

pean species of Cretaceous Labyrinthodonts are yet reported. The species were too few and too largely terrestrial to have secured frequent fossilization.

*Reptiles.* — The Reptiles of the Cretaceous are for the most part a continuation of Jurassic types, without marked evidence of upward progress. The Horned Dinosaurs, or *Ceratopsids* of Marsh, probably the latest of the larger species, while showing striking advances toward Mammalian forms in the bovine or rhinoceros-like horns and the two-pronged teeth, are a degenerate group, specialized downward, not upward. As Marsh states, they have the largest heads and smallest brains of any of the Reptile race.

The Mosasaurids also, exclusively Cretaceous species, illustrate profound degeneration. For, in these Snake-like species, the Lacertian type becomes enormously multiply posteriorly in the vertebral column; the legs are reduced to fins, as in Plesiosaurians, the posterior part of the body is turned into a fish-like skimming organ, and made the chief means of locomotion; and the pelvic girdle has lost connection with the vertebræ, there being no sacrum. Here degeneration has developed, not imperfect limbs and a defective skeleton, not something between a Fish or Amphibian and a Reptile, but a profoundly decephalized Reptile, adapted to aquatic life as if its outcome. The last of the Mosasaurs in America occur in the Montana Cretaceous; in Europe, in the beds of Maestricht.

Snakes are known from the American Laramie, and also from the Cretaceous of France. They were no doubt successors to an aquatic type, and related, it is supposed, either to the Mosasaurs, or to the Dolichosaurs of the English Chalk.

The true *Crocodylians* have a heart of four cavities, and traces of a diaphragm; and the teeth are implanted in sockets. But these high characteristics lose part of their apparent significance in view of the fact (1) that the four-cavity heart, after all, does not prevent the commingling of the venous and arterial blood before it enters the system; (2) that the character of teeth in sockets began in the Permian; and (3) that the animal has limbs so short that it "drags its body somewhat along the ground," in true *Reptilian* style.

The Dinosaurs, on the contrary, stood on long limbs like a Mammal, and had nearly the same freedom of locomotion. They were, however, as has been explained, *merosthenic* Reptiles, that is Reptiles having great and powerful hind limbs as the chief organs of locomotion, with usually small fore limbs and small brains. If they were the highest of Reptiles, then the Reptilian type reached its perfection under a merosthenic structure.

But the distinction of highest, as remarked on page 797, probably belongs to the Pterosaurs, which are eminently *prosthenic*. The largest species of the group existed in the Cretaceous period. It is not improbable that they had a double heart, like the Crocodiles, and one as good as that of the Birds.