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CATADISCUS POMACEAE SP. N. (TREMATODA, PARAMPHISTOMATIDAE) FROM *POMACEA CANALICULATA* (LAMARCK, 1801) (PROSOBRANCHIA, AMPULLARIIDAE)

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Catadiscus pomaceae *sp. n. from the intestine of the prosobranch mollusc* Pomacea canaliculata *(Lamarck, 1801), is described. The host snail was collected from a lenitic biotope belonging to the Riachuelo basin (Corrientes province, Argentina) during 1985-1986.*

So far the species of the genus Catadiscus *Cohn, 1904 have been recorded in amphibians and reptiles. This is the first instance of a species of that genus parasitizing a mollusc.*

Key words: *Catadiscus pomaceae* sp. n. – Paramphistomatidae – Trematoda – *Pomacea canaliculata*

Until now the genus *Catadiscus* Cohn, 1904 was only found parasitizing amphibians and reptiles (Cohn, 1904; Travassos, 1926; Lutz, 1928; Freitas & Lent, 1939; Freitas, 1941, 1943; Ruiz, 1943; Freitas & Dobbin, 1956; Mañé-Garzón, 1958; Artigas & Perez, 1964; Caubisens Poumarau, 1965; Suriano, 1970; Ostrowski de Nuñez, 1978; Incorvaia, 1983). The present paper deals with *Catadiscus pomaceae,* a new species found in the intestine of the prosobranch mollusc *Pomacea canaliculata* (Lamarck, 1801).

MATERIAL AND METHODS

Pomacea canaliculata were collected in a lenitic biotope belonging to the Riachuelo basin (Corrientes province, Argentina) during 1985-1986.

Specimens were studied *in vivo,* then fixed in 70% alcohol and stained with carmine hydrochloride. Figures were drawn using a camera lucida. Measurements are given in mm (mean ± SD). The material studied is deposited in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia".

RESULTS

DIPLODISCINAE Cohn, 1904

Catadiscus Cohn, 1904

Catadiscus pomaceae sp. n. (Figs 1-5)

Location: intestine

Description (based on 20 specimens) – Body oval to elongate. Tegument aspinous. Oral sucker subterminal with small papillae, with two posterior diverticula. Prepharynx long, pharynx muscular; caeca extend to the equatorial region. Acetabulum ventral and subterminal. Testis in posterior end of the caeca. Cirrus sac oval, in the prepharynx region; seminal vesicle, pars prostatica and cirrus present. Genital pore circular, subterminal, submedian, anteroventral to the caecal bifurcation. Ovary submedian and post-testicular. Mehlis gland postovarian, Laurer's canal not observed. Vitellaria follicular, intracaecal, lateral, comprising only few follicles disstributed from the posterior middle caecal level to the ovarian region. Uterus long, looping between the oral sucker and the caecal bifurcation. Eggs operculate. Excretory pore median, dorsal and preacetabular; vesicle I-shaped, with two collector arms, may extend from the equatorial region to the oral sucker region.

Dissected *P. canaliculata:* 115.

Prevalence: 29%; intensity: 1-6.

