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FIELD MUSEUM
OF
NATURAL HISTORY

GENERAL GUIDE



CHICAGO, U. S. A.

1928



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OTHER PUBLICATIONS OF FIELD MUSEUM PRESS

In addition to this General Guide to the collections, Field Museum of Natural History has begun publication of 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 special subjects with which they deal. The following numbers are now on sale:

Guide to Oriental Theatricals	\$0.25
Guide to Ethnology of Polynesia and Micronesia	0.50

A comprehensive survey of the activities of Field Museum, with data on its history and organization, is contained in the Manual of Field Museum of Natural History, which is on sale at \$0.25 per copy.

The Museum also publishes four series of Leaflets on scientific subjects, written in popular style. These range in price from \$0.10 to \$0.75. Twenty-seven such leaflets have been published in the Anthropological Series; thirteen in the Botanical Series; nine in the Geological Series; and ten on Zoological subjects.

A Design Series, of particular value to those interested in design work, arts and handicrafts, at present includes four numbers ranging in price from \$1 to \$2.50.

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FIELD MUSEUM OF NATURAL HISTORY

FOUNDED BY MARSHALL FIELD, 1893

GENERAL GUIDE

THIRTEENTH EDITION



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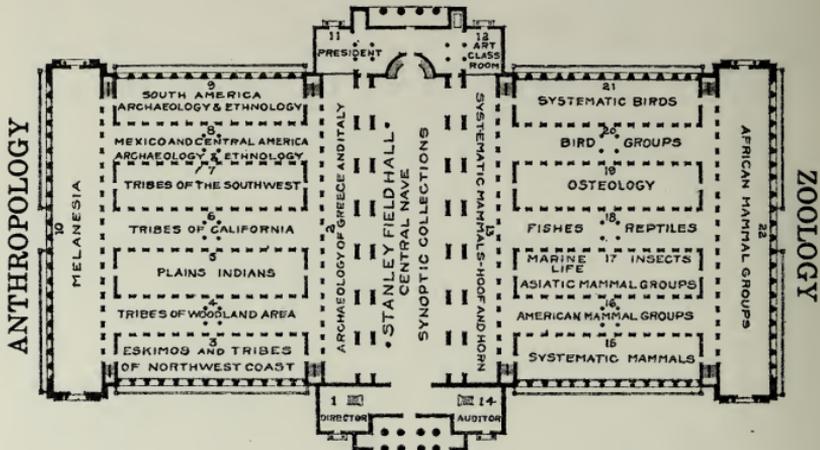
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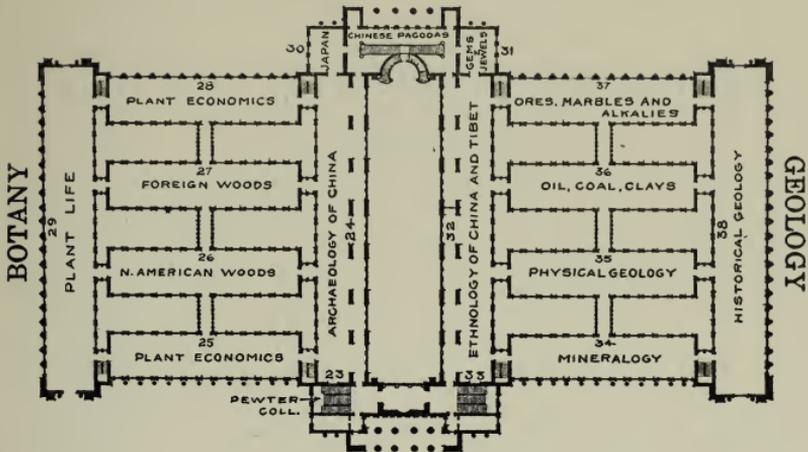
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- 4—Salish, Plateau, and Woodland Tribes, North American Archaeology—James Nelson and Anna Louise Raymond Hall.
- 5—Indian Tribes of the Great Plains.
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- 8—Mexico and Central America.
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- 15—Mammals—Systematic.
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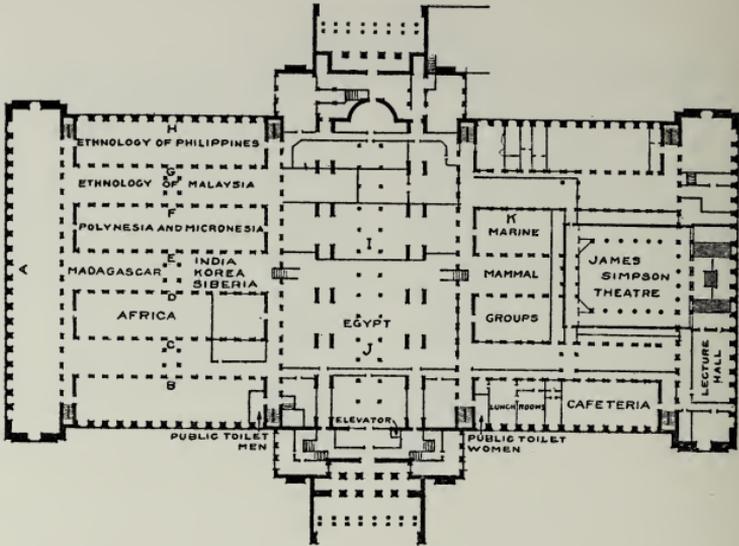
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- 38—Historical Geology—Ernest R. Graham Hall.

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- D—Ethnology of Africa.
- E—India, Siberia, Korea, Madagascar.
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The James Simpson Theatre, the Lecture Hall, Cafeteria and Lunch Rooms, and Men's and Women's Lavatories are on this floor.

GENERAL GUIDE TO THE COLLECTIONS

Introduction

This handbook is designed to serve as a brief guide to the collections in the Museum.

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, 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 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 Curators and a number of divisional Associate and Assistant Curators, preparators, etc.

