

found from the littoral zone down to the lowest points reached by the dredge. In the different zones these genera may present modifications; for instance, the *Amphiuræ*, below 1000 fathoms, often have more numerous mouth papillæ, and the corresponding *Ophioglyphæ* usually have swollen arm-plates and a microscopically tuberculous surface. Such structural features, however, plainly have no connection with the conditions of life, nor have they any relation to the survival of specially favoured forms. From a depth of over 1500 fathoms are found the strongly armoured *Ophiomusium pulchellum* (see fig. 71), the delicate *Amphilepis*, and the *Ophiomitra chelys* (see fig. 72), with its thorny spines and soft disk. At that great depth the peculiar conditions, apparently so unfavourable to a rich and varied growth, have not checked the development of widely differing forms.

“While, however, the Ophiuroidea yield little to the dictation of light, heat, or water pressure, they show well-marked laws of growth. Certain genera take the lead, like the larger clans of a barbarous nation. The collections of the Challenger, when combined with those of the “Blake,” show that the four genera *Ophioglyphæ*, *Amphiura*, *Ophiacantha*, and *Ophiothrix* contain more than two-fifths of the known species. There is a tendency also to elaboration and variety in structure. The naked and embryonic genera, like *Ophiomyxa* and *Ophiogeron*, have few representatives; while the finely constructed *Ophioglyphæ* has many species, and even the highest group, composed of the closely allied *Ophiura*, *Pectinura*, and *Ophiopeza*, is pretty strong in numbers.

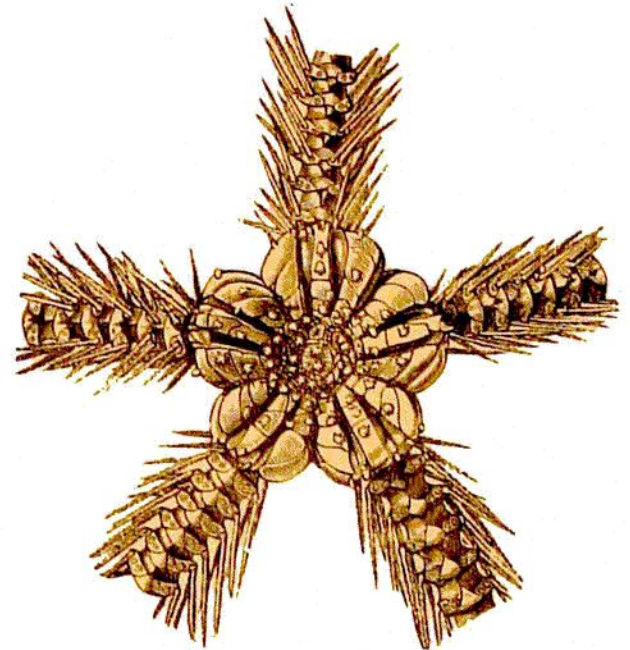


FIG. 72.—*Ophiomitra chelys* (Wyv. Thoms.). Dorsal aspect of the disk; four times the natural size.

“The dredgings of the Challenger have further taught us that we must not look exclusively in the abysses for surprising shapes, or for those that connect us closely with geological times. If the singular *Ophiotholia* (see fig. 73) must be sought in 1800 fathoms, its relative *Ophiohelus* may be found in less than 100 fathoms; and if *Ophiomastus* from the deep sea brings to mind the extinct *Aspidura*, *Pectinura* of the littoral zone recalls the so-called *Ophiura* of the Oolite. Nor must we forget that the extraordinary *Astrophiura*¹, apparently intermediate between the Brittle-stars and the Starfishes, lives in shallow water.”

The “singular *Ophiotholia*,” above referred to, was discovered by Mr. Murray in the

¹ Sladen, On the structure of *Astrophiura*, a new and aberrant genus of Echinodermata, *Ann. and Mag. Nat. Hist.*, ser. 5, vol. iv. pp. 401–415, 1879.