

## HELMINTHS PARASITES OF FRESHWATER FISHES FROM PIRASSUNUNGA, SP, BRAZIL

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*Twelve species of parasitic helminths, seven trematodes, four nematodes and one acanthocephalan are reported from various hosts. Creptotrema lynchi, a parasite from Bufo marinus in Colombia, is described for the first time in fish and from Brazil, parasitizing two different species. A list of the host species, measurements and figures of most parasites are included with particular reference to the tegument of Bellumcorpus major recovered from a new host. The genus Zonocotyloides Padilha, 1978 is considered a synonym of Zonocotyle and the new combination: Zonocotyle haroltravassosi is proposed to the species Zonocotyloides haroltravassosi Padilha, 1978. The nematodes Cucullanus pinnai and Procamallanus (Spirocamallanus) inopinatus and the trematode Pararhipidocotyle jeffersoni are reported in new hosts. The description of the acanthocephalan Neoechinorhynchus curemai (new locality record) is supplemented. Other parasites recovered include the nematodes Travnema travnema (new locality record), Rondonia rondoni and the digenetic trematodes Cladocystis intestinalis, Pseudosellacotylya lutzi (new locality record), Teratotrema sp. and Zonocotyle bicaecata.*

In March 1983 the authors spent one week examining fishes at the Latin American Regional Centre for Aquaculture (CERLA), Pirassununga, Brazil. Studies on helminth parasites of fishes had been realized in this Centre in 1927, 1946, 1947 and 1962 by Travassos and collaborators.

In the present paper the results obtained in 1983 are presented. A comparative study of the parasitism in the last 56 years will be done in a subsequent paper.

### MATERIAL AND METHODS

Ninety five fishes were examined for helminths parasites: 75 specimens of 14 species from Mogi-Guassu river and 20 specimens of 7 species raised in ponds.

The fishes were collected alive and carried in large containers to the laboratory in the "CERLA" where they were maintained alive until examined.

Examinations of fishes were made with the use of a stereoscopic microscope. The parasites recovered were heat or cold killed and preserved in a mixture of alcohol-formalin-acetic acid. Specimens for whole mounts were stained with alcoholic-acid carmine, dehydrated in ethyl alcohol, cleared in Faya's creosote and mounted in Canada balsam. Figures are original and were drawn with the aid of a drawing tube. Specimens are deposited in the Helminthological Collection of the "Instituto Oswaldo Cruz (Rio de Janeiro)".

### RESULTS AND DISCUSSION

From 95 fishes examined, belonging to 21 different species, 80 specimens (84.2%) were parasitized by one or more species of helminths: 60 (63.1%) by Monogenea, 35 (36.8%) by Nematoda, 21 (22.1%) by Digenea, 7 (7.37%) by the same species of Acanthocephala and 5 specimens (5.26%) by larval cestodes.

The higher prevalence of parasitism was represented by the monogeneans; from the 21 species of fishes examined, 17 were infected by Dactylogyroidea species which will be studied apart.

**Host-parasite list**

A listing of the 21 species of fishes examined is given, followed by the family to which they belong and the common name. Numbers after host species indicate number of fish infected/number examined. Number in brackets after parasite species indicate number of fish in which the parasite was found. The fishes marked with an asterisk (\*) were collected from the ponds of the "CERLA" and the others were from Mogi-Guassu river.

- Acestrorhynchus falcatus* (Bloch, 1794), Characidae, peixe-cachorro, 2/2.  
 Nematoda: Nematoda sp. (2).  
 Digenea: *Bellumcorpus major* (1).  
 Monogenea: Dactylogyroidea sp. (1).
- \**Astronotus ocellatus* (Cuvier, 1829), Cichlidae, apaiari, 2/2.  
 Nematoda: *Procamallanus (Spirocamallanus) inopinatus* (1).  
 Monogenea: Dactylogyroidea sp. (1).
- Astyanax bimaculatus schubarti* Britski, 1964, Characidae, lambari do rabo amarelo, 3/3.  
 Nematoda: *Procamallanus (Spirocamallanus) inopinatus* (2).  
 Monogenea: Dactylogyroidea sp. (3).
- Astyanax fasciatus fasciatus* (Cuvier, 1819), Characidae, lambari do rabo vermelho, 1/1.  
 Nematoda: *Procamallanus (Spirocamallanus) inopinatus* (1).  
 Monogenea: Dactylogyroidea sp. (1).
- \**Colossoma macropomum* (Cuvier, 1818), Characidae, tambaqui, 2/3.  
 Cestoda: larval forms (2).
- \**Colossoma mitrei* (Berg, 1895), Characidae, pacu, 4/4.  
 Nematoda: *Rondonia rondoni* (2).  
 Monogenea: Dactylotyroidea sp. (4).
- Cynopotamus humeralis* Cuvier & Valenciennes, 1849, Characidae, peixe-cadela, 1/3.  
 Nematoda: *Procamallanus (Spirocamallanus) inopinatus* (1).
- \**Cyprinus carpio carpio* Linnaeus, 1758, Cyprinidae, carpa, 5/5.  
 Monogenea: Dactylogyroidea sp. (5).
- \**Hoplias malabaricus malabaricus* (Bloch, 1794), Erythrinidae, traira, 1/2.  
 Nematoda: Nematoda sp. (larval) (1).  
 Digenea: *Pseudosellacotyla lutzi* (1).  
 Monogenea: Dactylogyroidea sp. (1).
- Iheringichthys labrosus* (Kröyer, 1874), Pimelodidae, mandi branco, 1/1.  
 Monogenea: Dactylogyroidea sp. (1).
- Leporinus copelandii* Steindachner, 1875, Anostomidae, piava (= piaba), 13/13.  
 Nematoda: *Cucullanus pinnai* (1).  
                   *Procamallanus (Spirocamallanus) inopinatus* (9).  
                   Nematoda sp. (larval) (3).  
 Digenea: *Creptotrema lynchi* (1).  
                   Strigeidae sp. (larval) (2)  
 Monogenea: Dactylogyroidea sp. (10).
- Leporinus octofasciatus* Steindachner, 1915, Anostomidae, piavassu, 2/2.  
 Nematoda: Nematoda sp. (larval) (1).  
 Digenea: *Creptotrema lynchi* (1).  
                   Strigeidae sp. (larval) (1).  
 Monogenea: Dactylogyroidea sp. (2).
- Parodon tortuosus tortuosus* Eigenmann & Norris, 1900, Parodontidae, canivete, 1/2.  
 Monogenea: Dactylogyroidea sp. (1).
- Pimelodus clarias* (Linnaeus, 1758), Pimelodidae, mandi amarelo, 6/6.  
 Nematoda: *Cucullanus pinnai* (3).  
 Monogenea: Dactylogyroidea sp. (3).  
 Cestoda: Cestoda sp. (larval) (3).
- Plecostomus* sp., Loricariidae, cascudo, 0/1.

