

**RAILLIETINA (RAILLIETINA) GUARICANA N. SP. (CESTODA-DAVAINEIDAE),  
PARASITE OF WILD RATS FROM THE ENVIRONMENTAL PROTECTION AREA  
OF GUARICANA, PARANÁ, BRAZIL**

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*Raillietina (Raillietina) guaricanae n. sp. is described from the wild rats Oryzomys intermedius, O. nigripes and O. ratticeps, captured in the Environmental Protection Area of Guaricana, from November 1988 to December 1989. Raillietina (Raillietina) guaricanae n. sp. is closely related to the Neotropical mammalian Raillietina, however it differs by the fewer number of rostellar hooks, and testes, different number of egg capsules and host species. The number of known species of Raillietina (Raillietina), parasites of mammals in the Neotropical Region, is increased to four.*

Key words: *Raillietina (Raillietina) guaricanae n. sp.* – Environmental Protection Area of Guaricana – Cestoda – Davaineidae – parasitism

The genus *Raillietina* is cosmopolitan, with 295 known species, parasites of small intestine of birds and mammals (Schmidt, 1986). In the Neotropical Region, many rodents (large and wild rats, lappes, agoutis) monkeys and men are reported as definitive hosts of these species. This infection, however, is considered accidental in man (Joyeux & Baer, 1929).

Important contributions to the study of *Raillietina (R.)* parasitizing mammals are given by Joyeux & Baer (1929), López-Neyra (1943, 1949), Cameron & Reesal (1951), Baer & Sandars (1956), Chandler & Pradatsundarasar (1957) and Schmidt (1986). Rego & Nascimento (1962), Rego (1964, 1967), Pinto & Gomes (1976) and Vicente et al. (1982) provide accounts on species of this genus in Brazil. This paper describes a new species of *Raillietina (Raillietina)* from wild rats from the Environmental Protection Area of Guaricana, Paraná, Brazil.

#### MATERIALS AND METHODS

The Environmental Protection Area of Guaricana is located in the Serra do Mar, among the counties of São José dos Pinhais, Morretes and Guaratuba (25°40'S – 48°55'W), state of Paraná. The rats were captured with live-traps and

identified by morfologic characters. The worms were fixed in Railliet-Henry, stained with Semichon's acetic carmine and clarified with Beachwood creosote. All the measurements are given in millimeters; the amplitude is given, followed by the average in parenthesis.

Types are deposited at the Coleção Helminológica do Instituto Oswaldo Cruz (CHIOC).

#### RESULTS

One hundred and five rats of the following species were captured: *Akodon montensis*, *Akodon sp.*, *Delomys dorsalis*, *Nectomys squamipes*, *Oryzomys intermedius*, *O. nigripes*, *O. ratticeps* and *Oxymycterys sp.* Twenty *Raillietina (R.) guaricanae n. sp.* were collected and thirteen were used to description.

