

# LIBYAN MAMMALS

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with the collaboration  
of

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## THE HISTORY OF MAMMALS IN LIBYA

Much of the history of mammals in Libya has still to be uncovered, but already there is a more complete record than for any other African country. The history stretches back some 45 million years and from a series of localities in the Sirte Basin has come evidence of abundant mammal life in time past, the essentials of which are summarized in Table 1.

The Cenozoic Era is often described by geologists as the Age of Mammals, distinguishing it from the preceding Mesozoic Era which was the Age of Reptiles. The Cenozoic time span covers the past 65 million years of earth history and the dominant forms of land life have been flowering plants, insects and mammals. Although mammals evolved from reptiles early in the Mesozoic some 200 million years ago, they formed a very small part of the fauna until the Cenozoic. Before looking at the mammals themselves it will be profitable to consider the geography of Libya during the Cenozoic. The history is essentially one of retreat of the sea northwards to its present position. The shore line of the Tethys (ancient Mediterranean) in Paleocene and Eocene times was deep in the Sahara (Fig. 1); as time progressed it migrated northwards, leaving always the Sirte Basin as a deep embayment—the present day Sirte Gulf being a remnant of that feature. All the fossil mammals up to the Pleistocene have come from around these shore lines.

The oldest fauna comes from Dor et Talha, a long escarpment west of Tazerbo. Here in Eocene times were rivers and lagoons with rich vegetation along the water's edge; catfish, turtles and crocodiles abounded. The lagoons supported Sirenia (sea-cows), and the occasional whale got stranded there. On land there were two large mammals, *Moeritherium* (Fig. 2) and *Barytherium*. *Moeritherium* was about the size of a wart-hog and probably looked like one; from the structure of *Moeritherium* cheek-teeth and the incipient tusks, we learn that this animal was ancestral to the elephants, the earliest known representative of the order Proboscidea. *Barytherium* was a very strange animal; it was about the size of a living elephant, but had no trunk and the tusks were very short and

probably not visible when the mouth was closed. The cheek-teeth carry two ridges and are quite unlike mastodon or elephant teeth, so that we must conclude that it is only very distantly related to elephants. The only other place in the world where *Barytherium* has been found is in the Fayum, Egypt, and there it is very rare. Other Eocene mammals include a small rodent and a small hyaenodont carnivore; this latter animal was very like a fennec or desert fox in its habits, but rather bigger.

From the Oligocene we have as yet very little evidence, but at one locality near Zella there have been found remains of two mastodons, a hyrax, anthracothere and carnivore. The mastodons evolved from *Moeritherium* and were later to give rise to true elephants. The hyraxes or conies are almost exclusively African, and their descendants are still found in Libya, looking very like marmots or prairie dogs. The anthracotheres are an extinct group of pig-like mammals. Although the fauna from this period is poorly known, it does suggest that luxurious vegetation abounded to feed the large mammals and hence the climate must have been much as in earlier Eocene times.

Jebel Zelten, so well known today as an area rich in oil fields, was in Miocene times a veritable paradise for land mammals. The very rich fauna of large mammals indicates conditions comparable to the game parks in tropical Africa today. There were rivers and lagoons, the fringes of which were clothed in rich vegetation with a hinterland of sparse vegetation; large crocodiles and turtles abounded in the warm waters; the banks supported a dense fauna which included mastodon, deinotheres (Fig. 3), rhinoceroses (Fig. 4), anthracotheres and pigs. There were two species of *Mastodon*, the larger being about the size of a living elephant; these animals can readily be distinguished from true elephants by their multicuspid teeth, and by the presence of tusks in both upper and lower jaws. Of similar size was the deinotherere, a distant relative of the elephants; this beast had tusks only on the mandible and these were curved down and back, thus giving the animal a very strange appearance. In the hinterland the dominant mammals were giraffes of several different species. One of these, *Prolibytherium* (Fig. 5), carried 'antlers' or ossicones on its head giving it the appearance of a fallow deer. There is a notable absence of grazing animals and an abundance of browsing or tree-feeding forms in the fauna; grasses and grazing mammals do not appear elsewhere

