

Miscellanea : Some observations on the taxonomy of Dictyocaulids

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Some Observations on the Taxonomy of Dictyocaulids.

By M. M. SARWAR,

College of Animal Husbandry, Lahore.

Taxonomic Position of Dictyocaulidae.

SKRJABIN & YERSHOV (1933) separated the genus *Dictyocaulus* from *Metastrongyloidea* and created a subfamily *Dictyocaulinae* to accommodate it, on account of the developed dorsal rays in the species of the genus. SKRJABIN (1941), further, created the family *Dictyocaulidae* and transferred it to *Trichostrongyloidea* because of its direct mode of development.

DOUGHERTY (1945) and then (1949 b) in a forceful dissertation stressed the fundamental nature of the criteria of female reproductive character for adopting it as a basis for classifying lungworms and strongly criticised some earlier workers, such as RAILLIET & HENRY (1912), for having disregarded it. DOUGHERTY (1949 a), as a result of these observations, transferred the lungworm genera with species having equatorial position of the vulva and amphidelphic character of the ovejectors to the family *Trichostrongylidae*. Later, DOUGHERTY (1951) withdrew this proposition which he had advanced on insufficient information of the structure of ovejectors in *trichostrongylids* and accepted GERICHTER's (1949) views that the genera classed as "trichostrongylid" by DOUGHERTY should revert to *Metastrongylidae*, except, *Dictyocaulus* on which both DOUGHERTY and GERICHTER remained undecided.

Discussion.

A review of the morphological characters of the genus *Dictyocaulus* would show that the genus bears definite alignments with *metastrongylids* and not so with the *trichostrongylids*. The character of caudal extremity in the genus *Dictyocaulus* is in line with the other *metastrongylids*. The caudal extremity in *metastrongylids* forms an angle of varying degrees with the rest of the body. The copulatory bursa is composed of rays which have cylindroid shapes, unlike the tapering rays in *trichostrongylids*. The partial or complete fusion of postero- and medio-lateral rays (fig. 1) is a characteristic of *metastrongylids*. The ventral set of rays are widely separated from the laterals. These common characters provide definite indication of the alignment of *Dictyocaulus* with *metastrongylids*.

Taxonomic Position of the Genus Dictyocaulus.

The genus *Bronchonema* Mönnig, 1932, was not held valid by DOUGHERTY (1946) but it has been upheld by SKRJABIN et al. (1952). MÖNNIG's main grounds for the creation of the genus *Bronchonema* related to the structure of the head end, the horizontal views of which (fig. 1 & 2, 1932) show only two lips. GERICHTER's (1951) *en face* view of *D. filaria* shows an oval oral opening with the ventral rim thicker than the dorsal one. The slight depressions on both lateral sides of the perioral surface form dorsal and ventral lips. This position conforms with that of *Bronchonema magna* in there being only two lips. In other respects, such as copulatory bursa, structure of vagina and the morphology of first stage larva, *Bronchonema magna* bears very close resemblance to *Dictyocaulus filaria*. The spicules in *D. filaria* and *B. magna* are thick, dark brown and already conspicuous in the living worm. All these characters suggest

