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THE FOUR-TUSKED MASTODONS AND RIVER-RHINOCEROSES OF NORTH AMERICA

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Of all migrations to America of man or beast in historic or prehistoric times, the coming of the elephant family was one of the most far-reaching. The mastodon branch of the family came first, and long afterward the true elephants followed.

This movement affords unmistakable evidence that there must have been a land route of migration from Asia to North America. No other means could account for the coming of these great beasts which are entirely unknown in the earlier history of life on this continent. No waifs cast up by the sea, no victims of mischance drifting in on ice-floes or on natural log-rafts, could account for the transport of such substantial beasts. They came after trekking across Asia from their earlier African home—came in such numbers as to establish here permanent colonies which in time grew and spread over two American continents and gave rise to a stock of animals which became thoroughly established in the Western Hemisphere.

The accompanying illustration shows a pair of the four-tusked mastodons (*Trilophodon*) on the banks of a broad and shallow river near the close of the Miocene period, fifteen million years ago. It is a photograph of a painting by Mr. Charles R. Knight—one of the series of twenty-eight murals of prehistoric life exhibited in Ernest R. Graham Hall (Hall 38).

Mastodons such as *Trilophodon* stood six or seven feet in height at the shoulders and were armed with a rather short trunk and two pairs of tusks. The tusks were enlarged incisor teeth and had only a narrow band of enamel which extended throughout the greater part of their length. The upper tusks curved downward and met the lower pair, which were set in a long, curved lower jaw. This characteristic has given rise to the name "longirostrine" or long-jawed mastodons. In some related animals the lower tusks were broad and chisel-shaped and, fitting closely together, formed a shovel-like projection. These animals, recently discovered in America as well as in Mongolia, are known as the shovel-jawed mastodons. The head in all of these animals was longer than that of the elephant and the forehead was less sloping. The body was likewise longer in proportion.

Fossil remains of the Miocene mastodons are found in sandbars along old river channels and in wind-blown sands of Nebraska, Kansas, Texas and of the southwest generally. Specimens are exhibited in Field Museum; entire skeletons are preserved in museums of Nebraska and Colorado.

The great river-rhinoceros, *Teleoceras*, shown in the same illustration, has a very different history. It is descended from a long line of North American ancestors which date back to middle Eocene time, forty million years ago. This continent was the early home of the rhinoceros family although some members are also known from the Middle Eocene of Europe.

Their fossil remains are preserved more and more abundantly in each succeeding geological period from Eocene to Pliocene. Members of the family branched out, taking on new characteristics and adapting themselves to new habits. There had been among them a line of slender animals, evidently fleet-footed runners; there had been various more conservative lines whose members were fitted for life in forest lands; finally came the short-limbed, heavy-bodied animals which, like the hippopotamus of the Old World, were at home in the rivers and capable of slow and laborious progress on land. Such is the river-rhinoceros, *Teleoceras fossiger*. Specimens including the head, legs and feet of this animal are exhibited in Graham Hall.

Teleoceras, or the "true horned" beast, lived and has left his fossil remains in various old river channels of the Great Plains region along with those of the four-tusked mastodon, but more abundantly. A single sand-pit at Long Island, Kansas, excavated by many collectors during the later eighties and the early nineties has produced skulls and other parts of more than one hundred animals. Cornfields now grow over the site of this old river channel which had afforded them burial place.

Greater elevation of the continent and increasing cold of Pliocene time marked the disappearance of the entire rhinoceros family in North America. Not so with the mastodons. Whether hardier by nature or better adapted to upland life, it is certain that descendants of this line continued to live in North America through the rigorous period of the Ice Age, growing stronger and sturdier during this period of hardship, and sending wandering branches of the family over most of South America. Some of them survived there until well within the Christian era, although the main stock died out in the central states of North America a few thousand years ago.

Giants That Roamed America Ages Ago

The four-tusked mastodon *Trilophodon* (in the center), and the rhinoceros *Teleoceras* (on the left), which lived on the Great Plains of North America at the close of the Miocene period (about fifteen million years ago). From a mural painting by Mr. Charles R. Knight. The small animals at the right are oreodonts or contemporary pig-like animals.

Change in Visiting Hours

Field Museum visiting hours, which have been 9 A.M. to 6 P.M. daily during the summer months, will change to the autumn schedule—9 A.M. to 5 P.M.—on Tuesday, September 3, the day after Labor Day. These hours will continue until October 31. On November 1 the winter hours, 9 A.M. to 4:30 P.M., will go into effect, continuing until March 31. During this period, however, the Museum will be open until 5 P.M. on Sundays.