*Raillietina (Raillietina) guaricanae n. sp.*

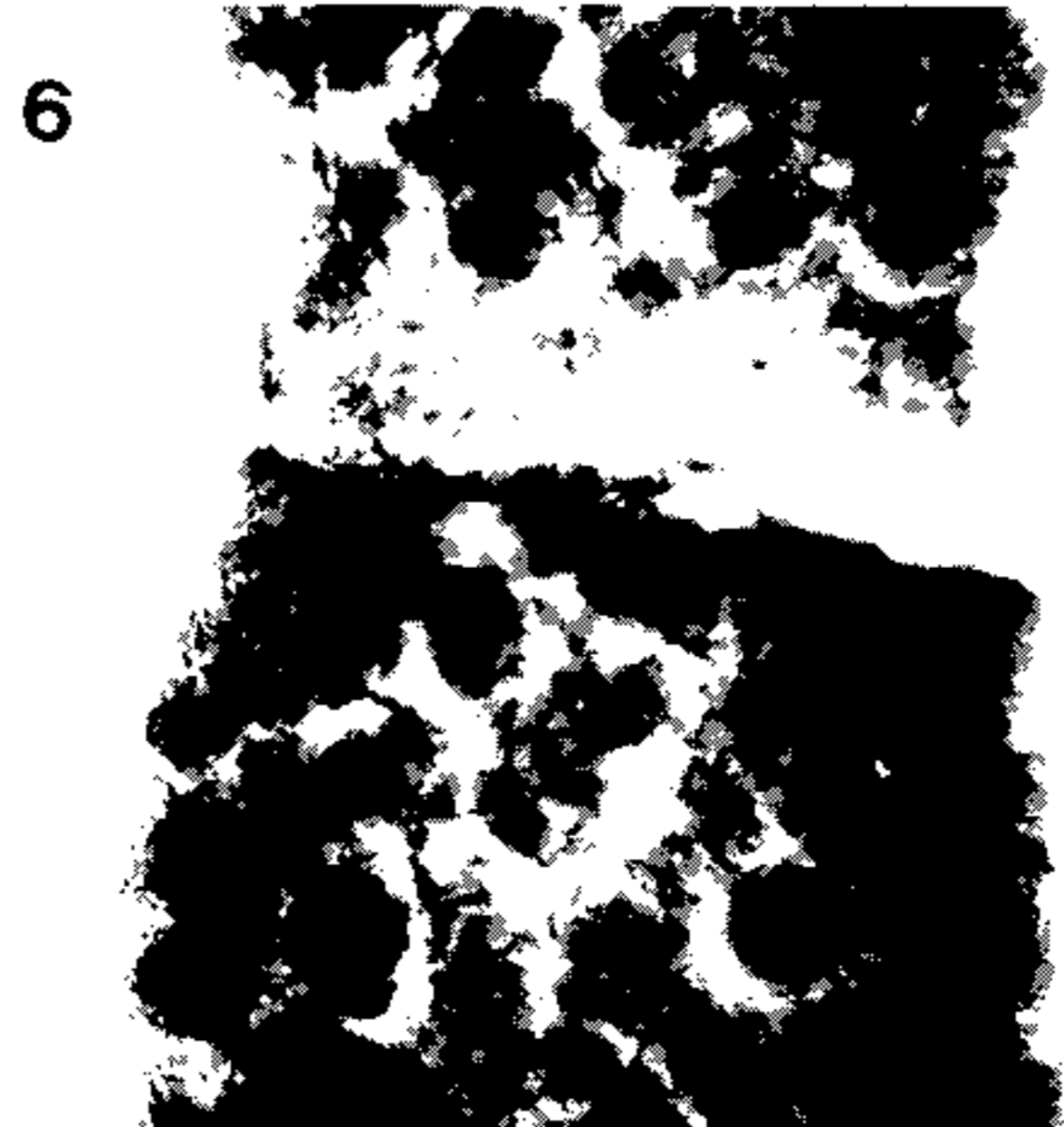
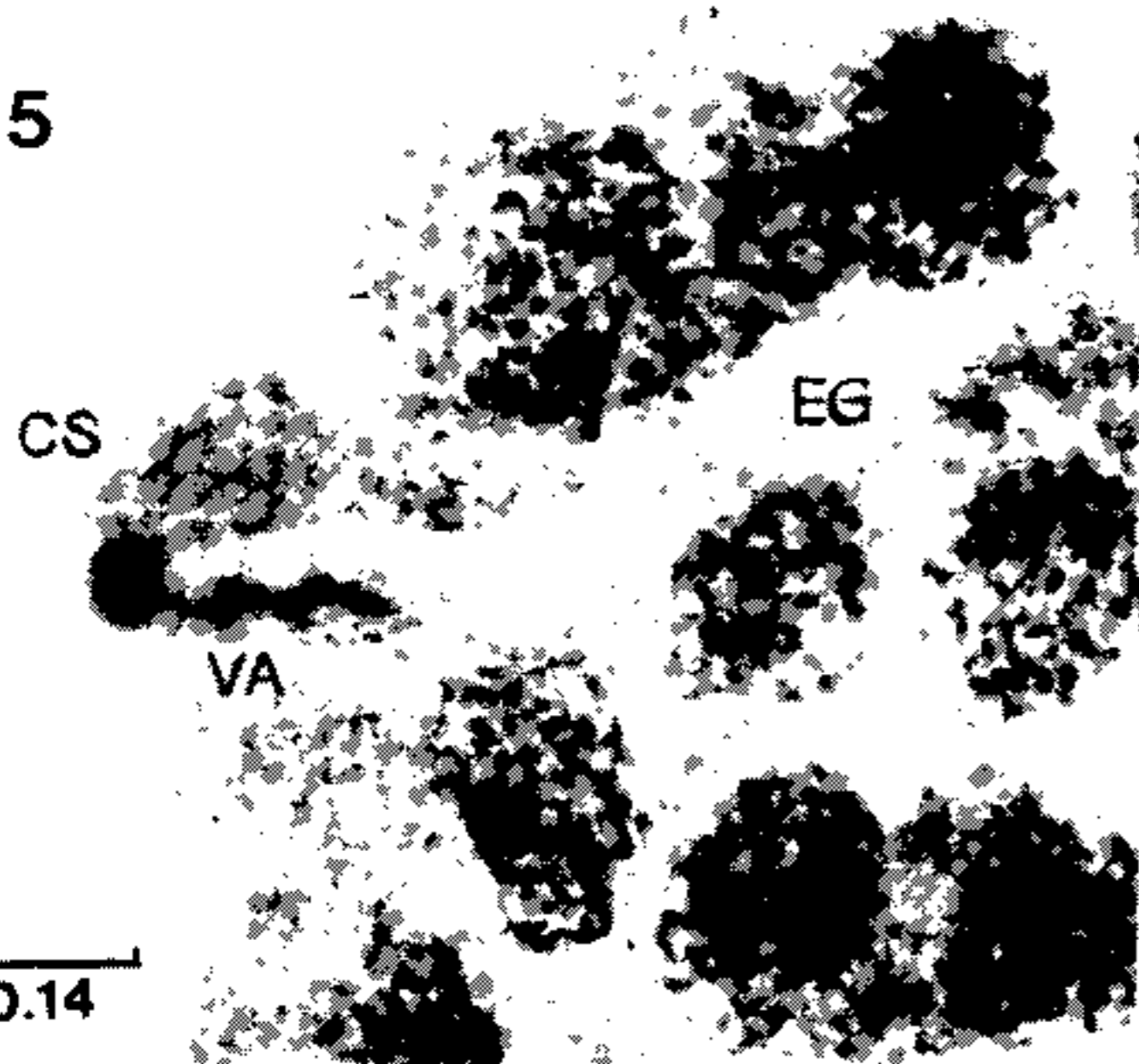
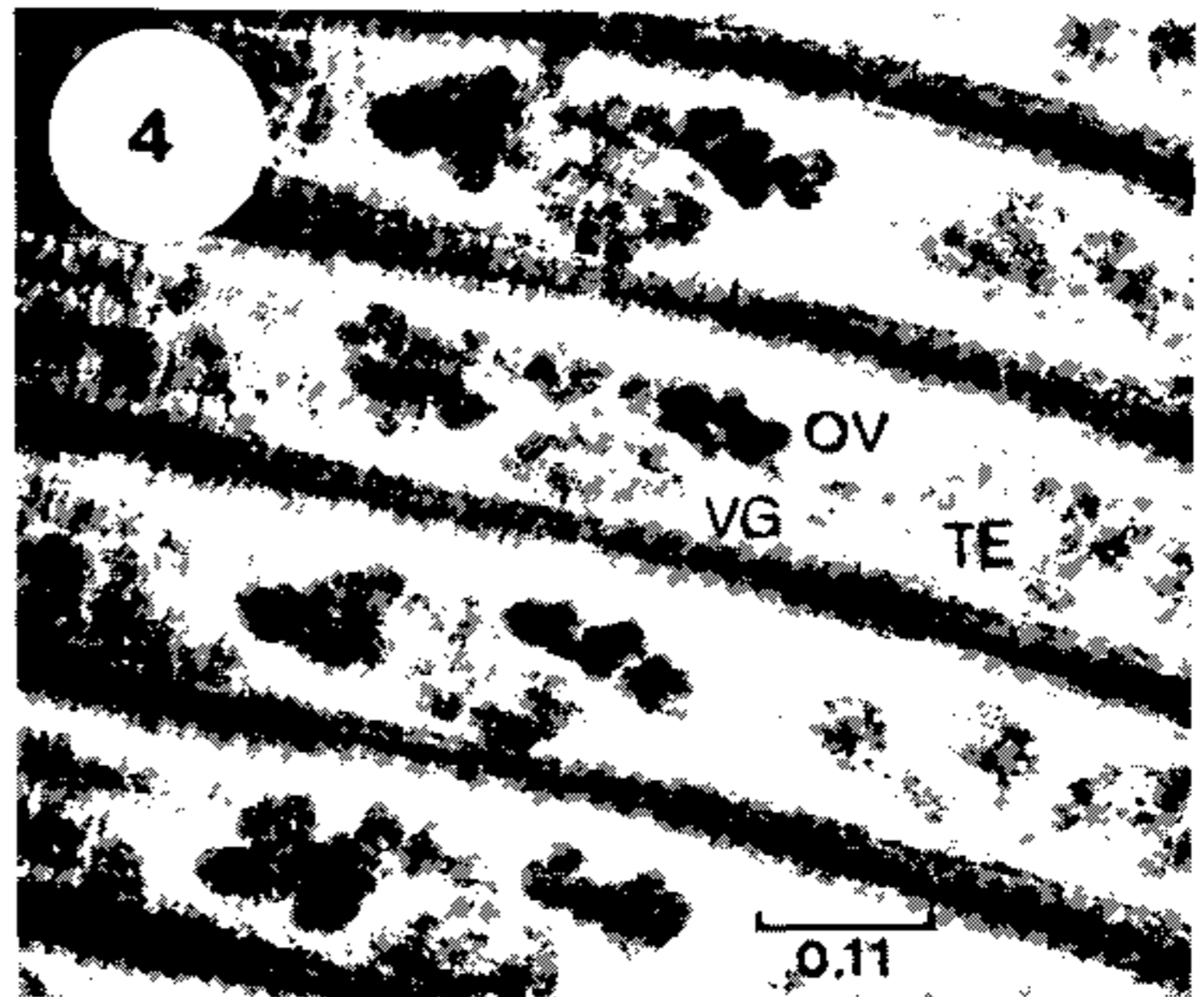
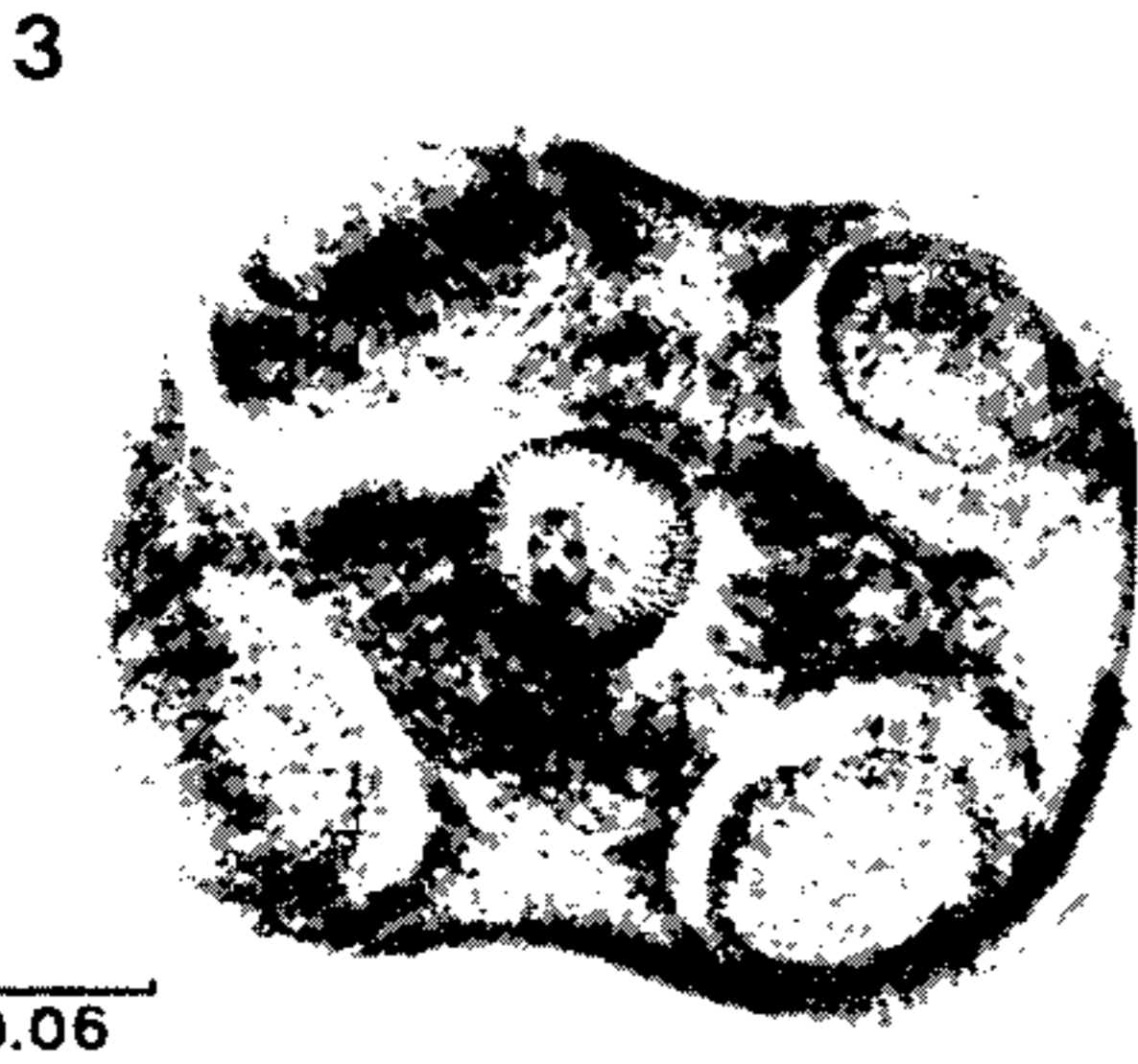
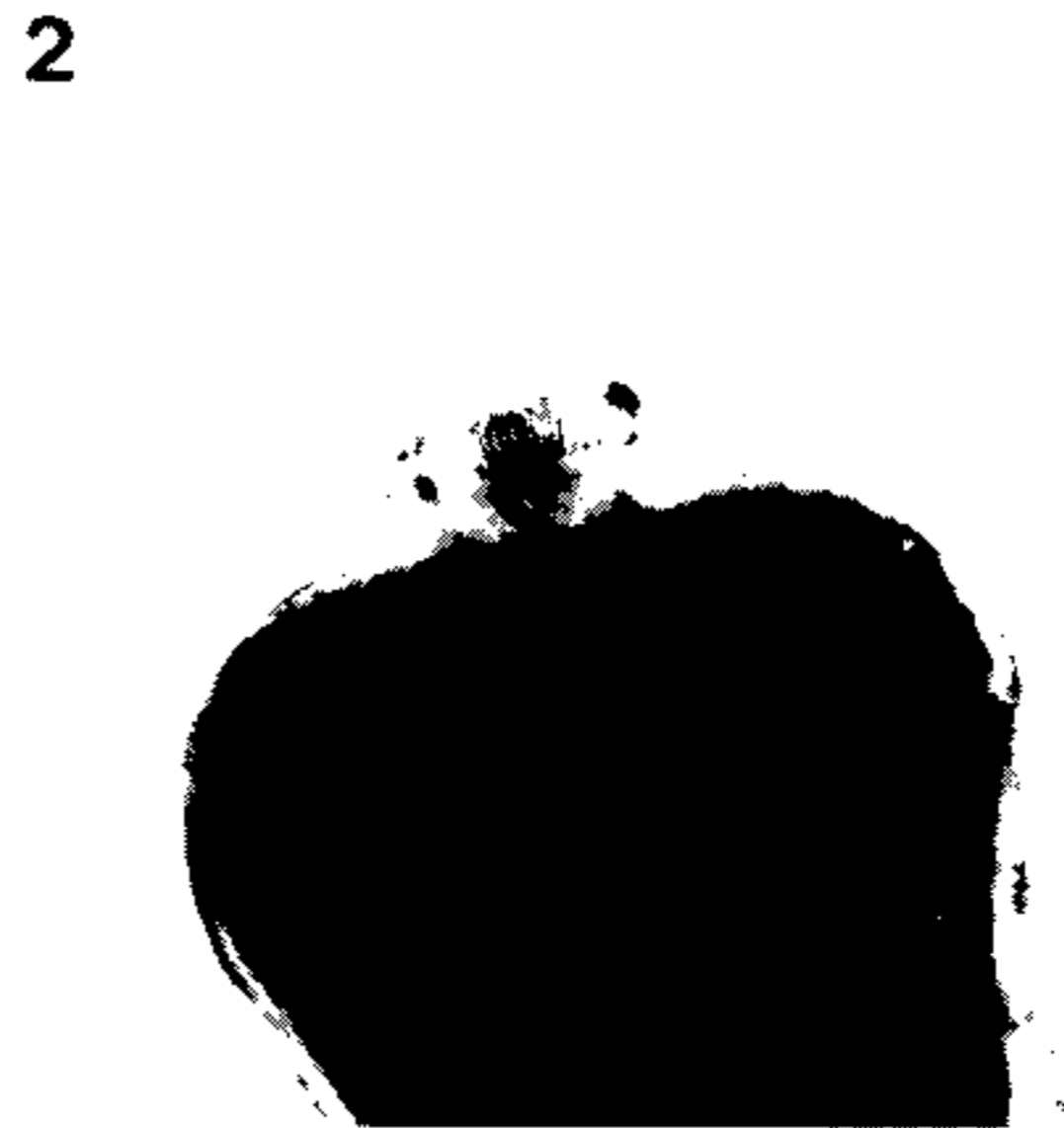
