vertebral centrum and the end of a limb bone. The centrum is small and is almost complete. It evidently belongs to a young individual, as shown by the pedicles at the supero-lateral borders; these pedicles end in sutural surfaces for articulation with the bases of the neural arches. There is no pleurocœl, but a shallow depression on each side of the centrum, slightly above the middle line. About two centimeters below this depression there is on each side another smaller depression, which lodges a single small deep pit on one side and two on the other; the rims of the anterior and posterior surfaces are incomplete, but one end is flat and the other slightly concave. So far as this centrum gives any indication of the characters of the animal to which it belonged, the latter was evidently not a member of the Sauropoda, but of some other group of the Reptilia. It is possible that it belonged to an exceedingly young sauropodous dinosaur, but the characters of the embryonic and young members of the Sauropoda are not sufficiently known to warrant such a reference, especially when the incomplete character of the specimen is taken into consideration. This centrum could only be given such a reference if it were definitely known that the centra of the young Sauropoda differed from the adult in having no pleurocœlia. The end of the limb bone, which Cope identified as the distal end of the humerus, is very incomplete and does not correspond, in the portion which is preserved, with the distal end of the humerus of better preserved specimens. In fact, it does not resemble very closely the end of any limb bone of the Sauropoda, but might be imagined to resemble the distal end of the femur, if the missing parts were restored; even then the resemblance would not be very close.

EPANTERIAS

Original type reference.

COPE, E. D. A New Opisthocœlous Dinosaur. Amer. Nat., XII, p. 406, June, 1878.

Subsequent reference.

HAY, O. P. Bibliography and Catalogue of the Fossil Vertebrata of North America. U. S. Geol. Surv., Bull. No. 179, p. 483, 1902.

Type species.— *Epanterias amplexus* Cope.

Original type description (Cope).

The dorsal vertebræ are strongly opisthocœlous, 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.

Present determination.— This genus was founded upon a species whose remains are clearly referable to the Theropoda and not to the Sauropoda. The genotype is a theropod which at present cannot be separated from *Allosaurus* Marsh.

Epanterias amplexus

Original type reference.

COPE, E. D. A New Opisthocœlous Dinosaur. Amer. Nat., XII, p. 406, June, 1878.

Subsequent reference.

HAY, O. P. Bibliography and Catalogue of the Fossil Vertebrata of North America. U. S. Geol. Surv., Bull. No. 179, p. 483, 1902.

Original type figure.— The remains of *Epanterias amplexus* were never figured by Cope. They are figured in this memoir, Figs. 24–27.

Type.— Two anterior dorsal vertebræ, one including the centrum only, the other most of the neural arch and spine. Several other bones of the same individual appear to have been associated with these, namely: an axis, a vertebra, a coracoid and a fragmentary limb bone which is interpreted to be a metatarsal. These bones together constitute Amer. Mus. Cope Coll. No. 5767.

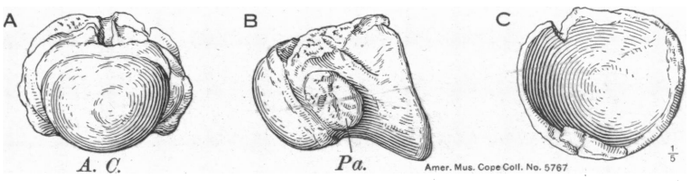

Fig. 24. Vertebra of *Epanterias amplexus* Cope.

This bone is not mentioned in Cope's original description of the type, but it evidently belongs to the same individual. It is the fourth or fifth cervical vertebra of a theropod dinosaur (Amer. Mus. Cope Coll. No. 5767). (A) anterior view; (B) lateral view, left side; (C) posterior view; one-fifth natural size. *A. C.* anterior convexity; *Pa.* parapophysis. New original figure.

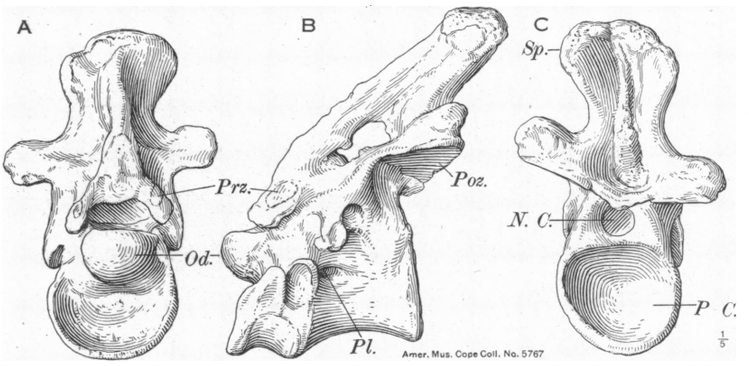

Fig. 25. Cervical vertebra associated with the type of *Epanterias amplexus* Cope.

Axis vertebra, or Cervical 2 (Amer. Mus. Cope Coll. No. 5767). (A) anterior view; (B) lateral view, left side; (C) posterior view; one-fifth natural size. *Di.* diapophysis; *N. C.* neural canal; *Od.* odontoid; *P. C.* posterior concavity; *Pl.* pleurocœl; *Poz.* postzygapophysis; *Prz.* prezygapophysis; *Sp.* spine. New original figures.