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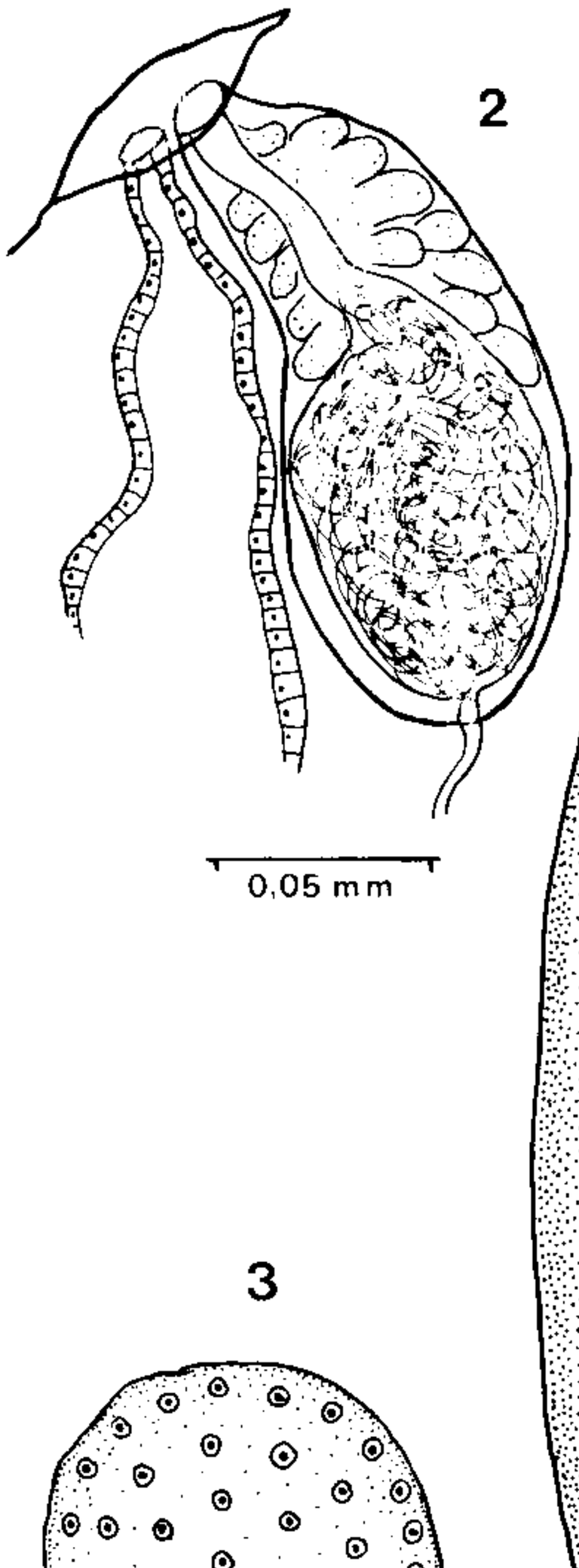
