

Copepoda (Grobben) are never observed in the Nauplius of the Cirripedia; the lateral horns and the very complicated system of dermal glands of the latter are again wanting in the Copepod-Nauplius. The various spinous processes of the Cirriped-Nauplius in the larva of the Copepoda are sought for in vain. No doubt a great many of these differences may be caused by adaptive changes, and be considered as secondarily acquired protective organs, as Balfour<sup>1</sup> calls them—yet this is also a supposition of a somewhat speculative character.

Moreover, we must not lose sight of the fact that it will always be very difficult to explain why the Cypris-stage, so highly characteristic of the ontogeny of the Cirripedia, is totally wanting in the development of the Copepoda, and why, when we consider an Archi-phyllopod as the common ancestor of both groups, the Copepoda, which are developed from it in a much more direct way, should be unisexual, whereas the Cirripedia, as a rule, are hermaphrodite. Claus himself has pointed out this latter difficulty,<sup>2</sup> and tries to explain it by submitting that the hermaphroditism of the Cirripedia is of a secondary character. This supposition in the first place is based on the fact that the Cirripedia are not exclusively hermaphrodite, and in the second place, that in those cases in which unisexuality is observed in the group of the Cirripedia, it occurs in a stage which corresponds to the Cypris-stage of the ordinary development; a younger stage corresponding to an earlier period of the phylogenetic development. As this latter conjecture is based in the first place on the sexual relations of the different forms of *Scalpellum*, with which I shall have ample occasion to deal when describing the numerous species of that genus collected during the cruise of H.M.S. Challenger, a discussion of this point may be postponed till then.

An elaborate discussion of what had been published on the so-called Cirripedia Suctoria, or Rhizocephala, does not lie within the province of this Report. As not a single specimen of a *Sacculina* or a *Peltogaster* is to be found in the Challenger collection handed over to me, and as my inquiries of the gentlemen engaged in preparing reports on the Crustacea Podophthalmata, Brachyura, Anomura, &c.—the animals on which the parasitic Cirripedia are found living—have proved in vain, it seems that not a single representative of this group was taken during the cruise of H.M.S. Challenger.<sup>3</sup> Considering that Prof. Semper, during his stay in the Philippine Archipelago, collected nineteen different species of this group, it seems rather curious that not a single specimen was taken by the Challenger. The only way to explain it would be, that the Crustaceans living in shallow water in the neighbourhood of the coast are not very richly represented in the Challenger collection, and that the Cirripedia Suctoria at present known were taken, almost without an exception, from such shallow-water inhabitants.

<sup>1</sup> Balfour, Larval Forms, *Quart. Journ. Micr. Sci.*, vol. xx. p. 381, 1880.

<sup>2</sup> Claus, *Genealogische Grundlage.*, p. 90, *et seq.*

<sup>3</sup> See note by the Editor of the Reports, p. 19.