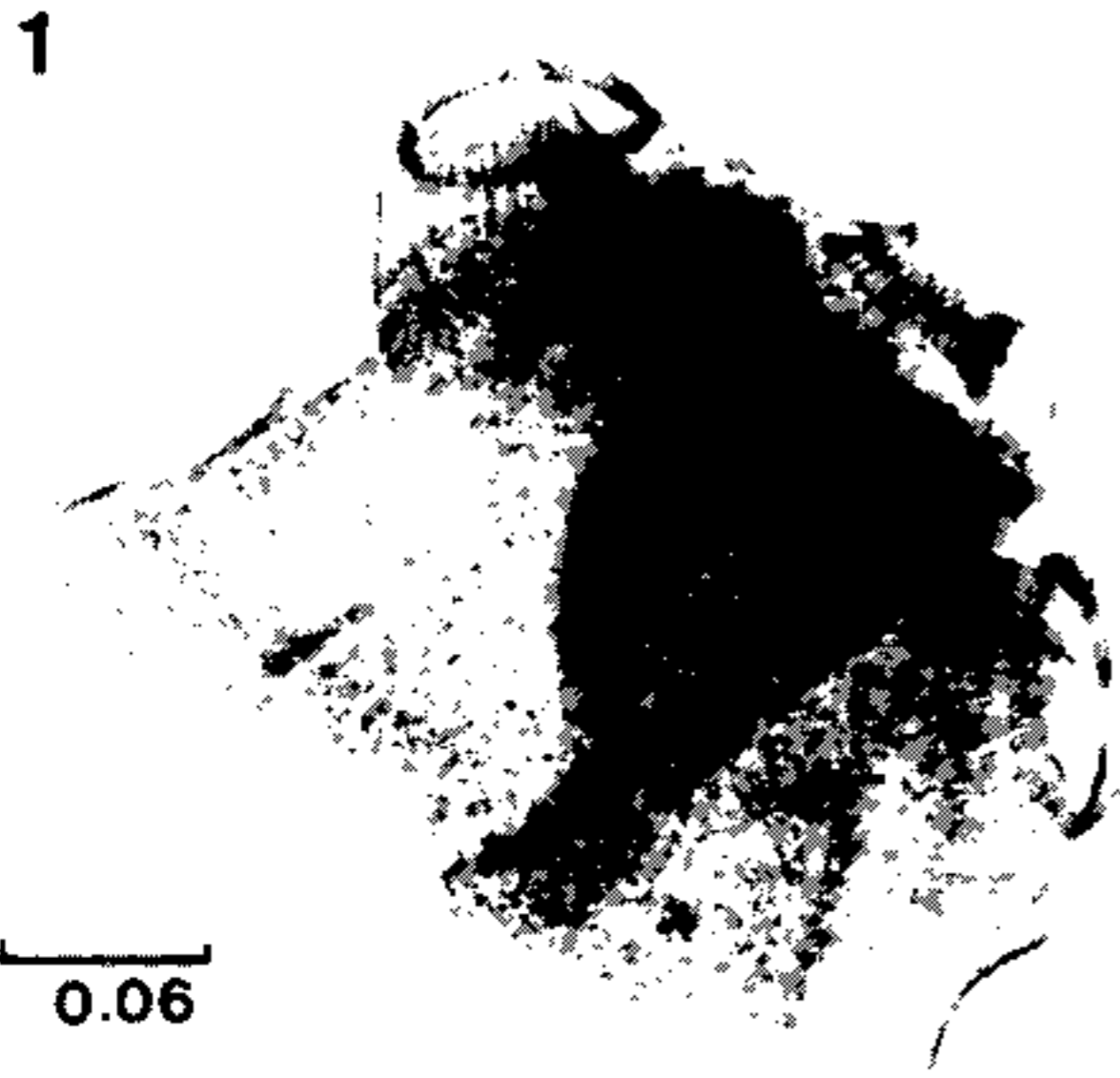
Host: *Oryzomys ratticeps*

