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ORIENTOSTRONGYLUS EZOENSIS N. SP. (NEMATODA: HELIGMOSOMIDAE) FROM THE BROWN RAT, *RATTUS NORVEGICUS* BERKENHOUT

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A new nematode, *Orientostrongylus ezoensis* n. sp., was obtained from the small intestine of *Rattus norvegicus* captured in Sapporo, Hokkaido, northern Japan. This species differs from three known species of this genus in the number of longitudinal ridges (23 in male and 25 in female), the morphology of the spicules, and in the formula of the dorsal and externo-dorsal rays, etc.

In the summer of 1974, a large number of brown rats, *Rattus norvegicus*, were trapped by the author in Sapporo and the helminthological examination was conducted. A new nematode species of the genus *Orientostrongylus* DURETTE-DESSET, 1970, was obtained from the small intestine. This species was always collected together with *Nippostrongylus brasiliensis* (TRAVASSOS, 1914).

MATERIALS AND METHODS

A large number of specimens were collected from the small intestine of 19 out of 120 rats. The specimens were preserved in formalin solution ond were treated by lacto-phenol solution for parasitological examination. The arrangement of the longitudinal cuticular ridges was determined by transverse sections.

The specimens used in this paper are deposited in the parasitological collection of the Department of Parasitology, Faculty of Veterinary Medicine, Hokkaido University.

DESCRIPTION

Orientostrongylus ezoensis n. sp.

Host *Rattus norvegicus* BERKENHOUT

Habitat Small intestine

Locality Sapporo, Japan

Description Body coiled tightly, red in color when alive. Cephalic vesicle well developed. Lips not prominent. Longitudinal ridges of cuticle with transverse striations, mostly starting from the base of cephalic vesicle.

Male: Body length 2.20~2.49 mm, maximum width 0.063~0.078 mm. Longitudinal ridges of cuticle 23 in number. Cephalic vesicle 0.039~0.052 mm long, 0.026~0.033 mm wide. Esophagus club-shaped, 0.285~0.345 mm long. Nerve ring and excretory pore at 0.130~0.134 mm and 0.167~0.212 mm from anterior end, respectively. Bursa slightly asymmetric. Bursal rays rather thick and short; antero-ventral and postero-ventral arise from common base; laterals arise from a short common stem, antero-lateral thicker than others; dorsal very thick; externo-dorsal arises from common trunk of dorsal some distance from base. Spicules short and subequal, covered with thin membrane, length 0.078~0.089 mm; proximal one third columnar; distal two thirds filiform, distal end bifurcated. Gubernaculum absent. Prebursal papillae present.

Female: Body length 3.11~4.39 mm, maximum width 0.063~0.078 mm. Longitudinal ridges 25 in number. Cephalic vesicle 0.045~0.056 mm long and 0.030~0.039 mm wide. Esophagus 0.282~0.371 mm long. Nerve ring and excretory pore at 0.119~0.155 mm and 0.182~0.219 mm from anterior end, respectively. Anus and vulva at 0.059~0.067 mm and 0.137~0.156 mm from posterior end, respectively. Ovary reflexed a little posterior to esophageal end. Uterine eggs 4~7 in number, 0.056~0.067×0.033~0.037 mm in size. Tail tapered bluntly.

DISCUSSION

Up to this time, three species have been assigned to the genus *Orientostrongylus* DURETTE-DESSET, 1970: *O. tenorai* DURETTE-DESSET, 1970, from *Bandicota bengalensis* in Calcutta and *Mus musculus* in Jalal-Abad (Afghanistan), *O. chinensis* (ERHARDOVA, 1959) DURETTE-DESSET, 1970, from *Cricetulus barabensis* in Peking, and *O. brevispicularis* (SINGH, 1962) DURETTE-DESSET, 1970, from *Rattus norvegicus* in Mukteswar-Kumaun, India. This genus is characterized by short spicules, thick dorsal ray, synthetic shape of the bursa, and arrangement of longitudinal ridges. The number of longitudinal ridges of *O. ezoensis*, 23 in male and 25 in female, is the largest among the four species; 15 in male and 16 in female of *O. tenorai*, 20 in male and 18 in female of *O. chinensis*, and 12 in male of *O. brevispicularis*. The distal end of the spicules of *O. ezoensis* is complex and similar to that of *O. tenorai*, but the proximal end is conical in the latter. In *O. ezoensis*, the externo-dorsal ray arises from the trunk of the dorsal ray some distance from the base; this characteristic is similar to *O. chinensis*. On the other hand, in *O. tenorai* and *O. brevispicularis*, the externo-dorsal arises from near the base of the dorsal. According to the original description by ERHARDOVÁ (1959), *O. chinensis* alone has a small gubernaculum.

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REFERENCES

1) DURETTE-DESSET, M.-C. (1970): *Annls Parasit. hum. comp.*, **45**, 829
2) DURETTE-DESSET, M.-C. (1971): *Mem. Mus. natn. Hist. nat. Paris*, **69**, 1
3) ERHARDOVÁ, B. (1959): *Čslká Parasit.*, **6**, 93
4) SINGH, K. S. (1962): *Indian J. Helminth.*, **14**, 98

