Zoologischer Anzeiger

herausgegeben

von Prof. **J. Victor Carus** in Leipzig.

Zugleich

Organ der Deutschen Zoologischen Gesellschaft.

Verlag von Wilhelm Engelmann in Leipzig.

XXII. Band. 4. September 1899. No. 596.

I. Wissenschaftliche Mittheilungen.

1. On the "Notochord" of Cephalodiscus.

By A. T. Masterman, B.A., D.Sc.

(Schluß.)

It is scarcely necessary to say that this pericardium is evidently homologous with the proboscis-vesicle of *Balanoglossus* and hence the comparison of the latter with the subneural gland of *Cephalodiscus* will have to be given up. With Dr. Harmer's second formula as given above I therefore now agree.

The detailed relationship of the subneural sinus, pericardium, and heart, and of the glomerulus I must leave to the fuller paper.

(1) How will the above affect Dr. Harmer's first formula? In my first paper reasons were given that the notochord of *Cephalodiscus* would have its structure and relationships more appropriately indicated by the term subneural gland, on account of its histological structure, the presence of mucoid material in its lumen and its relationship to the central nerve ganglion and to the pharynx. Later work (Trans. Roy. Soc. Edinb. Vol. XXXIX) led to a confirmation of this view, as the organ in question proved to have a similar relationship to a circum-pharyngeal system of grooves as is the case with the subneural gland of the Tunicata. What then is the homologue of this organ in *Balanoglossus*? Labouring under the erroneous assumption that the proboscis-vesicle of *Balanoglossus* was the homologue of the distal extremity of the subneural gland of *Cephalodiscus*, I formerly sought for the vestige of the proximal end in the neighbourhood of

the mouth of *Balanoglossus*. The subneural gland is almost certainly functional in *Cephalodiscus*, being connected with food-ingestion, but as the mode of feeding in *Balanoglossus* would appear to be of a different nature, it is probable that the subneural gland, if present at all, would in this group be vestigial. Again, we know that there has been a secondary pre-oral extension of the pharyngeal region in Enteropneusta so that it is possible that the subneural gland might in this group be pushed further forward into the proboscis. Although in *Balanoglossus* it has atrophied I think it can be identified in *Schizocardium*, *Glandiceps* and *Spengelia*, as the organ called the "vermiform process" of the "Eicheldarm" referred to by Dr. Harmer as "the slender anterior portion of the notochord". Strangely enough, Willey has recently expressed the same view and ascribes it to Dr. Harmer. If this is the case, then I am in agreement with the latter on this point but he must in this case have forsaken his first formula quoted above, for "the whole is not equal to its part". Dr. Harmer recognised that there was "no essential histological difference" between the subneural gland of *Cephalodiscus* and the organ we refer to, but I fail to find that he suggested anything further than that the latter was an integral part of the whole "Eicheldarm". Willey goes further, however, and suggests that the so-called "notochord" of *Cephalodiscus* is homologous with the vermiform process, or part of the "stomochord" of Enteropneusta. I am inclined to go further still and regard the latter as an organ distinct from, although organically connected with, the notochord of Enteropneusta and would apply the term subneural gland to it, when present in the members of this group. The detailed prooffor this view I must leave at present, but might mention the objections I urged (No. 545 Zool. Anz.) to the comparison of the subneural gland of *Cephalodiscus* with the whole "Eicheldarm" of *Balanoglossus* do not apply to the comparison with the "vermiform process".

(3) With regard to Dr. Harmer's third formula my views have been expressed recently (Rep. Brit. Assoc. 1898), and to these I adhere. Dr. Harmer objected to the name Diplochorda mainly because "*Cephalodiscus* affords no support" "to the theory of the originally paired character of the notochord of *Balanoglossus*". I now am inclined to believe that this name will probably have to be used not only for the three forms *Cephalodiscus*, *Phoronis* and *Rhabdopleura*, but to include Enteropneusta as well. I find in the one or two *Tornaria* I have been able to obtain that the pharynx has paired pleurochords laterally. Whether they take any part later in the formation of the stomochord or simply remain in situ as the dorsal branchial portion of the pharynx, as in *Cephalodiscus*, is immaterial. They are paired

pleurochords of the same nature as in the rest of the Diplochorda, so that this name, rather than being misleading, appears to emphasise an important feature in common between the four groups mentioned.

All these points, together with other anatomical data in *Cephalodiscus*, such as a well developed "epidermistasche" in connection with which there are aggregates of sense-cells, a preoral sense-organ, and a further account of the vascular system, will be dealt with fully in a short time.

St. Andrews, August 12. 1899.

2. Neues über paläarktische Geophiliden.

Von Carl Verhoeff, Dr. phil., Bonn a./Rh.

(Größtentheils eine vorläufige Mittheilung.)

eingeg. 23. August 1899.

Vor kurzer Zeit hat Dr. C. Attems in seiner werthvollen Arbeit »Neues über paläarctische Myriopoden[1]« u. A. auch die »Analbeine« der Chilopoden und bei dieser Gelegenheit meine Erörterungen darüber (im Archiv für Naturgeschichte, 1898) besprochen. Durch seine z. Th. abweichende Darlegung wurde ich zu erneuter Prüfung der Gliederung der Geophiliden-Beine veranlaßt und erkläre jetzt nur kurz, daß alle bisherigen Betrachtungen an einem Grundfehler leiden, nämlich der Verkennung der typischen Rumpfsegmenthüften. Die gewöhnlichen Laufbeine sind nämlich ebenso wie die Endbeine (meistens) siebengliedrig, Coxa, Trochanter, Femur, Tibia und 3 Tarsalia, aber die Hüften wurden bisher fälschlich als Episternen angesehen, wohl hauptsächlich ihrer sehr eigenthümlichen Gestalt halber. Die Verhältnisse bei den Anamorpha aber, die immer klar gewesen sind, lehren, daß diese Episternenauffassung falsch ist. Die Hüften der Chilopoden stoßen unmittelbar an die Bauchplatten, auch bei Scolopendriden ist es nicht anders. Nun sollen bei den Geophiliden mit einem Male große Pleurenstücke zwischen den Bauchplatten und den bisher sogenannten Hüften auftreten? Das ist schon widersinnig! Aber diese Annahme, welcher bisher sämmtliche Forscher, auch Cook und Attems (und bisher auch ich selbst) gefolgt sind, erzeugt noch andere Wunderlichkeiten, daß die »Hüften« nämlich Trochantergestalt haben sollen und die Endbeine andere Gliederung als alle übrigen. Durch meine Erklärung fallen alle diese Widersprüche fort, was ich in einer späteren Arbeit genauer auszuführen gedenke. Hier bemerke ich nur noch, daß meine 1898 gegebene Erklärung der Endbeingliederung (die ich allerdings jetzt nicht mehr

[1] Zoolog. Jahrbücher 1899, p. 286—335.