

Two Nematode Species of the Genus *Syphacia* (Oxyuridae) Collected from Rodents in Niigata Prefecture, Japan

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During the period of surveys on zoonotic parasitic diseases, the author had chances to examine various mammals in Niigata Prefecture, Japan, and recovered two species belonging to the genus *Syphacia* (Nematoda: Oxyuridae) from the field mouse, *Apodemus speciosus speciosus*, and the golden hamster, *Mesocricetus auratus*. Since these two species have not been recorded or precisely described in Japan, their morphological features are described here.

Materials and Methods

The field mice, *Apodemus speciosus speciosus*, were collected by using wire-cage traps, while the golden hamsters, *Mesocricetus auratus*, were bought from a dealer in Niigata City. They were killed by ether inhalation, their intestines were cut open in physiological saline and observed carefully. Detected nematodes were fixed in 5% formalin or 70% ethanol, and preserved in the same solutions. On microscopic examination, they were cleared in glycerin alcohol solution. Figures of worms were made with the aid of a drawing apparatus.

All specimens were deposited in the Department of Parasitology, School of Medicine, University of the Ryukyus.

Description

1. *Syphacia frederici* Roman, 1945 (Fig. 1)

Host: *Apodemus speciosus speciosus*
(Temminck and Schlegel)

Habitat: Cecum.

Locality: Itoigawa City.

Date: June, 1980.

Only females were obtained. Five worms were microscopically studied.

Female: Body tapered to both extremities, 3.3-3.8 mm in length and 193-237 μ in maximum width. Cuticle with transverse striations. Lateral alae prominent, arise immediately behind lips and extend to middle of tail. In apical view, cephalic end elliptical and lateral alae projecting sharply in lateral fields. Mouth triradiate, encircled by three lips which are well-defined from body. Four submedian papillae and two amphids form outer circle and inner circle consists of six small papillae. Distance from cephalic apex to nerve ring, excretory pore and vulva 107-134 μ , 0.38-0.45 mm and 0.56-0.62 mm, respectively. Esophagus relatively short but thick, 215-235 μ in length and 52-56 μ in maximum width. Esophageal bulb 81-85 μ long by 85-89 μ wide. Tail slender, conical and 0.51-0.61 mm long. