Annals of Parasitology 2023, 69, Supplement 1, s29

X[th] International Workshop on Cestode Systematics and Phylogeny, 4–10 August 2023, Warsaw, Poland

Bothridial pits and tegumental grooves: Organ morphology differentiates the Paranybeliniidae Dollfus, 1969 from the Otobothriidae

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Trypanorhynch cestodes are characterized by a unique scolex morphology, including an attachment apparatus with four tentacles equipped with hooks, and the presence of two or four bothria. Trypanorhynch systematics has developed in recent years, under consideration of a variety of different scolex and strobila characters but also of molecular analyses of the 18 and 28 ssr DNA. Since presentation of an alternative classification of the Trypanorhyncha by Palm (1997), one special morphological character to be considered was the so-called ciliated pit, a special organ on the bothrial borders that was used for the taxonomic placement of the Otobothriidae Dollfus, 1942 and the Paranybeliniidae Schmidt, 1970. Palm (2008) renamed these stuctures in the Paranybeliniidae as tegumantal grooves, different to the ciliated pits in the Otobothriidae. However, the lack of new material so far limited better interpretation of further details these structures. The spiral valve of two specimens of Mobula thurstoni (Lloyd, 1908) obtained from fishermen of Karangan Asam, West Bali, Indonesia, were studied for trypanorhynch cestodes, and revealed the presence of adult Paranybelinia otobothrioides Dollfus, 1966 and a second species of this genus new to science. The scolex morphology and surface ultrastructure of both species is described, including the structure of the tegumental grooves and the microtriches morphology. Implications for the classification of the Trypanorhyncha are discussed.