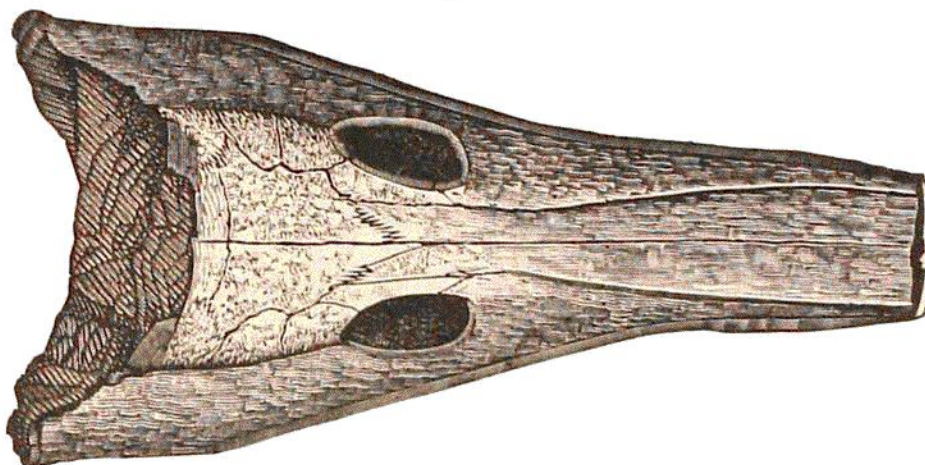


The *Fishes* were of Coal-measure types of Ganoids and Selachians. The genera of the former included *Ctenodus*, *Ptyonodus*, and others; also *Ceratodus*, a Dipnoan genus, which here has its first known species, while its last is still living in Australia; the Permian, *C. favosus* of Cope, is from Texas. Sharks occurred of the genus *Diplodus*, and along with them spines of *Orthacanthus*, which have been shown to have belonged to *Diplodus*, as suggested by Dawson in 1869 from the association of specimens in the Pictou coal-field, Nova Scotia.

The *Amphibians* were, like the earlier, mostly Stegocephs. Fig. 1123 of the cranium of *Eryops megacephalus* of Cope, from Texas, shows that the head had the *well-roofed* character to which the name Stegoceph alludes; and the length of the cranium, over 22 inches, indicates a large species. Two long, narrow-headed species, *Cricotus heteroclitus* (Fig. 1124) and *C.*

1124.



AMPHIBIAN. — *Cricotus heteroclitus* ($\times \frac{1}{2}$). Cope.

Gibsoni Cope, have been found in the Permian of Danville, eastern Illinois, and the former also in northern Texas.

The Permian *Reptiles*, the earliest of the class, belong to the tribe *Rhynchocephalia*, which, like the genus *Ceratodus* among Fishes, is nearly extinct. Only two species, of the genus *Sphenodon* (or *Hatteria*), now exist, and these are confined to New Zealand — a piece, like New Guinea, of a now half-extinct continent, Australia. One of the earliest of the species is probably the *Mesosaurus* (*Stereosternum*) *tumidus* of Cope (Fig. 1125), from beds containing shells of *Schizodus* in the Permo-Carboniferous of São Paulo, Brazil. It may be, however, from a bed below the Permian. Cope mentions its relations to the Amphibians and closer to the Rhynchocephalian Reptiles, and the interesting fact, of primitive aspect, that the foot, as the figure shows, has a tarsal bone (1 to 5 in figure) to each of the five metatarsals (I to V), five in all, or the *normal* number, instead of four, which is the largest number in later Reptiles.

Other Permian reptiles, but probably later stratigraphically, are those of *Clepsydraps* of Cope, three from Texas and as many from Illinois; of