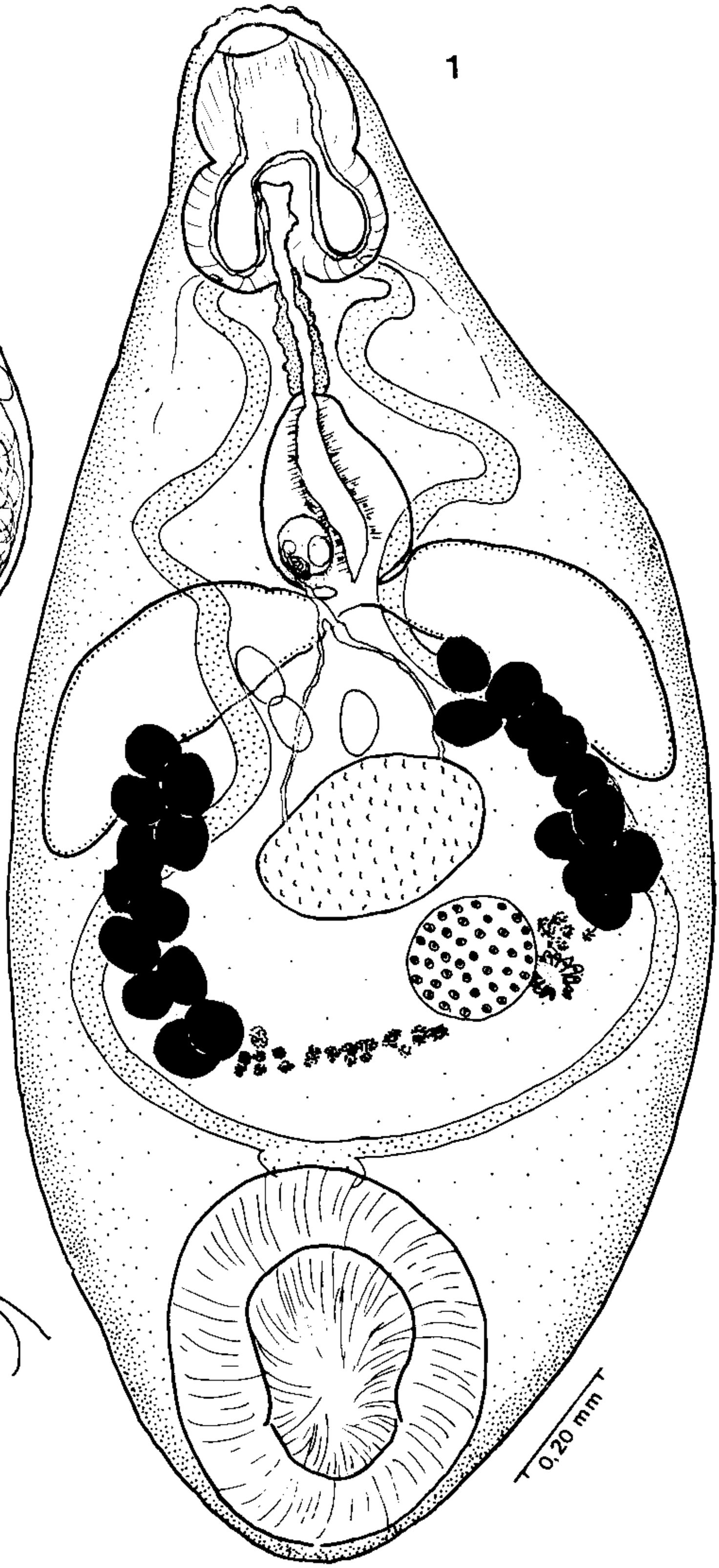
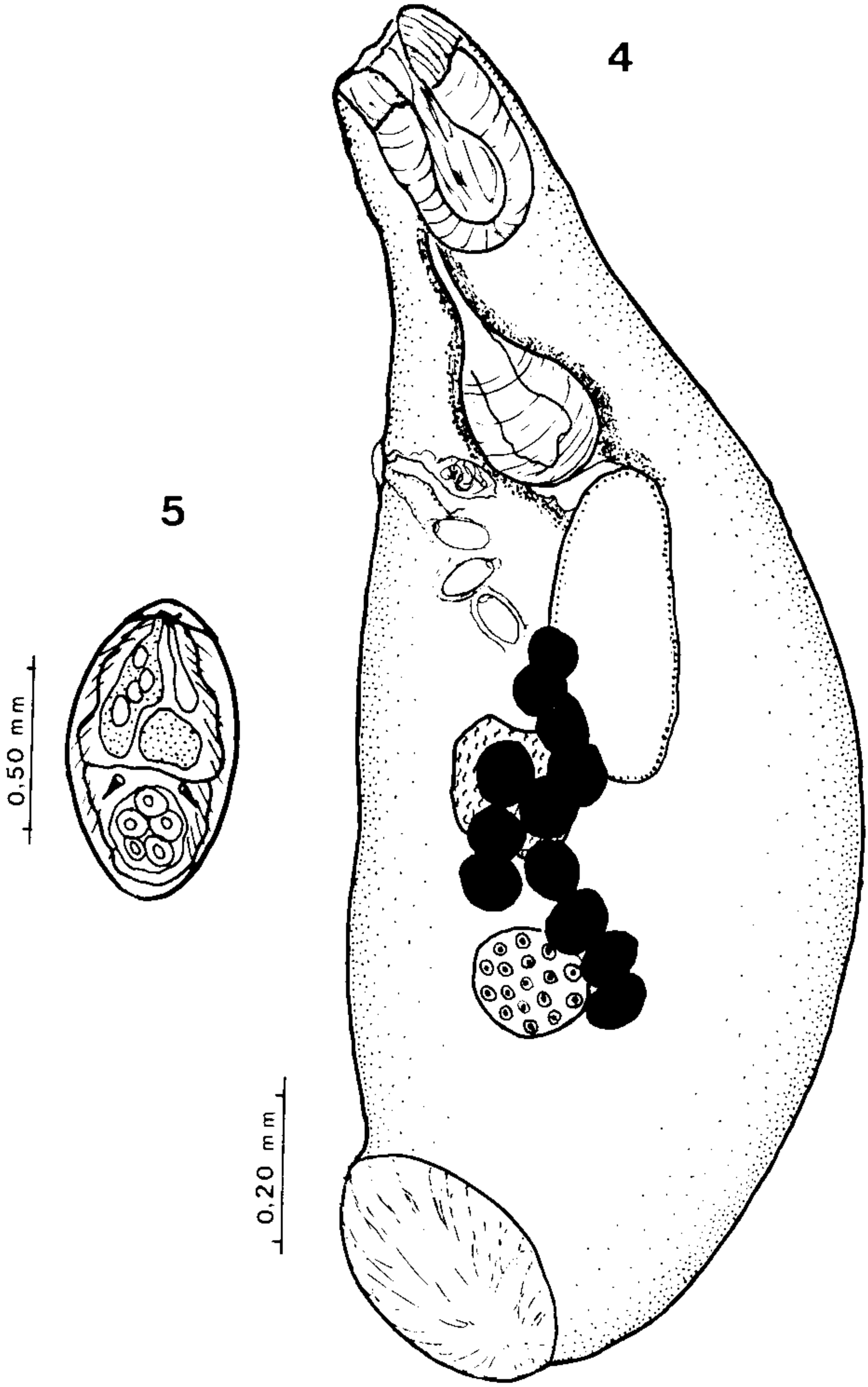




