

## HISTORY OF ELEPHANT ORDER TRACED IN FOSSIL EXHIBIT

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Few animals are as impressive in appearance, as interesting in habits, or as surprisingly intelligent as the elephants. Although well known to most persons through their frequent appearance in zoos and circuses, they are sufficiently spectacular to prevent

boscideans spread over the earth until, by the Pleistocene or Glacial epoch, they had invaded every continent with the exception of Australia. The common occurrence of bones and teeth of mastodons and mammoths in nearby bog deposits and gravel pits shows that these animals were numerous in the Chicago area and that they lived

considerable variety of types evolved from these forms, the most extraordinary of which were the so-called shovel-jawed mastodons. In these animals the lower jaw, one of which is shown in the exhibit, came to bear an astonishing similarity to a scoop shovel. The lower tusks became broad and flat with a chisel edge in front, and the connecting portion, or symphysis, of the two mandibles became greatly elongated and concave above. The resemblance to a shovel was no freak of nature but a marvelous adaptation in response to the requirements of a specialized mode of life. Study of the skeletons of these animals and of the deposits in which their bones have been found shows that they frequented marshes and used their "shovels" for digging up succulent aquatic plants from the mud.

### EVOLUTION OF THE TRUNK

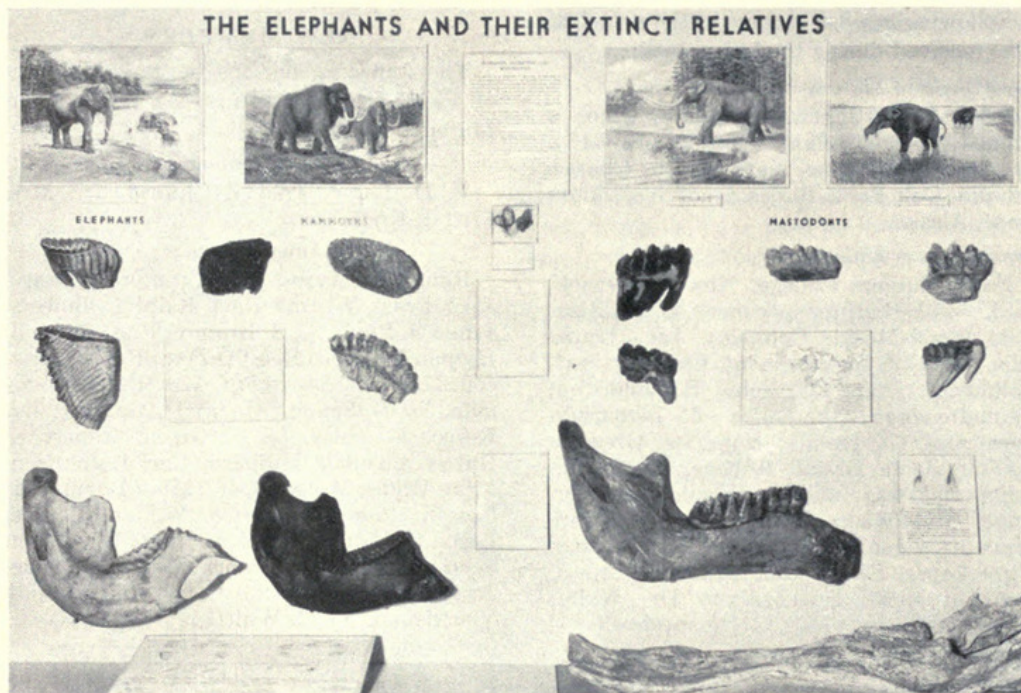
A short head was evolved in several different lines of mastodons. Since these animals possessed the typical elephant body structure with the characteristic short neck and long, pillar-like legs, the obvious result of a shortening of the skull and jaw was to remove the mouth from contact with the ground. The necessity for overcoming this difficulty led to the development of the trunk, which is actually the highly modified nose and upper lip. It is altogether likely that in the long-headed ancestral mastodons nose and lip formed a well developed flexible snout, somewhat resembling a tapir's, and that elongation of this organ kept pace with the shortening of the head.

By late Miocene time the mastodons had spread to Europe, Asia and, via a land connection at the site of the present Bering Strait, North America. Elevation of the Isthmus of Panama during the Pliocene epoch opened the way to South America, over which they ranged in the Pleistocene. The family survived into early Recent time in the Americas, but died out somewhat earlier in the Old World.

Elephants and mammoths differ from mastodons chiefly in having higher and shorter heads and much more complicated grinding teeth. They are believed to have arisen in south-central Asia during the later part of the Age of Mammals. Their ancestry is not yet well understood, but they are probably the descendants of a group of short-headed mastodons. The family spread over all of Eurasia and Africa and reached North America early in Pleistocene time, but, unlike the mastodons, did not penetrate South America to any extent.