\**Prochilodus brama* Valenciennes, 1849, Prochilodontidae, jaraqui, 0/1.

*Prochilodus scrofa* Steindachner, 1881, Prochilodontidae, curimbatá, 14/19.

Nematoda: *Procamallanus* sp. (larval) (1).

Nematoda sp. (larval) (1).

Monogenea: Dactylogyroidea sp. (12).

Acanthocephala: *Neoechinorhynchus curemai* (7).

*Pseudocurimata plumbea* (Eigenmann & Eigenmann, 1899), Curimatidae, saguiru de rabo vermelho, 14/14.

Nematoda: *Travnema travnema* (3).

Nematoda sp. (larval) (1).

Digenea: *Teratotrema* sp. (1).

*Zonocotyle bicaecata* (11).

Monogenea: Dactylogyroidea sp. (7).

*Salminus hilarii* Valenciennes, 1849, Characidae, tabarana, 2/2.

Nematoda: *Procamallanus* sp. (larval) (1).

Digenea: *Cladocystis intestinalis* (1).

*Pararhipidocotyle jeffersoni* (1).

Monogenea: Dactylogyroidea sp. (2).

*Schizodon nasutus* Kner, 1859, Anostomidae, taguara, 5/5.

Nematoda: *Procamallanus (Spirocamallanus) inopinatus* (1).

Monogenea: Dactylogyroidea sp. (5).

\**Tilapia rendalli* (Boulenger, 1896), Cichlidae, tilápia, 1/4.

Monogenea: Dactylogyroidea sp. (1).

## Nematoda

*Cucullanus pinnai* Travassos, Artigas & Pereira, 1928 (Cucullanidae)

This nematode had been referred from Pirassununga, parasitizing *Pimelodus clarias*, *Pseudoplatystoma* sp. and *Steindachneridion parahybae* (Travassos & Kohn, 1965). We recovered it from the intestine of *P. clarias* and *Leporinus copelandii* (new host record).

*Procamallanus (Spirocamallanus) inopinatus* Travassos, Artigas & Pereira, 1928  
(Camallanidae)

This is a very common freshwater fish parasite, that was studied with others Brazilian species of the genus by Pinto et al. (1972, 1975, 1976). From 21 different species of fishes examined in this opportunity, six harbour this nematode in the intestine: *Astronotus ocellatus* (new host record), *Astyanax bimaculatus schubarti*; *Astyanax fasciatus fasciatus*; *Cynopotamus humeralis* (new host record); *Leporinus copelandii* and *Schizodon nasutus*.

*Rondonia rondoni* Travassos, 1920 (Atractidae)

Thousands of this nematode had been recovered from the intestine of two out of four *Colossoma mitrei* examined. It was well studied by Costa (1962, 1963) from different regions of Brazil.

*Travnema travnema* Pereira, 1938 (Oxyuridae)

From three *Pseudocurimata plumbea* out of 14 examined, we recovered from the intestine, one to three adult females of *T. travnema*. This nematode was described by Pereira (1938) from the same host species, from Fortaleza, Ceará State, northeast of Brazil. This is the first report of this species in Mogi-Guassu river (southeast).

## Digenea

*Bellumcorpus major* Kohn, 1962 (Bucephalidae)  
(Figs. 1, 3, 4, Table I)

Three adult specimens were recovered from the cavity of one *Acestrorhynchus falcatus* which represents a new host record. They agree with the original description (Kohn, 1962), except



for the presence of a papillose-like tegument (Fig. 4) not seen in the type material, described from *Salminus hilarii*, which was reexamined in this study (Fig. 3).

