

*Hymenolepis magnirostellata* sp. nov. (Cestoda : Hymenolepididae),  
with Records of the Known Cestodes from the Shrews of Hokkaido

ISAMU SAWADA<sup>1)</sup> AND SUSUMU KANENO<sup>2)</sup>

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**Abstract**

A new hymenolepidid tapeworm, *Hymenolepis magnirostellata*, was found in the long-clawed shrew, *Sorex unguiculatus* Dobson from Yûdô-numa, Toyokoro-chô, Hokkaido. The new species closely resembles *Hymenolepis olivieri* Mikhail and Fahmy, 1976, but it differs that in the size of the rostellum, the size of the rostellar sac and the arrangement of the testes. *Coronacanthus parvihamatus* Sawada and Koyasu, 1990, *Ditestolepis longicirrosa* Sawada and Harada, 1990, *D. ezoensis* Sawada and Koyasu 1991, and an unidentified juvenile cestode of *Ditestolepis* were also obtained from *Sorex gracillimus* in Hokkaido.

**Key words:** *Hymenolepis magnirostellata*, hymenolepidid tapeworms, *Sorex unguiculatus*, *S. gracillimus*, Hokkaido

**Introduction**

Many species of the hymenolepidid and the dilepidid tapeworms have been recorded from shrews of the genus *Sorex* collected at different places of the world. In general the hymenolepidid tapeworm infecting them is small in size. The tendency seems to be correlated with the small size of their hosts. The tapeworms infecting the shrews of *Sorex* are divided into two groups, according to whether they possess armed rostellum or unarmed rostellum. Little is known about the species of unarmed rostellate *Hymenolepis* from the shrews of *Sorex*, and there is no previous record on the species from *Sorex* spp. in Hokkaido.

**Materials and Methods**

A total seven shrews, *Sorex unguiculatus* and *S. gracillimus* (Insectivora: Soricidae), were captured at six places in Hokkaido from July 19 to September 13, 1991. The shrews were

autopsied immediately after capture, and their intestinal tracts were fixed in Carnoy's fluid and sent to the senior author's laboratory. The methods used are the same as those previously described (Sawada and Harada, 1989). Measurements are given in millimeters.

**Results**

Localities of the shrews examined and their cestodes are shown in Fig. 1 and Table 1. The cestodes found are as follows.

*Hymenolepis* Weinland, 1858  
*Hymenolepis magnirostellata* sp. nov.  
(Figs. 2–5)

On Sept. 13, 1991, one long-clawed shrew, *Sorex unguiculatus*, was captured at Yûdô-numa, Toyokoro-chô. On dissection, the shrew was found infected with two mature specimens of this cestode and an unknown species (no scolex).

**Description:** Small-sized hymenolepidid; worm 9–10 in length by 0.7–0.8 in maximum width. Metamerism distinct, craspedote, margins serrate. Segments wider than long. Scolex 0.161–0.175 long by 0.252–0.266 wide, with four well-developed, oval suckers measuring

<sup>1)</sup>Biological Laboratory, Nara Sangyo University, Sango, Nara 636, Japan.

<sup>2)</sup>Katano City, Osaka 576, Japan.

沢田 勇 (奈良産業大学生物学教室)

金野 晋 (交野市松塚7の9)

0.098 in diameter. An unarmed rostellum triangular, 0.105 long by 0.126–0.140 at its width part. Rostellar sac 0.133–0.154 long by 0.147–0.168 wide. Neck slender, 0.97–1.11 long by 0.46–0.48 wide.

Genital pores unilateral, located at middle of segment margins. Testes three in number, subspherical, 0.098–0.112 by 0.049–0.056, arranged triangularly, one poral and two aporal.

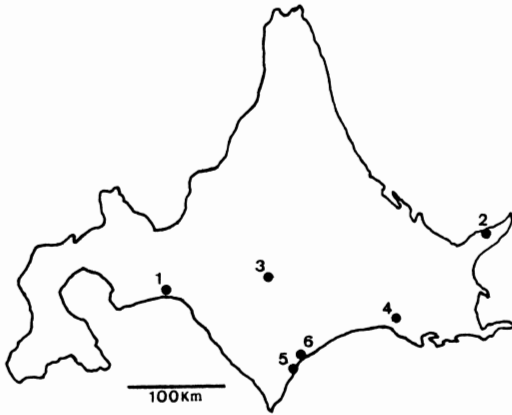


Fig. 1 Map showing the collection sites of shrews. For the locality number, see Table 1.

