

Vampirolepis tsushimaensis sp. nov. (Cestoda:Hymenolepididae)
in the Lesser White-toothed Shrew, *Crocidura suaveolens*
from Tsushima Island, Japan

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Abstract

A new species of hymenolepidid cestode, *Vampirolepis tsushimaensis* is described from the lesser white-toothed shrew, *Crocidura suaveolens* from Tsushima Island. This new species closely resembles *V. amamiensis* Sawada et Harada, 1986 from *C. horsfieldi watasei* of Amami-Ō-Shima, but differs from it in the shape of the rostellar hook.

Key words: *Vampirolepis*, shrew, Tsushima Island

Introduction

The lesser white-toothed shrew, *Crocidura suaveolens* (Pallas, 1811) are widely distributed at temperate woodland and steppe zones of the entire Palaearctic region from Spain to Korea, and Tsushima and Ullun-do between Korea and Japan (Corbet, 1978). Nevertheless, no cestode parasites of *C. suaveolens* have been recorded up to the present time. In this paper, a note of the cestode parasite obtained from *C. suaveolens* collected on Tsushima Island is given.

Materials and Methods

Five specimens of *C. suaveolens* captured at Mitsushima-chô, Toyotama-chô and Kamiagata-chô from Jan. 28 to 30, 1992 were examined for cestodes. The shrews were autopsied immediately after capture and their intestinal tracts were fixed in Carnoy's fluid and brought to the laboratory. The methods used are described in the former paper (Sawada and Harada, 1990). Measurements are given in millimeters.

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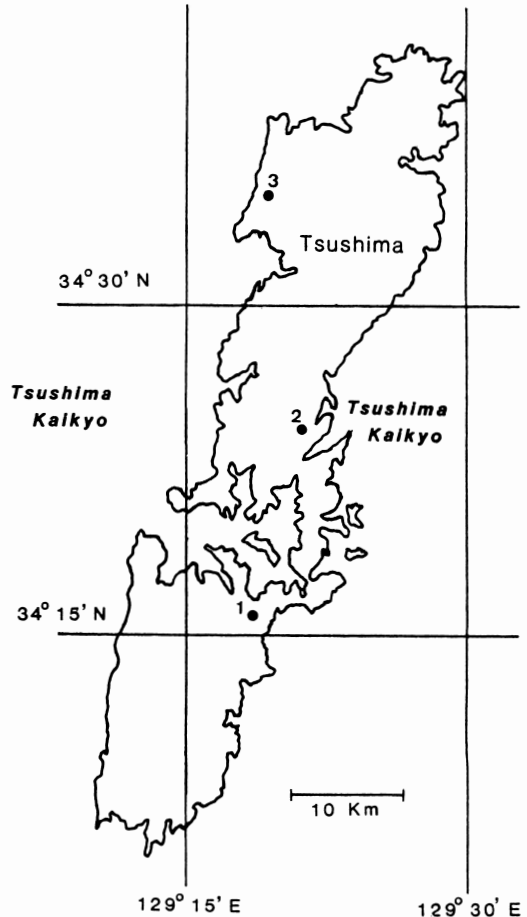


Fig. 1 Map showing the collection sites of *C. suaveolens*. For the locality number, see Table 1.

