Zoology Part XXVIII: Report on the CIRRIPEDIA. Anatomical Part. By P. P. C. Hoek. Bound in Volume 10,1884.

believes he has observed segmental organs in each of the seven body segments. Whether M. Huet be right in considering these organs "organes glandulaires . . . qui s'ouvrent à la partie supérieure des épimères, de chaque côté, par une ouverture en crible" as segmental organs, I will not discuss. To judge from his description they have not the typical structure of true segmental organs which are to form an open communication between the body-cavity and the exterior.

Two other sets of glands of Arthropoda, and more especially of Crustaceans, are perhaps more nearly related to the segmental organs; they are the antennal glands of the larvæ of many Entomostracans and of the full-grown Malacostracans; and the shell-glands of full-grown Copepoda and Phyllopoda. According to Grobben[1] they have nearly the same structure, and must be regarded as homologous organs (homodynamous they are called, more accurately I think, by R. and O. Hertwig[2]); both are composed of a little terminal sack (Endsäckchen), and a channel (Harnkanälchen) which opens at the surface of the body. Moreover, the cells covering the interior of the little sack in the antennal and shell-glands show a complete resemblance. An open communication with the body-cavity has, however, never been observed in the case of these organs[3]; if they really are to be compared with segmental organs, there can be no question that they have degenerated from their original condition.

Should there ever be discovered an intermediate form between a true segmental organ such as that of *Scalpellum* and a shell-gland as observed in the Copepoda, then in the first place the homology of the apparatus may be accepted; but in the second place it will then also be possible to give a more solid basis for demonstrating the homologies of the extremities of Cirripedia and Copepoda than has been the case hitherto. When treating of the female genital apparatus and its orifice at the base of the first cirrus I hope to point out that there is sufficient reason for admitting that a second pair of segmental organs, though in a slightly modified condition, is present in the Cirripedia also.

Finally, I will not take leave of this subject without stating as my opinion that the segmental organ which I have described is physiologically an organ of an excretory nature. The condition of the material at my disposal did not allow of my attempting a chemical investigation of the contents of the cells, and so it is only from analogy that this conclusion has been arrived at. It is fairly supported, I think, by the presence of muscle-fibres with numerous cavities between them, such as have also been observed by Grobben (*loc. cit.*, p. 105) in the neighbourhood of the antennal glands of the Decapoda.

[1] C. Grobben, Die Antennendrüse der Crustaceen, *Arb. Zool. Inst. Wien.*, Bd. iii. 1880.

[2] R. and O. Hertwig, Die Coelomtheorie, *Jenaische Zeitschr.*, Bd. xv. pp. 1–150, 1882.

[3] According to Sedgwick (*Quart. Journ. Micr. Sci.*, vol. xxiv., N.S., pp. 46, 47, 1884), the nephridia of the Invertebrata are developed from solid masses of cells derived from the wall of the cœlom; a communication with the body-cavity in that case would represent a secondary stage.

http://19thcenturyscience.org/HMSC/HMSC-Reports/Zool-28/README.htm