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# Heligmosomid Nematodes from the Small Mammals Captured in the Adjacent Area of Akademgorodok City, Southern Part of West Siberia, Russia

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**Abstract.** As a part of the Science Exchange Program between Nagoya University and Russian Academy of Sciences, heligmosomid nematodes of the small mammals captured in the adjacent area of Akademgorodok City, West Siberia, Russia was investigated in summer, 1994. The host materilas of the survey were 27 individuals of the Soricidae and 60 individuals of the Muridae, and its specific names were shown below; *Sorex araneus*, *S. caecutiens*, *S. isodon*, *S. minutus*, *S. tundrensis*, *Apodemus agrarius*, *A. peninsulae*, *Clethrionomys glareolus*, *C. rufocanus*, *C. rutilus*, *Microtus agrestis*, *M. arvalis*, *M. gregalis* and *M. oeconomus*. Among them, *Longistriata depressa* was obtained from *S. araneus*, *S. isodon*, *S. minutus* and *S. tundrensis*, and *Heligmosomoides neopolygyrus* was obtained from *A. agrarius* and *A. peninsulae*, respectively. However, there was no heligmosomid obtained from the genera *Clethrionomys* or *Microtus*. This is the first host record of *L. depressa* from *S. isodon* and *S. tundrensis*, and the locality record of *H. neopolygyrus* from West Siberia.

As a part of the Science Exchange Program between School of Agricultural Sciences, Nagoya University and Institute of Cytology and Genetics,Russian Academy of Sciences, the fauna of heligmosomid nematodes of the families Soricidae and Muridae captured in the adjacent area of Akademgorodok City, southern part of West Siberia, Russia was investigated from July to August 1994.

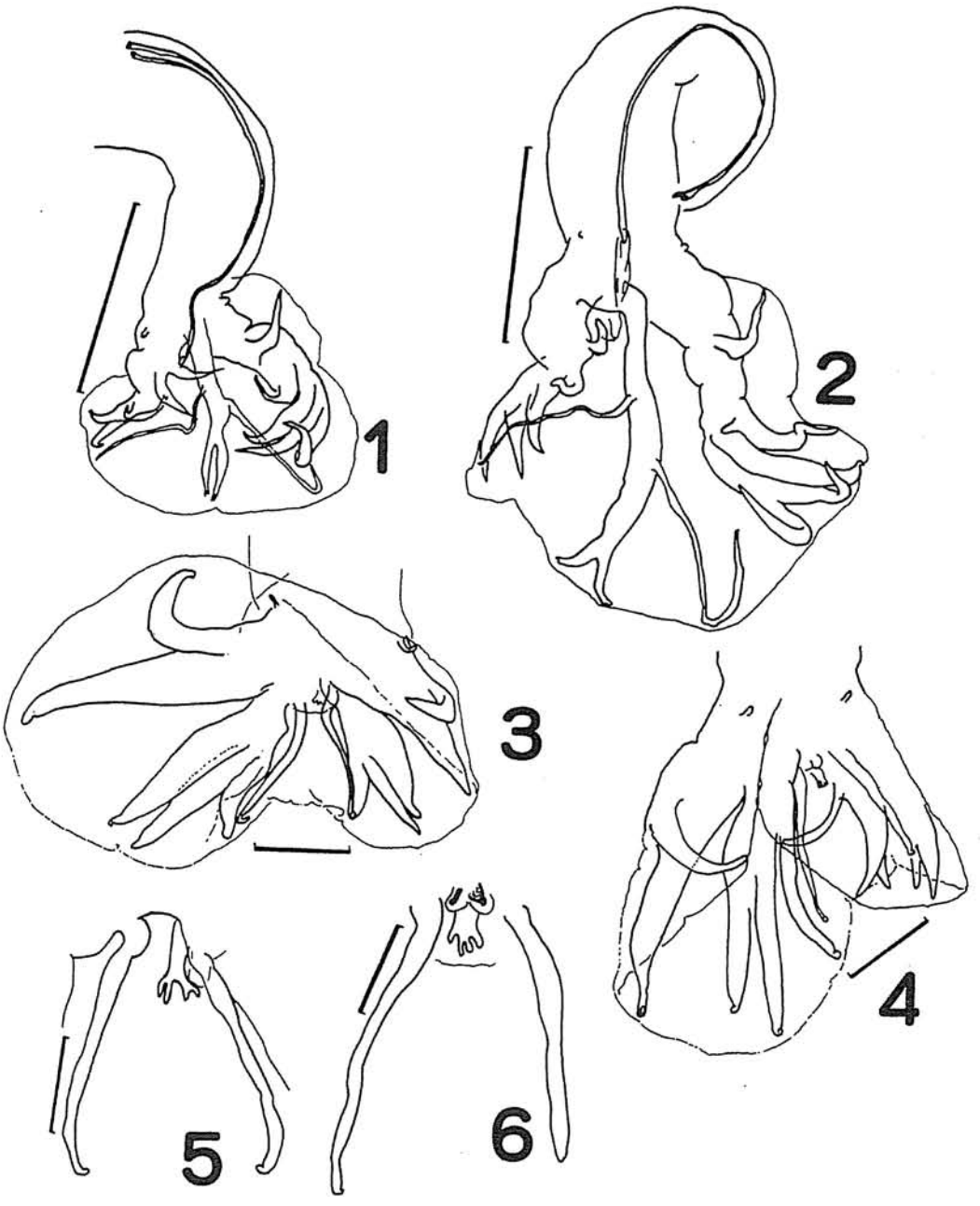
There has been several recent reports on the parasitic nematodes belonging to the family Heligmosomidae parasitizing the families Soricidae and/or Muridae in West Siberia (Chechulin, 1989; Chechulin and Panov, 1989; Fedorov, 1975a, b; Karpenko and Fedorov, 1987; Karpenko *et al.*, 1989). However, because new species and/or new host records of the nematode family have been done in its adjacent areas (Asakawa, 1991,1995; Asakawa *et al.*, 1994; Genov and Khadzhinikolova, 1984; Karpenko, 1987; Shakhmatova,1980, 1990; Vaucher and Durette-Desset, 1973), it should be reexamined with respect the data. In the present paper, we report the results of the heligmosomid survey.

