

caused the appearances which he believed to be bubble marks, said that he felt confident specimens in the possession of Mr. Teschemacher would convince him that such could not have been their origin.

Mr. Ayres remarked, that his researches among the Echinodermata of our coast had shown the existence of a singular law of distribution.

Of the Holothuridæ very few species are identical with European forms or even closely allied to them. Among the Ophiuridæ a greater resemblance prevails; a larger proportion of the species inhabiting both shores of the Atlantic, and those which are confined to our coast more nearly representing the types of Europe; while among the true Star Fishes all the species yet discovered are either identical with those of Northern Europe or intimately allied to them.

Mr. Ayres also gave an account of the structure of the Ophiuridæ, and presented a description and drawings of a new species belonging to the genus *Ophiolepis*.

O. tenuis Ayres. This is a small and delicate species, the disc in the largest specimens being not more than a fifth of an inch in diameter; the breadth of the disc is contained nearly four times in the length of the rays. The lateral ray-plates bear each two to four slender spines not equalling the breadth of the ray. The superior and inferior ray-plates are broadly-ovate, somewhat angular laterally.

The superior surface of the disc is covered with small, smooth plates, the origin of each ray being marked by a pair of larger, oval plates, having their narrow extremity outward, and touching each other through their whole length.

The plates forming the angles of the mouth have but a small number of teeth or divisions, generally from five to seven. The inter-brachial plates are similar in form to the inferior ray-plates, but smaller.

This species inhabits Boston Harbor, being frequently found creeping over the stones, shells, &c. brought up in the dredge from the depth of three to six fathoms. It is of a dark grayish

brown, with the border of the disc marked by five lighter spots, which are the pairs of plates at the origin of the rays. It is not difficult to preserve, and I may remark that none of our species appear to possess, in any great degree, the tendency to separation which characterizes those of Europe.

Ophiolepis robusta Ayres. This species is quite readily distinguished from any other American species yet known, by its proportions, the length of the rays scarcely exceeding the breadth of the disc. The spines of the rays are few and shorter than half the breadth of the ray to which they are attached. The lateral plates, which bear them, are greatly developed, meeting beneath the ray in such a manner as to separate the inferior plates widely from each other. From the general arrangement of the plates, each ray has the appearance of being loosely imbricated.

The superior surface of the disc is covered with small, smooth plates. The two plates which, in many species, mark the origin of the arms, are here with difficulty distinguished. A close examination shows a slight difference between them and the adjacent plates of the disc, but this species and the one to be next described give evidence that an importance has been, by some writers, attached to this character to which it is not entitled. Along that part of the disc bordering the base of each ray is a series of small spines or granules similar to the lateral ray-spines, but smaller.

The plates forming the angles of the mouth bear from seven to ten teeth. The inter-brachial plates are nearly circular.

This species I have not seen living. It inhabits Massachusetts Bay, and all my specimens I have taken from the stomachs of Cod and Haddock caught at the depth of sixteen to twenty fathoms. In the largest the disc is about four tenths of an inch in diameter.

Ophioderma olivaceum Ayres. The long, slender, lizard-tail rays of this species, its bright olive-green hue, and the activity with which it creeps over the sandy bottom, render it one of the most interesting objects in the localities which it inhabits. Unlike others of the tribe, it appears to shun deep water and is found abundantly near low-water mark, living in many places which are regularly left as pools by the receding

of the tide. It prefers regions covered with eel-grass (*Zostera*) but confines itself entirely to sandy bottoms. I have studied its habits chiefly at Sag Harbor, Long Island, where it is abundant. It is found near to *Sclerodactyla briareus* Le S. but not in company with it, that choosing the mud and this the sand for a residence. And so marked is the preference that in certain localities the two animals live in great numbers within three yards of each other and yet neither ever encroaches upon the other's territory. It manifests very little disposition to dismember itself on being handled.

The disc, which is generally quite flattened, attains sometimes a diameter of seven tenths of an inch. It is covered with small spines or granules closely set over its whole surface, so that no plates are visible. When these granules, however, are removed, the disc is seen to be formed of minute plates, as in the previous species, (*O. robusta*.) Of the pair of plates, so often found at the base of each ray, no trace can here be discerned, even under a magnifier.

The length of the rays exceeds four times the diameter of the disc. The superior ray-plates are transversely elongated; the inferior are small, rounded; the lateral bear six to eight short, blunt spines, which, notwithstanding their number, are so inconspicuous as to detract very little from the smoothness of the ray.

The granules of the disc cover also the inferior inter-brachial spaces, in each of which the two pairs of genital openings are well marked. The inter-brachial plates are very regularly ovate. The plates forming the angles of the mouth bear fifteen to eighteen teeth.

Mr. Ayres also presented a cast of the new species of Star-fish exhibited by him at the previous meeting, in Gutta Percha. This was the first application, he said, so far as he knew, of this substance to such a purpose, and it made a much better cast than gypsum, bringing out many points which that would not exhibit at all, and being of great strength and durability. He presented the casts in the name of Mrs. Westfall, of Sag Harbor, to whom the Society was indebted for the use of the original specimen.



Ayres, W. O. 1854. "Descriptions of new species of Ophiuridae." *Proceedings of the Boston Society of Natural History* 4, 133–135.

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