

## Two New Species of the *Vampirolepis* (Cestoda: Hymenolepididae) from Japanese Shrews

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**Key words:** Hymenolepidid cestode, *Vampirolepis*, shrew, *Crocidura*

### Introduction

To date, the cestode fauna of shrews in Japan has been unknown for the most part. The present study was carried out to clarify the systematic position of cestodes parasitic on Japanese shrews.

### Materials and Methods

One specimen of the shrew, *Crocidura dsinezumi chisai* Thomas was captured by trap at Suzu-shi, Ishikawa Prefecture on November 23, 1984, and four specimens of the shrew, *C. horsfieldi watasei* Kuroda were captured by trap at Setouchi-cho, Amami-oshima, Kagoshima Prefecture on January 29, 1985. The shrews were autopsied immediately after capture at the collecting sites. The specimens of cestodes as well as a part of guts were fixed in Carnoy's fluid. After being soaked in 45% acetic acid about 30 min for expanding, the fixed guts were stored in 70% alcohol. The cestode obtained from the alcohol-preserved guts was rinsed in water during 12 hr. The forms of scolexes and eggs

were observed without staining, and the genital organ systems in the mature and gravid proglottids were examined through interference contrast light microscope. Measurements are given in millimeters.

*Vampirolepis notoensis* sp. n.  
(Figs. 1-4)

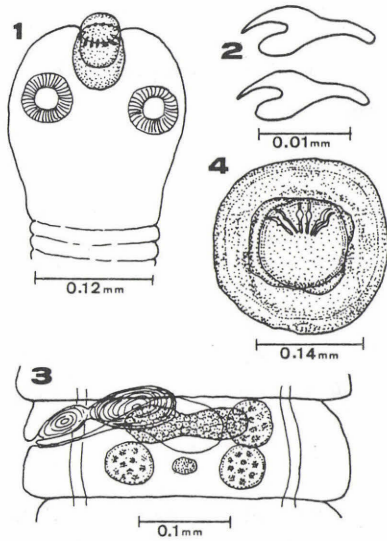
A shrew, *Crocidura dsinezumi chisai* Thomas, captured at Suzu-shi, Ishikawa Prefecture was found infected with a specimen of the present new species.

**Description:** Small-sized hymenolepidid; worm length 4.5; maximum width 0.5. Metamerism distinct, margins serrate. Proglottids wider than long. Scolex round, 0.189 long by 0.175 wide, not demarcated from neck. Rostellum pyriform, 0.098 long by 0.063 wide, armed with a single row of 23 hooks. Hooks measuring 0.014; hook handle short; guard bluntly round at its end, shorter than blade; blade sharp at its end; curved toward guard. Rostellar sac oval, 0.102 long by 0.071 wide. Suckers discoidal, unarmed, 0.074 in diameter. Neck absent.

Genital pores unilateral, located a little anterior to middle of proglottid margins. Testes three in number, spherical or oval, 0.070 by 0.105, one poral and two antiporal, arranged triangularly. Cirrus sac pyriform, 0.098-0.105 by 0.028-0.035, extending be-

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Figs. 1–4 *Vampirolepis notoensis* sp. n.

1: Scolex, 2: Rostellar hooks, 3: Mature proglottid, 4: Egg

yond longitudinal excretory canals. Internal seminal vesicle 0.056–0.063 by 0.028–0.035, gradually enlarged until filling proximal portion of cirrus sac. External seminal vesicle oval, 0.119–0.140 by 0.056–0.063. Vagina opening in genital atrium, extending medially, then enlarging, and forming seminal receptacle. Seminal receptacle 0.105 by 0.042, extending medially to midline of proglottid. Ovary transversely elongated, bilobed in mature proglottid, 0.161 wide. Vitelline gland compact, 0.035 by 0.028, situated near midline in space between poral and antiporal testes, just posterior to ovary. Eggs spherical, 0.035–0.042 by 0.028–0.032, surrounded by four thin envelopes, with smooth surface. Onchospheres spherical, 0.025–0.028 by 0.021–0.024; embryonic hooks 0.004 long.

*Host*: *Crocidura dsinezumi chisai* Thomas

*Site of infection*: Small intestine.

*Locality and date*: Takojima, Suzu-shi, Ishikawa Prefecture; Nov. 23, 1984.

*Remarks*: Spassky (1954) created the genus *Vampirolepis* for the systematic classification of those hymenolepidid species which possess a rostellum armed with more than 20 Y-shaped

hooks, parasitize Mammals and Aves, and have three testes arranged in a line. Since subdivision into further genera of the species which are originally placed in *Hymenolepis* Weinland, 1858, is deemed necessary by this time, the generic name *Vampirolepis* should be widely adopted.

The authors hold the view that *Hymenolepis fülleborni* Hilmy, 1936 from *Crocidura* sp. should be placed in the genus *Vampirolepis* Spassky, 1954.

Of the four known species belonging to the genus *Vampirolepis* from *Crocidura* spp. (*V. khalili* (Hilmy, 1936) Spassky, 1954 from *C. sp.*, *V. maclaudi* (Joyeux et Baer, 1928) Spassky, 1954 from *C. stampflii*, *V. molus* Srivastava et Capoor, 1979 from *C. murianus* and *V. füllebornii* (Hilmy, 1936) comb. n. from *C. sp.*), the present species most closely resembles *V. molus* in the length of rostellar hooks. However, it differs from *V. molus* in the number of rostellar hooks (23 vs. 26–32), and the form of rostellar hooks (guard strong vs. attenuate).