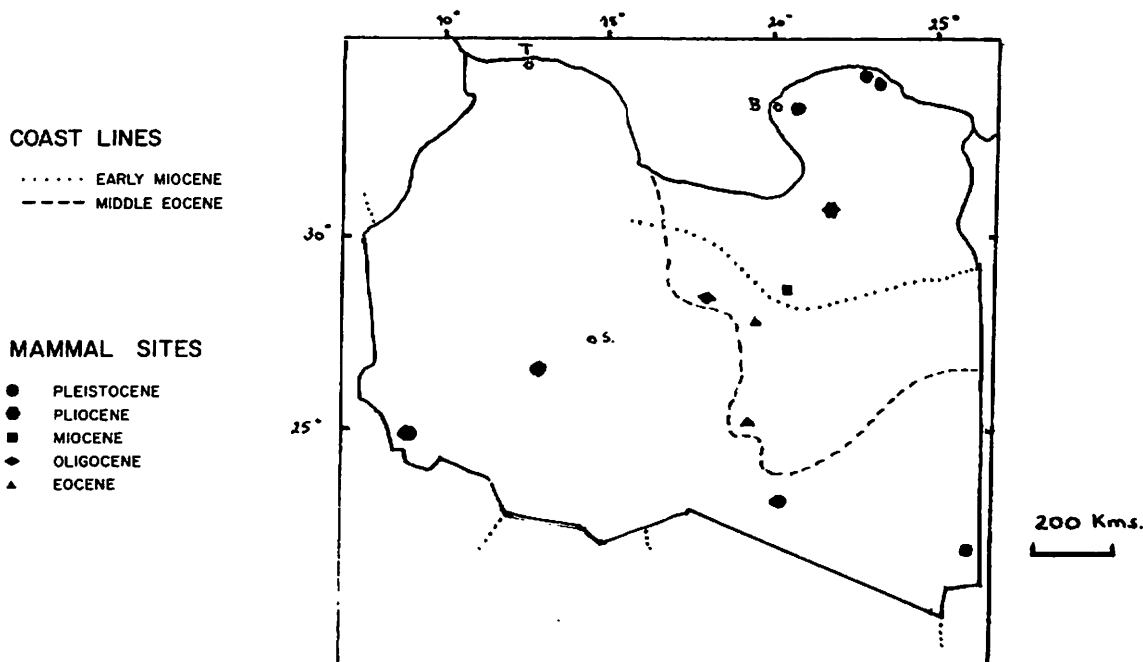


Fig. 1. Sketch-map of Libya showing the early coastlines and prehistoric mammal sites

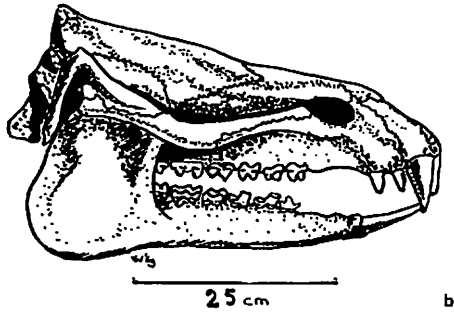
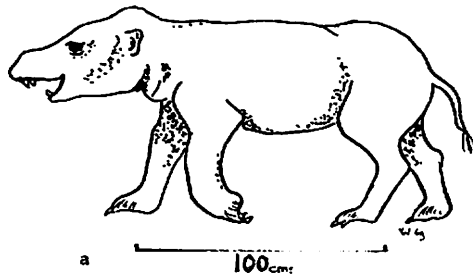


