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ART. XV.—*A Lower Cretaceous Brittle-star from Queensland.*

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(With Plate VII.).

[Read 9th November, 1933; issued separately 7th May, 1934.]

Introduction.

The following description is based on a well-preserved fossil brittle-star on the fractured faces of a bore-core obtained at Cleeve, near Longreach, Queensland.

The boring was put down by Oil Search Ltd., and was in charge of Mr. J. F. Foster, who took especial care to preserve the fossil, and after whom it is named.

Description.

Sub-phylum ASTEROZOA.

Class OPHIUROIDEA.

Family OPHIACANTHIDAE.

Genus **Ophiacantha** Mueller and Troschel.

Sub-genus **Ophioglyphoida**, nov.

Note on the Sub-genus.—The genus *Ophiacantha*, *sensu stricto*, has the disk formed of small plates and clothed with imbricating scales. A fundamental distinction of the present form is the distinctly platy structure of the disk, here exhibited on the oral side, showing a mosaic of more or less angulated pentagonal elements as in *Ophioglypha*.

OPHIACANTHA (OPHIOGLYPHOIDA) FOSTERI, sub-gen.
et sp. nov.

Description of Holotype.—Specimen showing oral face of the disk, which is roundly pentagonal and somewhat petaloid. Roof covered with small pentagonal plates, visible on the denuded under surface. Diameter of disk, 6mm. The teeth attached to the jaw-frame are short and bluntly pointed, whilst the mouth-shield itself is well-preserved. The sharply pentagonal border, showing the track of the nerve-ring, is also clearly seen on moistening the surface of the fossil.

Arms.—Of the five arms one is complete, and the four remaining, nearly so, whilst the bases or proximal portions are in place. Length of arms, circ. 32 mm.; diameter of arms, without spines, at junction with the disk, 1.6 mm.; full width with spines, 3 mm.

The vertebral ossicles are somewhat elongate in the direction of the arms, constricted in the middle, fossetted on the inner margin, and gently concave on the outer. Height of vertebral ossicle, fifth from disk margin, 0.47 mm.; width, 0.41 mm. Adambulacral plates of the arm short, rectangular, bearing on the outer surface from two to three long, slender, gently recurved, and thorny spines; directed distally. Average width of adambulacral, 0.2 mm.

Observations.—The character of the thorny spines and the existence of rectangular adambulacral plates, taken in conjunction with other structural features, support the reference of this fossil to *Ophiacantha*. It is of great interest to note that this living genus has at least persisted from Mesozoic times, and that it is still most abundant in the Pacific and East Indian regions (Clark, 1911, and Koehler, 1922). There is little doubt also that many of the recorded ophiuroids of Mesozoic strata from the Triassic onwards, such as *Ophioderma egertoni* of the Upper Lias (probably a *Pectinura* according to Lyman), may belong to genera still living. *Ophiolepis leckenbyi* with its surface tuberculation of the disk, from the Oolite, has been compared to *Ophioglypha* by Lyman (1882, p. 327). That author also states (*op. cit.*, p. 327) that "from the Trias upward there is nothing unfamiliar in the look of the ophiurans."

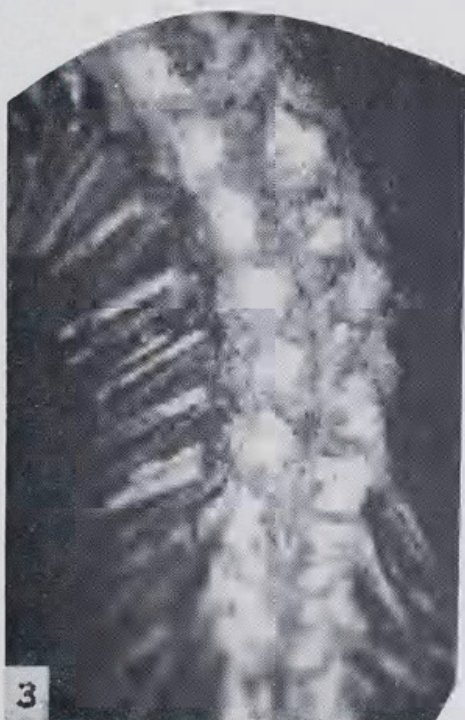
A Lower Cretaceous ophiuran has been described from the Grayson formation of Texas by C. I. Alexander (1931, pp. 152, 153, woodcuts Fig. 1, Pl. xx., Figs. 19, 20), as an *Ophioglypha*, which does not, however, show any preservation of the short delicate spines seen in the living forms of the genus. *Ophiacantha* as a Cretaceous genus does not seem to have been definitely recognized, although its probable occurrence in the earlier Lias formation has been suggested by Lyman (1882, p. 328).

The genus *Ophiacantha* (*O. heterotyla*) is found living as far south as Tasmania. It is especially abundant in the East Indian and Philippine areas as well as in the Pacific.

Locality of Holotype.—From No. 2 Bore, Gavin's Anticline, Cleeve, near Longreach, Queensland, at a depth of 519 feet. (Commonwealth Coll. No. 62.)

Horizon.—Dark-grey carbonaceous mudstones. Probably in the Tambo Series (Albian), Lower Cretaceous.

Note on the Bore Horizons.—At 447 feet, or 72 feet above the ophiuran horizon there occur the following fossils:—*Aucellina incurva*, *Syncyclonema socialis*, *Lenticulina rotulata*, and *L. subalata*, with the ostracod *Cytheropteron concentricum* (a Cretaceous species well known in England and Europe). The first two bivalved shells point to a Tambo fauna for the overlying beds. The ophiuran bed, with plant remains, indicates a horizon probably near the base of the Tambo series.



F.C. photo.]



Lower Cretaceous Brittle-Star : Longreach, Queensland.

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Explanation of Plate VII.

- Fig. 1.—*Ophiacantho (Ophioglyphoida) fosteri*, sub-gen. et sp. nov. Holotype. On Core from No. 2 Bore, Cleeve, near Longreach, Queensland. $\times 2$.
- Fig. 2.—Ditto. Paratype (Counterpart of same core). Matrix showing abundant plant fragments. $\times 2$.
- Fig. 3.—Ditto. Magnified arm showing opposed arm ossicles with spines. Holotype. $\times 11$.
- Fig. 4.—Ditto. Magnified thorny spines attached on right to ambulacral ossicles. Holotype. $\times 14$.



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