*Cladocystis intestinalis* Vaz, 1932 (Opisthorchiidae)  
(Fig. 7, Table I)

In 1928 Travassos, Artigas & Pereira identified as *C. trifolium* (Braun, 1990) some trematodes collected from *Salminus maxillosus* from Mogi-Guassu river.

In 1932 Vaz described the new species *C. intestinalis* from the same host from "Tietê" river and considered *C. trifolium* of Travassos et al. its synonym. It was also referred by Travassos & Kohn (1965) from *Salminus hilarii*.

Yamaguti (1971) in the "Synopsis of Digenetic Trematodes of Vertebrates" cited *C. trifolium* as a parasite of *S. maxillosus* and *Ardea cocoi*.

Three adult specimens were recovered from the intestine of *Salminus hilarii* together with one specimen of *Pararhipidocotyle jeffersoni*.

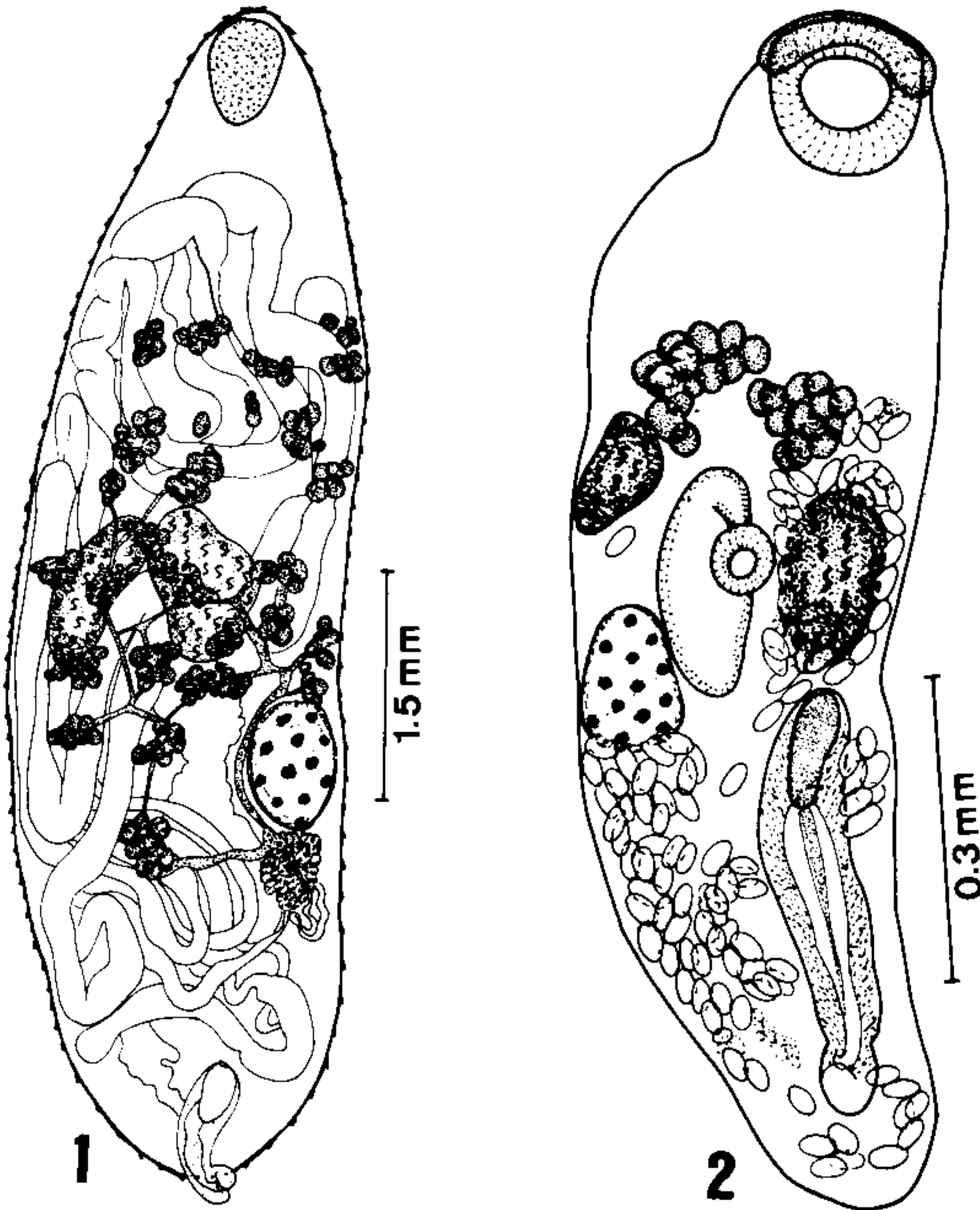


Fig. 1: *Bellumcorpus major*, ventral view (no. 32.153a). Fig. 2: *Pararhipidocotyle jeffersoni*, ventral view (no. 32.150). Original figures.