The Museum building is 700 feet long, 350 feet wide, 90 feet high, and covers an area of about eleven acres. The central hall, Stanley Field Hall, which is 299 feet long and 68 feet wide, rises to the entire height of the building; the rest of the structure is divided into four floors. Of these, the main and second, and a portion of the ground floor, are devoted to exhibition purposes; the remainder serve as working space 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 60 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 country 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.

Many of the 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 intended to convey an impression of 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, as listed below, at the date of publication of this Guide, are typical of the contents of this hall.

Near the front of the hall in a central position is a reproduction of a large African Hippopotamus. In this specimen the animal has been exactly reproduced in cellulose acetate, a material resembling celluloid. The process, a recent innovation in museum technique, has been developed by L. L. Walters, a member of the staff of Field Museum, and it produces exceedingly lifelike results.

Selected specimens of Eskimo ethnological material collected by the John Borden-Field Museum Alaska-Arctic Expedition, 1927, are to be found in a case near the north end of the hall.

Fossils of marine animals of an age 500,000,000 years past and associated rocks and minerals from Baffin Land, not far from the Arctic Circle, are shown in a case near the north end of the hall. These were collected by the Rawson-MacMillan Subarctic Expedition of Field Museum, 1927-8.

In the center of the hall are two African elephants mounted in fighting attitude. They were secured on a Museum expedition to British East Africa in 1906. This group is the work of the late Carl E. Akeley.

Toward the south end of the hall three bronze groups, also the work of Mr. Akeley, illustrate lion spearing by native Africans. These groups are the gift of Richard T. Crane, Jr.

Case 1. Prehistoric American gold ornaments from Colombia and Ecuador, South America, presented by William Wrigley, Jr.

Case 2. Ancient Roman bronze bath-tub, from Bosco-Reale, Italy.

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

Case 4. Synoptic exhibit of jade carvings from ancient Mexico, New Zealand, and China.

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

Case 6. Pottery and porcelain of the Sung period, China, collected by Captain Marshall Field Expedition to China, 1923.

Case 7. Selected examples of Chinese art, represented by ancient ceramics, bronze, cloisonné enamel and the figure of a zebu in cast solid silver.

Case 8. Gold and silver jewelry from India.

Case 9. Amber and amber-like resins. This case, together with two others in Hall 28, Department of Botany, contains one of the finest collections of resins known.

Case 10. A large iron meteorite, weighing 3,306 pounds, which ranks eleventh in size among known meteorites. It was found in 1908 near Tonopah, Nevada.

Case 11. Maya antiquities in pottery, jade and shell secured by Captain Marshall Field First Archaeological Expedition to British Honduras, 1928.

Case 12. Ancient Chinese jades of the archaic and early Han periods, presented by Mrs. George T. Smith, Mrs. John J. Borland, Miss Kate S. Buckingham, Martin A. Ryerson, Julius Rosenwald, Otto C. Doering, and Martin C. Schwab.

Case 13. Varieties of quartz. The remarkable range of colors and forms of this material is illustrated.

Case 14. A group of tropical epiphytic and parasitic plants growing about a termite nest. Reproduced from nature in the Stanley Field Plant Reproduction Laboratories of the Museum.

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

Case 16. Chinese tapestries and cut velvets, secured by Captain Marshall Field Expedition to China, 1923.

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

Case 18. Chilean Pudu. The Pudu is the smallest of all true deer, standing only seventeen inches high. It is here shown in a typical natural setting.

Case 19. Birds of Paradise. Selected examples of the most curiously and gorgeously plumaged group of birds from the islands of New Guinea.

Case 20. Antiquities from Kish, Mesopotamia, secured by the Field Museum-Oxford University Joint Expedition under the patronage of Captain Marshall Field.

Case 21. Various rare and handsome tropical woods.

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

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

DEPARTMENT OF ANTHROPOLOGY

First Floor:—Halls 2-10

Second Floor:—Halls 23, 24, 30, 32 and 33

Ground Floor:—Halls D, E, F, G, H and J

Hall 2: Edward E. Ayer Hall. Archaeology of Etruria, Greece Italy, and Ireland.—The main section of this hall is occupied by exhibits of Etruscan, Greek, and Roman antiquities in stone, bronze, iron, pottery, and glass. Eighteen reproductions of antique furniture are openly displayed on bases along the sides of the hall. There are two cases containing reproductions of notable Irish antiquities, including secular and ecclesiastic art.

Hall 3: Mary D. Sturges Hall. Eskimo and Tribes of the Northwest Coast of America.—Eskimo culture is illustrated in its wide geographical range, extending along the Arctic shores of America from Labrador to northeastern Siberia. The dependence of the Eskimo on hunting and fishing is well brought out, being particularly elucidated by four life-size groups showing the chase and capture of the seal, preparation of skins, and winter fishing through a hole in the ice. A single case, 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 east section of the hall is given over to the Indian tribes of the Northwest Coast in the following order: Tlingit, Tsimshian, Haida, and Kwakiutl. The religious and ceremonial aspect of life, which dominates the activities of these people, is well represented, notably in three life-size groups illustrating several stages in the Hamatsa dance of the Kwakiutl.

Hall 4: James Nelson and Anna Louise Raymond Hall. Tribes of the Eastern Woodland and North American Archaeology. Salish and Plateau Tribes.—The southwest quarter of this hall shows the life of the Woodland tribes with two miniature groups illustrating the summer and winter life of the Sauk and Fox. Ohio archaeology and the interior Salish tribes occupy the northwest quarter. The tribes of the Rocky Mountain Plateau are shown in the southeast quarter with noteworthy collections of costumes and woven bags. The collections in the northeast quarter connect with those at the east end of Mary D. Sturges Hall and show the life of the southernmost tribes of the Northwest Coast and the Coast Salish. The latter are introduced by a life-size group showing their home life and industries. A new addition to this hall is represented by an exhibit in three cases, illustrating the life and religious practices of the Potawatomi, a central Algonkian tribe which formerly inhabited the

Chicago region and is of much interest in connection with the early history of Chicago. This collection was made under the auspices of Julius and Augusta N. Rosenwald.