Location: small intestine

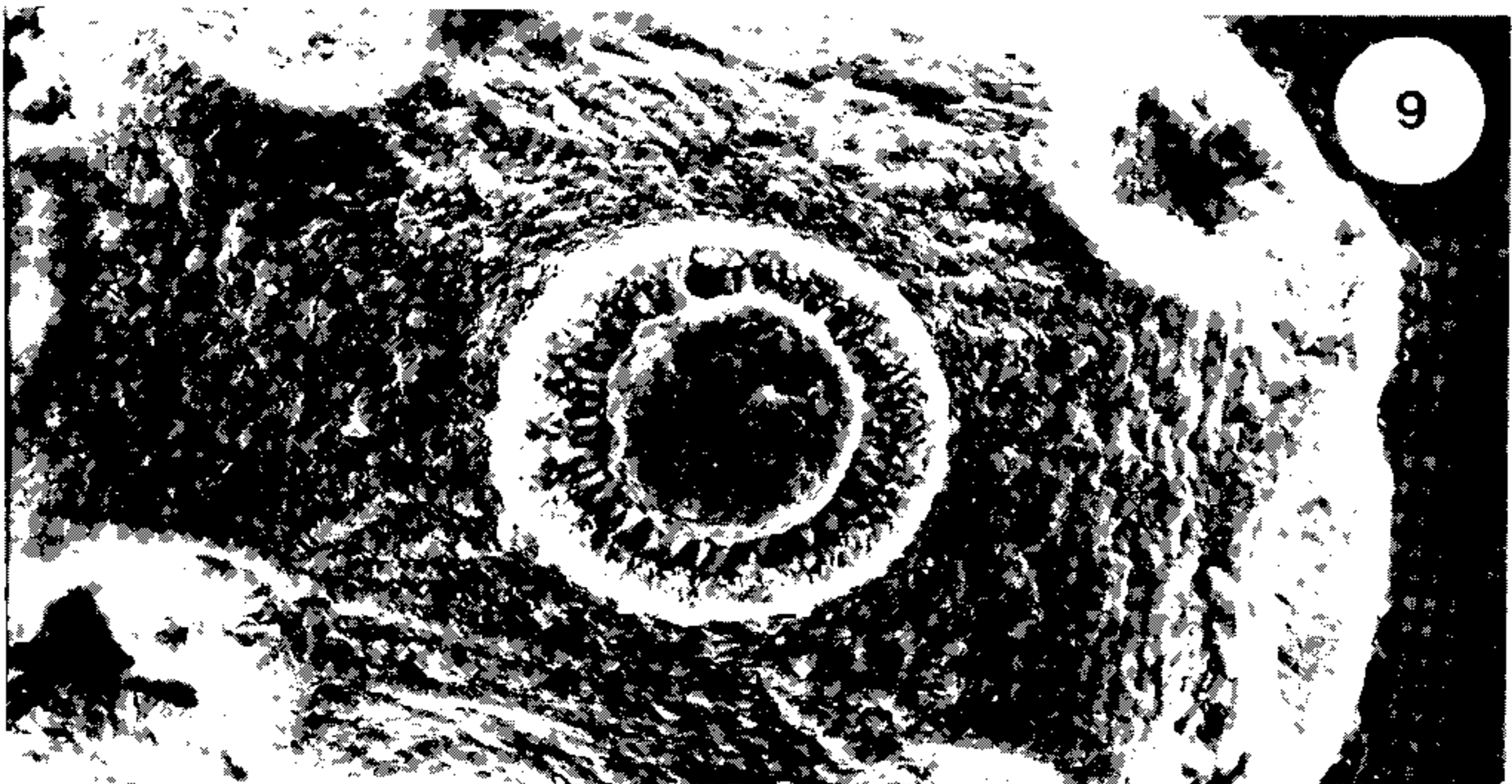
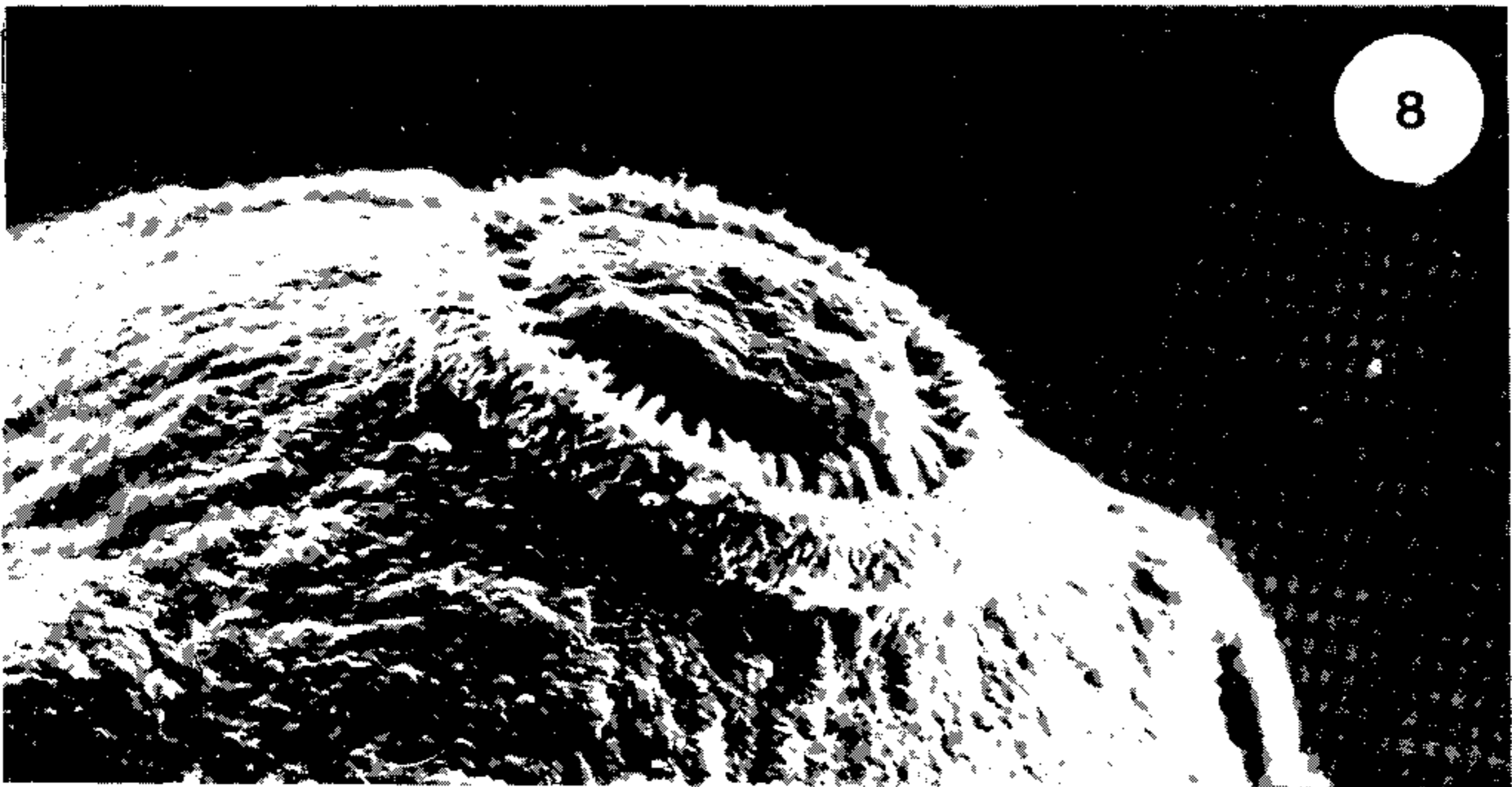