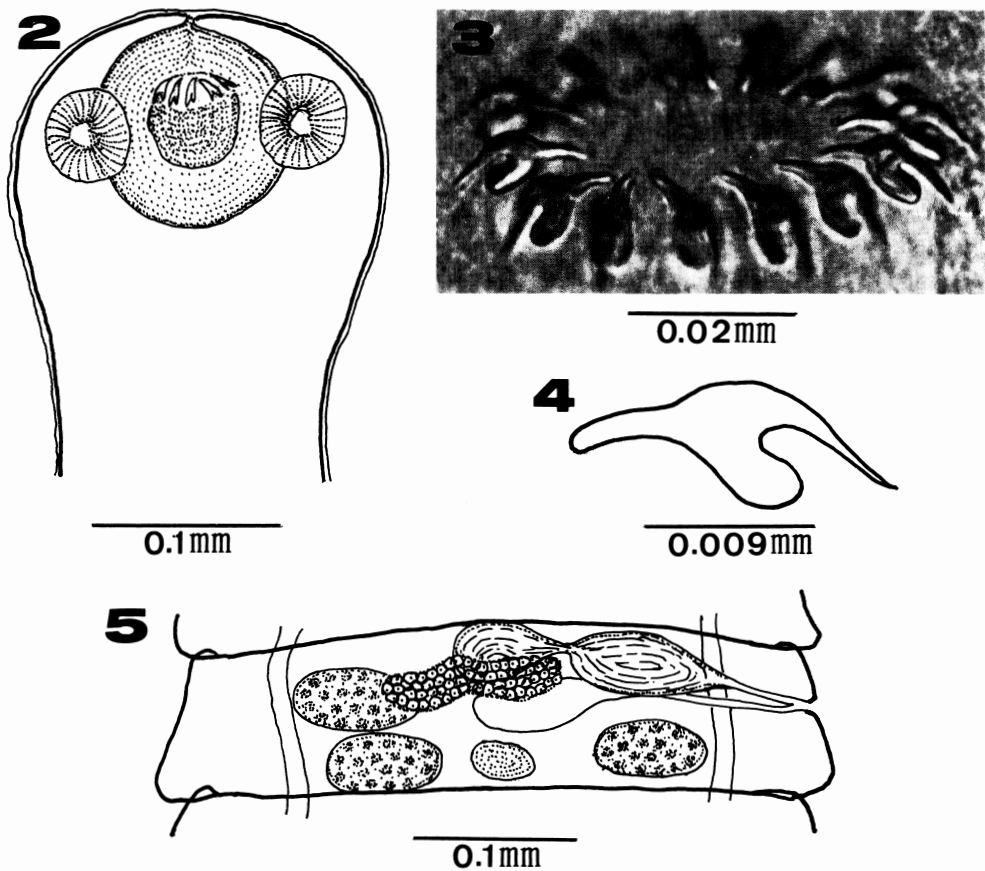
Vampirolepis Spassky, 1954
Vampirolepis tsushimaensis sp. nov.
 (Figs. 2–5)

Locality of the shrew examined and their cestodes are shown in Fig. 1 and Table 1.

Description: Small-sized hymenolepidid; worm length 2.3–4.8 and maximum width

Table 1 Locality and date of collection of *C. suaveolens*, and its cestode parasites in 1992

Locality	Date	Cestode parasites	
		Species	No.
(1) Kechiko, Mitsushima-chô, Shimoagata-gun	Jan. 28	<i>Vampirolepis tsushimaensis</i> sp. nov.	1
"	Jan. 29	"	3
"	"	–	0
(2) Takakobu-yama, Toyotama-chô, Shimoagata-gun	"	–	0
(3) Nagayama-gawa, Kamiagata-chô, Kamiagata-gun	Jan. 30	<i>V. tsushimaensis</i> sp. nov.	1



Figs. 2–5 *Vampirolepis tsushimaensis* sp. nov.

2: Scolex, 3: Rostellar hooks, 4: Rostellar hook magnified, 5: Mature segment drawn from a projected microphotographic negative

0.35–0.42. Metamerism distinct, margins serrate. Segments wider than long. Scolex 0.140 long by 0.196 wide, not demarcated from neck. Neck 0.28–0.32 long by 0.12–0.16 wide. Rostellum oval, 0.119 long by 0.105 wide, armed with a single row of 14–15 thorn-shaped hooks measuring 0.018 long. Hook handle short; guard prominent, round at its end, shorter than blade; blade long, sharp at its end, and recurved distally. Rostellar sac spherical, 0.119 long by 0.105 wide. Sucker discoid, 0.056–0.070 in diameter. Genital pore unilateral and located a little

anterior to middle of segment margin. Testes three, oval, 0.084–0.091 wide by 0.042–0.051 long, arranged in a form of triangle, one poral and two aporal. Cirrus sac, 0.119–0.126 long by 0.035 wide, extending beyond longitudinal excretory canal. Internal seminal vesicle 0.070–0.084 long by 0.028 wide, occupying almost whole of cirrus sac. External seminal vesicle 0.049–0.063 long by 0.035 wide. Seminal receptacle developed, 0.056–0.063 long by 0.035–0.040 wide. Ovary transversely elongate, bilobate, 0.133–0.140 across. Vitelline gland

