

Redescription of *Proisorhynchus australis* Szidat, 1961 (Digenea, Bucephalidae) parasitizing *Conger orbignianus* Valenciennes, 1842 (Pisces, Congridae) from Argentina

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Abstract

Proisorhynchus australis Szidat, 1961 is redescribed based on specimens collected from *Conger orbignianus* Valenciennes, 1842 caught in waters off Mar del Plata (38°08'S, 57°32'W), Argentina. Twenty one out of 32 congers examined were parasitized by *P. australis* (prevalence 65.62%, mean intensity 22.8, range 1–122). A number of morphological features not included in the original description justified the redescription of the species, and a detailed description of genitalia is provided for the first time. The diagnostic features used in the original description to define the species were corroborated, even after the range of measurements was broadened. Therefore *P. australis* is a valid species, despite not being considered in the recent literature regarding descriptions of new species in the genus.

Key words

Trematoda, Bucephalidae, *Proisorhynchus australis*, fish, *Conger orbignianus*, Argentina

Introduction

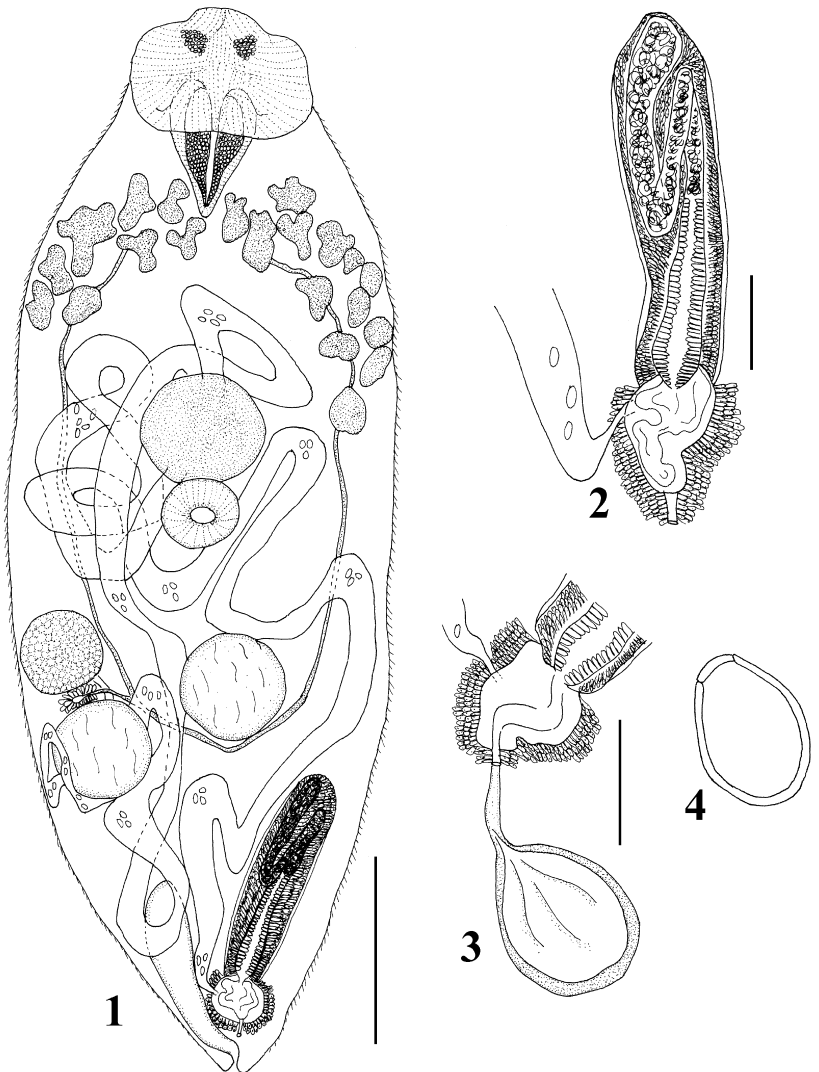
Proisorhynchus australis was originally described by Szidat (1961) parasitizing *Urophycis brasiliensis* (Kaup, 1858) (Pisces, Phycidae) from waters off Quequén (Buenos Aires Province, Argentina). Later, Szidat (1963) described cercariae of *Proisorhynchus* sp. from the mussel *Brachydontes rodrigezi* (d'Orbigny) from the same locality, as possible larval stages of *P. australis*. No further report of *P. australis* has been made until the recent work of Tanzola and Guagliardo (2000) who recorded this species in *Conger orbignianus* Valenciennes, 1842 from the coastal area of Bahía Blanca, Argentina. During a parasitological survey of *C. orbignianus* from the coasts of Mar del Plata, Argentina, specimens of *P. australis* were collected. The material examined in the present paper shows a number of morphological features not included in the original description by Szidat. Comparisons between Szidat's material and the specimens collected from the intestine of *C. orbignianus* justify the redescription of the species.

Materials and methods

A total of 32 specimens of *Conger orbignianus* Valenciennes, 1842 caught by commercial trawlers at the Mar del Plata port (38°08'S, 57°32'W) during March–November, 2004 were examined for trematodes immediately after capture. Fish were dissected, and the intestines were removed and examined under a stereomicroscope. Some specimens were observed alive. Adult worms were fixed in hot 4% formaldehyde and preserved in 70% alcohol. Whole-mounts were stained with Semichon's acetocarmine, cleared in methyl salicylate, mounted in Canada balsam and studied under a light microscope. Drawings were made with the aid of a drawing tube. All measurements are given in micrometres.

