

## NOTE ON FOSSIL SPECIES.

In 1869 Lütken published a short but satisfactory critique on the then known fossil Ophiurans.<sup>1</sup> He mentions nearly fifty species, and his general conclusion is that they have no certain standing, either generically or specifically. The latest resumé<sup>2</sup> shows that no real progress in the definition of these fossils has been made during the past twelve years. For this there are two reasons, (1) that many of the type specimens are ill preserved, and especially deficient in the mouth parts; (2) that nobody who knew much of the subject has made a general examination of the originals. Here is an excellent field for a palæontologist. It cannot be doubted that the museums have a great many unstudied species. Indeed I have myself seen some in the European collections. When we consider the variety of living Ophiurans, and their occurrence in every climate and at every depth, it is plain that he would throw much light on palæontology who would bring together and thoroughly study their fossil forms. At present it cannot be said that a single fossil genus is identical with the living. The most probable identity is that of the Oolitic *Ophioderma* (*Ophiura*) *egertoni*,<sup>3</sup> which may well be an *Ophiura*, an *Ophiopeza*, or a *Pectinura*; most probably the last. Another fossil long known is the Triassic *Aspidura loricata*,<sup>4</sup> which certainly has a considerable likeness to *Ophiomastus* (Pl. VIII. figs. 16–18), especially on the under side. Goldfuss has correctly drawn the little primary plates in the centre of the back as in the brachial spaces; and I suspect Polig is wrong in putting them in the interbrachial, where they are never found among the living. I agree, too, with Ludwig that the supposed division in halves of the mouth shields is highly improbable. Another Triassic form, *Aspidura ludeni*,<sup>5</sup> has nearly the whole arm occupied by swollen side arm plates, and may possibly stand near such a species as *Ophiomusium eburneum*. *Ophiolepis damesii* from the Oolite has similar side arm plates;<sup>6</sup> and so has the Oolitic *Ophiolepis leckenbyi*,<sup>7</sup> with the additional peculiarity of a microscopic surface tuberculation like that of *Ophioglypha convexa* and some other deep-sea species (Pl. VI. figs. 13–15). The same large, swollen, tuberculated side arm plates are found in *Ophiocoma granulosa*<sup>8</sup> from the Chalk. On the whole, it may be said that from the Trias upward there is nothing very unfamiliar in the look of the Ophiurans, although to find some of the shapes, we must go into

<sup>1</sup> Addit. ad Hist. Oph., vol. iii. p. 70, 1869.

<sup>2</sup> Zittel, Handbuch der Palæontologie, vol. i. p. 439, 1880.

<sup>3</sup> Broderip, Trans. Geol. Soc., 2nd Ser., pl. xii. fig. 6.

<sup>4</sup> Goldfuss, Petrefacta Germaniæ, pl. xlii. fig. 7; Polig, Zeitschrift f. Wissensch., Zoologie, vol. xxxi. p. 235, pl. xvii. figs. 10–14; Ludwig, Zool., Anzeiger, Jan. 1879, p. 41.

<sup>5</sup> Hagenow, Palæontographica, vol. i. p. 21, pl. i. fig. 1.

<sup>6</sup> Wright, Monog. British Fossil Echinoderm, vol. ii., pl. xxi. figs. 4, 5.

<sup>7</sup> Wright, *loc. cit.*, pl. xix. fig. 3.

<sup>8</sup> Roemer, Versteinerungen des Norddeutschen Kreidegebirges, 1841, pl. vi. fig. 22.