

***Trinibaculum rotundus* n.sp. (Monogenea, Ancyrocephalinae), a parasite of *Schizodon borellii* (Characiformes, Anostomidae) from the upper Paraná River floodplain, Brazil**

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Summary

A new species of dactylogyrid monogenean, *Trinibaculum rotundus* n.sp. is described and illustrated from the gills of freshwater fish *Schizodon borellii* (Boulenger, 1900) from the upper Paraná River floodplain, Brazil. *Trinibaculum rotundus* n.sp. has vagina dextrolateral slightly sclerotised ending at level of seminal receptacle; copulatory organ coiled with 1.5 clockwise rings; accessory piece not articulated; body disk-shape with absence of haptor peduncle and three bars (one ventral bar and two dorsal bars).

Keywords: Dactylogyridae; ectoparasite; fish; piava; floodplain

Introduction

The freshwater fish *Schizodon borellii* (Boulenger, 1900) (Characiformes) is popularly known as piava (Graça & Pavanelli, 2007), which area of distribution comprises the Paraná-Paraguay Basin, in South America (Garavello & Britski, 2003).

Trinibaculum was proposed by Kritsky, Thatcher & Kayton (1980), for parasites from the gills of the Characidae fish *Brycon melanopterus* (Cope) collected in the Municipality of Manaus, State of Amazonas, Brazil. This genus differs from all other Ancyrocephalinae by possessing two widely separated simple dorsal bars, a dextroventral vagina, confluent intestinal crura and intercecal gonads. Until now a single species belonging to this genus was described, *Trinibaculum brasiliensis*. (Kritsky, Thatcher & Kayton, 1980).

A new species of *Trinibaculum* was found on the gills of *Schizodon borellii* from the upper Paraná River floodplain, Brazil.

Materials and methods

Sixteen specimens of *Schizodon borellii* were collected from September 2006 to September 2007 with gill nets in the upper Paraná River floodplain (22°50' – 22°70'S and 53°15' – 53°40'W), South Brazil. Monogenean were removed from the gills under stereo-microscope, killed in a 1:4000 formalin solution and preserved in 5% formalin. Some specimens were mounted unstained in Hoyer's medium to study sclerotized structures. Other specimens, stained with Gomori's trichrome, were used to visualize internal organs (see Eiras *et al.*, 2006). Measurements are in micrometres, with means followed by the range and number (n) of specimens measured in parentheses. Illustrations were prepared with aid of a drawing tube and a Nikon YS 2 microscope. Ecological terminology is based on Bush *et al.* (1997). Numbering (distribution) of haptor hook pairs follows Mizelle (1936) and the description of coiled tube of male copulatory organ follows Kritsky *et al.* (1985). Type specimens were deposited in the Instituto Oswaldo Cruz Collection (CHIOC), Rio de Janeiro, Brazil.

Results

Dactylogyridae Bychowsky, 1933
Ancyrocephalinae Bychowsky, 1937
Trinibaculum Kritsky, Thatcher & Kayton, 1980

Trinibaculum rotundus n.sp. (Fig. 1 – 8)
Type-host: *Schizodon borellii* (Boulenger, 1900) Characiformes
Site: gill filaments

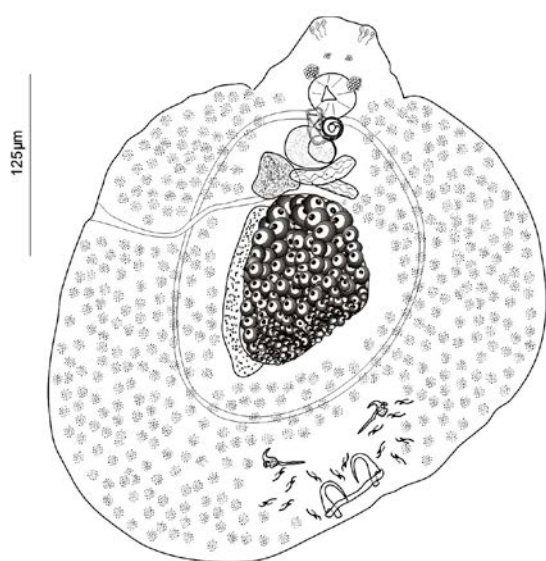


Fig. 1. *Trinibaculum rotundus* sp. nov. from *Schizodon borellii*.
Composite drawing of whole-mount (ventral view).
Scale bar: 125 µm.

Type-locality: upper Paraná River floodplain; Brazil (22°50' – 22°70'S and 53°15' – 53°40'W)

Specimens deposited: Holotype, CHIOC 37529a; four paratypes, CHIOC 37529b, 37529c, 37529d, 37529e.

Prevalence: 6.25 % (examined 16, infested 1)

Mean Intensity: 17 parasites per host

Specimens studied: 16 specimens in Hoyer's medium and 1 stained with Gomori's trichrome.

