

**The Hamster (*Cricetus cricetus* L.), a New Host
of *Paranoplocephala omphalodes* (Hermann, 1783) Lühe, 1910
(Cestoda, Anoplocephalidae)**

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The parasitologists of the Hungarian Natural History Museum dissected 12 specimens of *Cricetus cricetus* L. in 1966-1969. Internal parasites were found in all exemplars: 11 animals have been infested by nematodes, 6 also by tapeworms. Most of the cestods parasitising the host belonged to *Hymenolepis straminea* (Goeze, 1782)(TENORA-MURAI, 1970), while one tapeworm proved to represent *Paranoplocephala omphalodes* (Hermann, 1783) Lühe, 1910. This species parasitizes rodents belonging to the subfamily Microtinae; it is described now for the first time from *Cricetus cricetus* L.

Material and methods: A *Paranoplocephala omphalodes* specimen parasitized, together with nematodes and two *Hymenolepis straminea*, a female hamster (Mus.Nat.Hung.No.2490) collected with nine other exemplars by F. MÉSZÁROS near Balmazújváros, Com. Hajdú, on 30 August, 1969. After fixing in 10 % hot formaline, BAER's HCL carmine staining was used in making the total preparation. Of some proglottides containing mature eggs, also permanent egg slides have been made in Berlese solution; some of the strobila were also thus studied.

Description of the species (based on our specimens): *Paranoplocephala omphalodes* (Hermann, 1783) Lühe, 1910.

Subfamily: Anoplocephalinae Blanchard, 1891.

Localization: small intestine.

Intensity: one specimen.

A medium-sized Anoplocephalid; length: 110 mm, maximum width: 2.5 mm, number of proglottides: 360. Genital pores alternating irregularly, in small series, on one or the other side of the strobila (Fig. 1.).

The scolex was damaged during collection, hence no precise data can be submitted. Width of neck region: 0.24 mm, length: 1 mm. Strobila invariably wider than long, the shape of only the last proglottides, filled with mature eggs, approaching the rectangular form. The length-width ratio of the strobila varies in the course of maturing:

Ratio of first strobila 1:5 (0.080 x 0.400 mm);
young hermaphrodite segments 1:11 (0.070 x 0.970 mm);
mature hermaphrodite segments 1:8, 1:9 (0.130-0.160 x 1.160-1.450 mm);
after development of uterus 1:4, 1:7 (0.320-0.520 x 2.00-2.400 mm);
proglottides containing immature eggs 1:3, 1:2.5 (0.640-0.720 x 1.920-2.250 mm);
proglottides containing mature eggs 1:1.3 (1.260-1.400 x 1.580-1.800 mm).

Parenchymal musculature well developed; longitudinal bundles situated in two concentric circles, with also numerous diagonal and vertical muscles observable.

Excretory system strongly developed: diameter of the two lateral pairs of excretory stems: 0.028-0.033 mm, and 0.050-0.070 mm, respectively, forming transverse anastomoses dorsally in each segment.

Cloaca 0.060-0.120 mm deep, opening marginally and in median third of the segments - nearly medially in young segments - but shifting to posterior border of second third in older proglottides. During copulation the cloaca evaginates, exhibiting 0.040-0.045 mm high sexual papilla on the segment. Vagina open-

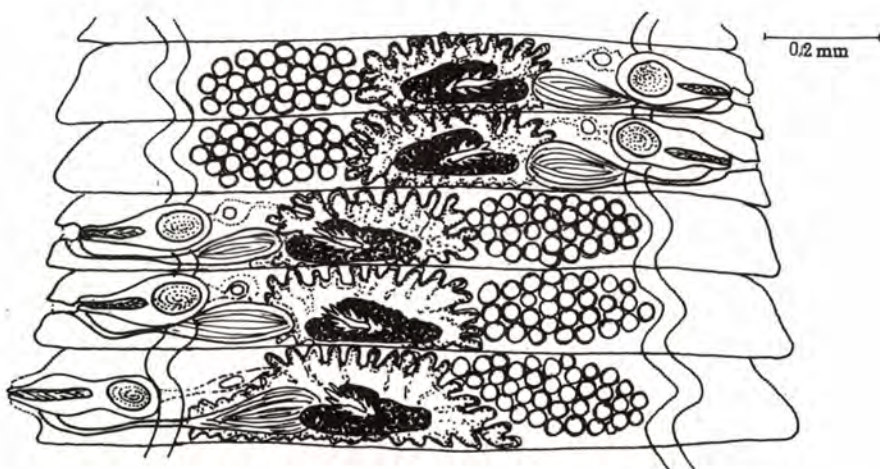


Fig. 1: Paranoplocephala omphalodes: hermaphrodite segments
 1. ábra: P. omphalodes hermafrodita izei

ing into genital atrium behind cirrus sac. Vas deferens decurrent anteriorly to receptaculum seminis.