Specimens of *P. australis* studied by Szidat (1961), available at the Helminthological Collection of the Museo Nacional de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina, coll. # 62/3 and 62/4 were also examined. Neither holotype nor paratypes were identifiable in the collection.

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Figs 1–4. *Prosorhynchus australis*: **1.** Ventral view, scale bar = 450 µm; **2.** Detail of terminal genitalia, scale bar = 140 µm; **3.** Terminal genitalia with protruded genital lobe, scale bar = 140 µm; **4.** Detail of egg, scale bar = 20 µm

Results

***Prosorhynchus australis* Szidat, 1961 (Figs 1–4)**

Syn.: *Bucephalus australis* (Szidat, 1961) Yamaguti, 1971

Description: Based on 14 specimens. Body elongate, fully covered by spines, 2,396 (1,620–2,900) long by 850 (700–1,080) maximum width. Rhynchus conical, strongly muscular, 469 (376–544) long by 430 (368–500) wide, representing 20.7 (15.8–27.0)% of body length. Rhynchus cone with two lateral bands of transverse muscles and two central bands of dorso-ventral muscles surrounding the central funnel; rhynchus cone surmounted by disc formed by radial muscles and two antero-lateral fields of dorso-ventral muscles. Mouth located at 1,123 (744–1,420) from anterior end. Pharynx slightly preequatorial, 161 (128–200) long by 168 (128–208) wide.

Intestinal caecum sac-like, anterior to pharynx, 265 (232–304) long by 242 (168–312) wide. Testes rounded to oval, opposite to slightly diagonal, located midway between intestinal caecum and posterior body end. Left testis 250 (192–328) long by 267 (208–328) wide; right testis 234 (224–264) long by 258 (200–312) wide. Cirrus sac thick-walled, sinistral, 512 (368–576) long by 149 (120–160) wide, representing 18.7 (15.5–20.1)% of total body length. Cirrus sac containing tubular, looped seminal vesicle representing about 1.5 × total length of cirrus sac, long pars prostatica and numerous small prostatic cells. Ejaculatory duct entering into genital atrium. Genital atrium 218 (195–240) long by 180 (152–208) wide, surrounded by numerous glandular cells, containing genital lobe, circular when protruded, observed in two specimens. Genital pore ventral and subterminal. Ovary pretesticular, ovoid, dextral, 209 (168–232) long by 199 (152–240) wide. Mehlis’

gland between ovary and testis surrounds ootype. Laurer's canal not observed. Vitellarium follicular, ranging between 24 and 32 large follicles forming arch in anterior part of body. Vitelline ducts joining at level of testes, common vitelline duct opens into ootype within Mehlis' gland. Uterus entering at right side in genital atrium. Eggs 34 (29–40) long by 19 (13–23) wide. Excretory vesicle tubular and excretory pore terminal.

Host: *Conger orbignianus* Valenciennes, 1842.

Site of infection: Intestine.

Locality: Mar del Plata (38°08'S, 57°32'W).

Prevalence: 65.62%.

Mean intensity (range): 22.8 (1–122).

Material deposited: Helminthological Collection of the Museo de La Plata (CHMLP), La Plata, Argentina. Collection No. 5419.

Discussion

After comparison of Szidat's material and the present specimens it was observed that most measurements of parasites from *C. orbignianus* were larger, probably due to the high degree of contraction of the original material. Szidat's specimens showed the uterus filled with eggs, obscuring all other organs, and therefore the vitelline glands, ovary and testicles were observed in only a few specimens, justifying the detailed description of the genitalia is provided here. However, the diagnostic features provided by Szidat (1961) to define the species in relation to *P. atlanticus* Manter, 1940 (size and shape of rhynchus, distribution of vitelline glands, and size of testes relative to ovary) were corroborated, even after the range of measurements was broadened. *Prosorhynchus atlanticus* was later regarded as a junior synonym of *P. pacificus* Manter, 1940 (Hanson 1950, Overstreet 1969). Until the work of Tanzola and Guagliardo (2000), no references to *P. australis* were made in the recent literature, including those descriptions of new species (e.g. Durio and Manter 1968) and citations of species of *Prosorhynchus* from Argentine waters (e.g. Suriano and Martorelli 1983). Among congeners, *P. australis* most closely resembles *P. longisaccatus* Durio et Manter, 1968, from which can be readily differentiated by the latter having the ovary to the right of or partly posterior to the anterior testis, instead of pretesticular, the testes clearly diagonal and the cirrus-sac larger relative to body length. *P. longisaccatus* was reported from the flatfish *Oncopterus darwinii* Steindachner, 1875 from Mar Chiquita (37°46'S, 57°27'W), a locality near Mar del Plata (Suriano and Martorelli 1983).

However, it is clearly observed in the figures that a small pretesticular ovary is located to the right of slightly diagonal testes, which together with the shape of the rhynchus precludes its identification as either *P. australis* or *P. longisaccatus*. Notwithstanding, Suriano and Martorelli (1983) made no reference to deposited material, and no further confirmation of the specific status of these parasites can be made. Finally, the transfer of *P. australis* to the genus *Bucephalus* Baer, 1827 made by Yamaguti (1971) should be considered as not valid, because the present species lacks a ring of retractable tentacles in the rhynchus, a diagnostic feature of *Bucephalus* (Overstreet and Curran 2002).

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