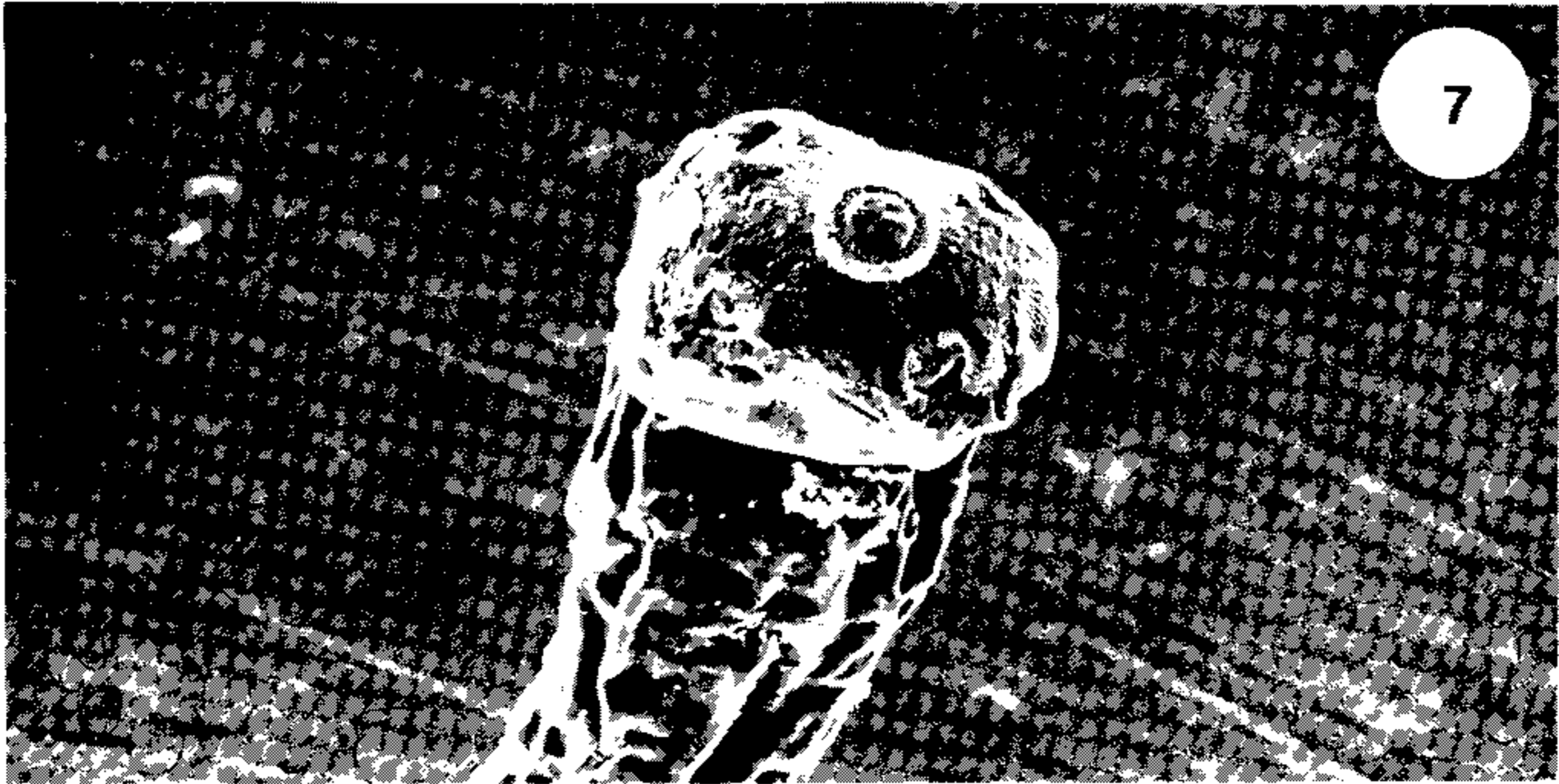
Locality: The Environmental Protection Area of Guaricana, Paraná.

