

enthält in der Regel 1—3 dieser kugelrunden 0,007—0,009 mm breiten parasitischen Algen, so daß viele Hunderte in einem *Enterostoma*-Individuum wohnen. Nur selten begegnet man Exemplaren, die davon nur etwa 50—60 Stück enthalten. Wie diese Turbellarie die einzige bisher bekannte ist, welche in den Darmzellen Zooxanthellen enthält und darin mit den Actinien übereinstimmt, so sind diese Parasiten hier auch verschieden von den Zooxanthellen der Convoluten und gleichen in Form und Größe zum Verwechseln denen der Actinien, wie sie von O. und R. Hertwig beschrieben worden sind⁸. Im Übrigen enthält dieses *Enterostoma* massenhaft Pseudorhabditen (Schleimstäbchen) in der farblosen Haut, hat vier schwarze Augen und die für das Genus charakteristische Stellung von Mund- und Geschlechtsöffnung, Pharynx und weichhäutigem Copulationsorgan. Hervorzuheben wäre die Form des Dotterstockes (netzartig verzweigt) so wie der Spermatozoen. Letztere sind gesäumt, aber die Säume sind sehr schmal, so daß die Breite der 0,1 mm langen und an beiden Enden rasch verjüngten Spermatozoen bloß 0,0026 mm beträgt. Diese Turbellarie ist außerordentlich lichtempfindlich und es ist höchst auffallend, wie die an der Lichtseite des Glases angesammelten Thiere bei Drehung des Gefäßes sofort auf dem kürzesten Wege dem Lichte zustreben, so oft man dieses Experiment auch wiederholen mag. Frei in der Leibeshöhle eines Individuums fand sich ein junges geschlechtsloses *Distoma* von 0,54 mm Länge.

Von Polycladen fanden sich während meines von Mitte März bis Mitte April währenden Aufenthaltes folgende Arten: *Stylochoplana agilis* Lg., *Leptoplana pallida* Lg., *Lept. tremellaris* Oc., *Lept. Alcinoi* O. Sch., *Thysanozoon Brocchii* Grube, *Oligocladus sanguinolentus* Lg., *Prosthlostomum siphunculus* Lg. (u. A. ein Exemplar von über 3 cm Länge).

3. Note on the ovaries and oviducts of *Eudrilus*.

By Frank E. Beddard, M. A., London.

eingeg. 18. März 1886.

Mr. Perrier has described (Nouvelles Archives d. Museum t. VIII [1872] p. 74) the very remarkable structure of the female generative apparatus in the earthworm *Eudrilus*. In this genus alone the ovaries are attached to a structure which may correspond to the copulatory pouch of other earthworms though its aperture is upon the 14th seg-

⁸ O. u. R. Hertwig, »Die Actinien«. Jenaische Zeitschr. f. Naturwiss. 13. Bd. 1879. p. 495 ff.

ment; this segment usually carries the openings of the oviducts, and the structures regarded by Perrier as copulatory pouches are also anomalous in that they are placed behind the testes, instead of being placed in front of them, as in the majority of earthworms, or in the same segments, as in *Lumbricus*. In the paper referred to above Mr. Perrier describes the copulatory pouch as consisting of a tube which terminates in a wide cul-de-sac; to this are attached (1) a slender tube much contorted and (2) a small spherical body, the ovary; in one species (*E. peregrinus*) there is an additional structure in the shape of a small glandular body which is situated like the ovary upon the peduncle of the copulatory pouch. This description is accompanied by a figure which shows the ovary attached by a short stalk to the peduncle of the copulatory pouch just opposite to the entrance of the long tubular diverticulum. Mr. Perrier does not say in so many words that the ovary is actually continuous with, opens into, the copulatory pouch, but I suppose from his description that this is intended. In any case this very important divergence from the ordinary type of structure has not been referred to by writers of text books, and the matter appeared to be worth going into again. In a species of this genus, which I cannot differentiate from those described by Mr. Perrier, I have found by dissection and by a study of complete series of transverse sections that the ovary is actually continuous with a long coiled oviduct; this latter is evidently the 'diverticulum' of the copulatory pouch described by Perrier; the ovary is therefore not, so to speak, sessile upon the peduncle of the copulatory pouch, but is connected with it by this long coiled oviduct. Besides this oviduct I could find no trace of any structure which could possibly represent the tubular coiled diverticulum described by Perrier. If the species, to which the present note refers, is really identical with one of those described by Perrier — and I cannot distinguish it either by external characters or structure from *E. peregrinus* — I may fairly claim to have been the first to record this anomalous fact; Mr. Perrier's figure can only, on this hypothesis, represent a lucky guess, partly expressing the truth. I am able to confirm his description of a small accessory glandular body which opens opposite to the oviduct, in fact exactly as is shown in Plate II fig. 26 of his Memoir; in this particular figure however there is some doubt expressed in the text as to the identity of the body lettered *o* with an ovary and I am myself inclined to regard it as the little glandular body above referred to. In one species the ovary has been identified by Perrier without any doubt.

In transverse sections the ovary was seen to be invested in a tunic of fibrous tissue which was directly continuous with a long coiled tube

— the oviduct; the interior of the ovary was divided into numerous compartments by trabecula arising from the external coat and anastomosing with each other; towards the inferior surface of the organ these compartments which contained numerous ova in various stages of development, became fused together and were perfectly continuous with the wide lumen of the oviduct. It is impossible to state the exact point where the ovary ends and the oviduct commences. I hope later on to give fuller details respecting the structure of the ovary but at present content myself with emphasizing the fact that the oviduct is perfectly continuous with the ovary. This is novel to the whole group of the Chaetopoda; in many cases there are no special oviducts; when present they are completely independent of the ovaries, being in all probability the equivalents of nephridia. On the other hand in the Platyhelminthes and Leeches the ovaries and oviducts are continuous structures precisely as they are in *Eudrilus*. Even if there is not the profound morphological distinction between the two forms of generative glands and ducts as is believed by the brothers Hertwig (»Coelomtheorie«), among others, to exist, there is a striking anatomical difference; it is of importance to note that, as far as the female reproductive apparatus is concerned, the Oligochaeta may possess generative organs which depart widely from the structures characteristic of the group and agree in many points with the Platyhelminthes, Leeches, and even some of the Mollusca.

Although the structure of the female organs of *Eudrilus* is so remarkable, and as far as is at present known unique in the group to which it belongs, the male organs conform to the ordinary type; there are three pairs of testes (probably vesiculae seminales as in *Lumbricus*), and two vasa deferentia on either side which open on to the exterior of the body on the 17th segment. The accessory glandular organs connected, with the external orifice of the vasa deferentia, have been accurately described by Mr. Perrier.

4. Zur Geschichte der Vererbungstheorien.

Von Dr. August Weismann, Professor in Freiburg.

eingeg. 4. April 1886.

»Selten nur ist ein fruchtbarer Gedanke in der Wissenschaft aufgetaucht, ohne daß er nicht von einer Seite bekämpft, von anderer aber als bereits bekannt hingestellt worden wäre. Das Erstere ist gewiß vollkommen in der Ordnung, ja sogar nothwendig, denn erst aus dem Kampf der Meinungen kann die Wahrheit klar und bestimmt hervorgehen, aber auch dem Zweiten ist nicht alle Berechtigung ab-

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