Table 2 Comparison of closely related species armed with 10–20 rostellar hooks in the range of 0.013–0.022 mm long from soricines

Cestode species	Rostellar hook		Hosts
	number	length (mm)	
<i>Vampirolepis jacobsoni</i> (Linstow, 1907)	11	0.018–0.021	* <i>Crocidura caerulea</i> * <i>C. murina</i>
<i>V. bahli</i> (Singh, 1958)	10	0.018	* <i>C. caerulea</i>
<i>V. amamiensis</i> Sawada et Harada, 1986	15	0.018	<i>C. horsfieldi watasei</i>
<i>V. sunci</i> Sawada et Harada, 1989	16	0.014	<i>Suncus murinus</i>
<i>V. jakounezumi</i> Sawada et Hasegawa, 1992	13–14	0.018	<i>S. murinus</i>
<i>V. tsushimaensis</i> sp. nov.	14–15	0.018	<i>C. suaveolens</i>

**Crocidura caerulea*, *C. murina* = *Suncus murinus*

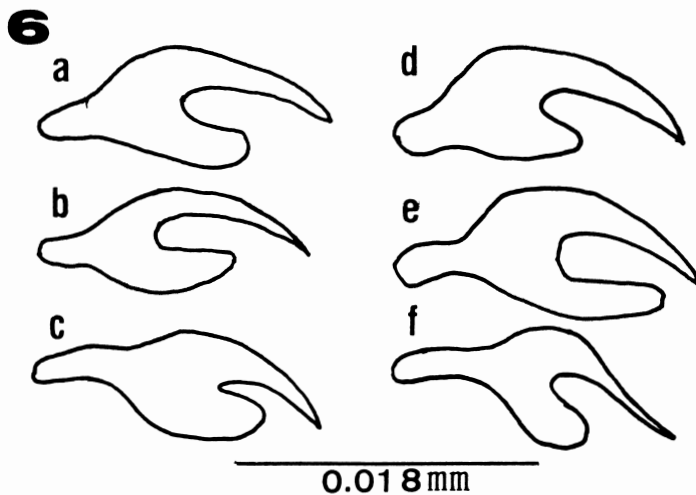


Fig. 6 Comparison of rostellar hook-shapes among six species of *Vampirolepis*.

a: *jakounezumi*, b: *sunci*, c: *amamiensis*, d: *bahli*, e: *jacobsoni*, f: *tsushimaensis*

weakly developed, 0.028 wide by 0.021 long, situated in posterior field of segment. The worms were fully mature, but not gravid.

Host: *Crocidura suaveolens* (Pallas, 1811)

Site of infection: Small intestine.

Locality and date: Mitsushima-chô, Shimoagata-gun and Kamiagata-chô, Kamiagata-gun, Tsushima Island, Nagasaki Prefecture; Jan. 28–30, 1992.

Type specimen: Holotype; Nara Sangyo Univ. Lab. Coll. No. 9310 and two paratypes Nos. 9311–9312 were selected from the 3 exx., collected from Mitsushima-chô, Shimoagata-gun, Tsushima Island, Nagasaki Prefecture, Jan. 29, 1992. The rest two specimens were excluded from the type designation because they were immature.

Remarks: In possessing 10–20 rostellar hooks in the range of 0.013–0.022 mm long among about 32 species of *Vampirolepis* occurring in soricines, this new species is related to the following five species: *V. jacobsoni* (Linstow, 1907), *V. bahli* (Singh, 1958), *V. amamiensis* Sawada et Harada, 1986, *V. sunci* Sawada et Harada, 1989 and *V. jakounezumi* Sawada et Hasegawa, 1992 (Table 2). Of these, this new species closely resembles *V. amamiensis* in the

shape of rostellar hook. However, it differs from *V. amamiensis* in the shape of blade (recurved distally vs. curved toward guard) (Fig. 6).

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