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XX.—*Miscellanea Zoologica.* By GEORGE JOHNSTON, M.D.,
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[With a Plate.]

BRITISH NEREIDES.

SYLLIS, Savigny.

CHAR. *Body* linear-elongate, slender: *head* small, lobed more or less in front: *eyes* four: *antennæ* three, cranial, filiform, submoniliform, similar to the *tentacular cirri*, of which there are two pairs: *proboscis* divided into two distinct portions, the aperture plain, edentulous: *segments* numerous: *feet* undivided, armed with jointed bristles; the *superior cirrus* elongate, submoniliform, the *inferior* short, unjointed: *tail* with two moniliform styles: *branchiæ* none.

1. *S. armillaris*; pale yellowish-brown, unspotted; head deeply lobed in front, the lobes papillary; superior cirri four times longer than the breadth of the body, submoniliform. (Plate IX. figs. 1, 2, 2 h.)

Nereis armillaris, Müll. *Wurm.* 150. *tab.* 9. *fig.* 1—5, copied in *Encyclop. Méthod.* *pl.* 55. *fig.* 13—17. *Bosc, Vers.* i. 168. *Turt. Gmel.* iv. 86.

Hab. Among shells and stones in deep water. Berwick Bay.

DESC. Animal of a pale yellowish-brown colour, dusked in some places from the earthy contents of the intestine, very slender, linear-elongate, tapered at the tail, somewhat compressed. *Head* distinct, small, deeply lobed in front; the lobes porrect, papillary, coalescent behind, but separated by a line from the antenniferous portion, which is rounded and slightly convex: *antennæ* slightly tapered, submoniliform, the medial originating from the vertex and rather longer than the lateral: *eyes* placed in a semicircle, the posterior pair more approximated than the anterior: *proboscis* long, the outer portion shorter than the basal, smooth: *post-occipital segment* not larger than the following, with two *tentacular*

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cirri on each side, the superior longer than the inferior, submoniliform: *segments* very numerous, short, or about as broad as long; the *foot* obtuse, undivided, furnished with a single fascicle of colourless bristles, which are jointed and curved near the pointed apex; the spine conical, straight: *superior cirrus* at least three times the breadth of the body in length, becoming gradually shorter near the tail, slightly tapered, submoniliform: *inferior cirrus* not projecting much beyond the foot, conical, undivided: *styles* of the tail elongate.

Length 2 inches; breadth about a line.

This worm is not uncommon. The specimen figured was found among some shells and stones which had been brought up from deep water by the lines of the fishermen. It may be compared, so far as external appearance goes, with the subterranean *Geophilus*: its motion is moderately quick and effected in the usual way.

To the *Scyllis monilaris* of Savigny this species is evidently nearly allied, and indeed I find no characters to distinguish it excepting the deeply-lobed front, and the greater comparative elongation of the superior cirri, which, in the figure of *S. monilaris* given by Audouin and Edwards (*Hist. Nat. du Litt. de la France*, ii. pl. 4 B. fig. 1—5), scarcely exceed the breadth of the body. By the same characters *S. armillaris* is separated from the *S. fulgurans*. I have no opportunity of comparing ours with figures of any of the other species of the genus indicated by Audouin and Edwards. Müller's figures of this species are very good.

Any one acquainted with Annelides will at once be led, from their great development and form, to conjecture that the frontal lobes of this worm are analogous to the exterior antennæ of the Nereis; and it may be considered as giving support to the opinion of Blainville, who had come to this conclusion from the examination of species in which their development is much less remarkable, and where there was little coincidence in their figure.

PLATE IX. fig. 1. *Syllis armillaris*, natural size. Fig. 2. The same magnified. Fig. 2 h. The head more highly magnified.

2. *S. prolifera*; yellowish-brown, unspotted; head semicircular in front, entire; superior cirri scarcely twice the breadth of the body, very obscurely jointed, not moniliform. (Plate IX. figs. 3, 4.)

Nereis prolifera, Müll. *Zool. Dan. tab. 52. fig. 5—9*, copied in *Encyclop. Méth. Vers*, pl. 56. fig. 12—15. *Turt. Gmel.* iv. 90.

Bosc, Vers, i. 174. *Audouin et Edw. in Ann. des Sc. Nat.* xxix. 231. note 3; and *Hist. du Litt. de la France*, ii. p. 209. note 3.

Hab. Amongst corallines in deep water. Berwick Bay.