Hall 5: Indian Tribes of the Great Plains.—The life of the tribes of this region centered about the horse and the buffalo. The collections are introduced by a life-size group showing a Crow woman and horse with full trappings. The center of the hall is dominated by a large original tipi. The southern half of the hall is devoted to the Cheyenne, Arapaho, and Crow, and fully illustrates the arts and industries of the nomadic tribes. Their principal religious observances are typified by exhibits of the paraphernalia of the Arapaho men's societies and by an original Sun Dance altar. The northern half illustrates the life of the Blackfoot and Dakota and of some of the agricultural tribes on the eastern edge of the area. The exhibits of Dakota bead and porcupine-quill work are especially noteworthy. A large collection of Pawnee ceremonial objects is shown in the northeast quarter, and the principal rites of the tribe are illustrated by miniature groups showing 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.—The California tribes occupy the west half of the hall, being 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 in the west entrance of the hall. A remarkable collection of Navaho blankets is on view in the southeast section of the hall.

Hall 7: Sedentary Tribes of Arizona and New Mexico.—The chief representative of this group is the Hopi of Arizona, whose religious and ceremonial life is represented with great care and detail. At the west entrance are placed a life-size group showing the interior of a Hopi home with various domestic pursuits, the figure of a Hopi bride, and a Hopi boomerang-thrower, followed by two life-size groups representing Katsina dancers in costume. Accurate reproductions of Hopi altars, as erected in the yearly ceremonies of the tribe, are displayed in thirteen cases. Models of the pueblos of Walpi and Hano are also noteworthy. The series of Hopi tihus (images representing deities and given to girls) is no less remarkable and instructive.

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. Case 1 in the northwest corner supplies the link to exhibits in Hall 7 by showing a collection of pottery from Casas Grandes, Chihuahua. The civilization of this region is closely allied to the Pueblo cultures in the Southwest of the United States. A part of this collection was presented to the Museum through General Pershing. The rest of the north side of the hall is occupied by cases

illustrating the archaeology of Mexico. Particular attention is drawn to the very fine smaller stonework attributed to the Toltecs and Aztecs (Case 2). The Toltecs were a highly civilized people, who preceded the Aztecs and built up an empire rivalling in extent 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 the adjoining case. The casts displayed in the center of the hall were made from Maya monuments extant in Guatemala, Yucatan, and Honduras. 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 every-day 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.

Hall 9: South America.—In this hall are represented the Indians of South America of the past and present. Exhibitions representing the various modern tribes of South American Indians occupy the northeast section of the hall. Among the important collections are those from the Chaco Indians, the fierce, nomadic and equestrian warriors of the plains of northern Argentina; the Jivaro tribe in the forests of eastern Peru, including four examples of the 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, which no Indian woman may see under pain of death. The remainder 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 represented, and there are several cases of artistic pottery dating from pre-Inca times, dug up in the Chimu and Nazca districts on the Peruvian coast. The southeast section of the hall is devoted to the Inca 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 fine textiles from the ancient cemetery at Ancon. The southwest section of the hall is given over to a representation of the little-known Calchaqui culture which flourished in early times in north-western Argentina.

Hall 10: Joseph N. Field Hall. Melanesia, South Pacific.—This hall contains general ethnographical material from Melanesia and New Guinea, chiefly obtained by the Joseph N. Field Expedition (1909-13) under the leadership of A. B. Lewis, and regarded as the most comprehensive Melanesian collection in this country. At

the north end are collections from New Britain and New Ireland, including large ceremonial masks and elaborately carved wooden figures. Next come New Hanover and St. Matthias with their peculiar types of decorated spears, clubs, clothing, and ornaments. 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 come the island groups of 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.

Hall 23 (at north end of East Gallery) contains the Edward E. Ayer collection of pewter comprising several hundred objects of pewter of European, Chinese, and Japanese origin.

Hall 24, East Gallery, second floor:—The collections from China, secured by two expeditions, the Blackstone Expedition (1908-10) and the Captain Marshall Field Expedition (1923), both under the leadership of the Curator, Dr. Berthold Laufer, are intended to illustrate the development of Chinese civilization from its beginning to the present time. There are two main divisions: the ancient, original culture of China prior to the intrusion of Buddhism (Cases 1-38), and Buddhistic China, as influenced and modified by religious and artistic currents coming from India from the third century A. D. onward (Cases 39-59). In each division, the principle of arrangement of the material is strictly chronological. The collection is particularly strong in archaic bronzes, jade, cast iron, mortuary clay figures, armor and weapons, as well as in Buddhistic and Taoistic sculpture. A collection of beautifully carved rhinoceros-horn cups on exhibition is a gift of the late John J. Mitchell.

South Gallery: A remarkable collection of 84 models of Chinese pagodas, made by Chinese orphans in the Jesuit Institution of Siccawei, is shown here.

North Gallery: An unusually fine carved lacquer screen of twelve panels from China, eighteenth century, deposited by Mrs. Marshall Field, Sr.

Hall 30: Frank W. Gunsaulus Hall (southeast corner, second floor): **Japan.**—This room contains a collection of sword mounts (presented by Dr. Gunsaulus), armor and weapons, costumes of women, Buddhistic images in wood, Nō masks, ivory carvings, and musical instruments. A set of dolls used for the Girls' Festival occupies the center of this room. On the walls are shown a wood-cut reproduction of a famous landscape by Sesshu, a large tapestry

representing the dedication of the temples of Nikko, and a painted screen of the Tosa school (presented by Dr. Gunsaulus).