Catadiscus pomaceae sp. n. – Fig. 1: adult specimen, ventral view. Fig. 2: genital terminal. Fig. 3: ovarian complex.



Catadiscus pomaceae sp. n. – Fig. 4: adult specimen, latero-ventral view. Fig. 5: egg.

TABLE I

Morphometric differences between *Catadiscus pomaceae* sp. n. and congeneric species recorded in Argentina

		C. uruguayensis Freitas & Lent 1939	*C. hylae* Incorvaia, 1983	*C. freitaslenti* Ruiz, 1943	*C. longicoecalis* Caubicens Poumarau, 1965	*C. pomaceae* sp. n.
Vitelline gland		Postcaecal	Postcaecal	Caecal (from posterior middle) Pretesticular	Caecal (from posterior middle) Post-testicular	Caecal (from anterior middle) Pretesticular
Egg/follicle ratio		Equal or less ?	Equal ?	Greater (0.072-0.048)	Less ?	Equal or greater (0.090-0.110)
OS/VS ratio		1:2.4-1:4.7	1:6.0-1:6.4	1:3.9-1:4.0	1:3.3	1:1.5-1:2.7
VS/Body ratio		1:2.4-1:3.5	1:2.6-1:3.6	1:3.9-1:3.6	1:3.7	1:3.5-1:6.5
Genital pore location		Bifurcal	Bifurcal	Postbifurcal	Postbifurcal	Prebifurcal
Pharynx (mm)	l	0.07-0.12	0.11-0.15	0.16-0.20	0.18	0.19-0.28
	w	0.05-0.10	0.05-0.09	0.12-0.14	0.14	0.13-0.17

l = length, w = width, OS = oral sucker, VS = ventral sucker.

TABLE II

Comparative measurements (mm) of three *Catadiscus* species with *C. pomaceae* sp. n.

		C. cohni Travassos, 1926	*C. pygmaeus* (Lutz, 1928)	*C. inopinatus* Freitas, 1941	*C. pomaceae* sp. n. Min.	Max.	$\bar{X}$	SD	*N*
Length		1.21-2.21	1.04	2.51-3.95	0.70	2.70	2.04	0.66	10
Diameter		0.80-1.17	0.60	1.21-1.71	0.25	1.08	0.81	0.26	10
Prepharynx		? ?	0.15	? ?	0.25	0.47	0.34	0.10	10
Pharynx	l	? ?	0.07	0.13-0.17	0.19	0.28	0.21	0.01	10
	w	? ?	0.07	0.09-0.11	0.13	0.17	0.14	0.02	10
Oral sucker	l	0.10-0.15	0.12	0.10-0.11	0.11	0.21	0.16	0.04	10
	w	0.22-0.27	0.18	0.24-0.32	0.10	0.23	0.19	0.05	10
Ventral sucker	l	0.70-0.77	0.35	0.65-0.88	0.20	0.56	0.36	0.11	10
	w	0.57-0.60	0.32	0.53-0.78	0.16	0.46	0.40	0.14	10
Diverticula		0.12-0.16	0.10	0.16	0.08	0.18	0.12	0.05	10
Eggs	l	0.080-0.088	0.080	0.084-0.101	0.086	0.090	0.088	0.002	13
	w	0.042-0.046	0.056	0.050-0.055	0.047	0.054	0.050	0.003	13
OS/VS ratio		1:5-1:7	1:3	1:7-1:8	1:1.5	1:2.7	1:2.1	0.39	10
VS/Body ratio		1:2-1:3	1:3	1:4-1:4.5	1:3.5	1:6.5	1:5	0.96	10
Host species		*Bufo marinus*	*Pseudis paradoxa*	*Leptodactylus ocellatus*	*Pomacea canaliculata*				
Geographic area		Brazil	Venezuela	Brazil	Argentina				

l = length, w = width, OS = oral sucker, VS = ventral sucker.