## Materials and Methods

Outlines of locality and methods of capture of host animals. These were shown in the preceding preliminary report (Kobayashi *et al.*, 1994). Collecting date. 21st - 27th Jul. and 8th - 9th Aug., 1994.

Host animals. The host materilas of the present survey were shown below; *Sorex araneus* (N=18)(N: Number of individuals of shrews or rodents examined), *S. caecutiens* (N=4), *S. isodon* (N=1), *S. minutus* (N=3), *S. tundrensis* (N=1), *Apodemus agrarius* (N=7), *A. peninsulae* (N=4), *Clethrionomys glareolus* (N=10), *C. rufocanus* (N=18), *C. rutilus* (N=14), *Microtus agrestis* (N=1), *M. arvalis* (N=1), *M. gregalis* (N=1) and *M. oeconomus* (N=4).

Parasitic nematodes. Nematodes were obtained from intestine of the shrews or small intestine of rodents. Nematodes were fixed and preserved in 10% formalin solution, and examined microscopically with lactophenol solution. Some




Figs. 1 and 2. Two types of bursae of *Longistriata depressa* from *Sorex araneus* in this survey. Ventral view and scale bar=0.1 mm.

Figs. 3-6. Bursae (3 and 4), and dorsal and externo dorsal rays (5 and 6) of *Heligmosomoides neopolygyrus* from *Apodemus agrarius* (3 and 5) and *A. peninsulae* (4 and 6). Ventral view and scale bars=0.1 mm (3 and 4) or 0.05 mm (5 and 6) .

nematodes were sectioned with a razor for observation of the synlophe (Durette-Desset, 1983). Measuring and drawing of these nematodes were done with the aid of a camera lucida, OLYMPUS Model BH2-DA.