### MAMMOTS PRESERVED IN FLESH

One member of the group, the Northern Mammoth, is perhaps the best known of all extinct vertebrates. Entire carcasses of this animal have been found in frozen ground in Siberia, the flesh so well preserved that wolves and other carnivores have fed readily upon it. Finds such as this, together with the realistic cave paintings of the animal executed by the Stone Age men of western



New Synoptic Type of Exhibit in Paleontology

Some of the principal facts about elephants and their fossil relatives are illustrated by comparisons of bones, by paintings restoring the appearance of prehistoric types, and by maps indicating present and past distribution.

their being regarded with the indifference which usually accompanies familiarity. The wonderfully adaptable trunk, the hallmark of the group, which can be used for such a variety of purposes as the delicate manipulation of a peanut, the taking of a showerbath, or the lifting of a tree trunk, is alone sufficient to insure elephants a prominent place among the wonders of the animal kingdom.

Interest in the living elephants is considerably enhanced by the realization that the two forms now confined to Africa and south-eastern Asia constitute a small remnant of a once extensive order whose range included most of the earth and whose known history goes back more than thirty million years. The earliest proboscideans, as members of the elephant order are called, occurred in the late Eocene of Egypt. Of tapir size and rather tapir-like in appearance, they possessed many of the basic characters of the order and indicate that a considerable part of proboscidean evolution had taken place before this first appearance of the group in the geologic record. The complete absence of proboscideans in deposits of an earlier date than late Eocene in other continents definitely suggests that Africa was the ancestral home of the order. During the later part of the Age of Mammals the pro-

here until comparatively recent times, geologically speaking. Specimens of the American Mastodon are the commonest fossil vertebrates that are brought in to the Museum for determination.

### FAMILIES COMPARED IN EXHIBIT

The elephant and mastodont families are the two most important of the order, and include the majority of the extinct forms. A new exhibit which has recently been added to Ernest R. Graham Hall (Hall 38) is devoted to these two groups. It displays specimens of typical representatives of both, compares and contrasts them, demonstrates the present and past distribution by means of maps, and includes paintings of four of the better known or more interesting forms. One fact that is emphasized is the close relationship between mammoths and elephants. It is probable that most persons who have heard of mammoths and mastodons tend to think of them as practically one and the same thing, whereas in reality they were quite distinct.

Of these two families, the mastodons are the older and more diversified. The earliest known representatives, found in the Oligocene of Egypt, had already attained the typical proboscidean body form, but had long heads and tusks in the lower jaw. A



Europe, make it possible to reconstruct the appearance of this mammoth almost as well as if living specimens had been available for study. A piece of skin and a wisp of hair found in Alaska are included in the exhibit.

The evolution of the elephant order reached its zenith in Pleistocene time, the epoch in which man began to dominate the world. The men of the Stone Age were a hunting people and there is abundant evidence that mammoths were a favorite object of the chase. Huge refuse heaps of mammoth bones in central Europe, and discoveries of arrow points associated with remains of these animals in North America, testify eloquently to the slaughter that must have gone on. This hunting may have contributed to the extinction of the order over the greater part of its once wide range, an extinction that unfortunately is still progressively continuing.

The elephant exhibit is one of a new series which is intended to replace old style cases throughout Ernest R. Graham Hall. In the new cases, shelving is eliminated, the specimens being attached by bracket mountings to the backs of the cases, thus permitting greater flexibility of arrangement and more pleasing installation. Each is planned and installed as a unit and is devoted to one main concept, in this instance the past history of the elephant order. Such exhibits are more attractive and less confusing than those of the old style in which unrelated specimens were placed together, with a common geological age as the only bond between them.

### MAY GUIDE-LECTURE TOURS

Conducted tours of exhibits, under the guidance of staff lecturers, are made every afternoon at 2 o'clock except Saturdays, Sundays, and certain holidays. Following is the schedule for May:

Thursday, May 1—General Tour; Friday—The Importance of Rocks and Minerals (Bert E. Grove).

Week beginning May 5: Monday—Animal Life of Forest and Plain (Mrs. Leota G. Thomas); Tuesday—General Tour; Wednesday—Spring Wild Flowers (Miss Marie B. Pabst); Thursday—General Tour; Friday—Hunters and Hunted (Miss Elizabeth Hambleton).

Week beginning May 12: Monday—The Wild Relatives of Some of the Domesticated Animals (Miss Elizabeth Best); Tuesday—General Tour; Wednesday—The History and Adventure of Life (Bert E. Grove); Thursday—General Tour; Friday—Herders and Their Herds (Miss Elizabeth Hambleton).

Week beginning May 19: Monday—Animal Life of Alpine and Polar Regions (Mrs. Leota G. Thomas); Tuesday—General Tour; Wednesday—Clothing and Shelter from Plants (Miss Marie B. Pabst); Thursday—General Tour; Friday—Farmers and Their Crops (Miss Elizabeth Hambleton).