Hall 32: West Gallery, second floor.—The north part of the hall contains collections from Tibet (Cases 44-80), secured by the Blackstone Expedition of 1908-10. Weaving and textiles, clothing in a series of costumed figures, and jewelry are fully represented. Images, paintings, sculpture, musical instruments, and other objects used in worship in the Lama temples are displayed in twelve cases. At the north end there are two cases illustrating the process of printing and wood-engraving in China and Tibet. In the central portion of the hall are shown various Chinese industries, such as wood, bamboo and root carvings, lacquer, fans, bone and ivory carvings, basketry, musical instruments, tobacco, and a remarkable collection of beadwork presented by Mrs. George T. Smith. The south section of the hall is occupied by Chinese and Tibetan dramatic performances on which a special guide entitled "Oriental Theatricals" has been issued.

Ground Floor

Hall D: Africa.—The exhibits in this hall are so arranged that they take the visitor on a journey from the Cameroon region of West Africa through the Congo area and South Africa, thence along the east coast of the continent up to Somaliland. The section illustrated in greatest detail is that of Cameroon (Cases 1-14, 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 wood-worker'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 represent witch-doctors engaged in magical ceremonies which are deemed necessary to cure the sick, to make rain, and to appease the ghosts of ancestors. Cases 16 and 17 contain an excellent collection of bronzes as well as wood and ivory carvings from the West African city Benin, testifying 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, Zulus of South Africa, the warlike Masai of Kenya Colony, and the Somali tribes of Abyssinia. 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.

Hall E: India, Siberia, Korea, Madagascar (temporary arrangement).—The ancient civilization of India is represented by a small, but well-selected collection of early Buddhist sculpture of the Gandhara period (first and second centuries A.D.); a few examples of later Indian and Jaina sculpture have been added to this case. The

ethnology of India is illustrated by copper, brass, and bidri ware, carved and painted Singhalese masks from Ceylon. A tall brass temple-censer from Benares, symbolizing the seven worlds according to the Indian system of cosmology, occupies the center of the hall. The very primitive culture of the Andamans and Nicobars is shown in detail. The Ainu of both Yezo and Saghalin, and the Gilyak and Tungusian tribes of eastern Siberia are well represented with their characteristic fur and fish-skin garments and many good examples of their highly developed decorative art. The civilization of Korea is well illustrated by a unique series of magnificent court costumes, suits of armor, weapons, an iron mortar, two copper cannons, dresses of the people, household articles, and pottery.

The west half of this hall is occupied by a collection from Madagascar obtained by the Captain Marshall Field Expedition to Madagascar, 1925-27, under the leadership of Dr. Ralph Linton. The natives of Madagascar are of mixed Asiatic and African origin, and the exhibit forms a link between the African exhibits in Hall D and the Polynesian and Malayan exhibits shown in the adjoining halls to the south. This is the only Madagascar collection of any 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 fibre, 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.

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. The carved ceremonial paddles and adzes from the Cook Islands and the New Zealand material illustrative of the culture of the ancient Maori are likewise noteworthy. Jade implements and feather robes are prominent features of this collection which may be 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 60 feet long and 14 feet high. The whole 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 guide entitled "Ethnology of Polynesia and Micronesia" has been published by the Museum, and is for sale at the north entrance.

Hall G: Malay Peninsula and Malay Archipelago.—The exhibits in this hall are partly the results of the Arthur B. Jones Expedition to Malaysia in 1922-23, in charge of F. C. Cole; partly acquisitions from the World's Columbian Exposition of 1893, and partly gifts of individual donors. In the west section of the 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 accompanying performances testify to the high development of dramatic art in Java. Four notable ancient stone sculptures from Java, on exhibition, are the gift of the Java-Chicago Syndicate of the Columbian Exposition. There is a remarkable collection illustrative of the life of the Dyaks of Dutch Borneo, presented by the late Dr. William Krohn, who gathered it in Borneo. The center of the hall is occupied by three groups—a miniature model of a Menangkabau village, a Semang pigmy making fire, and a Dyak head-hunter. Attention should especially be called to the numerous fine wood-carvings and textiles in this hall.

Hall H: Philippine Islands.—The collections in this hall, gathered between 1906 and 1911 by three members of the staff, William Jones (deceased), Stephen C. Simms, and F. C. Cole, under an appropriation provided by the late Robert F. Cummings, 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 in 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, cannon, and other weapons from the Moro are worthy of particular attention. At the east end of the hall is a life-size group of Bagobo weavers consisting of six life-size figures 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. On the east wall and the wall north of the west stairway are displayed tomb-sculptures and paintings. This exhibit includes statues of the goddess Sekhmet and of the nobleman Senmut. 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 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, and an Empire corselet of finely cut leather are especially noteworthy. Other exhibits are devoted to statuettes in stone, bronze and wood, ushebtis, offering-tables, tomb and memorial tablets, alabaster and other stone vases, pottery, jewelry, toilet articles, tools, weapons, wooden furniture, mummified animals, etc. 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 place in Egypt.

DEPARTMENT OF BOTANY

Halls 25-29, Second Floor

The installations in the halls of this department are designed to illustrate, as fully as possible, the forms of plant life and the products yielded by vegetation for the use of man.

Hall 25: Plant Economics.—The north side of this hall is devoted to a unique and comprehensive display of the botany and the economic products of the Palms, with some cases of Bamboo. The south side is occupied by food products of vegetable origin, particularly the small grains and corn with their products; breads, including ancient Egyptian bread more than 3,000 years old; starches, sugars, oils and fats, legumes, tea, coffee, spices, and tobacco.

Hall 26: Charles F. Millspaugh Hall. North American Trees.—The cases in this hall present monographic displays of the trees of North America. They show the trunks and wheel sections; photographs of the trees in summer and winter; the woods in plain, quartered, and figured boards; branches in leaf and flower; maps, colored to show the area of distribution; and a descriptive label giving such other information as the specimens themselves fail to convey.

Hall 27: Foreign Woods.—The cases in this hall are grouped geographically and contain specimens of the woods of Russia, Korea, Japan, Formosa, Australia, Philippines, Ceylon, India, Johore, Jamaica, Trinidad and various countries of Central and South America. The Japanese series is one of the most valuable and comprehensive ever brought together.