These specimens are deposited in the Department of Veterinary Medicine, Rakuno Gakuen University, Hokkaido, Japan, and Institute Animal Ecology, Siberian Branch, Russian Academy of Sciences, Novosibirsk, Russia.

## Results and Discussion

1) Soricidae. *Longistriata depressa* (Dujardin, 1845) was obtained from13 individuals of *Sorex araneus*, 1 individual of *S. isodon*, 2 individuals of *S. minutus*, and 1 individual of *S. tundrensis*. *Longistriata* sp. was obtained from 1 individual of *S. caecutiens*, but positive identification was not possible because of the absence of male nematode.

*L. depressa* has been reported from *Sorex araneus*, *S. caecutiens* and *S. minutus* (Genov and Khadzhinikolova, 1984; Vaucher and Durette-Desset,1973), but this is the first report of the nematode species from *S. isodon* and *S. tundrensis*. Furthermore, although a common stem of dorsal and externo dorsal rays of bursa of *L. depressa* obtained from most of the host individuals was not so long (Fig. 1), it is remarkable that the stems obtained from 2 individuals of *S. araneus* were very long (Fig. 2).

2) Muridae. *Heligmosomoides neopolygyrus* Asakawa et Ohbayashi, 1986 was obtained from 2 individuals of *A. agrarius* and 1 individual of *A. peninsulae*. *Heligmosomoides* sp. was obtained from 1 individual of *A. peninsulae*, but positive identification was not possible because of the absence of male nematode. On the other hand, there was no heligmosomid obtained from the genera *Clethrionomys* or *Microtus* in the survey.

This is the first record of *H. neopolygyrus* from West Siberia, although this nematode species have been reported from Primorskiy Region, Far East, Russia (Asakawa et al., 1994). The absence of the basal swellings of externo-dorsal ray is a definite characteristic of this species (Figs. 3-6). And it has been reported that the externo-dorsal rays of the nematodes obtained from *A. peninsulae* are longer than ones from *A. agrarius* (Asakawa, 1991, 1995; Asakawa et al., 1993, 1994). The present cases accorded with such tendency (Figs. 5 and 6).

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## ロシア共和国西シベリア南部アカデムゴロトク市周辺で採集した小哺乳類のヘリグモソームム科線虫

浅川満彦・織田銑一・原田正史・成田裕一・子安和弘・A.I.ﾁｪﾁｭｰﾘﾝ・A.K.ﾄﾞﾌﾞﾛﾄﾎﾞﾙｽｷｰ・V.V. ﾊﾟﾉﾌ・P.M.ﾎﾞﾛﾃﾞｲﾝ・K.P.ﾌｪﾄﾞﾛﾌ

1994年夏、名古屋大学とﾛｼｱ科学ｱｶﾃﾞﾐｰとの共同研究の一環として、西ｼﾍﾞﾘｱのｱｶﾃﾞﾑｺﾞﾛﾄｸ市周辺で採集された小哺乳類のﾍﾘｸﾞﾓｿｰﾑﾑ科線虫の調査をおこなった。調査した宿主材料は、ﾄｶﾞﾘﾈｽﾞﾐ科27個体およびﾈｽﾞﾐ科60個体で、それらの種名は以下の通りであった; *Sorex araneus, S. caecutiens, S. isodon, S. minutus, S. tundrensis, Apodemus agrarius, A. peninsulae, Clethrionomys glareolus, C. rufocanus, C. rutilus, Microtus agrestis, M. arvalis, M. gregalis* および *M. oeconomus*。その結果 、*Longistriata depressa* が *S. araneus, S. isodon, S. minutus* および *S. tundrensis* から、また *Heligmosomoides neopolygyrus* が *A. agrarius* および *A. peninsulae* からそれぞれ検出された。しかし, *Clethrionomys* 属あるいは *Microtus* 属の各種からはﾍﾘｸﾞﾓｿｰﾑﾑ科線虫は検出されなかった。なお、*S. isodon* 並びに *S. tundrensis* から *L. depressa* が検出されたこと、また 西ｼﾍﾞﾘｱから *H. neopolygyrus* が検出されたことは今回が初めてとなった。

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