

EXHIBIT SHOWS PERMIAN REPTILES RELATED TO MAMMALS

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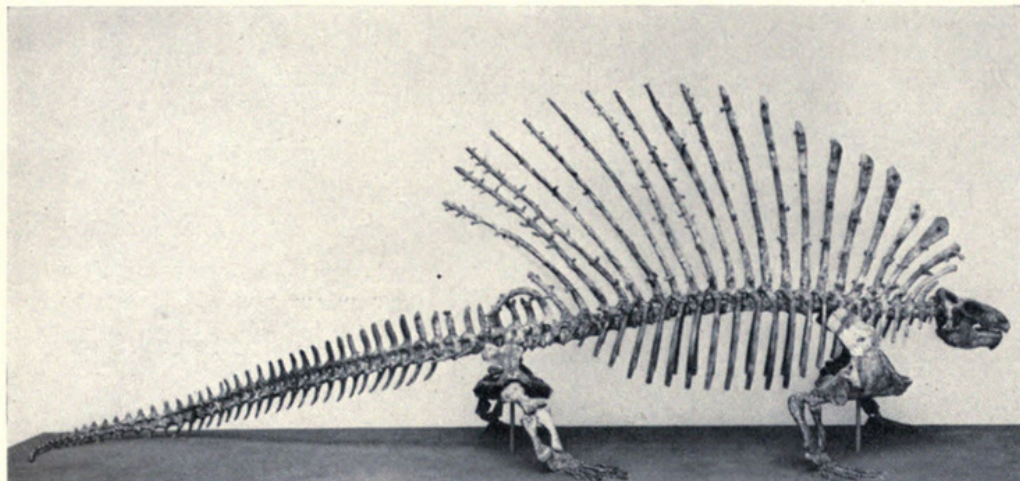
THE general evolutionary history of the furry animals, the mammals, is fairly well known far into the distant past. Two large groups of reptiles, the pelycosaurs and the therapsids, are related to the mammals. So close is the skeletal resemblance of some

function of these long spines. It is safe to state that the bony spines were covered and connected by skin. Thus *Edaphosaurus* (and *Dimetrodon*, see below) had a much greater body surface than an animal of equal size lacking a dorsal fin. Since living reptiles control their body temperatures largely by moving into or out of the heat

case, the delicately built *Varanops*, a primitive flesheater, and *Sphenacodon*, an advanced form with moderately elongated vertebral spines. The most striking member of this line is *Dimetrodon*, a reptile that measures in excess of ten feet in length. Like *Edaphosaurus*, it possesses very long vertebral spines that formed a vertical fin-like structure on its back. No cross-bars are developed. It was from the Sphenacodonts that the more advanced mammal-like reptiles took origin.

All of the pelycosaurs displayed were taken from beds of Early Permian age, about 230 million years ago, and all but *Sphenacodon*, which came from New Mexico, were found in beds of deltaic origin in north-central Texas. The skeleton in the fourth case, *Aulacocephalodon*, belongs to a large, clumsy, vegetarian therapsid. Although this animal belongs to the mammal-like reptiles, it represents a sideline that became greatly modified for feeding on plant material. Adult specimens, such as the individual on display, are entirely devoid of teeth. *Aulacocephalodon* lived nearly 200 million years ago on swampy plains of Southern Africa and was preserved in the deposits of the Karroo Desert.