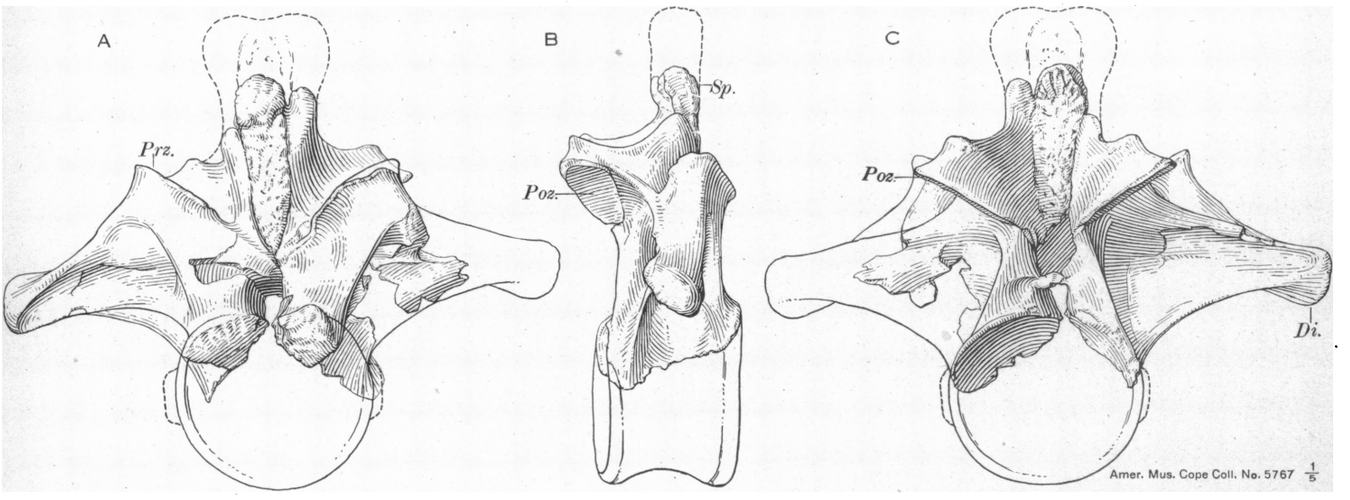

Fig. 26. Type dorsal vertebra of *Epanterias amplexus* Cope.

Dorsal 1 or 2 of a theropod dinosaur (Amer. Mus. Cope Coll. No. 5767). (A) anterior view; (B) lateral view, right side; (C) posterior view; one-fifth natural size. *Di.* diapophysis; *Poz.* postzygapophysis; *Prz.* prezygapophysis; *Sp.* spine. Reconstructed portion in dash lines. New original figure of type.

Type locality and level.— The uppermost beds of the Morrison formation at Garden Park, eight miles north to northeast of Canyon City, Colorado.

Original type description (Cope).

The latter [*E. amplexus*] 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*.

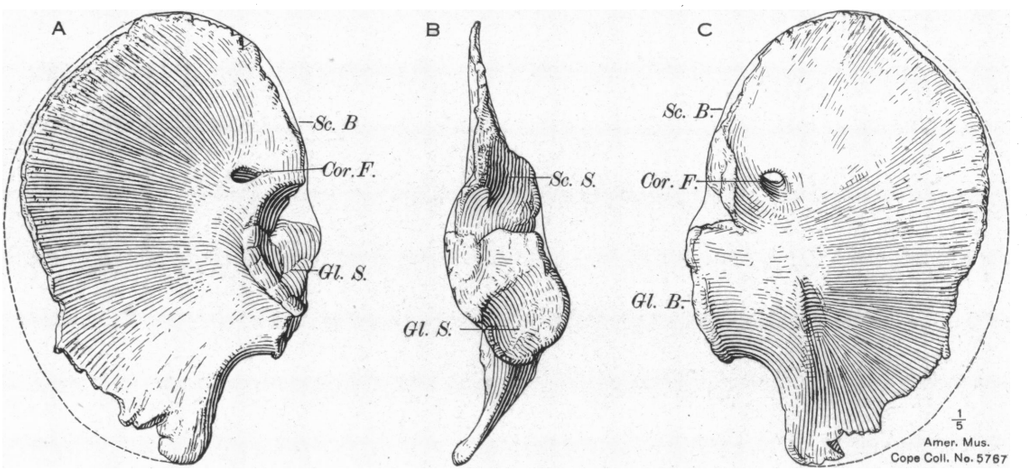

Fig. 27. Coracoid associated with the type of *Epanterias amplexus* Cope.

Right side (Amer. Mus. Cope Coll. No. 5767). (A) internal view; (B) inferior view; (C) external view; one-fifth natural size. *Cor. F.* coracoid foramen; *Gl. B.* glenoid border; *Gl. S.* glenoid surface; *Sc. B.* scapular border; *Sc. S.* scapular surface. Reconstructed portions in dash lines. New original figures.

Present determination.— The species is a member of the Theropoda.

DISCUSSION OF *Epanterias*

This genus was founded upon a species whose type consists of remains of a large theropod. The form is of unusual interest because of the large size of the bones, which are about $\frac{1}{5}$ larger than those of any theropod previously reported from the Morrison formation. These bones have been carefully studied, but the descriptions are not included in the present memoir as they do not belong to a member of the Sauropoda. The form is noted and figured as it was considered a Sauropod by Cope and has been included in lists of the North American Sauropoda.

II.—DETAILED DESCRIPTION OF *CAMARASAURUS* REMAINS

SKULL

Material and Association.— The material of the skull in this collection consists of an incomplete brain-case and occipital region, one nearly complete left maxillary, one right quadrate and two nearly complete right dentary bones. The association of these bones is absolutely unknown. In the type description of *Caulodon diversidens*, Cope mentioned that the teeth which constitute that type were found