Hall 28: Plant Economics.—On the north side of this hall are displayed fiber plants such as cotton, hemp, flax, jute, Manila hemp, sisal hemp, and their products. On the south side are shown varnish gums, lacquers and lac, wood distillation products, resin and turpentine methods, paper pulp products, cork, tanning materials, dye-woods, rubber, and a variety of crude drugs.

Hall 29: Hall of Plant Life.—The exhibits here are designed to furnish a general view of the range of plant life. Beginning at the northeast corner of the hall, the lowest order of plants, the Bacteria, are followed by the Algae, Fungi, Mosses, and other flowerless plants; next are the conifers, and then the flowering plants, which occupy the greater part of the hall. Most noteworthy of the exhibits are the flowering and fruiting top of a Coconut Palm, at one end of the hall, and at the other a trunk of the curious Cannon-ball tree, with flowers and huge fruits. Other interesting plants represented are Pepper, Breadfruit, the giant waterlily known as *Victoria regia*, Pitcher-plants, Citrus fruits, Mahogany, Poison Ivy, Mango, Cacao, Cacti, Mangrove, Chicle or Sapodilla, Coffee, Banana, Vanilla and other orchids, and wild flowers of the United States. The hall is not complete, and new exhibits are being added continually.

Third Floor: The Herbarium.—In rooms over Hall 25 are installed the large study collections, consisting of an herbarium of the plants of Illinois, the famous Harper dried collection of fleshy fungi, and a general herbarium of mounted plants from all parts of the earth, containing in all more than 600,000 specimens. The herbarium is especially rich in plants of tropical America. These collections are accessible on request to persons particularly interested in botany.

Wood Collection.—In this division, on the third floor, is a classified study collection of named woods, mainly tropical, including more than 6,000 specimens. This may be consulted by persons interested in woods.

DEPARTMENT OF GEOLOGY

Halls 34-38, Second Floor

Hall 34: Minerals, Crystals, Meteorites, Physical Geology.—The east half of the hall is occupied by the systematic collection of minerals, the specimens being 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. Minerals such as realgar, proustite etc., 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 outside of and 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. These are minerals which by substitution or alteration assume the forms of other species. There is also an exhibit of radiographs made by a number of different species of radio-active 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. Several 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, thirteen 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 specimens are installed in individual cases, the meteorite of greatest size thus shown weighing 3,336 pounds. Over two tons of meteorites from the famous locality at Canyon Diablo, Arizona, including the largest known individual (weighing 1,013 pounds) of this fall are shown in one case. Etched faces are shown on many of the specimens of iron meteorites, thus illustrating the peculiar figures which distinguish these meteorites from terrestrial irons.

The west end of the hall is occupied by part of a collection illustrating physical geology, and includes specimens of 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. Additional specimens illustrating physical geology are installed in the adjoining hall.

Hall 35: Clarence Buckingham Hall. Physical Geology, Rocks, Relief Maps.—The collections at the east end of this hall are a continuation of those in the west end of Hall 34. The more important groups illustrate volcanic productions, dendrites, tufas, veins and vein structure, faults, folds, joints and cave formations. Contorted, ropy lava surfaces from Vesuvius and volcanic bombs from France and New Zealand are conspicuous among the volcanic specimens.

There are also shown many examples of such oft-mentioned substances as volcanic ash, lapilli and mud. Many of the dendrites, which are fern and flower-like forms deposited by water seeping through cracks in rocks, are objects of exceeding delicacy and beauty. In the case illustrating rock structure, large specimens illustrating slaty cleavage are worthy of attention. Welsh quarrymen have split these great pieces of slate along the cleavage into many thin leaves. In another case are specimens of ripplemarked sandstone, which display large surfaces ripplemarked by wave action 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 limestone stalactites and stalagmites, other cave products, such as floor deposits and gypsum rosettes, are also represented. Caves of an unusual type in Utah which contain huge, transparent, gypsum crystals instead of the usual limestone stalactites are illustrated by a number of crystals from such a cave which have been so installed as to reproduce its appearance. Artificial lighting of the cave 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 effect of lightning on both sand and rock.

In one case in this hall a model of the Natural Bridge of Virginia is shown. Besides being a faithful reproduction of the bridge in natural colors, with the vegetation and other features reproduced, it illustrates a number of features of rock structure which occur on too large a scale to be satisfactorily shown by specimens.

The western half and somewhat more of the hall 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. Portions of the earth's surface which are of unusual geological interest are also presented in relief. Of especial local interest is a group of 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. Against the west wall are two large relief maps of the United States. One shows the distribution of rainfall and the annual temperatures, and the other the area covered by the continental ice sheet during the glacial epoch.

Dominating the west end of the hall is a model, 19 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 is about three times greater than the horizontal.

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. The derivatives of petroleum and specimens illustrating their uses, form another large exhibit. A model of the original Rockefeller refinery at Cleveland is shown. Numerous oils refined from petroleum occupy a case in the center aisle. They range in use from burning and lubricating to medicinal oils. The great variety of uses of paraffin in the manufacture of familiar objects of everyday utility is interesting, and is illustrated by many specimens. The uses shown range from waterproofed clothes-pins and shot-gun shells to flowers for ladies' hats, chewing gum and candles. With these familiar derivatives and uses of petroleum products are shown other important products and uses which are not so well known. Near the center of the hall, the leading varieties of coal are shown in a series of cases, and there are also exhibited specimens of coal from many of the most important coal fields of the world. A complete vertical section of a coal seam, five feet thick, shows the appearance of the coal before it is mined. The source of coal is illustrated by a stump of a tree from a forest of the time of the coal formation, and the origin of coal and the relation of the several kinds to each other are shown by a synoptic collection. Accompanying the coal collection is a case showing the numerous substances obtained as by-products from coal. The products shown are obtained by the gas company of the city of London, England, in the manufacture of illuminating gas. Although this case necessarily contains only a few of the thousands of coal by-products, the diversity and the brilliant colors of those shown make it well worthy of attention. In the adjoining case is a less highly colored but interesting series of the more important coal by-products obtained in this country. A synoptic collection illustrates the kinds of mineral fuels and some of their relations. Adjoining the coal collections are cases containing oil shales and important uses of asphalt.