Explanation of plate

Fig. 1 Bursa, ventral view

Fig. 2 Anterior extremity of female

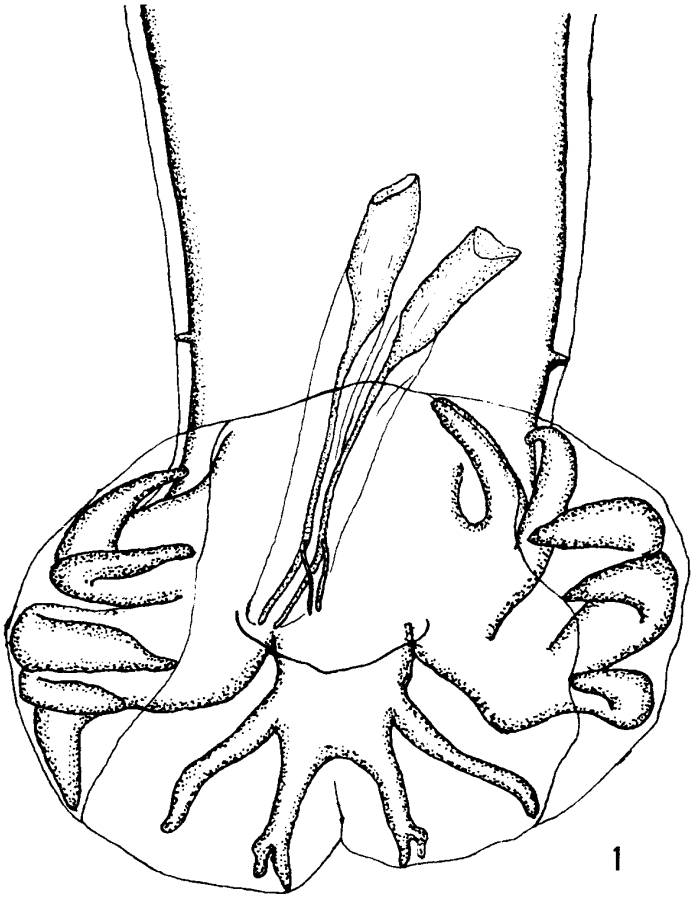
Fig. 3 Posterior extremity of female

Fig. 4 Transverse section of male

Fig. 5 Transverse section of female

D dorsal V ventral

R right L left



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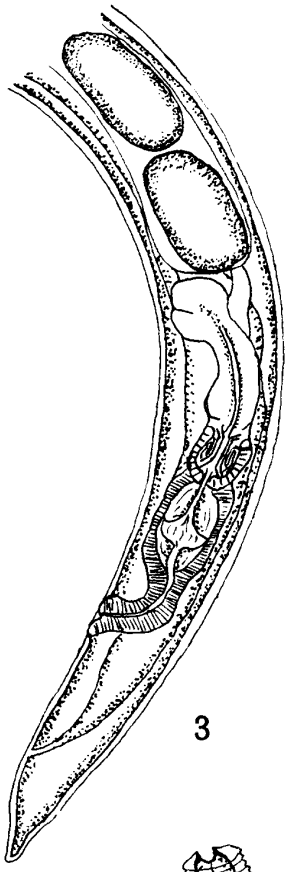

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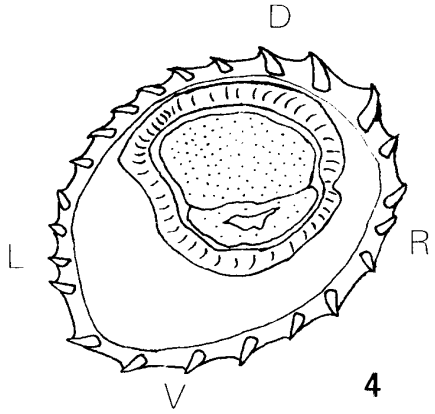

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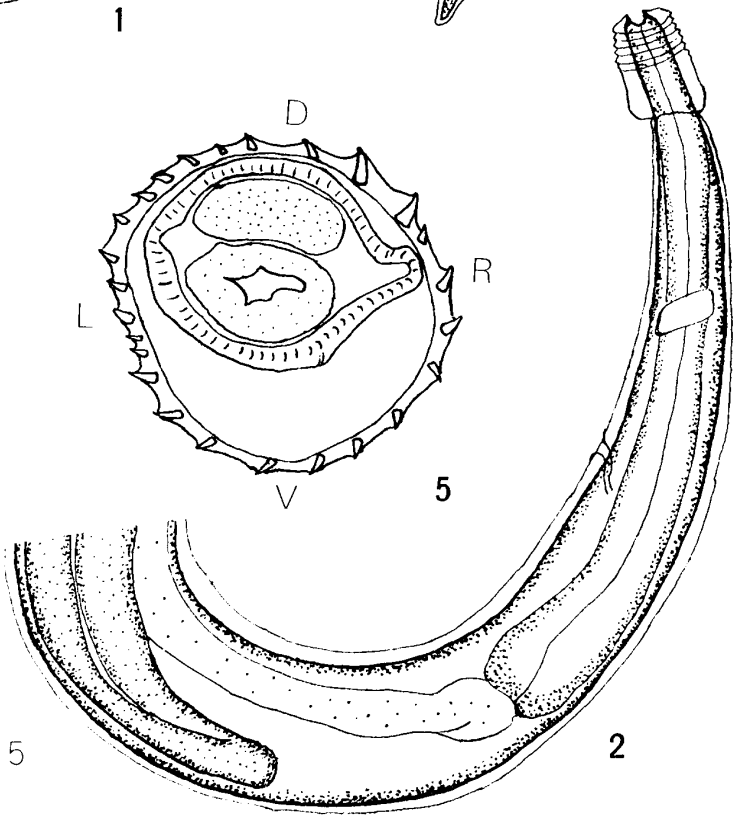

2

0.1mm : 2, 3

0.05mm : 1, 4, 5