Fig. 2. *Moeritherium*

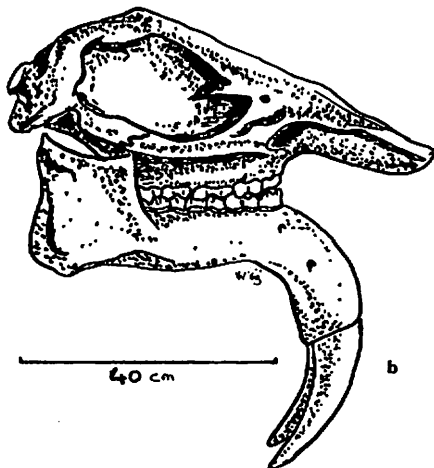
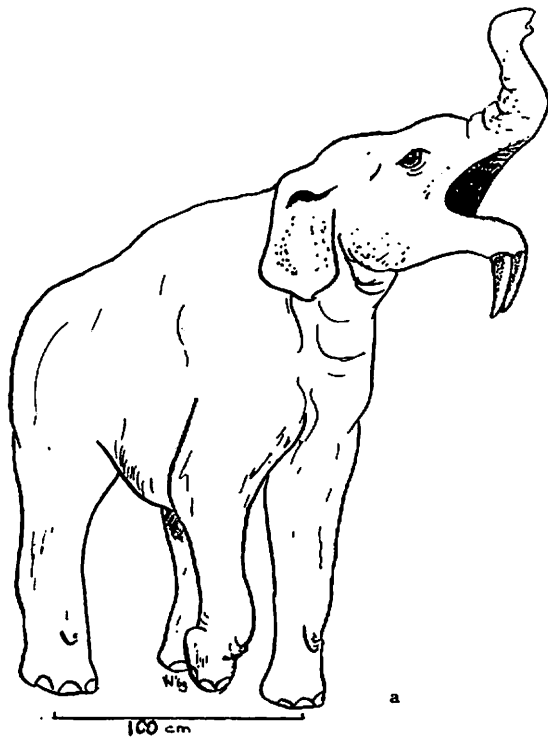


