

XVI. SOME OLIGOGENE LIZARDS.

BY EARL DOUGLASS.

Glyptosaurus? *montanus* sp. nov.

(Type, No. 1050, Carnegie Museum Catalogue of Vertebrate Fossils.)

The type of this species is the greater portion of a skull and mandible, a limb bone, and several separate shields. The specimen was found by the writer in a hard nodule in the Lower White River (Titanotherium) beds north of the Big Hole River at the southeastern base of McCarty's Mountain, about fifteen miles north of Dillon in Montana. It was associated with a considerable portion of a skeleton of *Ischyromys*. The nodules containing the two specimens had been

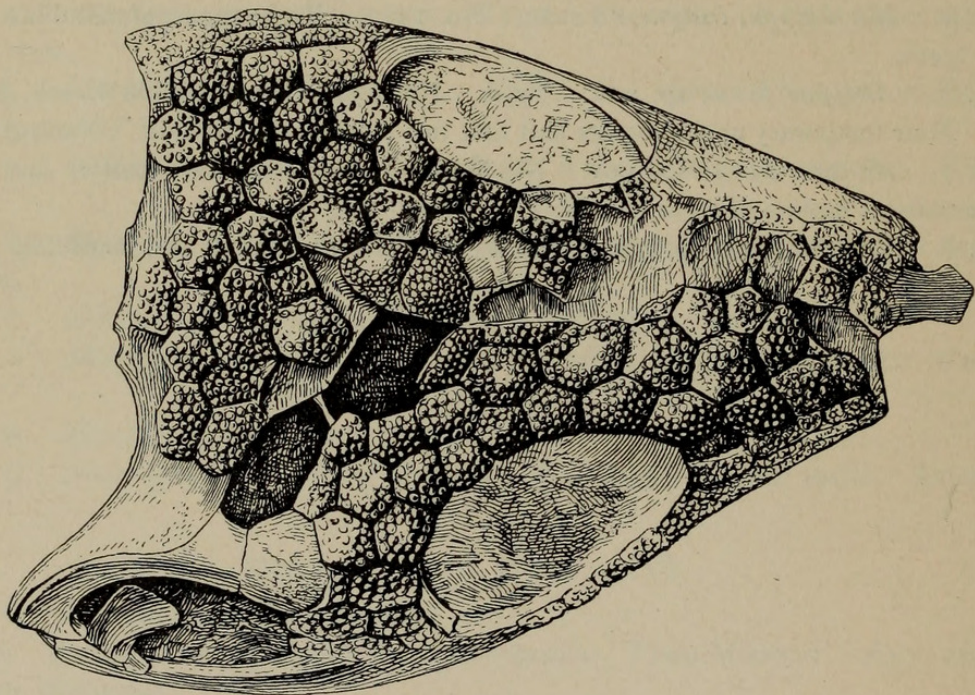


FIG. 1. *Glyptosaurus?* *montanus*. Type No. 1050. Top view of skull. $\frac{2}{1}$.

weathered out of the bed which enclosed them, but they were evidently not far from their original position. At nearly the same level were specimens of *Limnenetes* and *Hyracodon*.

Distinguishing Characters. — The skull is broad posteriorly and gradually narrows toward the muzzle. It is short in proportion to the width. The orbits are large and oval with the long axis antero-posterior. Their

vertical diameter is nearly the same as the distance between their upper borders. There is a superior temporal arcade. The mandible is moderately heavy. The teeth are smooth, have low rounded chisel-shaped crowns, and are pleurodont. Those on the maxillary are directed slightly backward. The skull is nearly covered with tuberculated osseous shields which are arranged in a concentric manner around the orbits. These shields are not large but vary somewhat in size and form. They are convex on the upper surfaces and are covered with minute tubercles, which are nearly equal in size.

