DOI: 10.1590/1808-1657v65n1p1071998

COMUNICAÇÃO CIENTÍFICA

MONOECOCESTUS JACOBI SP. N. (CESTODA: ANOPLOCEPHALIDAE) PARASITE OF CAPYBARA *HYDROCHOERUS HYDROCHAERIS* LINNAEUS, 1766 (RODENTIA: HYDROCHOERIDAE) FROM THE REGION OF "BANHADO DO TAIM", STATE OF RIO GRANDE DO SUL, BRAZIL[1]

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ABSTRACT

Monoecocestus jacobi sp. n. is described as a parasite of the small intestine of capybara (*Hydrochoerus hydrochaeris*) from the state of Rio Grande do Sul, Brazil. The new species most closely resembles *M. hagmani, M. macrobursatum* and *M. minor.* It differs from South American species of the genus in the size of strobila, opening of the genital atria, disposition of testes and size of proglottides.

KEY WORDS: *Monoecocestus jacobi* sp. n., Anoplocephalidae, Cestoda, Capybara, *Hydrochoerus hydrochaeris*, Rodentia.

RESUMO

MONOECOCESTUS JACOBI SP. N. (CESTODA : ANOPLOCEPHALIDAE) PARASITO DE CAPIVARA *HYDROCHOERUS HYDROCHAERIS* LINNAEUS, 1766 (RODENTIA : HYDROCHOERIDAE) NA REGIÃO DO "BANHADO DO TAIM", ESTADO DO RIO GRANDE DO SUL, BRASIL. *Monoecocestus jacobi* sp. n. é descrito como parasito do intestino delgado de capivara (*Hydrochoerus hydrochaeris*) no Estado do Rio Grande do Sul, Brasil. A nova espécie mostra-se morfologicamente próxima de *M. hagmani, M. macrobursatum* e *M. minor*, diferenciando-se das espécies sulamericanas do gênero no tamanho do estróbilo, abertura do átrio genital, disposição dos testículos e tamanho das proglótides.

PALAVRAS-CHAVE: *Monoecocestus jacobi* sp. n., Anoplocephalidae, Cestoda, Capivara, *Hydrochoerus hydrochaeris*, Rodentia.

During a survey of helminths of capybaras (*Hydrochoerus hydrochaeris*) in the region of "Banhado do Taim", in the state of Rio Grande do Sul, Brazil, undescribed specimens of *Monoecocestus* Beddard, 1914 were found. The genus *Monoecocestus* is a parasite of birds and rodents in the neotropic and tropic region of the American continent. Eighteen species of *Monoecocestus* have been described in the world, nine of which were from South America and three in the capybara.

After removal from the small intestine of the capybara, the cestodes were washed and relaxed in fresh water, compressed between glass slides and fixed in A.F.A. solution (Alcohol 70° GL - 93%, Acetic acid - 2%, and Formalin - 5%). Before the fixation, the cestodes were preserved in 70% alcohol. For the identification, the cestodes were stained in acetic carmine, and processed by standard methods and mounted permanently on glass slides (AMATO, 1985). Measurements were

[1]Este artigo faz parte da dissertação de mestrado do primeiro autor.

made in an ocular micrometer and drawings were made with the aid of a camera lucid. All measurements were made in millimeters.

***Monoecocestus jacobi* sp. n.** (Fig. 1)

DESCRIPTION: Strobila is 225 to 258 long, with 280 to 320 craspedote segments. When mature these segments have the maximum width of 6.286 and maximum length of 1.323. The width of segments increase discreetly until the medial portion of strobila decreasing discreetly from there to the last segment, with no significant variation in the width. Scolex measures 3.3079 in the length and 3.1923 in width. The suckers are well developed measuring 1.1730 in the largest diameter. The neck is short, with small width when compared to the scolex. The genital pores are regularly alternated (rarely unilateral in two successive segments). The genital atria opens in the last third of the proglottides and it is deep in the mature proglottides. Sixty to eighty testes situated in the posterior part of the proglottides sidewards of the vitellarium and ovary are distributed irregularly and scatteredly, forming a continuous layer, that becomes more delicate below the vitellarium, being limited laterally by the osmoregulatory canals. The cirrus pouch is 0.7354 long by 0.3784 wide, with a piriforme format. The cirrus armed is 0.4391 long. The cirrus pouch is leaned against the proglottides laterally rebated in the gravid proglottides. The vas deferens is slightly sinuous with a curved path to the cirrus pouch where a dilatation is formed constituting the internal seminal vesicle. The vagina crosses the vas deferens to open in the genital atria above the cirrus pouch. Above the cirrus pouch, the vagina dilates forming the external seminal receptacle. The follicular ovary measures 2.6905 in width and occupies the upper central part of the proglottis. The vittellarium compact occupies the central part and measur 0.4461 in width by 0.8923 in length. The ovary and vittellarium are located in the central part of the proglottid, with a small change of direction towards the genital pore. The uterus arises centrally, forming a diffuse reticulum in all segments; gravid uterus fill the entire segment between excretory canals. The vas deferens persist in the gravid proglottis, occupying a dorsal position.