Fig. 3. *Deinotherium*

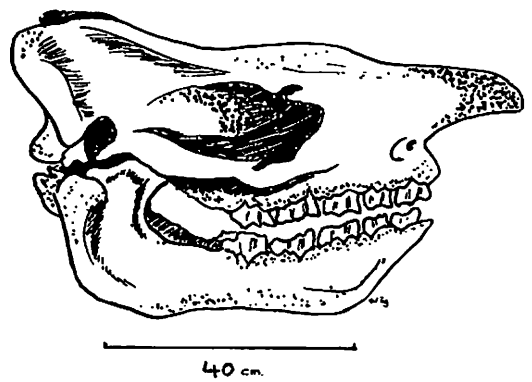


Fig. 4. Rhinoceros, Pleistocene skull

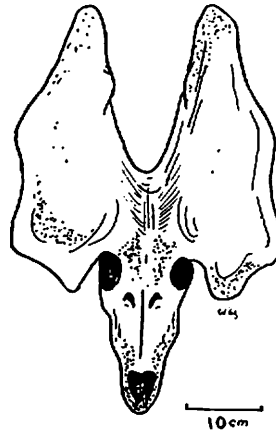


Fig. 5. *Prolibytherium*. reconstruction of skull

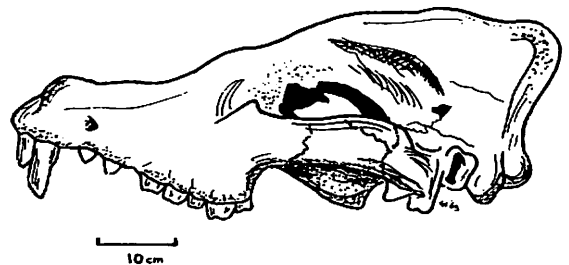


Fig. 6. Hyaenodont carnivore, reconstruction of skull

much before mid-Miocene. Preying on these herbivores were a series of carnivores, some closely related to cats and dogs, and others of the primitive hyaenodont stock which survived later in Africa than in Europe. Most significant among these at Zelten is *Hyainailouros* (Fig. 6), which was the largest carnivore that ever lived, having a skull 66 cms long, and in life resembling a gigantic hyaena. The Zelten fauna is essentially African; it comprises stock whose evolution is exclusively African up to that time (*Mastodon* and *Deinotherium*). Giraffids are unknown outside Africa at this time though their ancestors are to be found in Eurasia. The presence of rhinoceroses, carnivores, anthracotheres and pigs show that members of these families had entered Africa across the Tethys Sea and became integrated into the Libyan fauna by early Miocene times.

There is a time gap of some twenty million years following the Zelten fauna during which we have no evidence of mammal life, and the next fauna is that of Qasr Sahabi which is but a few million years old. In this fauna we see very advanced mastodons, a late deinothera, a very large rhinoceros of Asiatic affinity, together with the ox *Leptobos*, a horse and hippopotamus. The mastodons were large with very elongate

tusks—the skull of one is displayed in the Natural History Museum in Tripoli. The new elements point to the lateness of the fauna, when better land connections existed with Eurasia. It is still essentially a tropical fauna and the climatic conditions must have been warm and moist, without a desert regime.

The Pleistocene is marked in Europe by Ice Ages and in Africa by pluvial or wet periods. The fauna from sites associated with human cultures in the Jebel el Akhdar comprise essentially animals found today south of the Sahara—lion, hyaena, elephant, rhinoceros, zebra, giraffe, buffalo, oxen, gazelle and Barbary sheep; gazelle, Barbary sheep and hyaena are still to be found in Libya. This evidence is supplemented by that from rock paintings and petroglyphs which occur all over Libya, from Ghat in the west and Uweinat in the east to Eghei Zouma in the south. Again the animals are usually the game mammals found today further south beyond the Sahara, with occasionally a few extinct species. Most interesting among these is an animal named *Megaceroides*: the Eghei

Zouma petroglyphs show a moose-like animal with big branched antlers; it has been referred to the deer family by some authors, but may well be an extinct giraffe. Deer are unknown south of the littoral zones in Africa, their places being taken by the antelopes and gazelles. *Prolibytherium* of the Jebel Zelten was the first of a line of 'antlered' giraffes, known from later deposits in Africa and Asia, and the petroglyphs in southern Libya may well represent the last survivors of the stock.

Thus until a period about 10,000 years ago, a rich mammalian fauna was still to be found in many parts of Libya. Many of the animals of the Roman circuses would have come from the coastal provinces. The rigours of the present day desert are a very recent phenomenon geologically speaking; increasing aridity has restricted the mammals to isolated areas. Man has by his hunting decimated and exterminated many species until, today, only a handful of species of larger mammals survive and that precariously in areas which with increasing exploration are becoming less remote.

TABLE 1

Million years	Era	Period	Locality	Fauna
3	CENOZOIC	Recent and Pleistocene	Uweinat, Haua Fteah, Hagfet ed Dabba, Hagfet et Tera, Wadi Derna	Lion, hyaena, zebra, rhinoceros, elephant, hippopotamus, giraffe, gazelle, buffalo, Barbary sheep.
12		Pliocene	Qasr Sahabi	Cetaceans, carnivores, mastodon, deinothera, rhinoceros, horse, pig, anthracothere, hippopotamus, bovids
25		Miocene	Jebel Zelten	Hyaenodonts, carnivores, mastodon, deinothera, sirenians, rhinoceros, pig, anthracothere, giraffids and other ruminants
38		Oligocene	Zella	Carnivores, mastodon, hyracoids, anthracothere.
55		Eocene	Dor et Talha	Rodents, cetaceans, hyaenodontids, sirenians, proboscideans.
65		Palaeocene		