*Creptotrema lynchi* Brooks, 1976 (Lepocreadiidae)  
(Fig. 5)

This species had been described by Brooks (1976) from *Bufo marinus* in Colombia. We recovered 4 and 16 adult worms respectively from the intestines of *Leporinus copelandii* and *L. octofasciatus*, similar to those described by Brooks. From this same locality (Pirassununga), *Creptotrema creptotrema* from *Leporinus elongatus* (recently redescribed by Kohn, 1984 from the type material) had been described previously (Travassos, Artigas & Pereira, 1928).

We give a brief description of our material, considering that it represents the first occurrence of this species in fish and in Brazil. Description based on 9 specimens; means are given in brackets after the measurement range. Body oval to elongate, 0.98 to 1.59 mm (1.38) long by 0.57 to 0.68 mm (0.60) largest wide. Tegument without spines. Oral sucker subterminal, 0.15 to 0.18 mm (0.16) long by 0.18 to 0.21 mm (0.19) wide, with two small dorsolateral papillae. Acetabulum 0.21 to 0.27 mm (0.24) long by 0.24 to 0.27 mm (0.25) wide, immediately pre-equatorial. Suckers ratio 1:1.33 to 1.46. Pharynx 0.06 to 0.09 mm (0.06) in diameter. Caeca extending near posterior end of body. Genital pore median, ventral to esophageal bifurcation. Cirrus sac 0.24 to 0.37 mm (0.29) long by 0.04 to 0.06 mm (0.05) wide; bipartite vesicle, pars prostatica and eversible cirrus present. Testes elongate, in posterior third of body, symmetrical to slightly oblique; left testis 0.20 to 0.27 mm (0.23) long by 0.10 to 0.17 mm (0.13) wide; right testis 0.21 to 0.35 mm (0.27) long by 0.10 to 0.15 mm (0.13) wide. Ovary pre-testicular, posterior to acetabulum, 0.13 to 0.19 mm (0.18) long by 0.13 to 0.21 mm (0.17) wide. Vitellaria with large follicles extra-caecal extending from the level of pharynx to posterior extremity of body, few intercaecal follicles may be present. Seminal receptacle present, 0.03 to 0.08 mm (0.06) long by 0.03 to 0.10 mm (0.06) wide. Mehlis' gland and Laurer's canal present. Uterus with large eggs measuring 0.064 to 0.079 mm (0.071) long by 0.034 to 0.045 mm (0.039) wide. Excretory pore terminal.