Male reproductive system: about 50 testes scattered in 2-3 layers above one another in aporal portion of medullary parenchyma, from anterior margin to posterior border of the segment, aporally from ovarium and some also above it; they measure 0.028-0.037 x 0.030-0.040 mm. The testes atrophize concurrently with uteral development. Vas deferens decurrent anteriorly to receptaculum seminis, forming a vesiculum seminalis externa of varying size, surrounded by mucous cells, in front of cirrus pouch. In proximal half of cirrus pouch, it widens into a vesiculum seminalis interna (0.045-0.070 x 0.035-0.055 mm), then joins cirrus as a straight, narrow tube. Cirrus 0.075-0.110 x 0.012-0.015 mm, covered with minute spines (about 1 μ) arranged in oblique rows. Cirrus pouch oval or pyriform, 0.200-0.260 x 0.062-0.085 mm, of 0.010-0.015 mm thick strongly muscular walls (Table 1.).

Table 1.

Comparative data referring to Paranoplocephala omphalodes
 - P. omphalodesre vonatkozó összehasonlító adatok

	JANICKI, 1906	Author's data
host - gazda	Mus arvalis Mus amphibius	Cricetus cri- cetus
locality - lelőhely	Berlin	Balmazújváros (Hungary)
body length - féreg hossza	135 mm	110 mm
max. width - szélessége	3.4 mm	2.6 mm
hermaphrodite segments longer than wide - ízek méretaránya	1:5 - 1:8	1:5 - 1:11
same ratio of ultimate segment - utolsó íz aránya	1:1.5	1:1.3
genital pores - ivarpitvar helyzete	alternating irregularly	alternating irregularly
cirrus pouch: length - cirruszsák hossza	0.210 mm	0.200-0.260 mm
position of vagina - vagina helyzete	behind cirrus pouch	behind cirrus pouch
egg size - pete mérete	0.04 mm	0.042-0.047 mm
oncosphere hooklets - embrionális horgok	0.0046 mm	0.004-0.005 mm

Female reproductive system: Ovary and receptaculum seminis situated on poral side. Ovary consisting of a large number of digitiform lobules, arranged rather closely and medially convergent, thus entire organ rather uniform in appearance: 0.250-0.420 x 0.120-0.150 mm. Vitelline gland 0.080 x 0.150-0.210 mm, oval, very compact, extending above posterior half of ovary to posterior border of segment, medially usually deeply evaginate, containing there the Mehlis gland (0.040 x 0.060 mm). Vagina an elongate tube, 0.010 mm in diameter, distally infundibuliform and opening into genital atrium. Its proximal half widening into a large receptaculum seminis (0.210-0.300 x 0.060-0.100 mm), its maximal size attained in proglottides possessing a well developed uterus. This latter initially a diagonal tube on



Fig. 2:

Egg type of Paranoplocephala omphalodes from Cricetus cricetus

2. ábra: P. omphalodes petéje

anterior border of segment, then, concurrently with the atrophisation of gonads, it fills the entire medullary parenchyme, passing even the line of the excretory stems. It is not sacculiform, forming numerous irregular pouches; the mature eggs fill the entire medullary space in the last developmental stage.

The mature eggs are globular, with a resistant, elastic outer and a thin internal cover, enveloping the "pyriform apparatus" containing the oncosphere. Average size of eggs 0.042 x 0.047 mm (limit values: 0.031-0.046 wide and 0.044-0.055 mm high); pyriform organ 0.029 mm high, diameter of bulbus 0.018 mm, length of embryonal hooks 0.005 mm (Fig. 2.).

The known hosts of Paranoplocephala omphalodes (Hermann, 1783) Lühe, 1910, in the Palaearctic Region are as follows:‡ Arvicola terrestris L., A. exitus Mill., Castor fiber L., Clethrionomys glareolus Schreb., Microtus agrestis L., M. arvalis Pall., M. agrestis hirtus Bell., M. gud Sat., M. nivalis Martins, M. oeconomus Pall., M. socialis Pall., M. ungurensis Kastsch., Ondatra zibethicus L., Pitymys subterraneus daghestanicus Shidl., P. subterraneus majori Thomas. The present study added the species Cricetus cricetus L. to this list.

MURAI, É.: Paranoplocephala omphalodes (Hermann, 1783) Lühe, 1910 (Cestoda, Anoplocephalidae) új gazdaállata a mezei hörcsög (Cricetus cricetus L.)

A mezei hörcsögben élősködő galandférgek vizsgálata Magyarországon két faj előfordulását bizonyította. A vizsgált hörcsögek 50 %-a fertőzött volt Hymenolepis straminea (Goeze, 1782)-val (l. TENORA - MURAI, 1970) egy hörcsög vékonybelében ezen a fajon kívül Paranoplocephala omphalodes (Hermann, 1783) Lühe, 1910 1 példányát találtuk. Nevezett faj a Microtinae alcsaládba tartozó rágcsálók parazitája, Cricetus cricetus-ból most kerül első ízben leírásra.

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‡ In his work, Spassky (1956) relegated to P. omphalodes a number of North American species as junior synonyms; their hosts are not enumerated in this list.

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