DESC. *Body* rather more than half an inch in length, scolopendriiform, roundish, of a yellowish-brown colour: *head* small,

distinct, rounded and entire in front, with four *eyes* placed in a square, the anterior pair more widely set than the posterior: *antennæ* three, elongate, filiform, clothed with minute cilia, unjointed: *proboscis* apparently without teeth or other armature: *segments* numerous, narrow, incised at their junctions; the *post-occipital* with a pair of *tentacular cirri* on each side, one-half the length of the *antennæ*; the *cirrus* of the following segment elongate, antenniform: *feet* uniramous, short, entire, armed with a single fascicle of retractile simple unjointed bristles; the *superior cirrus* longer than the breadth of the segments, obscurely marked with a few transverse lines or wrinkles, but not in any degree moniliform; the *inferior cirrus* small, and not projecting much beyond the foot: tail tapered, tipped with a pair of *styles*.

This little worm always kept its *antennæ* twisted up in a spiral manner, so that it was not easy to get a distinct view of their number and location: they differ remarkably from those of the preceding species in their greater development; and it was easy to see, with a magnifier of no high powers, that they were clothed throughout with fine cilia.

PLATE IX, fig. 3. *Syllis prolifera* of the natural size. Fig. 4. The same magnified; 4 *h*, the head and anterior segments; 4 *s*, the middle segments; 4 *t*, the posterior extremity and styles.

GLYCERA, *Savigny*.

CHAR. *Body* lumbriciform, attenuated at both ends, the rings numerous, narrow: *head* conical, bulged at the base, prolonged into a sort of annulated horn with four minute equal *antennæ* on the apex: *tentacular cirri* none: *mouth* inferior; the *proboscis* very large, clavate, two-jointed; the terminal joint smooth, the basal joint elongate, villose with minute papillæ: *feet* uniform, obsoletely biramous, setigerous, with a short superior and inferior *cirrus*, and sometimes branchial papillary processes: tail with a pair of short *styles*.

In all the *Nereides* which we have hitherto described, the head is to be readily distinguished by its enlarged form and its dissimilarity from the first segment; but in the *Glycera* there is no marked line of separation between these parts. The head has the appearance of a small pointed horn, and is indeed so like the anterior end of the earth-worm, that we cannot but perceive, in this sameness of character, a certain approximation to a junction between the families to which the *Glycera* and earth-worm respectively belong. Yet though this is unquestionable, still the *Glycera* is not the nearest connecting link, for there are other *Annelides errantes* which partake more of the habits and character of the *Terricolæ*.

1. *G. alba*; body most attenuated anteriorly; jaws four; supe-

rior ramus of the foot pointed on the dorsal aspect, rather longer than the cirrus; branchiæ none. (Plate IX. fig. 1—9.)

Nereis alba, Müll. *Zool. Dan. Prod.* 217. *Zool. Dan. tab.* 62. *figs.* 6, 7. *Aud. et Edw. Litt.* ii. 243. *Turt. Gmel.* iv. 89. *Bosc, Vers.* i. 172.

Hab. In sandy places between tide-marks under stones. Berwick Bay, not uncommon.

DESC. *Body* vermiform, round, or rather somewhat flattened on the ventral surface, tapered anteriorly to a sharp point, less tapered at the tail, $2\frac{1}{2}$ inches long, smooth, indistinctly annular, of a yellowish-white colour, stained with the contents of the intestine, and marked with a red vessel down the back. *Head* cornuted, the apex surmounted with four minute *antennæ* only visible with a magnifier. *Proboscis* very large, faintly striate in a longitudinal direction; the teeth brownish-black, corneous, falcate, divided into three processes at the base, inserted into a sort of tubercle forming a square round the plain oral aperture. *Segments* very narrow, equal and numerous. *Feet* papillary, obscurely biramous, obtuse, pointed above at the outer angle; the *cirri* short, the inferior almost obsolete: *bristles* colourless, jointed near the apex; the spines straight, setaceous, pellucid. *Anal segment* rounded, apodal, terminated with two minute *styles*, which are frequently cast off in the animal's struggles.

Glycera alba lives under stones, sometimes buried in the gravel or sand, but the worm never penetrates far below the surface. Its motions in the water and in the sand are slow, but when irritated the contortions of the body are violent, and it very often twists itself so as to form a short spiral column, as we have attempted to show in the first of our illustrative figures.

Savigny considers his *G. unicornis* to be identical with the *Nereis alba* of Müller. It is more probable, however, that the British species is the same as the Norwegian; the more especially as there is nothing in the description to create any doubts of their identity. The *G. unicornis* is remarkable for its want of jaws, affording a striking proof that organs of vast importance in the higher classes are here only of secondary consequence, and do not even afford a good generical character.

PLATE IX. fig. 1. *Glycera alba*, natural size, and in a favourite position. Fig. 2. The same, with the proboscis protruded. Fig. 3. The head magnified. Fig. 4. A view of the proboscis fully extruded. Fig. 5. The apex of the proboscis viewed in front to show the jaws. Fig. 6. Three views of a jaw detached and magnified. Fig. 7. A side-view of a foot from near the middle of the body slightly compressed. Fig. 8. A view of two feet from above. Fig. 9. A bristle highly magnified. Fig. 10. The tail magnified.

[To be continued.]