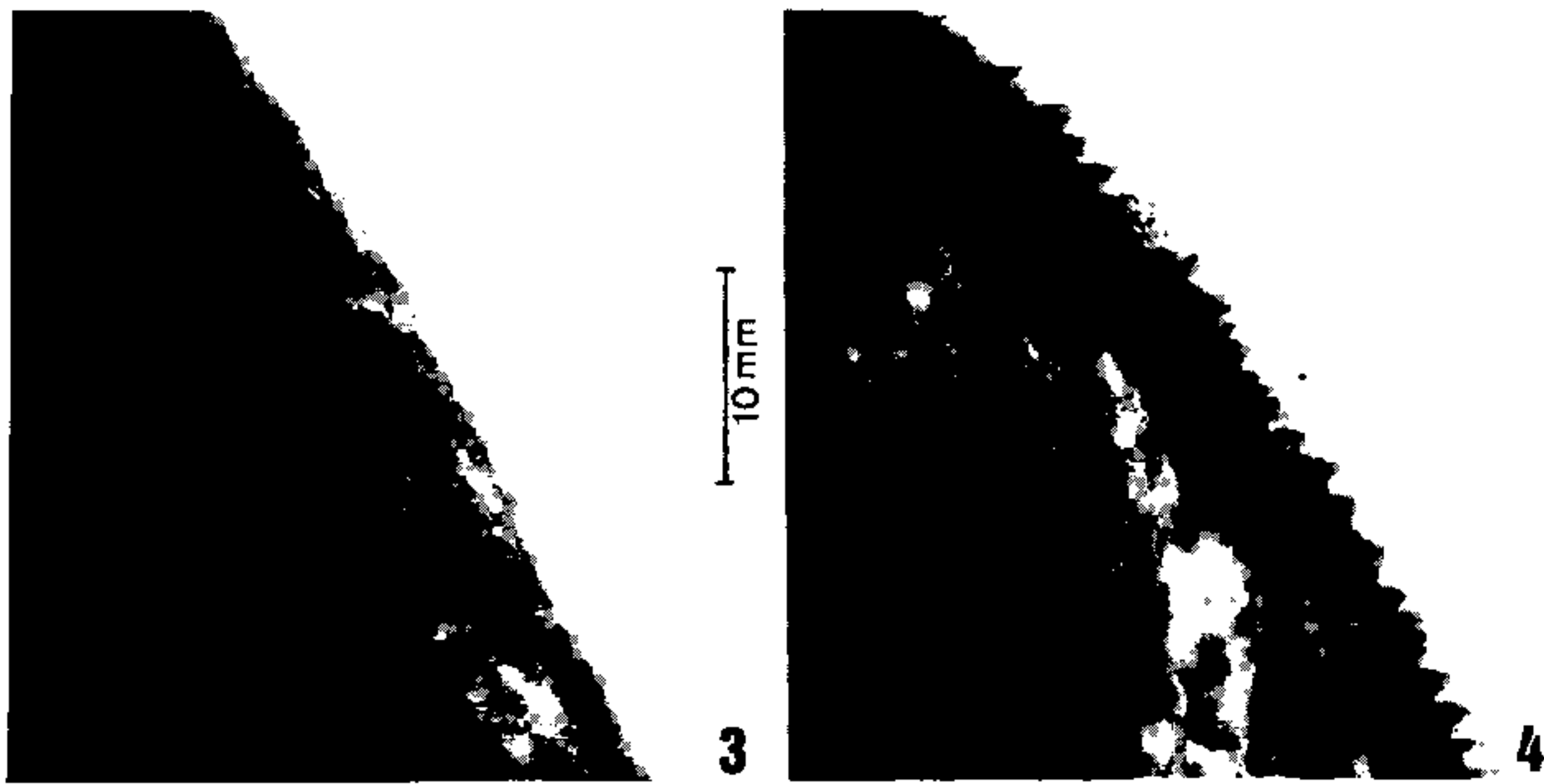


Fig. 3: Papillose like tegument of *B. major* from *A. falcatus* (no. 32.153b). Fig. 4: Smooth tegument of *B. major* from *S. hilarii* (type-specimen no. 28.746a). Original figures.

*Pararhipidocotyle jeffersoni* Kohn, 1970 (Bucephalidae)  
(Fig. 2, Table I)

In the intestine of *Salminus hilarii* we recovered one specimen of this parasite, originally described from *S. maxillosus*. The report of this species in *S. hilarii* represents a new host record.

*Pseudosellacotyla lutzi* (Freitas, 1941) Yamaguti, 1954 (Microphallidae)  
(Fig. 8, Table I)

We recovered more than 250 of this small trematode, from the intestine of one out of two *Hoplias malabaricus malabaricus* examined. It was described by Freitas (1941) from the same host from "Ilha Seca, São Paulo"

*Teratotrema* sp. (Callodistomidae)  
(Fig. 9, Table I)

From the gall bladder of *Pseudocurimata plumbea*, we recovered two immature trematodes that seem to belong to *Teratotrema dubium* Travassos, Artigas & Pereira, 1928, a parasite described from the same host and provenience.

TABLE I

Digenea parasites of freshwater fishes from Pirassurunga, S.P. — Measurements in millimeters.

Species	<i>Bellumcorpus major</i>	<i>Cladocystis intestinalis</i>	<i>Pararhipidocotyle jeffersoni</i>	<i>Pseudosellacotyla lutzi</i>	<i>Teratotrema</i> sp.	<i>Zonocotyle bicaecata</i>
Host	<i>Acestrorhynchus falcatus</i>	<i>Salminus hilarii</i>	<i>Salminus hilarii</i>	<i>Hoplias m. malabaricus</i>	<i>Pseudocurimata plumbea</i>	<i>Pseudocurimata plumbea</i>
Site	Body Cavity	Intestine	Intestine	Intestine	Gall Bladder	Intestine
Length	6.92–7.99	1.34–1.76	1.18	0.51–0.65	1.26–1.38	2.40–4.51
Width	2.07–2.82	0.42–0.53	0.36	0.37–0.48	0.60–0.71	1.24–2.33
Oral Sucker	(rhynchus) 0.71–0.77 x 0.47–0.61	0.086–0.096 x 0.094–0.108	(Anterior Sucker) 0.15 x 0.15	0.075–0.089 x 0.075–0.099	0.15–0.16 x 0.17–0.19	0.32–0.48 x 0.47–0.56
Ventral Sucker	—	0.060–0.071 x 0.064–0.073	—	0.047–0.052 x 0.047–0.052	0.16–0.17 x 0.15–0.17	1.29–2.12 x 1.56–2.48
Sucker Ratio	—	1:0.68–0.73	—	1:0.53–0.65	1:0.97–1	—
Pharynx	0.33 x 0.32–0.34	0.06–0.07 x 0.06	0.07 x 0.06	0.05–0.06 x 0.05–0.06	— —	— —
Cirrus Pouch	0.64–0.88 x 0.25–0.30	x	0.45 x 0.09	(Seminal Vesicle) 0.059–0.160 x 0.040–0.060	—	—
Testes	0.56–0.98 x 0.38–0.63	0.26–0.42 x 0.11–0.19	0.13–0.17 x 0.07–0.09	0.09–0.21 x 0.07–0.14	—	0.093–0.24 x 0.14–0.22
Ovary	0.73–0.82 x 0.49–0.57	0.14–0.18 x 0.16–0.27	0.13 x 0.11	0.067–0.12 x 0.070–0.094	—	0.22–0.36 x 0.26–0.36
Eggs	0.019–0.023 x 0.014	0.030–0.038 x 0.016–0.023	0.033–0.038 x 0.016–0.021	0.033–0.038 x 0.016–0.019	—	0.071–0.112 x 0.056–0.075

*Zonocotyle bicaecata* Travassos, 1948 (Zonocotylidae)  
(Fig. 6, Table I)

This species was described by Travassos (1948) from the intestine of *Pseudocurimata elegans elegans* (= *Curimata elegans*) from Mogi-Guassu river in the family Aspidogastridae. Dollfus (1956) included it in the Digenea and Yamaguti (1963) placed it near the Paramphistomidae in a new family Zonocotylidae. Padilha (1978) described its life cycle and the adult worm from *Pseudocurimata gilberti gilberti* (= *Curimata gilberti*) from "Guandu-Açu" river, Rio de Janeiro State. In the same paper Padilha proposed the new genus *Zonocotyloides* for the new species *Z. harol-travassosi* from the same host, confirming the family Zonocotylidae among the Paramphistomoi-dea in the Digenea. Padilha differentiated *Zonocotyloides* from *Zonocotyle* in having a larger body, lobulated testis, round ovary, vitellaria compact V shaped with only one vitello-duct in one side of the body.