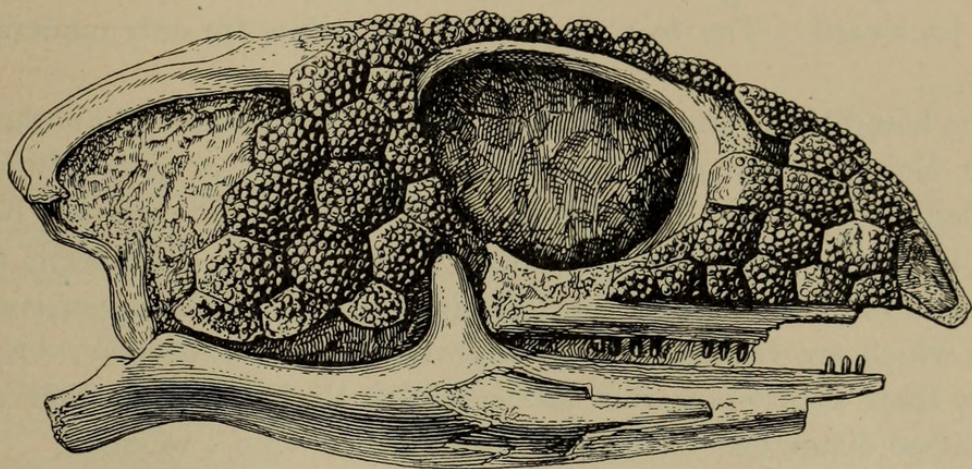


FIG. 2. *Glyptosaurus? montanus*. Type No. 1050. Side view of skull. Part of plates posterior to the orbit restored from the other side. $\frac{2}{1}$.

Detailed Description. — The parieto-frontal plane of the skull is flat and very broad, twice as broad as the space between the orbits. Beginning above the anterior portion of the orbits the superior plane of the skull slopes downward to the anterior portion of the muzzle. The orbits are large and elliptical, the longer axis being in the direction of the long axis of the skull.

There is a superior temporal arcade, and the jugal arch is heavy. The upper surface of the parietal was covered with shields. On removing these plates along the anterior border of the parietal and the matrix from the under surface of the bone it was seen that there was no contact with the frontal or any bone anterior to the parietals, except what appears to be a small thread of bone from the antero-external surface of the parietal to the frontal or post-orbital. I am not able to say whether this is a normal condition or not, as there is no other skull with which to compare the type. The space between the bones, like the remainder of the roof of the skull, was covered with hard bony

shields. The parietal sends out wings postero-laterally. These wings are sharp and thin anteriorly, but have ridges on their postero-inferior surfaces. Their upper surfaces are slightly convex, but are nearly in a horizontal plane. They do not face upward and forward as in *Iguana*. The parietal overlaps the squamosal with which it has a long surface of contact. The squamosal is long and sickle-shaped. The shields prevent one from determining how far the bone extends anteriorly. There are no separate mastoid or prosquamosal bones. The quadrate is in place, but not all of it can be seen. It has a posterior longitudinal angle or ridge and the posterior upper portion of the bone projects backward. The frontals between the orbits are only moderately thick.

The mandible is quite thick transversely and is rounded on the inferior surface. The post-dentary portion is nearly or quite as long as the dentary portion. It arches outward, the articulate portion being bent inward. The coronoid process is quite high. The teeth form an even row and are only a short distance apart. In the upper jaw the teeth which are visible increase slightly in height anteriorly. Apparently their antero-posterior diameters are slightly greater than their transverse diameters. They are low and their apices rounded.

The hard, osseous shields nearly cover the bones of the skull and the spaces between them. They vary in size, but none are as large proportionally as those of *Helodermoides tuberculatus* Douglass. Their upper surfaces are convex, and the forms of their peripheral boundaries vary with the amount of crowding of the contiguous shields. Some are nearly circular, some four-, some five-, and some six-sided. They are arranged with a fair degree of regularity around the orbits. Each orbit had about twenty of these shields surrounding it in the fringing row or circle; the next row had at least twenty-three and probably twenty-six. The third row was not continuous, but was interrupted beneath the orbit, and the two rows on the opposite sides unite on the median line of the skull between the orbits, thus making five complete rows here. Posterior to the lower portion of the orbit the shields are larger. A central shield is surrounded by five large shields and one small shield. The three concentric rows around the orbits do not include an area on the median posterior parietal portion of the skull, which is covered with about a dozen or more shields which are arranged in the form of a triangle, these short rows composing it extending in the same direction as the contiguous concentric rows. A

