A new species of an interesting amphistome *Pseudodiplodiscoides* Murty, 1970 in *Bellamya bengalensis* Lamarck, 1882 from water bodies near district Barabanki, U.P.

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Abstract A new species of an interesting trematode genus *Pseudodiplodiscoides* (Murty, Zool Anz 185: 312–317, 1970), is described from the gut of the snail *Bellamya bengalensis* Lamarck, 1882, collected from the fresh water bodies near district Barabanki, U.P. After careful examination of several freshly collected specimens, the genus is validated and another species described under the genus *Diplodiscus* viz., *D. minutus* (Saksena et al., Indian J Helminthol 4:37–54, 1987) from *Indoplanorbis exustus* Deshayes has also been transferred to the genus *Pseudodiplodiscoides* as *P. minutus* (1987). The new species is characterised by the shape and size of non operculated eggs, extension of vitellaria and position of genital pore.

Keywords Amphistome trematode · *Bellamya bengalensis* · *Pseudodiplodiscoides*

Introduction

There are several records of adult amphistomes in molluscs from India by Anjaneyulu (1967), Murty (1970, 1973), Pandey (1973) and Saksena et al. (1987) and abroad by Honer (1960, 1961). Murty (1970) established the genus *Pseudodiplodiscoides* Murty (1970) for the worms collected from *Pila globosa* Swainson at Waltair. In the present communication, we are dealing with an unknown species of the genus *Pseudodiplodiscoides* Murty (1970),

from the gut of a gastropod *Bellamya bengalensis* Lamarck, 1882, procured from ponds near district Barabanki. In all, 200 snails were examined, of which 17 were found infected.

Materials and methods

Snails were collected from different water bodies, near district Barabanki and its adjoining areas. They were brought to the laboratory in small earthen pots, maintained in small beakers and fed with Lettuce leaves. They were dissected at convenience and worms thus collected were studied live and subsequently preserved, by gently pressing with the help of a cover slip on slide, fixed over night in 70 % alcohol, stained with Aceto-alum Carmine, dehydrated in grades of alcohol, cleared in Xylol and mounted in Canada Balsam. Figures were drawn with the help of drawing tube attached to Phase Contrast microscope (Olympus CX-41). Type and Paratypes are deposited in the Helminthological collection of Zoological Survey of India, Kolkata.

Description

Pseudodiplodiscoides murtyi n.sp (Figs. 1, 2 and 3)

Aspinose body (Figs. 1 and 2) is elongated, with rounded ends, 1150–2640 × 310–690 µm. Oral sucker is sub-terminal, circular, 120–190 × 130–230 µm. Oral diverticula are absent. Acetabulum is oval, situated at posterior end, larger than oral sucker, 290–450 × 250–460 µm. Central sucker inside acetabulum is absent. Black cercarial eye spots have been observed in some specimens, close to oral sucker. Prepharynx and pharynx are absent. Oesophagus is long,

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Figs. 1–3

Pseudodiplodiscoides murtyi
n.sp. 1. Immature worm, 2.
 Mature worm, 3. Excretory
 system

60–230 × 30–90 µm and bulbous posteriorly due to presence of oesophageal bulb of 100–170 × 70–100 µm. Oesophagus is surrounded by small and rounded oesophageal glands. Intestinal bifurcation is at a distance of 490–510 µm from the distance of anterior end. Intestinal caeca are wide, with somewhat irregular outer margins and extend up to ventral sucker. Single testis is round, post equatorial, 40–150 × 40–160 µm, lying in middle of body between intestinal caeca. Vas deference runs anteriorly to form vesicula seminalis externa. Cirrus sac is oval, situated just posterior to intestinal bifurcation, encloses vesicula seminalis interna, pars prostatica and ejaculatory duct. Ovary oval, 30–80 × 20–70 µm, located anterior to acetabulum. Laurer's canal present. Ootype well developed, close to ovary. Uterine coil quite distinct, runs anteriorly in intercaecal field, up to level of intestinal bifurcation, forming a muscular metraterm, opening into genital atrium. Genital pore is located at level of intestinal bifurcation and is without a sucker. In three specimens (Fig. 1), only two eggs could be observed inside the uterus. Eggs elongate-oval, non-operculated, 80–140 × 90–150 µm. Vitelline follicles granular, extra-caecal and distributed from intestinal bifurcation to hind end of caeca. Vitelline reservoir opens at ootype, situated above ovary. Excretory bladder (Fig. 3) oval, located just anterior to acetabulum and opens outside by excretory pore. Excretory canals arise from excretory bladder, one on each lateral side, runs antero-laterally

in a winding manner, to the level of posterior border of oral sucker, forming several loops on its way, a distinct loop near oral sucker, turns downwardly towards acetabulum. It is gorged with black excretory material.

Discussion

Murty (1970) established the genus *Pseudodiplodiscoides* with *P. pilai* as its type species, found in the stomach and intestine of *P. globosa* (Swainson), collected from Kolleru lake (Andhra Pradesh) and experimentally traced its life cycle. The genus is characterised by rudimentary oral diverticula, embedded in oral sucker, well developed sphincter at oesophagus–oral sucker junction, presence of oesophageal bulb, absence of central sucker in acetabulum and genital sucker. Excretory system is not studied in detail. Jones (2005), have considered *Pseudodiplodiscoides* a synonym of *Diplodiscus*. In our opinion, the two genera are clearly distinct. Apart from generic characters, given by Murty (1970), the pattern of excretory system is significantly different in two genera (excretory canals are in a winding manner in *Pseudodiplodiscoides* while in *Diplodiscus* it is not). However, the presence of rudimentary oral diverticula, embedded in oral sucker, can be explained by the fact that the loop of excretory ducts close

to the oral sucker sometimes appear as pouches. Further, Saksena et al. (1987) described a new species of the genus *Diplodiscus* viz., *D. minutus*, from the intestine of another gastropod *Indoplanorbis exustus* Desh. at Rewa (M.P). We hereby consider *D. minutus* a species of *Pseudodiplodiscoides* as it lacks very well developed oral pouches in the oral sucker, a central accessory sucker in the acetabulum. The pattern of the excretory system fits into that of *Pseudodiplodiscoides* and therefore a new combination is given as *P. minutus* (Saksena et al. 1987) n.comb. Thus, the genus *Pseudodiplodiscoides* has so far two species in India viz., *P. pilai* and *P. minutus*. The species under present study chiefly differs from both the known species in absence of oral diverticula and position of genital pore (In *P. pilai* and *P. minutus* oral diverticula are present and the genital pore is post-bifurcal in *P. pilai* and pre-bifurcal in *P. minutus*) and therefore we consider it a new species *P. murtyi* is named in honour of late Prof. A. S. Murty, who established this genus. It is worthwhile to mention here that during life cycle studies of *Diplodiscus amphichrus* Tubangui, 1933 by Pandey et al. (1983), it was observed that their cercariae encysted on skin castings of *Rana cyanophlyctis* (Schneider) to become infective to amphibian host. They failed to encyst on *Hydrilla*, *Vallisneria* plants, and various insect larvae etc. Unfortunately, in spite of our best efforts, we are not able to get larval stages of the present worm. Murty (1973) has mentioned that the snails become infected by feeding on leaves having metacercarial cysts of *Pseudodiplodiscoides* sp.

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