We recovered one to four specimens of *Z. bicaecata* from the intestine of 11 out of 14 *P. plumbea* examined, in a total of 24 worms, in which we could observe variation in the shape of the testis, ovary and vitellaria. The other differential characteristics such as smaller acetabulum and the presence of only one vitello-duct which is not often easy to be observed, in our opinion, are not



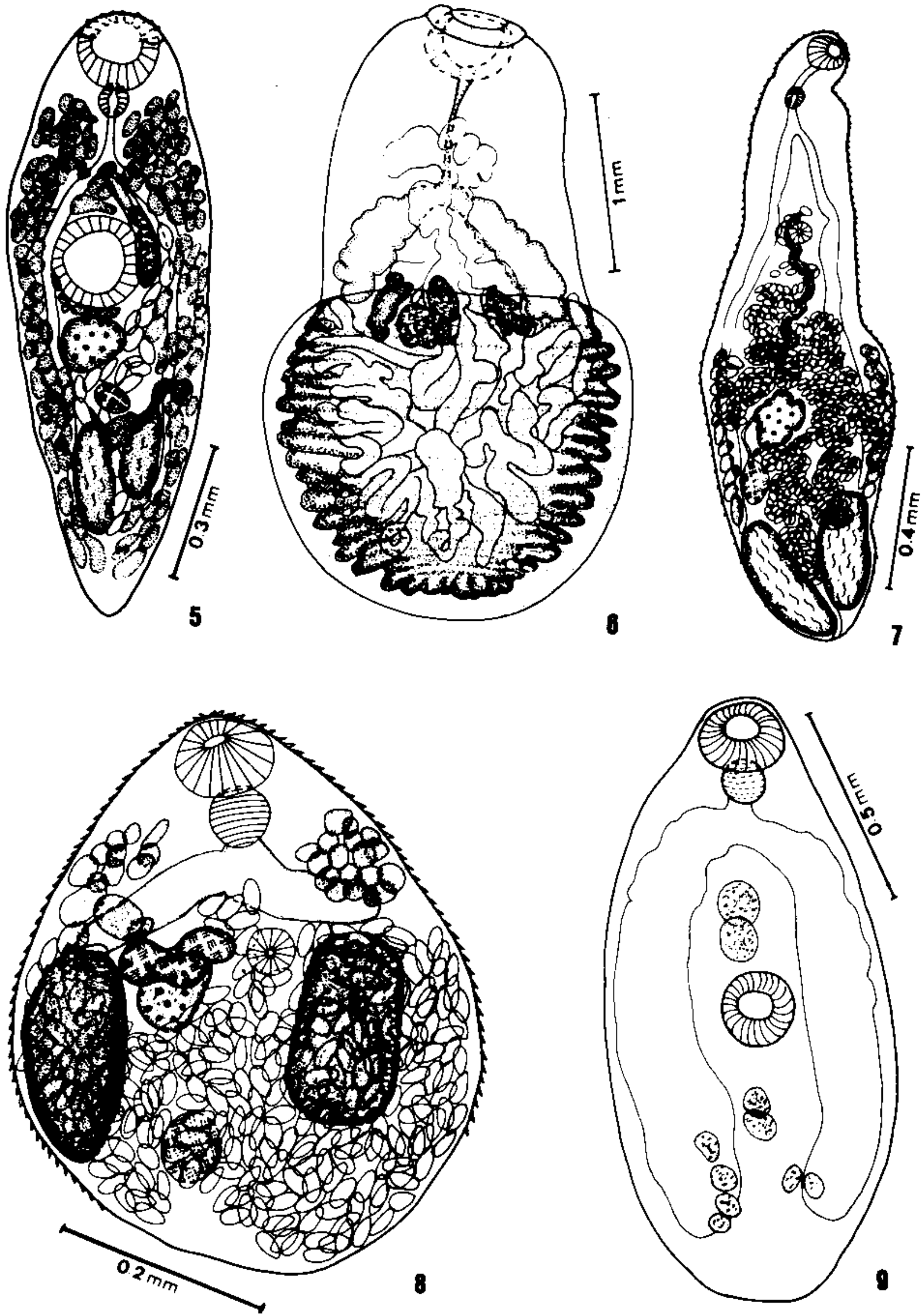


Fig. 5: *Creptotrema lynchi*, dorsal view (no. 32.1491). Fig. 6: *Zonocotyle bicaecata*, ventral view (no. 32.145a). Fig. 7: *Cladocystis intestinalis*, ventral view (no. 32.151b). Fig. 8: *Pseudosellacotyla lutzi*, ventral view (no. 32.154f). Fig. 9: *Teratotrema* sp., ventral view (no. 32.152a). Original figures.

sufficient to erect a new genus, so *Zonocotyloides* should be regarded as a synonym of *Zonocotyle* with the species *Zonocotyle bicaecata* Travassos, 1948 (type-species) and *Zonocotyle haroltravassosi* (Padilha, 1978) n. comb.