DISCUSSION

Several adult trematodes have been recorded in molluscs, crustaceans and leeches. Loos-Frank (1969) has observed adult *Proctoeces buccini* in the kidney of *Buccinum undatum* and adult *P. scrobiculariae* in the kidney of the bivalve *Scrobicularia plana.* In Argentina, Szidat (1956) described the cycle of *Genarchella genarchella,* a hemiurid, which occurs in *Littoridina australis*. This trematode is able to complete its entire life cycle in a single molluscan host. Adults of this species have also been reported from *Salminus maxillosus* and other fishes from Buenos Aires and Corrientes provinces, Argentina (Hamann, 1989). Sullivan & Heard (1969) described *Alloglossidium progeneticum* from the crayfish *Procambarus spiculifer;* Font & Corkum (1975) also found *A. progeneticum* in the intestine of *Ictalurus nebulosus,* and *A. renale* in the antennary gland of the freshwater shrimp *Palaemonetes kadiakensis.* Corkum & Beckerdite (1975) observed that *Macrobdella ditetra*

is the second and final host in the cycle of *Alloglossidium macrobdellensis*. Taft & Kordiyak (1973) studied the incidence, distribution and morphology of *Alloglossidium hirudicola* infesting leeches.

From this review, it may be inferred that the genus *Catadiscus,* normally found in amphibians and reptiles, may also parasitize mollusca. Besides, considering the life cycle of Paramphistomatidae, it is likely that, while feeding, *Pomacea canaliculata* becomes infested with encysted metacercariae found in plants or other substrata.

Out of the fourteen known species of *Catadiscus,* the four below have been recorded in Argentina:

1) *C. uruguayensis* Freitas & Lent, 1939 parasitizing *Leptodactylus ocellatus* (Uruguay, Argentina):

2) *C. hylae* Incorvaia, 1983 infesting *Hyla pulchella* (Argentina);

3) *C. freitaslenti* Ruiz, 1943 parasitizing *Liophis miliaris* (Brazil), *Bufo paracnemis, Leptodactylus ocellatus* (Paraguay), *Xenodon merremii, Lystrophis dorbignyi, Erythrolampus aesculapii, Leimadophis almada, Lygophis flavifrenatus, Bothrops alternata, B. neuwiedii meridionalis* (Argentina); and

4) *C. longicoecalis* Caubisens Poumarau, 1965 infesting *Xenodon merremii, Philodryas olfersii, Lystrophis dorbignyi* and *Bothrops neuwiedii meridionalis* (Argentina).

All these species are quite dissimilar to *C. pomaceae.* Differences include the situation and size of the vitelline gland follicle, relative sucker size, ventral sucker ratio vs body size, genital pore location and pharynx size (Table I).

C. longicoecalis presents long caeca, which finish near the posterior border of the acetabulum, while in *C. pomaceae* caeca are shorter and extend to the equatorial region, resembling *C. cohni, C. pygmaeus* and *C. inopinatus.* Given the actual relative sucker size it seems similar to *C. pygmaeus,* but quite different from *C. cohni* and *C. inopinatus* (Table II).

Differences related to the distribution of vitelline gland follicles in *C. cohni* and *C. pygmaeus* were observed. These follicles are distributed from the posterior caecal ends to the ovarian region in *C. cohni* and to the ventral sucker in *C. pygmaeus.* In *C. inopinatus* the follicles are distributed like in the present species, that is, from the posterior half of the caeca to the ovarian zone.

Eggs differ in size from those of the above-mentioned species, being slightly larger in *C. inopinatus* and smaller in *C. cohni* and *C. pygmaeus*. Besides, in those species the pharynx size and the prepharynx length are smaller than in *C. pomaceae.*

To sum up, given the differential features described above, *C. pomaceae* is here proposed as a new species.

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