Week beginning May 26: Monday—Apes and Other Animals of the Forest (Miss

Elizabeth Best); Tuesday—General Tour; Wednesday—Roots (Miss Marie B. Pabst); Thursday—General Tour; Friday—Memorial Day holiday, *no tour*.

Persons wishing to participate should apply at North Entrance. Tours are free. By pre-arrangement with the Director, special tours are available to parties.

### GIFTS TO THE MUSEUM

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

#### Department of Anthropology:

From F. G. James, Cleveland, Ohio—a stained glass of Tiffany manufacture, 44" x 80", made in New York; from Charles Schmid, Oak Park, Ill.—a deadfall (Eskimo trap), Alaska.

#### Department of Botany:

From Rutgers College, New Brunswick, N. J.—83 herbarium specimens, Costa Rica; from Wood-Mosaic Company, Inc., Louisville, Ky.—2 specimens of Claro walnut, California; from Dr. John R. Johnston, Chimaltenango, Guatemala—65 herbarium specimens, Guatemala; from Dr. Gregorio Bondar, Bahia, Brazil—9 specimens of palm fruits and wax, Bahia, Brazil; from Dr. Angel Maldonado, Lima, Peru—36 specimens of algae, Peru; from Dr. Herman Kleerekoper, São Paulo, Brazil—19 specimens of algae, Brazil; from Dr. Walter Kiener, Lincoln, Neb.—110 specimens of algae, Colorado.

#### Department of Geology:

From S. C. Puccetti, Chicago—a quartz-filled chalcedony geode, Illinois; from Edwin C. Galbreath, Ashmore, Ill.—3 specimens of vertebrate fossils, Illinois.

#### Department of Zoology:

From Chicago Zoological Society, Brookfield, Ill.—7 birds; from Princess Sigismund of Prussia, Barranca, Costa Rica—6 snakes, a gecko, and a bat, Costa Rica; from F. N. Bard, Chicago—a mounted bear, British Columbia; from Lincoln Park Zoo, Chicago—an anaconda and a skink, South America and Australia; from John G. Shedd Aquarium, Chicago—8 fish specimens and a sea turtle; from R. A. Burton, Mt. Pleasant, Iowa—25 Texas salamanders, Iowa; from L. F. Brown, Naples, Fla.—a manatee skull, Florida.

#### The Library:

Valuable books from Mrs. John King Fairbank, Cambridge, Mass.; Dr. Henry Field, Washington, D. C.; and H. B. Conover, A. B. Wolcott, and Rupert Wenzel, all of Chicago.

### Meeting of Orientalists

Several prominent scholars presented papers at a session of the American Oriental Society's annual meeting held in the Lecture Hall of Field Museum April 16. Those who spoke included Dr. Homer H. Dubs, of Duke University; Dr. B. Schwartz, of the New York Public Library; Dr. Florence E. Day, of Dumbarton Oaks Library; Professor J. J. Obermann, of Yale University; Miss Rachel

Wischnitzer-Bernstein, and Dr. Alfred H. Lybyer, of the University of Illinois. The delegates were welcomed to the Museum in an address by Dr. Wilfred H. Osgood, Curator Emeritus of Zoology. The Museum gave a tea for the society at the close of the session. The meeting ran from April 15 to 17, other sessions being held at the Oriental Institute of the University of Chicago, and the Art Institute.

### NEW MEMBERS

The following persons became Members of Field Museum during the period from March 17 to April 15:

#### Associate Members

V. D. Berry, Fred J. Clifford, Jr., Mrs. Fred J. Koch.

#### Annual Members

Robert B. Ayres, Hal Crompton Bangs, J. L. Beven, W. Dale Bost, Ralph E. Bowers, James S. Boyle, C. S. Brophy, P. A. Caswell, Hyman B. Coen, Reuben Don, Robert Driscoll, David B. Eisenberg, Mrs. Helene Feldman, W. L. Fenner, Christ H. Garbers, Dr. Roscoe C. Giles, D. C. Green, Robert E. Hattis, Coleman Hibbard, Carl I. Johnson, Miss Hilda M. Kemper, Miss Lucille M. Larson, James Lawrence, William Levine, Leslie F. Muter, Frank A. Randall, William Schmidt, J. J. Schwander, Lester N. Selig, Joseph Sterling, Mrs. J. O. Stoll, Joseph Wertheimer, C. C. Whittier.

### MEMBERSHIP IN FIELD MUSEUM

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

### BEQUESTS AND ENDOWMENTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to a person or cause, named by the giver.

Contributions made within the taxable year, not exceeding 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 for life. These annuities are guaranteed against fluctuation in amount, and may reduce federal income taxes.





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