Cirrus sac pyriform, 0.119–0.161 long by 0.035 wide, expanding beyond longitudinal excretory canals. Internal seminal vesicle 0.112–0.119 long by 0.028–0.035 wide, occupying almost whole of cirrus sac. External seminal vesicle 0.126 long by 0.028–0.035 wide. Ovary transversely elongated, bilobate, 0.140–0.175 wide. Vagina initially posterior to cirrus sac, gradually expanding into a voluminous seminal receptacle measuring 0.084–0.119 long by 0.049–0.056 wide. Vitelline gland irregularly lobate, 0.098–0.112 long by 0.049–0.056 wide, just posterior to ovary. Eggs oval, 0.039–0.042 in major axis by 0.028–0.032 in minor axis. Onchospheres subspherical, 0.028–0.032 by 0.025; embryonic hooks 0.014 long.

*Host:* *Sorex unguiculatus* Dobson, 1890 (Insectivora: Soricidae).

*Habitat:* Small intestine.

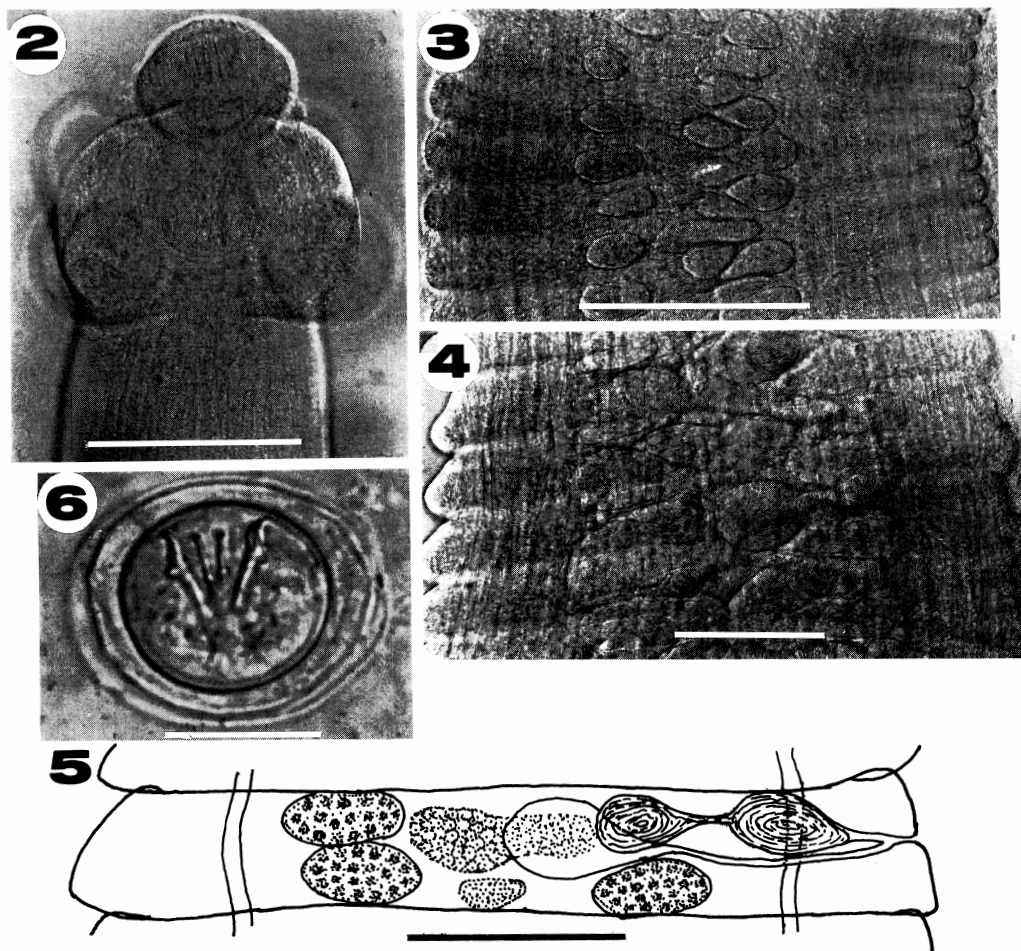
*Locality and date:* Yûdô-numa, Toyokoro-chô; Sept. 13, 1991.