Type host: *Hydrochoerus hydrochaeris* Linnaeus, 1766.

Location: Small intestine

Prevalence: 41.67%

Mean intensity: 5,4

Abundance: 2.25

Type locality: Granja Santa Maria, Roadside BR 471, km 476, county of Rio Grande, state of Rio Grande do Sul, Brazil.

Type: Lâmina nº 32.2.2.

Paratype: Lâmina nº 32.2.1.

Etymology: The new species is named in honour of the father of the first author.

REMARKS

The genus *Monoecocestus* Beddard, 1914 have eighteen species described; REGO (1961) considers valid eleven species as follow: *Monoecocestus hagmani* (Janicki, 1904) Freeman, 1949 in *Hydrochoerus hydrochoeris* from Brazil; *M. hydrochoeri* (Baylis, 1928) Spassky, 1951 in *Hydrochoerus hydrochoeri* from Paraguay and Brazil; *M. americanus* (Stiles, 1895) Fuhrmann, 1932 in *Erethizon dorsatum* and *E. epizanthum* from USA and Canadá; *M. erethizonthis* Beddard, 1914 in *Erethizon dorsatum.* and *E. epizanthum* from USA and Canadá; *M. anoplocephaloides* (Douthitt, 1914) Smith, 1951 in *Geomys breviceps* from USA; *M sigmodontis* (Chandler & Suttles, 1922) Melvin & Chandler, 1950 in *Sigmodon hispidus* from USA; *M. gundlachi* Vigueras, 1943 in *Capromys pilorides* from Cuba; *M. reiphilus* Voge & Read, 1953 in *Pterocnemia pennata* from Perú and Chile; *M. parcitesticulatus* Rego, 1960 in *Cavia porcellus* and *Cavia aperea* from Brazil; *M. minor* Rego, 1960 in *Cavia aperea* from Brazil and *M. macrobursatum* Rego, 1961 in *Hydrochoerus hydrochoeris* from Brazil. Subsequently the following species were described: *M. giganticus* Buhler, 1970 in *Erethizon dorsatum* from USA; *M. myopotami* Sutton, 1973 in *Myocastor coypus bonariensis* from Argentina; *M. diplomys* Noble & Tesh,1974 in *Diplomys darlingi* from Panamá; *M. torresi* Olsen, 1976 in *Ctenomys maulinus brunneus* from Chile; *M. thomasi* Rausch & Maser,1977 in *Glaucomys sabrinus* from USA; *M. mackiewiczi* Schimidt &

