

## GEOLOGY AND PALÆONTOLOGY.

A NEW OPISTHOCÆLOUS DINOSAUR.—I have recently received from the Dakota beds of Canyon city, Colorado, a number of bones of a new and remarkable extinct reptile allied to *Camarasaurus* (= *Titanosaurus* and *Atlantosaurus* Marsh nom. nud.), and *Streptospondylus*. The dorsal vertebræ are strongly opisthocæloous, and are without lateral fossa or foramen of the centrum. The arch is freely articulated with the latter, and is not much elevated, and possesses no hyposphen. The neural spine is transverse; the diapophysis is supported on narrow buttresses, and the neural arches generally lightened by fossæ as in the two genera named. A strong parapophysial tubercle near the anterior convexity receives the head of the rib. Each zygapophysis of one side is separated from that of the other by a deep concavity. The genus so characterized may be called *Epanterias*, and the species *E. amplexus*. The latter has a rather low and wide dorsal neural arch with small fore and aft diameter, and with a neural spine divided into three obtuse apices. There are three fossæ at the base of the diapophysis, the anterior one vertical; and a very deep one between the posterior zygapophyses. The cup of the centrum embraces the ball extensively, and the neurapophysis overlaps the side of the centrum behind. Length of centrum m. .115; diameters behind, transverse, .120; vertical .108. Elevation of neural arch .290; width of neural spine .083, of both diapophyses .400. This saurian was much smaller than the *Camarasaurus supremus*, and perhaps equal to the *Hadrosaurus foulkei*. It may be associated with the former in the *Camarasauridae*. With *Amphicælias* is probably in like manner to be arranged *Tichosteus*; while the carnivorous form *Hypsirhoplus* represents a third type.—*E. D. Cope*.

PROF. MARSH ON PERMIAN REPTILES.—In the May number of the *American Journal of Science and Arts*, there is an appendix added by Prof. O. C. Marsh, in which he characterizes in a very insufficient manner, four species of reptiles, which he states to have been derived from a Permian formation in New Mexico. We should not regard this article as suitable for notice in this journal but for certain assertions which it contains, and some circumstances connected with its publication. In the opening paragraph it is asserted that "hitherto no Permian vertebrates have been identified in this country, although not uncommon in Europe." This statement is the reverse of the fact. In the Proceedings of the Philadelphia Academy for 1875, p. 404, a paper on this type of vertebrates commences, where some of the leading characters of the reptiles are pointed out. In the Proceedings of the American Philosophical Society for May, 1877, several new species are described from the same formation, and in the same journal for November, 1877, other species are added, making the whole number up to twenty-one. These