little above the dental borders of the maxillaries the shields end abruptly, leaving a border of the maxillary bare. There were undoubtedly shields on the skin of the lower part of the head or throat. There are six still in the matrix beneath the post-coronoid portion of the mandible. There are also some larger, rather thin shields, which probably belong to the lower part of the body.

The tubercles on the shields of the head are arranged in imperfectly concentric rows. There are from three to five or six of these rows on each scute. The tubercles are nearly equal in size. As before stated the shields are convex on the upper surfaces.

MEASUREMENTS.

	mm.
Length of skull, approximately.....	48
Posterior width of skull	35
Width of skull between the orbits.....	12
Height of skull	16
Height of skull including mandible.....	23
Antero-posterior diameter of orbit.....	19
Vertical diameter of orbit.....	10
Antero-posterior diameter of largest shields on skull	5
Transverse diameter of largest shields on skull	3.2
Length of body shields.....	7.4
Estimated length of humerus.....	30
Diameter of shaft of humerus	2.7

These remains probably represent a lizard not less than 13 or 14 inches in length.

This specimen undoubtedly belongs to the family Anguidæ, and apparently to the genus *Glyptosaurus* Marsh, though I have not had the opportunity of examining the various types of *Glyptosaurus* and they are not figured.

In all the species as in all known members of the family Anguidæ the skull is covered with shields and the teeth are pleurodont.

For convenience I give below the characters of the different species given by Marsh. This will aid in making comparisons with the specimens here described.

***Glyptosaurus sylvestris* Marsh.**

American Journal of Science (3), I, 1871, p. 456.

The shields on the frontals between the orbits are of moderate thickness and are but little elevated. In the middle row on each frontal

they are broader than long. Each shield is covered with small polished tubercles without definite arrangement. From Bridger beds, Grizzly Buttes, Wyoming.

Glyptosaurus nodosus Marsh.

American Journal of Science (3), I, 1871, p. 458.

Frontals thicker on median suture than those of *Glyptosaurus sylvestris*. Shields between orbits very convex. The middle shield on the frontals longer than wide and hexagonal. Length of animal about three feet. From Bridger beds, Grizzly Buttes, Wyoming.

Glyptosaurus oscellatus Marsh.

American Journal of Science (3), I, 1871, p. 458.

Cranial plates very thick and united by sutures, and having the tubercles in concentric series. The outer row considerably larger than the others. The next two or three rows considerably smaller, and the inner rows very small, without definite arrangement. Larger than *Glyptosaurus sylvestris* or *G. nodosus*. Bridger beds, Grizzly Buttes, Wyoming.

Glyptosaurus princeps Marsh.

American Journal of Science (3), IV, 1872, p. 302.

Lower teeth close together. Bases deeply fluted. Frontal very massive. Malar arch complete. Parietals thick with a parietal foramen. Length fully six feet. Bridger beds, Grizzly Buttes, Wyoming.

Glyptosaurus brevidens Marsh.

American Journal of Science (3), IV, p. 305.

Teeth rod-like, close together, and short, part of them barely projecting from the jaw. Summits obtuse and marked by irregular striæ. Dermal scutes on malar region very thick, and heavy; tubercles in concentric rows. More than four feet long. Bridger beds, Grizzly Buttes, Wyoming.

Glyptosaurus rugosus Marsh.

American Journal of Science (3), IV, p. 305.

Osseous scutes on frontals smaller than in *Glyptosaurus sylvestris*. Prominently convex. Tubercles nearly equal in size, without definite arrangement. Prefrontals and postfrontals approach more nearly to each other above orbit. About three or four feet long. Bridger beds, Grizzly Buttes, Wyoming.