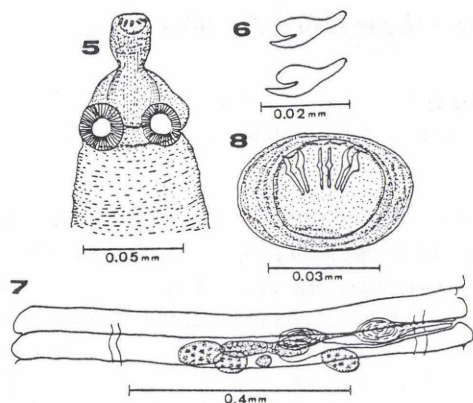
*Vampirolepis amamiensis* sp. n.

(Figs. 5–8)

Of the four specimens of the shrew, *Crocidura horsfieldi watasei* Kuroda, captured at Setouchi-cho, Amami-oshima, Kagoshima Prefecture, on January 29, 1985, two were found infected with a mature specimen of this new species, respectively.

*Description*: Small-sized hymenolepidid; strobila 6–15 in length; maximum width 0.7. Scolex small, 0.175–0.210 long by 0.245–0.385 wide. Rostellum evaginated in both specimens, 0.056 long by 0.070 wide, with a single row of 15 small hooks 0.018 long. Handle of hook short; guard bluntly round at its end, shorter than blade; blade long, sharp at its end. Rostellar sac 0.154 long by 0.126 wide. Suckers discoidal, 0.084–0.098 by 0.098–0.105. Neck absent. Numerous proglottids much broader than long.

Genital pores unilateral, located a little



Figs. 5–8 *Vampirolepis amamiensis* sp. n.

5: Scolex, 6: Rostellar hooks, 7: Mature proglottid, 8: Egg

anterior to middle of proglottid margins. Testes three in number, oval 0.098 by 0.049–0.056, arranged in a transverse row, one poral and two aporal, cirrus sac elongated, 0.154 by 0.035, extending anterolaterally beyond longitudinal excretory canals. Internal seminal vesicle 0.070–0.077 by 0.028–0.035, enlarging to fill proximal portion of cirrus sac. External seminal vesicle oval, 0.056 by 0.035–0.042. Vagina opening in genital atrium, posterior to cirrus sac, then enlarging, and forming voluminous seminal receptacle measuring 0.140–0.175 by 0.049–0.056. Ovary transversely elongated, bilobed in a mature proglottid, 0.140–0.210 wide. Vitelline gland compact, directly posterior to ovary. Eggs oval, 0.042–0.046 by 0.028–0.032; surrounded by four thin envelopes; the outermost chorion thin, with smooth surface. Onchospheres spherical, 0.025–0.028 by 0.028–0.032; embryonic hooks 0.011 long.

*Host*: *Crocidura horsfieldi watasei* Kuroda.

*Site of infection*: Small intestine.

*Locality and date*: Setouchi-cho, Amami-oshima, Kagoshima Prefecture; Jan. 29, 1985.

*Type specimen*: Holotype: NSU Lab. Coll. No. 8511. Paratype: 8512.

*Remarks*: The present new species most closely resembles *Vampirolepis maclaudi* (Joyeux et Baer, 1928) Spassky, 1954 from *Crocidura stampflii* in the number of rostellar hooks. However, it differs from *V. maclaudi* in the length of rostellar hooks (0.014 vs. 0.036), and the form of rostellar hooks (blade, curved toward guard vs. curved against guard).

### Summary

Hymenolepidid cestodes, two new species were recorded from shrews collected at Ishikawa and Kagoshima Prefectures in 1984 and 1985, respectively. *Vampirolepis notoensis* sp. n. was obtained from *Crocidura dsinezumi chisai* of Suzu-shi, Ishikawa Prefecture. *V. notoensis* is related to but differs from *V. molus* Srivastava et Capoor, 1979 in the number of rostellar hooks and the form of rostellar hooks. *V. amamiensis* sp. n. obtained from *C. horsfieldi watasei* of Setouchi-cho, Kagoshima Prefecture. *V. amamiensis* is related to but differs from *V. maclaudi* (Joyeux et Baer, 1928) in the length of rostellar hooks and the form of rostellar hooks. The cestodes from shrews in the present collection are reported from Japan for the first time.

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日本産ジネズミに寄生していた *Vampirolepis* 属条虫の2新種沢田 勇<sup>1)</sup>・原田正史<sup>2)</sup>( <sup>1)</sup> 奈良産業大学生物学教室 <sup>2)</sup> 大阪市立大学医学部実験動物研究室)

1984年11月23日石川県珠洲市で採集されたホンシュウジネズミ *Crocidura dsinezumi chisai* Thomas に新種のノト条虫 *Vampirolepis notoensis* が寄生していた。さらに1985年1月29日鹿児島県大島郡(奄

美大島)瀬戸内町で採集されたワタセジネズミ *Crocidura horsfieldi watasei* Kuroda には新種のアマミ条虫 *Vampirolepis amamiensis* が寄生していた。ジネズミからの条虫の記載は日本では初めての記録である。