### Acanthocephala

#### *Neoechinorhynchus curemai* Noronha, 1973 (Neoechinorhynchidae) (Figs. 10-15)

Only *Prochilodus scrofa* was parasitized in the intestine by acanthocephalans belonging to the species *N. curemai*. This species was described from the same host from the Amazonas river, Maicuru, Pará (Noronha, 1973; 1984). Our specimens now described, represent the first report of this species in Pirassununga, São Paulo State.

#### Description based on five males and five females.

Means are given in brackets after the measurement range.

**General:** with the characteristics of the genus *Neoechinorhynchus*. Trunk fusiform, with greatest width in its anterior third. Proboscis globular, armed with three circles of six hooks; anterior lateral hooks notably larger. Anterior series of proboscis hooks with two dorsal, two ventral and two larger hooks, one on each lateral surface; ventral and dorsal hooks approximately the same size 0.032 to 0.039 mm (0.035) long. The two larger lateral hooks with 0.056 to 0.065 mm (0.059) long by 0.015 to 0.020 mm (0.017) wide at its base. Hooks of middle series 0.030 to 0.038 mm (0.036) long. Lateral hooks of basal series 0.038 to 0.045 mm (0.041) long, larger than ventral and dorsal ones 0.030 to 0.038 mm (0.033) long. Round giant hypodermal nuclei present: one on one side and four to five on the other. Lemnisci of different sizes, without nuclei.

**Male:** trunk 7.7 to 12.12 mm (10.36) long by 1.00 to 1.26 mm (1.12) maximum width. Proboscis 0.12 to 0.13 mm (0.12) long by 0.11 to 0.13 mm (0.12) wide. Proboscis receptacle 0.43 to 0.81 mm (0.60) long. Longer lemniscus 2.52 to 3.17 mm (2.80) long and the shorter 2.04 to 2.50 mm (2.26) long. Anterior testis 0.81 to 1.44 mm (1.03) long by 0.32 to 0.41 mm (0.36) wide. Posterior testis 0.88 to 1.56 mm (1.13) long by 0.32 to 0.37 mm (0.36) wide. Syncitial cement gland 0.73 to 1.92 mm (1.16) long by 0.23 to 0.48 mm (0.34) wide. Cement reservoir 0.27 to 0.41 mm (0.35) long by 0.24 to 0.32 mm (0.29) wide. Entire male system occupying 45 to 61% (54%) of trunk length. Everted bursa 0.21 to 0.36 mm (0.29) long.

**Female:** trunk 8.16 to 16.8 mm (13.17) long by 0.96 to 1.14 mm (1.10) wide. Proboscis 0.12 to 0.13 mm (0.13) long by 0.14 to 0.16 mm (0.15) wide. Proboscis receptacle 0.59 to 0.66 mm (0.63) long. Longer lemniscus 2.04 to 3.60 mm (2.88) long and the shorter 1.08 to 3.00 mm (2.38) long. Reproductive system from anterior margin of the uterine bell to terminal genitalia pore 0.86 to 1.44 mm (1.23) long, occupying 5.1 to 10.4% (8.75%) of trunk length. Eggs elongated, 0.050 to 0.060 mm (0.054) long by 0.013 to 0.023 mm (0.020) wide.