*Type specimen:* Holotype, Nara Sangyo Univ. Lab. Coll. No. 9210, paratype, No. 9211.

*Remarks:* At present, about 17 unarmed species of the genus *Hymenolepis* are described from insectivores and rodents (Yamaguti, 1959;

Table 1 Shrews examined, and their cestode parasites in Hokkaido in 1991

Locality	Date	Shrew species	Incidence (No. infected / No. examined)	Parasites	
				Species	No.
(1) Uenae, Tomakomai-shi	19 July	<i>Sorex unguiculatus</i>	0/1		
(2) Shiretoko-tôge, Shari-chô	1 Aug.	<i>Sorex gracillimus</i>	1/1	<i>Coronacanthus parviamatus</i>	43
				<i>Ditestolepis longicirrosa</i>	8
				<i>Ditestolepis</i> sp.	3
(3) Nisshou-tôge, Hidaka-chô	5 Sept.	<i>Sorex gracillimus</i>	1/1	<i>Ditestolepis ezoensis</i>	8
				<i>Coronacanthus parviamatus</i>	23
(4) Takkobu-numa, Kushiro-chô	9 Sept.	<i>Sorex gracillimus</i>	0/2		
(5) Seika, Taiki-chô	13 Sept.	<i>Sorex unguiculatus</i>	0/1		
(6) Yûdô-numa, Toyokoro-chô	13 Sept.	<i>Sorex unguiculatus</i>	1/1	<i>Hymenolepis magnirostellata</i>	2
				sp. nov.	
				unidentified (no scolex)	1



Figs. 2–6 *Hymenolepis magnirostellata* sp. nov.

2: Scolex (Scale bar – 0.2mm) 3: Immature segments (Scale bar – 0.2mm) 4: Mature segments (Scale bar – 0.2mm) 5: Mature segment drawn from a projected microphotographic negative (Scale bar – 0.2mm) 6: Egg (Scale bar – 0.02mm)

Schmidt, 1986; Sawada and Koyasu, 1991). Among them, the present new species closely resembles *Hymenolepis olivieri* Mikhail and Fahmy, 1976, from *Crocidura olivieri* in Egypt, in the small-sized strobila, and the well-developed rostellum and rostellar sac. However, the present new species differs from *H. olivieri* in a larger rostellum (0.105 long by 0.126–0.140 wide vs. 0.058–0.067 long by 0.055–0.062 wide), a larger rostellar sac (0.133–0.154 long by 0.147–0.168 wide vs. 0.084–0.092 long by 0.061 wide), and the arrangement of the testes (triangular distri-

bution vs. transverse row).

*Coronacanthus* Spassky, 1954

*Coronacanthus parvihatatus* Sawada and Koyasu, 1990

*Coronacanthus parvihatatus* Sawada and Koyasu, 1990, pp. 194–196, figs. 15–20.

*Host: Sorex gracillimus* Thomas, 1907. For locality, see table 1 and fig. 1.

*Ditestolepis* Softys, 1952  
*Ditestolepis longicirrosa* Sawada and Harada,  
 1990

*Ditestolepis longicirrosa* Sawada and harada, 1990,  
 pp. 471–474, figs. 8–14.

*Host: Sorex gracillimus* Thomas, 1907. For  
 locality, see table 1 and fig. 1.

*Ditestolepis ezoensis* Sawada and Koyasu,  
 1991

*Ditestolepis ezoensis* Sawada and Koyasu, 1991,  
 pp. 572–574, figs. 13–17.

*Host: Sorex gracillimus* Thomas, 1907. For  
 locality, see table 1 and fig. 1.

*Ditestolepis* sp.

A specimen of *Sorex gracillimus* captured at  
 Shiretoko-tôge, Shari-chô, on August 1, was  
 found infected with three juvenile tapeworms  
 belonging to the genus *Ditestolepis* (Table 1).

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