The skeletons were obtained as a gift



SKELETON OF REPTILE THAT LIVED 230 MILLION YEARS AGO

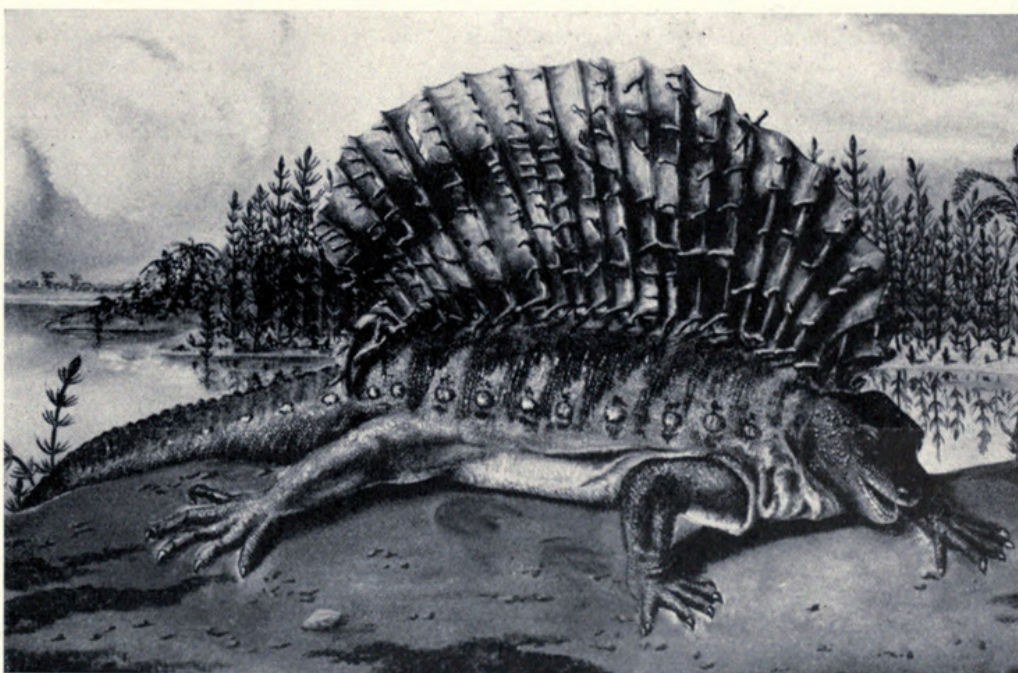
Edaphosaurus pogonias from the Early Permian of Texas. A specimen presented to the Museum by the University of Chicago, remounted in the paleontological laboratories here and recently placed on exhibition among the fossil collections in Ernest R. Graham Hall (Hall 38).

therapsid reptiles to the mammals that they are often called mammal-like reptiles. The therapsids in turn are descendants of the pelycosaurs; the most advanced members of this group merge almost indistinguishably with the primitive therapsids. The history of mammalian evolution is essentially known over a period of some 250 million years.

Representative skeletons of a number of pelycosaurs have been placed on exhibition in three new cases in Ernest R. Graham Hall (Hall 38). A fourth new case contains a large herbivorous therapsid.

Pelycosaurs flourished near the end of the Paleozoic Era, about 230 million years ago. At that time they deployed into three major lines of development. A member of the most primitive line, *Ophiacodon*, is included in the central group of four skeletons. This was a rather large, semi-aquatic reptile that retained many of the primitive features of the pelycosaurs. The two more advanced lines are adaptively distinct: one, the Edaphosauria, consisting of herbivores, and the other, Sphenacodontia, of carnivores.

The edaphosaurs are represented in the central case by *Casea*, a relatively small reptile with a barrel-shaped body. The culmination of one line in this group, *Edaphosaurus*, is mounted in one of the two side cases. This reptile was about eight feet long and characterized by spectacularly elongated vertebral spines. The spines are set with lateral nodes that give an impression of cross-bars. A number of doubtful theories have been suggested to explain the



HOW A PELYCOSAUR LOOKED IN LIFE

Restoration of *Edaphosaurus*, the most bizarre reptile known from Texas. It lived about 230 million years ago. Miss Maidi Wiebe of Department of Geology staff is the artist. A skeleton is exhibited in Hall 38.

of the sun, it has, quite recently, been suggested that the dorsal fin might have served as an additional mechanism of temperature control. Valid objections can be raised against all of the proposed theories, however, and the bizarre structure may have had no function whatever.

The carnivores, Sphenacodontia, are represented by two skeletons in the central

from the collections of Walker Museum of the University of Chicago. All have been remounted.

It is not the facts which guide the conduct of men, but their opinions about facts; which may be entirely wrong. We can only make them right by discussion.

—Sir Norman Angell



Zangerl, Rainer. 1953. "Exhibit Shows Permian Reptiles Related to Mammals."
Bulletin 24(4), 7-7.

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