Etymology: the specific name refers to the disc-shaped body of the parasite

Description: (based on 17 specimens): Body disc-shaped, 585 (500 – 960, $n = 9$) long, greatest width 593 (450 – 880, $n = 9$). Cephalic lobes scarcely developed; cephalic glands poorly developed, lying in three bilateral groups dorsal-posteriorly to pharynx. Members of anterior pair of eyes smaller, usually closer together than members of posterior pair. Few accessory granules dispersed in anterior body. Pharynx spherical, 41 (31 – 58, $n = 5$) in diameter. Peduncle absent. Ventral anchor, with developed deep and superficial roots, straight shaft and well-recurved point 18 (15 – 22, $n = 6$) long, 13 (10 – 21, $n = 6$) wide; dorsal anchor

with elongated deep root and extended superficial root, 22 (19 – 24, $n = 4$) long, 7.1 (6.8 – 7.8, $n = 6$) wide. Ventral bar 45 (39 – 53, $n = 6$) long, rod-shape and two widely separate simple dorsal bars 25 (21 – 44, $n = 8$) long. Hooks similar, 13.5 (12.7 – 13.7, $n = 8$) long, each with straight thumb, curved shank, short point, FH loop about $\frac{1}{2}$ shank length. Male copulatory organ sclerotised, a coiled tube with 1.5 clockwise rings, ring 19 (17 – 20, $n = 9$) in diameter. Accessory piece not articulated to male copulatory organ base. Testis dorsal to ovary, oval; vas deferens obscured; sinuous seminal vesicle; prostatic reservoir circular. Ovary rounded; vaginal dextrolateral, duct slightly sclerotised, ending in the central seminal receptacle. Vitelline follicles throughout trunk, but absent in regions of gonads and copulatory complex. Uterus not observed. Egg without filament 83 (68 – 91; $n = 3$) in diameter.

Discussion

Trinibaculum rotundus n.sp. can be defined by a combination of characters: 1) vagina dextrolateral slightly sclerotised ending at level of seminal receptacle; 2) copulatory organ coiled with 1.5 clockwise rings; 3) accessory piece not articulated; 4) body disk-shape with absence of haptor peduncle; 5) three bars (one ventral bar and two dorsal bars). The new species is close to *Apedunculata* Cuglianna, Cordeiro & Luque, 2009 by the presence of vagina dextrolateral, duct slightly sclerotised, opening into central seminal receptacle; accessory piece not articulated and body disk-shape with absence of haptor peduncle, nevertheless, the new species can be separated from *Apedunculata* by the presence of three bars, number of rings of the copulatory organ (two rings in *Apedunculata*) and difference morphology of anchors (Cuglianna, Cordeiro & Luque, 2009).

Neomurraytrema, Tripathi, 1959 is another dactylogyrid genus close to *Trinibaculum* but can be easily separated from the new species by lacking accessory anchor sclerites on the ventral anchors (Kritsky, Thatcher & Kayton, 1980). At the moment the genus *Trinibaculum* comprised only one species, *Trinibaculum braziliensis* that differs from new species by having body robust, subtriangular; peduncle short, haptor trapezoidal; ventral bar broadly V shaped; dorsal anchor with spine-shaped deep root; copulatory

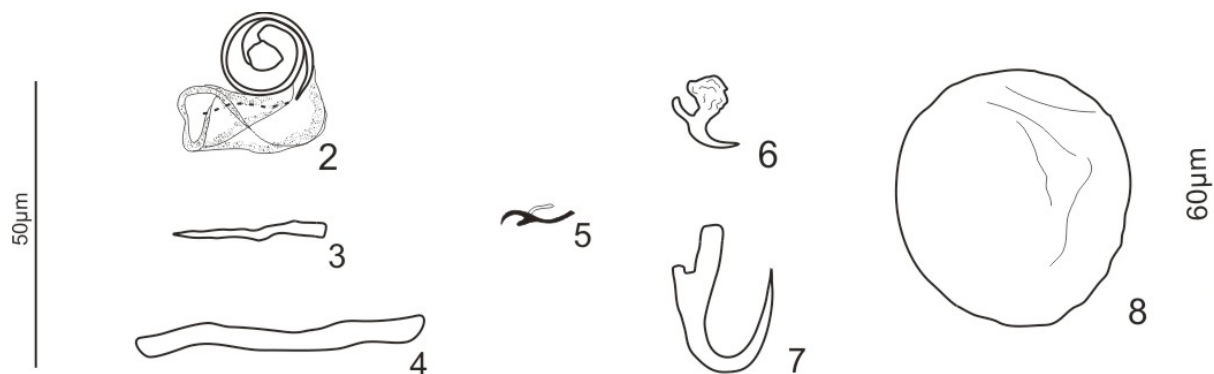


Fig. 2. – 8. *Trinibaculum rotundus* sp. nov. from *Schizodon borellii*. 2 - copulatory complex, 3 - dorsal bar; 4 - ventral bar; 5 - hook; 6 - dorsal anchor; 7 - ventral anchor; Scale-bar: 50 µm; 8.egg. Scale-bar: 60 µm.

complex with cirrus a simple tube and vagina dextroventral (Kritsky, Thatcher & Kayton, 1980).

This is the first record of *Trinibaculum* to the floodplain of the upper Paraná River, Brazil.

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