Glyptosaurus sphenodon Marsh.

American Journal of Science (3), IV, p. 306.

Referred doubtfully to *Glyptosaurus*. Teeth different from any previously described from Green River Basin. Crowns of upper teeth long and cylindrical, separated slightly, and directed obliquely backward, compressed and very sharp, bases rugose. Animal two or three feet long. From Henry's Fork, Wyoming.

Glyptosaurus anceps Marsh.

American Journal of Science (3), I, 1871, p. 458.

Only vertebræ known. They represent an animal about two feet long. From Grizzly Buttes, Wyoming.

Rhineura hatcheri Baur.

(FIGURES 3-5.)

American Naturalist, Vol. XXVII, 1893, p. 998.

On the page cited above Dr. George Baur briefly described without figures, two Amphisbænians, *Rhineura hatcheri* and *Hyporhina antiqua*.

On 1901 Mr. O. A. Peterson obtained two nearly complete skulls¹ of the former species and a fragment of a third, from the White River formation on Bad Land Creek in Sioux County, Nebraska.

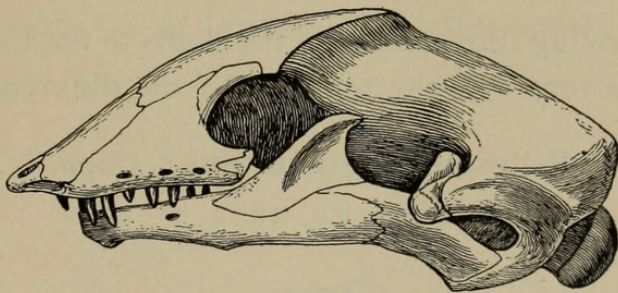


FIG. 3. *Rhineura hatcheri*. (No. 423A.) Side view of skull. $\frac{4}{1}$ nearly.

The distinguishing characters of *Rhineura hatcheri* given by Bauer are the following :

Nasals inferior in position ; the single premaxillary widely separated from the frontals by the nasals which are distinct and which extend to the border of the muzzle overroofing the nostrils ; prefrontal large and placed between the parietal, frontal, and maxillary, forming the superior border of the orbit ; jugal rudimentary and connected with the

¹ No. 423, Carnegie Museum Catalogue of Vertebrate Fossils.

maxillary only; no post-orbital arch; one tooth on the premaxillary and six pointed teeth on each maxillary. Length of the skull from the middle portion of the condyle to the anterior end of the premaxillary

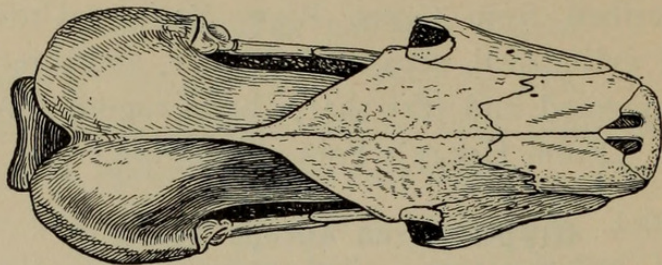


FIG. 4. *Rhineura hatcheri*. (No. 423A.) Top view of skull. $\frac{4}{1}$ nearly.

13 mm. Transverse diameter of the skull between posterior ends of maxillaries $5\frac{1}{2}$ mm. Distinguished from *Rhineura floridana* Baird by the slenderer form of the skull.

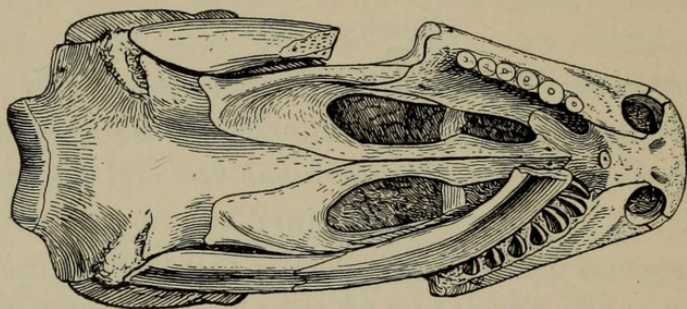


FIG. 5. *Rhineura hatcheri*. (No. 423B.) Palatal view of skull. $\frac{4}{1}$ nearly.