In the center aisle is a case containing diamonds and specimens of rock in which diamonds are found, as well as specimens of the minerals associated with diamonds. Two cases illustrate the occurrence and uses of peat. These 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. A collection of graphite shown contains numerous specimens of crude graphite and associated rocks, as well as specimens illustrating the uses of this mineral. Of general interest also is a group of specimens showing all stages in the manufacture of the common lead-pencil.

The west end of the hall is occupied by exhibits of clays, soils, sands, and other earthly materials. Two cases are 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. Another case contains soils grouped according to the more exact classification of the United States Department of Agriculture. This is followed by a collection of numerous soils arranged according to 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 or other burned ware, there appears with most of the specimens a little

brick burned from the specimen itself. The manufacture of common brick is illustrated by a large model of a brick yard which shows all stages of the manufacture from digging the clay to loading the finished brick on freight cars. There are also shown collections of clay-like and earthy minerals of industrial importance. These include fuller's earth, mineral soaps, cement rocks and mineral pigments. A collection filling three cases illustrates the uses of silica. It includes ornamental and gem varieties, and such well-known substances as the common plastering and building sands, as well as such comparatively little known things as a flask for chemical use blown from pure, melted quartz, and a specimen of smoky quartz which the Chinese make into dark spectacles. The manufacture of Portland cement is illustrated by a large and elaborate model of a modern plant. Full details of the work are represented, from the mining of the constituent limestone and clay to the storing of the completed product.

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 that gold, silver and lead ores 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 the methods of mining ore and of treating ores of the more important metals. Among these a model of a gold mine shows the 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. To this collection has been added a series of those minerals which have been found useful in radio-communication.

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 characteris-

tic 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.

Hall 38: Ernest R. Graham Hall. Fossil Animals and Plants.—Fossils here exhibited consist of the remains of plant and animal life which have been preserved in the earth by natural agencies. They include specimens turned to stone by petrification, specimens preserved in bogs by the antiseptic action of bog-acids, specimens preserved by being saturated with asphaltum, and also natural casts, molds and tracks. An introductory case at the south end of the hall gives a comparison between fossil and recent forms of life of similar kinds.

The collections here are arranged in the order of their geological sequence. At the south end of the hall may be found examples of the oldest known fossils. Progressing to the northward are arranged series of fossils representing the plants and animals which lived in the successive geological periods. Fossils of the latest geological period will be found at the north end of the hall.

On the walls above the cases a series of 28 paintings representing various types of extinct plants and animals is being installed. Each panel shows a characteristic scene in the geological period which it represents. These paintings, when all in place, are designed to extend in continuous series about the hall.

Ten of these paintings now on view are as follows: (1) The cooling earth long before the appearance of life; (2) the beginnings of life with great masses of algae, the only living things of that time; (3) a sea beach of the Ordovician period with the animals of 500,000,000 years ago; (4) a coral reef of Silurian time on the site of what is now Chicago; (5) an Armored Dinosaur; (6) Egg-laying Dinosaurs from the Gobi Desert; (7) two Giant Dinosaurs; (8) the Moa, a giant bird which once lived in New Zealand; (9) the Giant Kangaroo and another extinct giant marsupial, the Diprotodon; (10) the Mastodon which in prehistoric times may have wandered over the site of this city.

At the north end of the hall are exhibited various examples of extinct animals which lived at the same time as primitive man. Some of them were certainly known to him. A life-size reproduction of the Moa, a gigantic ostrich-like bird of New Zealand, represents one of a numerous assemblage of birds which may have been exterminated by the natives of those islands. The skeleton of the great Irish Deer recalls an animal which was exterminated by civilized man. A skeleton of the Mastodon, and another of the Mammoth, are the most conspicuous objects in this end of the hall. Similar species of extinct elephants were known to the cave men of western Europe. In the upright cases are skeletons of the European Cave

Bear and of the Sabre-tooth Tiger, two of the natural enemies encountered by primitive man. Among the specimens in another upright case is the skull of a Cave-man accompanied by a stone lamp and other utensils, all partially embedded in the stony cave deposit.

A mounted skeleton, with armored shell, of the huge armadillo-like animal, *Glyptodon*; a large skull of a baleen whale; skulls of giant sloths, of *Nesodons*, of fossil horses, and of many other South American fossil animals, illustrate the peculiar animal life of that continent in the Pliocene period. These specimens were collected by Captain Marshall Field expeditions to South America.

Immediately to the south of these exhibits is a series of cases, designated under the geological term "Miocene," containing specimens of animals and plants of the Age of Mammals. These animals preceded the Age of Man, and probably none of them were ever seen alive by human beings. Most conspicuous among these is the slender skeleton of a fossil 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, mustellines and other less familiar kinds of extinct animals. An immense fossil pair of jaws armed with huge teeth represents a great extinct shark. A spiral fossil designated as "Daemonelix" is probably the natural cast of an extinct plant.

Beyond these exhibits are fossils of the Oligocene period. Most conspicuous among them is the mounted skeleton and a fine series of skulls 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. A skeleton of a smaller sabre-tooth tiger, skulls and skeletons of a variety of extinct rhinoceroses, tapirs, wolves, smaller three-toed horses, and of a great variety of animals of less familiar names are shown in upright cases. Of especial interest is a group of skeletons of the *Lepidomeryx*, a member of the deer family no larger than a terrier dog. These skeletons in a stone slab are exhibited in a table-case.

Fossils of the Eocene Period include a skeleton of one of the smaller titanotheres, *Dolichorhinus*, a fine series of skulls of the Uinta mammals, and contemporary specimens of crocodiles and turtles. In another upright case may be seen a series of fossil fishes, each one exhibited in its matrix of stone. Various fossil shells, insects, palms and other Eocene plants are included in the series.