Types: holotype CHIOC no. 33.043 A-C and paratypes CHIOC nos. 33.043 D-F and 33.044.

Description (measurements based on 13 specimens): Strobilum 300-601 (418) long, maximum width 1.82-3.65 (2.83). Number of



*Raillietina (R.) guaricanae* n. sp. Figs 1, 2: scolex – lateral view (400 X). Fig. 3: scolex – face view (400 X). Fig. 4: mature proglottid – OV: ovary, VG: vitellin gland, TE: testes (160 X). Fig. 5: mature proglottid changing to gravid – CS: cirrus sac, VA: vagina, EG: egg capsules (160 X). Fig. 6: gravid proglottid with egg capsules (160 X).



*Raillietina (R.) guaricanae* n. sp. - Scanning electron microscopy. Fig. 7: scolex (400 X). Fig. 8: scolex (1000 X). Fig. 9: rostellum (1500 X).

proglottids 947 (based on four specimens): 242 immatures, 390 mature, 257 mature changing to gravid and 116 gravid. Scolex 0.25-0.30 (0.27) long, 0.24-0.38 (0.29) in diameter (Figs 1, 2, 3 and 7). Rostellum 0.06-0.07 (0.06) in diameter, with double crown of alternating hammer-shaped hooks (Figs 8 and 9). Hooks 66-78 (70) in number, 0.01-0.02 long. Suckers 0.08-0.11 (0.09) in diameter, armed with seven rows of smaller hooks 0.006 long. Mature proglottids ten times wider than long, 0.08-0.35 (0.15) long, 0.93-3.05 (1.56) wide (Fig. 4). Genital pores unilateral, located about one third of length of proglottid from its anterior border. Cirrus sac pyriform curved, concave posteriorly, 0.05-0.12 (0.08) long, 0.03-0.06 (0.04) wide (Fig. 5). Vas deferens narrow and coiled. Testes 0.02-0.07 (0.04) in diameter; 26-41 (35) per proglottid; 6-12 (9) on poral side, 20-30 (26) on anti-poral side; located between longitudinal ventral excretory ducts. Vagina opens posterior to cirrus sac. Ovary, bilobed, situated slightly towards poral side of proglottid; each lobe 0.05-0.30 (0.13) wide. Vitelline gland 0.06-0.18 (0.11) wide. Gravid proglottids somewhat longer than wide, 0.70-1.68 (1.00) long, 0.56-1.26 (0.81) wide (Fig. 6). Egg capsules subglobular or ovoid; 92-121 (104) in each proglottid, 0.12-0.18 (0.13) in diameter. Each capsule contains 4-12 (7) eggs (0.0015 in diameter).

#### DISCUSSION

There is much controversy about the specific determination of the species of *Raillietina* (López-Neyra, 1943; Cameron & Reesal, 1951). They show little morphological variation and many original descriptions were based only in incomplete specimens, sometimes in bad fixation conditions with important characters frequently omitted.

There are three species of *Raillietina* (*Raillietina*) known as parasites of mammals from the Neotropical Region (Baer & Sandars, 1956): *Raillietina* (*R.*) *demerariensis*, *Raillietina* (*R.*) *alouatta* and *Raillietina* (*R.*) *trinitatae*. *Raillietina* (*Raillietina*) *guaricanae* n. sp. differs from these species by the following reasons: the number of rostellar hooks (70) is fewer than the others (from 170 to 300); the number of testes (26 to 42) is similar to *R. (R.) trinitatae*, but fewer than *R. (R.) demerariensis* (50 to 70) and *R. (R.) alouatta* (110 to 130); the number of egg capsules is 92 to 121 for the new species, while it is 38 to 55 for *R. (R.) alouatta*,

80 to 240 for *R. (R.) trinitatae* and 92 to 121 for *R. (R.) demerariensis*.

There is relative specificity from the parasite to their hosts. Only *Oryzomys* species were found hosting *R. (R.) guaricanae*, although other rats were captured in the same place and with the same kind of baits.

This paper represents the first record of *Raillietina* parasitizing mammals in the state of Paraná. The number of *Raillietina* (*R.*) parasites of mammals from the Neotropical Region has increased to four: *R. (R.) demerariensis*, *R. (R.) alouatta*, *R. (R.) trinitatae* and *R. (R.) guaricanae* n. sp.

#### ACKNOWLEDGEMENTS

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