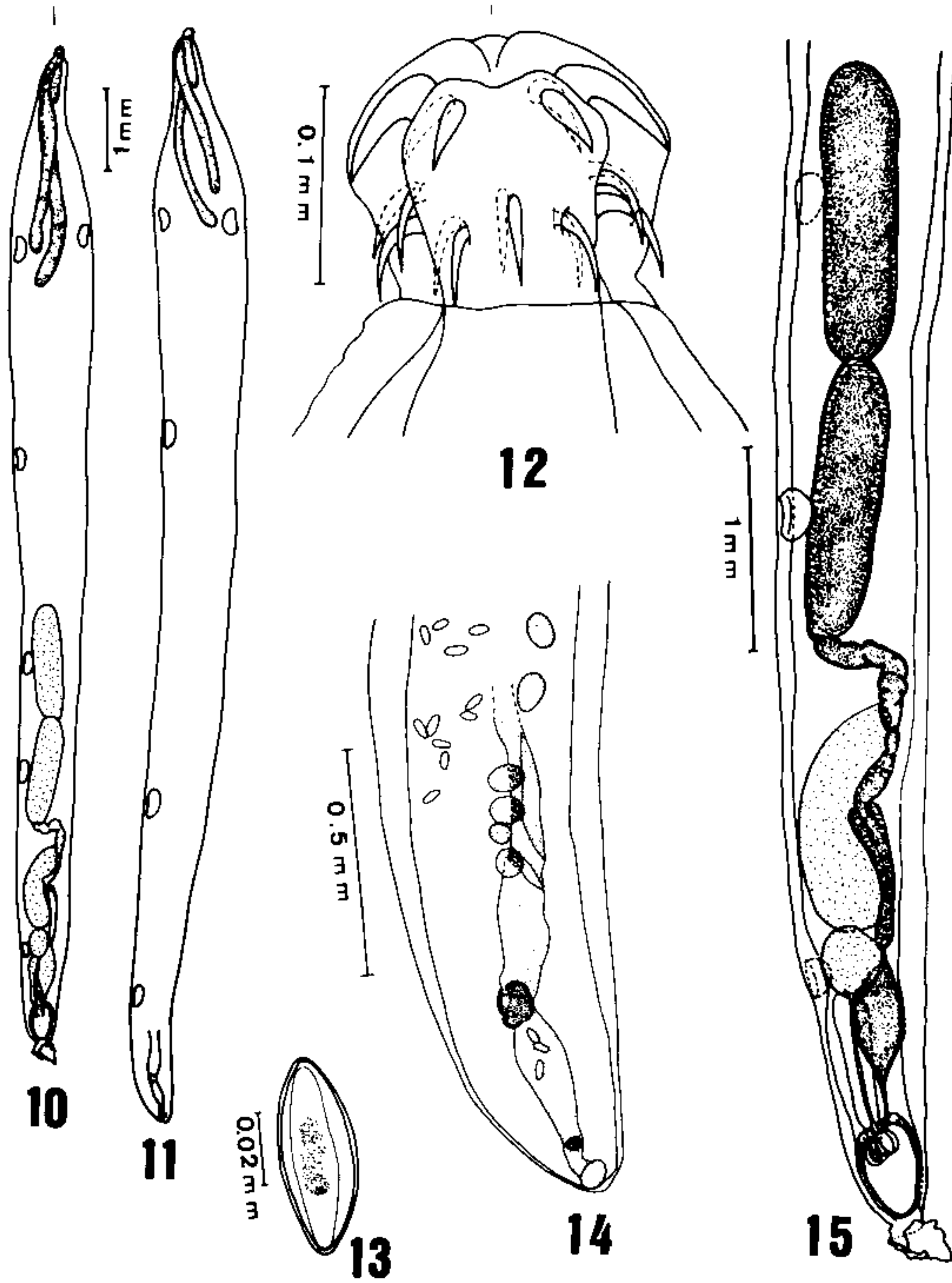
#### Remarks

In 1973 Noronha compared *N. curemai* only with the others species of *Neoechinorhynchus* parasites from *Mugil* because of a mistake, *Mugil curema* was referred as the type host instead of *Prochilodus scrofa*. In 1984, Noronha made the correction considering host and size of hooks.

In the genus *Neoechinorhynchus* there are only a few species wherein the terminal lateral hooks are distinctively larger than the others: *N. doryphorus* Van Cleave & Bangham, 1949, parasite of fish and *N. emydis* Leidy, 1951; *N. pseudemydis* Cable & Hopp, 1954 and *N. chrysemidis* Cable & Hopp, 1954 parasites of turtles. *N. doryphorus* was described from the flag fish (*Jordanella floridae*) from Florida, by having the most pronounced diversification of the lateral hooks of the terminal series, in which it differs from our material. The other three species, parasites of turtles, differ mainly in the morphology of the eggs (Cable & Hopp, 1954).

*N. curemai* differs from the described Brazilian species (*N. buttnerae* Golvan, 1959; *N. macronucleatum* Machado Filho, 1954; *N. paraguayense* Machado Filho, 1959 and *N. pterodoridis* Thatcher, 1981) mainly by the presence of the larger terminal lateral hooks.





Figs. 10-15: *Neoechinorhynchus curemai*: fig. 10: male (no. 32.060e); fig. 11: female (no. 32.060b); fig. 12: proboscis (no. 32.060a); fig. 13: egg from preserved female; fig. 14: posterior end of female (no. 32.060b); fig. 15: posterior end of male (no. 32.060e). Original figures.

RESUMO

No presente trabalho são apresentados sete trematódeos, quatro nematóides e um acantocéfaló parasitas de diferentes espécies de peixes do rio Mogi-Guaçu. *Creptotrema lynchi*, trematódeo descrito originalmente de anfíbio (*Bufo marinus*) na Colômbia, é referido pela primeira vez em peixes e no Brasil. *Bellumcorpus major* é assinalado em um novo hospedeiro e são apresentados novos dados morfológicos referentes ao tegumento. O gênero *Zonocotyloides* Padilha, 1978 é considerado sinônimo de *Zonocotyle* Travassos, 1948 e é proposta uma nova combinação para a espécie *Zonocotyloides haroltravassosi* Padilha, 1978. Os nematóides *Cucullanus pinnai* e *Procamallanus* (*Spirocamallanus*) *inopinatus* e o trematódeo *Pararhipidocotyle jeffersoni* são assinalados em novos hospedeiros. O acantocéfaló *Neoechinorhynchus curemai* é redescrito de nova localidade. São também registrados os nematóides *Travnema travnema* (referido em nova localidade) e *Rondonia rondoni*; e os trematódeos *Cladocystis intestinalis*, *Pseudosellacotyla lutzi* (em nova localidade), *Teratotrema* sp. e *Zonocotyle bicaecata*.

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