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

Of the Comanchian period a great skeleton of the dinosaur, *Apatasaurus*, occupies a central position in the hall and dominates the entire collections. Parts of other dinosaurs from both North and South America are exhibited on pedestals or occupy adjacent cases. A series of models in miniature, designed to represent these animals in life, is exhibited in a case near by.

Fossils of the Jurassic Period are represented in these collections by a choice series of skulls and skeletons of the fish-lizards from England and from Germany; by a large series of fossil fishes, mostly from Bavaria; by a few specimens of the rare flying-reptiles, and by a comprehensive series of fossil crustaceans, cuttlefish, crinoids, sponges and other invertebrate animals. There are also a number of fossils of the plants known as cycads.

The Triassic fossils exhibited include fishes from South Africa, tracks of reptiles from Massachusetts and various fossil plants and shells from Germany. A series of skulls of primitive reptiles and of amphibians of Permian age are exhibited in an upright case together with the fossils of the Triassic period.

Fossils of the Carboniferous Period include a number of fine slabs of tree-trunks, well preserved stumps, roots and branches of the larger trees, *Lepidodendrons* and *Sigillaria*; a series of the great "horse-tail" rushes, *Calamites*, and a large number of fossil ferns.

The Devonian fossils include fishes, starfishes, sponges, corals and a variety of other invertebrate animals.

From the Silurian Period there are exhibited great crustaceans, cephalopods, straight and coiled, corals, crinoids, and fossil seaweed.

The Ordovician series includes a slab with scales of the earliest fishes, a number of large trilobites, and various brachiopods and cephalopods.

The Cambrian, or earliest period of known life, is represented by an extensive series of trilobites, specimens of fossil jellyfish and seaweeds and of the controverted fossil, *Eozoon canadense*.

DEPARTMENT OF ZOOLOGY

Halls 13, 15-22, First Floor

Hall 13: George M. Pullman Hall. Horned and Hoofed Mammals.—This hall, which runs north and south, and 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 low 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 is an example of the rare giraffe-like Okapi, shown in a case near the north end of the hall.

Hall 15: Mammals-Systematic.—This hall is at the right of the main or north entrance to the Museum, and is entered by passing

through the north end of Pullman Hall. 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 successively various groups, as rodents, edentates (sloths, anteaters, etc.), fur-bearing mammals, the cat family, and the dog family, terminating with the highest mammals, the monkeys and man-like apes. In the northwest corner of the hall is a case devoted to the mammals of the Chicago area.

Hall 16: American Mammals-Habitat Groups.—Hall 16, next on the south from Hall 15, contains habitat groups of North American large 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 are also 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 under construction further American groups, including the Alaska Brown Bear, Polar Bear, Musk Ox, Bison, Beaver, Jaguar, and Capybara.

Hall 17: William V. Kelley Hall. Asiatic Mammals-Habitat Groups. Marine Invertebrates. Insects.—In the east half of this hall are some striking habitat groups of Asiatic mammals forming part of an extensive series intended to occupy the entire hall. Among those completed are Marco Polo's Sheep, Asiatic Ixobrychus, and Indian Rhinoceros, composed of animals obtained by the James Simpson-Roosevelts Asiatic Expedition.

In the south and west part of the hall, in temporary position, is a series of cases showing many of the myriad forms of life found in the sea—corals, crinoids, sponges, sea urchins, star-fishes, crustaceans and many others. At the west end of the hall are several cases of insects—tarantulas, centipedes, scorpions, seventeen-year "locust," silkworm, and certain butterflies. Two habitat groups illustrate the insect life of the Indiana dunes and the life history of the Tomato Worm Moth.

In the alcove flanking the west entrance to the hall is a habitat group of American crocodiles in which the animals are reproduced in cellulose acetate, a material resembling celluloid.

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

The fishes are arranged in two series; one showing representatives of the principal orders and families of fishes, and the other

showing habitat groups and special collections of Atlantic and Pacific food and game fishes, and also Chicago market fishes.

The collection of reptiles includes representatives of the lizards, snakes, turtles, and crocodiles. Of particular interest are American amphibians and reptiles reproduced in celluloid. Noteworthy among these is a South American Anaconda installed in a natural setting. 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 17.

Hall 19: Osteology-Skeletons.—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. In the center toward the west end is the huge skeleton of a Right Whale. Of particular interest among the bird skeletons is an assembled skeleton of the extinct Great Auk. On the southeast wall of the hall is a case containing skeletons of man, gorilla, chimpanzee, and orang arranged for comparative study.

Hall 20: Birds-Habitat Groups.—Eighteen bird groups with painted backgrounds are shown, mostly in large sectional cases with four groups to each case. 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. Near the west end of the hall is a large case containing four groups from tropical America and including the Flamingo, the Jabiru Stork, Horned Screamer, Scarlet Ibis, and Oilbird or Guacharo. At the extreme west end of the hall is a group of Alaskan water birds from the Pribilof Islands, and a group of albatrosses and other mid-Pacific birds from the island of Laysan.

Hall 21: Birds-Systematic.—A systematically arranged collection of birds including 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 is undergoing revision by which the birds are being arranged on natural perches or bases instead of on shelves. Among the groups for which the new installation is completed are the diving birds, gulls, terns, shore-birds, ducks, hawks, owls, and woodpeckers. Species known to occur in the state of Illinois are marked with a red star. 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 Game Animals. 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 door and the James Simpson Theatre.

North of the stairway are groups of large African mammals collected and prepared by the late Carl E. Akeley—koodoos, zebras, buffaloes, and various antelopes. On the other side of the stairs are other African antelopes including a group of Mountain Nyala obtained by the Field Museum-Chicago Daily News Abyssinian Expedition, 1927. In temporary position in this hall are a family of Gorillas next to the central west wall, and two groups of Orangs and Proboscis Monkeys from the East Indies. Certain groups of American large mammals also are temporarily located in this hall.

H. N. HIGINBOTHAM HALL

Hall 31: Gems and Jewels.—Second floor at head of staircase leading from the south end of Stanley Field Hall.