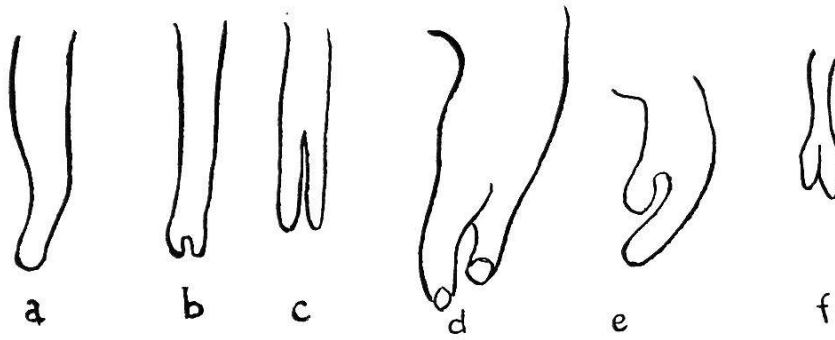


Fig. 1

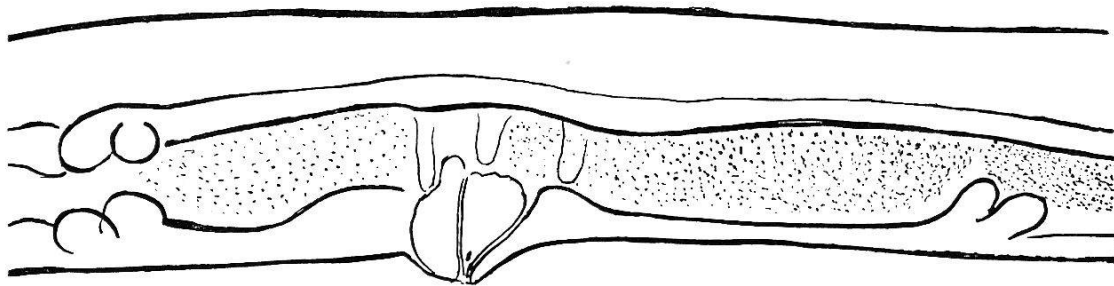


Fig. 2

Fig. 1. Postero- and medio-lateral rays of copulatory bursa. a) *Micrurocaulus viviparus*, b) *Dictyocaulus filaria*, c) *Arnfieldia arnfieldi*, d) *Protostrongylus* sp., e) *Vastrestrongylus pneumonicus*, f) *Pneumostrogylus ovis*.

Fig. 2. Ovejectors in a female recovered from the lungs after 22 days of infection.

that *B. magna* is taxonomically closer to *D. filaria* than *D. filaria* is to *D. viviparus* and there are no grounds for upholding the genus *Bronchonema*.

The differential key proposed by DOUGHERTY (1949 a) for the genus *Dictyocaulus* "Dorsal ray divided into two independent stalks" relates to the type species *D. filaria* but not *D. arnfieldi* in which the dorsal ray has a common proximal trunk.

The species described under the genus show grouping on the following lines:

A 1. Double dorsal rays having tridigitate terminations; postero- and medio-laterals fused except at their distal extremities; first stage larva having a knob like thickening anteriorly and a blunt slightly thickened distal extremity.

Subgenus *Dictyocaulus*, species *filaria*, *magna*.

2. Double dorsal rays having tridigitate terminations; postero- and medio-laterals completely fused; first stage larva pointed at the distal extremity.

Subgenus *Micrurocaulus* Skrjabin, 1934, species *viviparus*, *cameli*, *eckerti*.

B. Dorsal ray single with a proximal stem and two branches, each branch showing bidigitate endings; postero- and medio-laterals fused in their proximal and separate in their distal half; first stage larva having a slender transparent appendage at the caudal extremity.

Arnfieldia n. gen., species *arnfieldi*.

It is proposed to raise the status of the subgenus *Micrurocaulus* to a full genus.

The definition of the subfamily Dictyocaulinae should be the same as for the genus *Dictyocaulus sensu lato*. The definitions for the genera *Dictyocaulus*, *Micrurocaulus* and *Arnfieldia* n. gen. are stated in the differential key.

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Beitrag zur Rotatorienfauna Gambiens

Von BRUNO BĚRZINŠ.

Fischereiversuchsanstalt Aneboda, Ugglehult, Schweden.

Vom eingesammelten Material der schwedischen Gambienexpedition im Jahre 1950 übergab mir phil. Lic. B. AFZELIUS 12 Proben aus den Reisfeldern bei Bansang und Georgetown sowie einige aus Aquariumschlamm entnommene Proben.

Die Proben:

1. Bansang	27. 8.	Aquariumschlamm
2. Bansang	28. 8.	Plankton aus einem Reisfeld
3. Bansang	28. 8.	Plankton aus einem Reisfeld
4. Bansang	28. 8.	Zooplankton aus einem Reisfeld