

3. Zur Entwicklungsgeschichte und Systematik der Süßwassermilben.

Von Prof. Dr. P. Kramer in Halle a. S.

eingeg. 13. Februar 1892.

In einem ausführlicheren Aufsätze, welcher demnächst im Archiv für Naturgeschichte erscheinen wird, habe ich auf Grund der verschiedenen Larvenformen unserer Süßwassermilben dargelegt, daß diese Milbengruppe in drei Abtheilungen zu zerlegen ist, von denen die erste die Gattung *Hydrachna*, die zweite die Mehrzahl aller Süßwassermilben und die dritte die Gattungen *Diplodontus*, *Hydrodroma* und *Eylaïs*, wahrscheinlich auch *Limnochares*, umfaßt. Die letztere Abtheilung weist die größte Verwandtschaft mit den Trombididen auf und sondert sich wieder in zwei Unterabtheilungen, indem *Eylaïs* eine besondere Stellung einnimmt.

Hieraus ergibt sich nach meinem Dafürhalten, daß das neueste Acaridensystem, wie es Prof. G. Canestrini in seinem *Abbozzo del sistema acarologico*, Venezia 1891, gegeben hat, in Bezug auf die darin aufgestellte Ordnung der Hydracarina, welche der Ordnung der Prostigmata coordiniert wird, einer Revision bedarf. Indem dort nämlich sämtliche Hydrachnidae in die eine und die Trombididae in die andere Ordnung gestellt werden, wird der durch die Entwicklungsgeschichte begründete natürliche Zusammenhang beider Familien gestört.

Das Resultat meiner hierauf bezüglichen Betrachtungen bestätigt nur um so mehr, was ich bereits in meinem Aufsatz: *Grundzüge zur Systematik der Milben*, Archiv für Naturgeschichte, 43. Jahrg. 1. Bd. 1877, p. 236 u. f. ausgeführt hatte.

Halle a. S., 13. Februar 1892.

4. On the Excretory System of Temnocephala.

By William A. Haswell, Sydney.

eingeg. 13. Februar 1892.

When I published a few years ago an account of *Temnocephala*¹, the mode of opening of the excretory system on the exterior by means of two dorsally and anteriorly placed apertures seemed quite exceptional among the Trematodes. It has since, however, been shewn by Braun² that this is not the case — a similar arrangement prevailing also in *Polystomum*, *Diplozoon*, *Octobothrium*, *Sphyranura*, *Axine*,

¹ Quart. Journ. Microsc. Sci. Vol. XXVIII. (1888).

² Zool. Anz. XII. 1889, p. 620, and Bronn's Klassen u. Ordnungen des Tierreichs, Vermes, p. 445.

Microcotyle, *Gyrodactylus*, *Dactylogyrus*, *Pseudocotyle* and *Tristomum*: it may, in fact, be said, as pointed out by Braun, that any other mode of opening is to be looked upon as the exception among the Monogenea. But in several other respects the excretory system of *Temnocephala* presents features which have not been detected, if they occur, in other Platyelminthes.

Each of the two excretory openings leads into a thick-walled, contractile terminal sac of a pyriform shape with a curved apex. A layer of muscular fibres encloses the sac, but the greater part of the thickness of its wall is composed of a thick layer of finely fibrillated protoplasm. In this there are no nuclei as far as the dilated body of the sac is concerned; but in the wall of the curved narrow portion, where it merges into the main canal there are two large nuclei at some little distance from one another: These two nuclei were formerly supposed by me to be the nuclei of nerve-cells closely applied to the terminal vesicle; but a careful re-examination of series of sections has shewn this to be an error: the nuclei are of exactly the same character as the nuclei of the excretory cells to be presently described³. The terminal sac is in reality a perforated cell with its nucleus situated in its narrower posterior portion. The second nucleus is the nucleus of a narrow perforated cell the lumen of which is the cavity of the posterior part of the terminal sac and its continuation into the principal vessel. At various other points in the course of the main vessels there are nuclei of similar character; but these are very few, there being not more than twenty of these nuclei altogether.

The main excretory canals are thus intracellular, as well as the terminal vesicles — the walls of the entire system, so far as the larger trunks are concerned, being composed of a very limited number of very greatly produced and sometimes branched cells.

These main branches give origin to a system of canalicules or capillaries of small calibre and thin walls, and »Wimperflammen« are to be detected at various parts of the body, though always very few in number: but the precise relation between these has not been determined.

From each main trunk, not far from its origin, there is given off a branch which has a very remarkable destination. It quickly divides to form a number of vessels which enter the wall of the terminal vesicle and ramify through its substance, giving rise to a complicated

³ Wright and Macallum in their account of *Sphyrnura Osteri* (Journal of Morphology. Vol. I. p. 20) describe ganglioncells as applied to the excretory vesicles in that Trematode. It appears to me not improbable that they have here fallen into the same error as myself.

system of exceedingly fine capillary channels. In the course of these capillaries and in slight terminal dilatations of side branches there are numerous »Wimperflammen«. As the terminal vesicle is, as we have seen, formed of a single very large perforated cell, we have thus this remarkable result, that in the substance of this cell, in addition to the cavity of the vesicle, there is also a richly ramifying system of capillaries containing a number of »Wimperflammen«.

Some of the branches of the system terminate by entering the substance of certain very large cells — the excretory cells which are scattered throughout the body. As the vessel enters the cell it loses its proper wall and breaks up at once into a number of capillary channels which ramify richly throughout the protoplasm in all directions. A somewhat similar series of cells were described by Wright and Macallum as occurring in *Sphyranura Osleri*; but in that Trematode the excretory vessel does not branch within the cell, but ends in a rounded space. The arrangement which characterises *Temnocephala* is paralleled by the case of certain of the unicellular glands of the same animal, in which a breaking up of the duct into a number of channels within the protoplasm is distinctly traceable in sections of specimens fixed with Flemming's solution.

January 4th 1892.

5. Beitrag zur Hydrachnidenkunde.

(Vorläufige Mittheilung.)

Von Richard Piersig, Leipzig.

eingeg. 13. Februar 1892.

Seit einigen Jahren mit der Feststellung der Hydrachnidenfauna Sachsens beschäftigt, ist mir im Laufe meiner Studien manches Neue und Interessante zur Beobachtung gekommen. Es bildet den Inhalt nachfolgender Zeilen.

Im Juli vorigen Jahres fand ich eine neue Species der artenreichen Gattung *Arenurus*. Es gelang mir nur zwei männliche Exemplare davon zu fangen. Dieser Umstand verbunden mit den zahlreichen Nachforschungen, die ich in den letzten Sommerhalbjahren angestellt habe, lassen auf die große Seltenheit obenerwähnter Milbe schließen.

Die neue Art gehört zu den kleinsten ihrer Gattung. Die Gesamtlänge beträgt ca. 0,6—0,7 mm, die Breite 0,51—0,52 mm. Der Leib ist stark gepanzert und bläulich gefärbt. Auf dem Rücken finden sich kaffeebraune Stirn- und Seitenflecken. Der Rückenbogen umschließt die letzten zwei Drittel des Körpers. Die Dorsaldrüse tritt

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Zeitschrift/Journal: [Zoologischer Anzeiger](#)

Jahr/Year: 1892

Band/Volume: [15](#)

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Artikel/Article: [4. On the Excretory System of Temnocephala 149-151](#)