

He considers *Phoronis* a true Gephyrean, and that the flexure of the alimentary canal (which resembles that habitually assumed by *Sabellaria*) is the result of the coalescence of the parts—of a primitively straight form—thus approximated by the exigencies of its life. Further, he explains how this metamorphosis came to be carried out abruptly, mainly from its great advantages to the form.

In the same year a preliminary account of the large species procured by the Challenger was communicated by the author to the Royal Society of Edinburgh.¹

Dr. Haswell next noted² the occurrence of a closely allied form, somewhat less in size, inhabiting the semi-gelatinous investment of the remarkable Actinia—*Cerianthus*. In his own words, "The present species, which I propose to name *Phoronis australis*, was obtained on two occasions during the dredging work carried on under the auspices of the Trustees of the Australian Museum, at a depth of fifteen fathoms, off Ball's Head, in Port Jackson. . . . A number of individuals inhabit a large irregular semi-gelatinous sac, about six inches long and three or four wide, and open at both ends. The walls of the sac, which range from $\frac{1}{4}$ to $\frac{1}{2}$ an inch in thickness, and are tolerably tough, are composed of numerous fine threads closely felted together, and in these walls, in wide irregular spaces among the felted threads, lie the worms, the head projecting externally; the inner surface of the sac is lined by a dense glistening layer of the same material as the rest. The whole substance of the sac is of a purple colour." This description was drawn up before the identity of the tube was recognised, but Dr. Haswell afterwards found *Cerianthus* inside, and was good enough to forward several examples to me. He has also subsequently mentioned that the larval forms (*Actinotrocha*) are obtained by the tow-net on the surface throughout the greater part of the year.

The following year (1883) Mr. Caldwell presented a preliminary note on the structure, development, and affinities of *Phoronis* to the Royal Society.³ This is an able and comprehensive contribution on the subject, the observations and conclusions arrived at by the author being noticed under the several heads in the body of this paper.

In his remarks on the metamorphoses of some Bryozoa, Dr. Jules Barrois⁴ especially refers to the comparison instituted by Sydney Harmer and Ostrooumoff between the evagination of the internal sac of the Bryozoa and the ventral tube of *Actinotrocha*. Ostrooumoff groups the Bryozoa into three great types: (1) in which the skin of the adult is formed mainly by the evaginated sac (*e.g.* *Phoronis*); (2) in which the skin is formed by the aboral face enveloping the rest (*Vesicularia*); and (3) in which the skin is formed in part by both faces (*Chilostomata*). Barrois himself reduces them to two great types, viz. (1) those characterised by the predominance of the ventral face, and the reduction of the dorsal to the terminal region of the body; and (2) those distinguished by the predominance of the aboral face (the cephalic of the trochosphere) which envelopes the oral (somatic).

¹ *Proc. Roy. Soc. Edin.*, vol. xi. pp. 211–217, 1880–82.

² *Proc. Roy. Soc.*, vol. xxxiv. pp. 371–388.

³ *Proc. Linn. Soc. N.S.W.*, vol. vii. p. 606.

⁴ *Ann. d. Sci. Nat.*, t. i. pp. 83–86, 1886.