The accompanying illustrations of the skulls in the Carnegie Museum (No. 423) show very well the relations of the different bones.

***Peltosaurus granulosus*? Cope.**

Paleontological Bulletin, No. 15, 1873, p. 5.

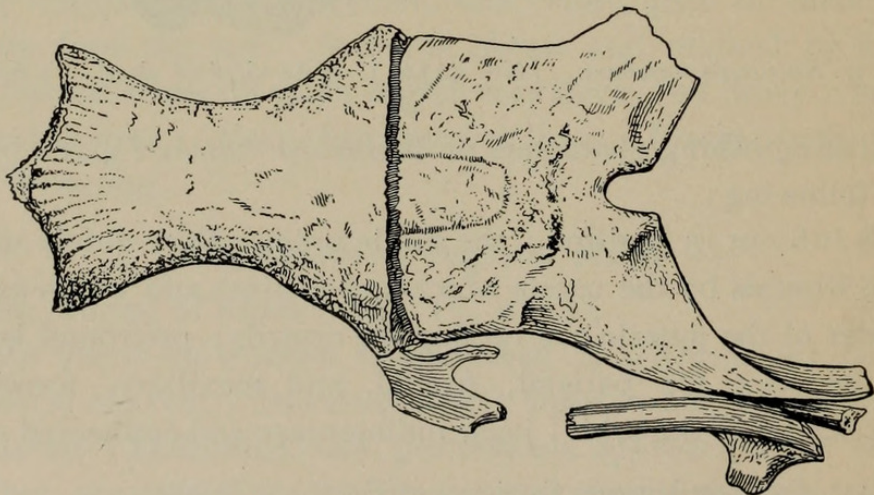


FIG. 6. *Peltosaurus granulosus*. (No. 425.) Top view of part of skull. $\frac{2}{1}$ nearly.

The type of this species consists of portions of a skull and skeleton, parts of which were figured and described by Cope in his Tertiary Vertebrata (pages 773-775, Plate LX, figs. 3-11).

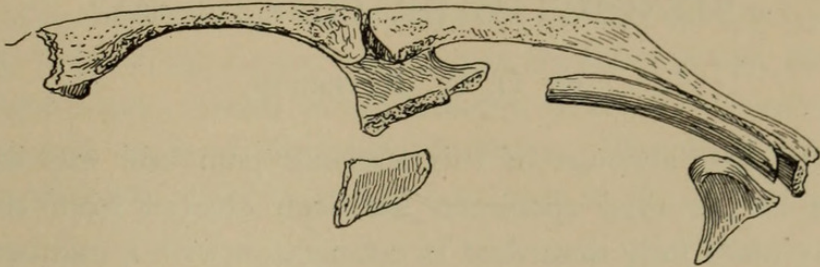


FIG. 7. *Peltosaurus granulosus*. (No. 425.) Side view of part of skull. $\frac{2}{1}$ nearly.

A portion of a skull (No. 425, Carnegie Museum Catalogue of Vertebrate Fossils) was found by O. A. Peterson in the Middle White River (Oreodon) beds, on Prairie Dog Creek in Sioux County, Ne-

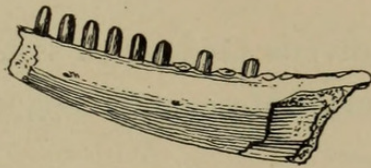


FIG. 8. *Peltosaurus granulosus*. (No. 425.) Portion of a mandible. $\frac{2}{1}$.

braska. As this specimen shows some portion of the skull not figured by Cope drawings of it are given in this paper.



Douglass, Earl. 1908. "Some Oligocene lizards." *Annals of the Carnegie Museum* 4(3-4), 278–285. <https://doi.org/10.5962/p.328729>.

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