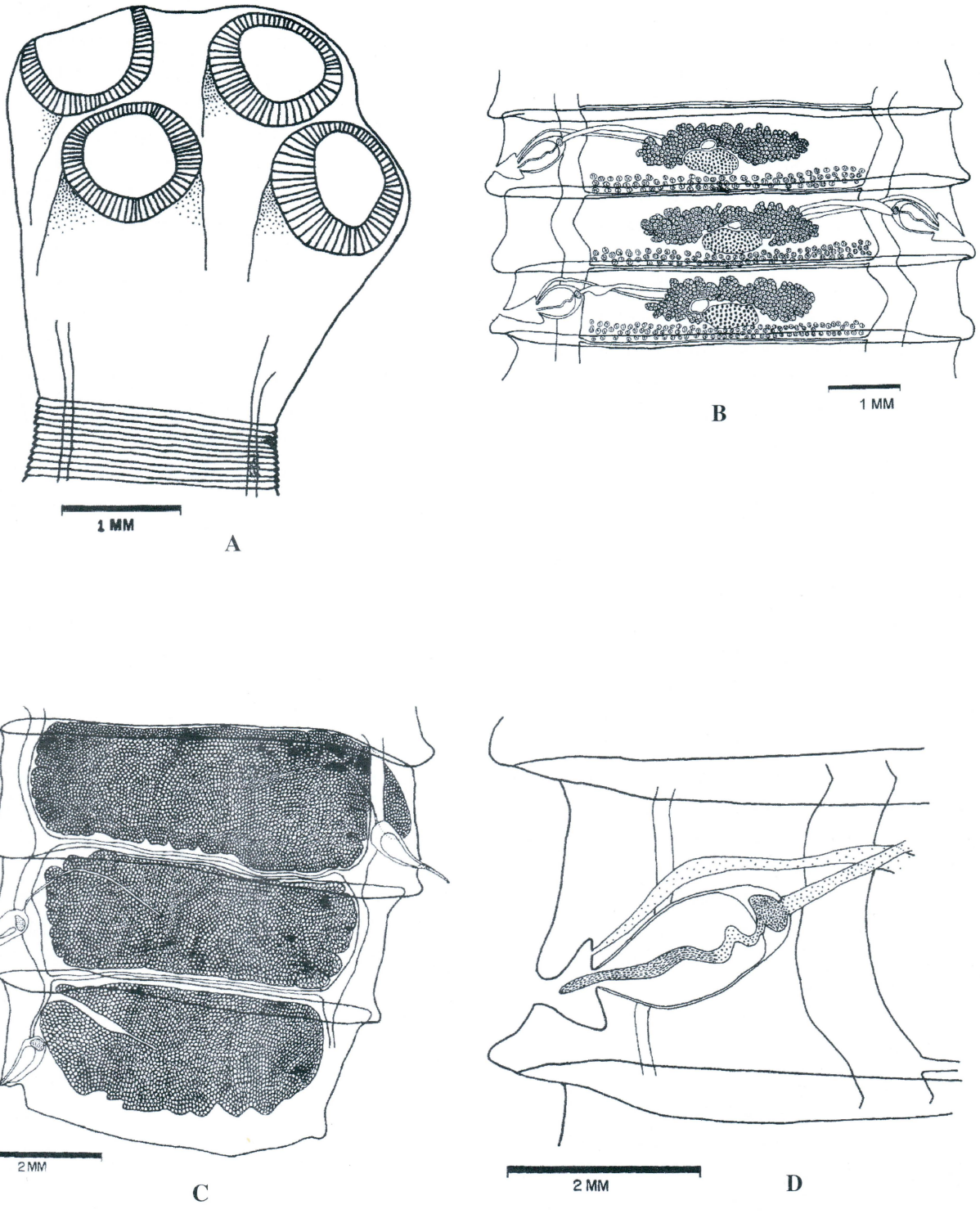

Fig. 1 - *Monoecocestus jacobi* n. sp. - A) Scolex; B) Mature proglottides; C) Gravid proglottides; D) Detail of cirrus pouch.

Martin, 1978 in *Phyllotis* sp. from Paraguai and *M. centroovarium* DRONEN et. al., 1994 in *Geomys attwateri* from the USA.

Among the nine known species of *Monoecocestus* from South America, *M. jacobi* closely resembles *M. hagmani*, *M. macrobursatum* and *M. minor* in general proglottids morphology and in having the ovary nearly centrally located.

M. jacobi differs from *M. hagmani*, by having the opening of the genital atria in the last third of the proglottis while *M. hagmani* has the opening in the first half of the proglottis. The new species differs from *M. hagmani* by having a different location of the testes, vittelarium and ovary. In *M. hagmani* these structures are deslocated towards the genital space so that the vittelarium occupies a place, laterally to the mediane line. In *M. jacobi* we also observe a lateral dislocation although less pronanced. The differentiation of these two species may be made by the number of proglottides (280 to 320 in *M. jacobi* and 240 in *M. hagmani*), length and width of proglottides (6.28 x 1.32 in *M. jacobi* and 5.7 x 0.66 in *M. hagmani*), numbers of testes (60 to 80 in *M. jacobi* and 120 to 150 in *M. hagmani*) and the size of the cirrus pouch (0.73 x 0.37 in *M. jacobi* and 0.52 x 0.2 in *M. hagmani*)

Although *M. macrobursatum* shows a cirrus pouch well developed, this cestode is small when compared to *M. jacobi* (225 to 258 in *M. jacobi* and 12 to 22 in *M. macrobursatum*). The absence of a neck in *M. macrobursatum* differentiates it from *M. jacobi* since this species has a well-developed neck, differentiating scolex from strobila. Even though these two species have similar number of testes (60 to 80), the distribuition of the testes makes it possible to differentiate these two species. In *M. jacobi* the testes form a more delicate continuous layer below the vittelarium, which does not occur in *M. macrobursatum*.

The differentiation of *M. minor* when compared to *M. jacobi* is easily acomplished since *M. minor* and *M. macrobursatum* do not have a neck and are smaller when compared to *M. jacobi* (15.41 in *M. minor* and 225 to 258 in *M. jacobi*), even though the disposition of testes, vittelarium and ovary is very similar in these two species.

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Received for publication in 5/1/98