This hall contains a large and very valuable collection of gems and jewels. There are shown many examples of nearly every known gem, represented both by 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 and Tiffany 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 Brazilian stones, and rough diamonds from nearly all the important fields of the world. Emeralds are illustrated by crystals from Colombia, Brazil, Russia and North Carolina and by cut stones from Colombia 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 99½ carats. A cut aquamarine weighing 331 carats, together with many other stones of fine quality and remarkable size, illustrate this variety of beryl. Of topaz there are to be seen a nearly pure crystal from Brazil weighing 90 pounds, and many blue, yellow and colorless stones cut from crystals. Many cut and crystallized amethysts from Brazil and other countries show the rich, dark, purple color and other qualities of this stone. A bowl, one foot in diameter, cut from one piece of rose quartz, is noteworthy for its rich color and size. 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 precious and semi-precious stones are illustrated in the collection both by cut and rough specimens. Gold and platinum are represented by nuggets and by many other specimens showing their occurrence in nature.

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

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION DEPARTMENT

This Department prepares small portable cases of natural history and economic exhibits, and lends them to the schools of Chicago.

This direct and effective way of extending the museum into the classrooms of the schools was made possible through the benefaction of the late Norman Wait Harris, who provided in 1911 an endowment of \$250,000. This endowment has been supplemented by contributions in 1919 of \$25,000 and in 1923 of \$100,000 from members of Mr. Harris's family.

More than 1,000 cases are at present available for this educational work. Other cases are being prepared. At the beginning of the school year two cases are sent to each school for a period of two weeks. At the end of that time they are taken to other schools for the same period, and two other cases are left in their stead. Deliveries to the schools are made by motor trucks.

Examples of these cases are exhibited at the south end of Stanley Field Hall.

GENERAL INFORMATION

Location

Field Museum is located in Grant Park near Lake Michigan, the main entrance facing Roosevelt Road. The Illinois Central main and suburban station is within two blocks of the Museum. Surface cars, elevated lines, interurban lines and buses also provide transportation to within a few blocks of the Museum. There are fine drives for automobiles, and ample free parking space.

Hours and Rules of Admission

The Museum is open to the public during the following hours:

November, December, January	9:00 a. m. to 4:30 p. m.
February, March, April, October	9:00 a. m. to 5:00 p. m.
May, June, July, August, September	9:00 a. m. to 6:00 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, professors and teachers of any recognized University, College, School or Institute are admitted free upon presentation of proper credentials.

Checking

Canes, umbrellas and parcels must be checked at the entrances. A fee of five cents is charged for this service.

Telephones

Public telephones will be found to the east and west of the main (north door) entrance.

Wheel Chairs

Visitors desiring the use of wheel chairs may obtain them at the main (north door) 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 Library

The Museum Library is open for reference daily, except Sunday. The Library contains approximately 92,500 volumes.

Information

Information concerning the Museum may be secured at the main (north door) entrance where the Publications of the Museum and Picture Post Cards are sold. Copies of many photographs made by the Museum photographer are also on sale there.

Lunch Rooms

There is a Cafeteria on the ground floor where meals and refreshments may be obtained between 11 a. m. and 3 p. m. daily, 12 noon and 4 p. m. Sundays. Accommodations are also provided in rooms near the Cafeteria for school children and parties who provide their own lunches.

Special Privileges

Sketching and photographing in the Museum are permitted only under certain restrictions, details of which are obtainable upon application to the Director.

The Research Collections and Laboratories, which are on the third floor, are not open to the public, but may be visited by students, specialists, and members of the Museum upon application to the Director and with the approval of the Curators.

Museum Tours and Guide Service

At 11 a. m. and 3 p. m., on Monday, Tuesday, Wednesday, Thursday and Friday of each week, a Guide-lecturer conducts tours through various sections of the Museum. Thursday tours are general; 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. Each tour lasts about an hour and may be taken, without charge, by any Museum 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.

Lectures and Entertainments

Lectures and entertainments are given in the James Simpson Theatre of the Museum. Some of these are for children, some for the general public, and some for members. Free Lecture Courses are given on Saturday afternoons during the Spring and Autumn by prominent scientists and explorers. Entertainments for children are given on Saturday mornings during the Spring and Autumn. They include both speakers and motion pictures on natural history and economic subjects. The Yale University Press "Chronicles of America" photoplays are shown for children, and also in Americanization programs for the foreign born. This series of motion pictures is the property

of the Museum, having been presented by Chauncey Keep as a memorial to his son, the late Henry Blair Keep. Special lectures are given from time to time. Lectures by members of the Museum staff are frequently broadcast by radio. Lecturers are also sent out by the Museum to the public schools of Chicago, a large gift having been made for this purpose and for the Saturday morning children's entertainments by Mrs. Anna Louise Raymond as a memorial to her husband, the late James Nelson Raymond.

Membership

The Museum has several classes of members. Benefactors are members who give or devise \$100,000. Fellows are those who give or devise \$5,000, and they have the privilege of appointing their successors in perpetuity. Life Members are those who give \$500. They are exempt from dues and enjoy privileges extended to Members of the Board of Trustees. Non-Resident and Associate (Life) Members are those who pay \$100; Non-Resident Associate (Life) Members pay \$50. They are exempt from dues and also enjoy privileges extended to Members of the Board of Trustees. Sustaining Members contribute \$25 annually. After six years they automatically become Associate (Life) Members. Annual Members contribute \$10 annually. They are entitled to the publications of the Museum on request, and to special privileges in the way of attendance, etc. Other Memberships are: Corporate, Honorary and Patron, additions to membership under these classifications being made by special action of the Board of Trustees, as provided in the amended By-Laws. Additional information as to becoming a member of Field Museum may be obtained by application in person or by correspondence.

BEQUESTS

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

FORM OF BEQUEST

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

Cash contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the taxpayer's net income are allowable as deductions in computing net income under the Revenue Law.

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

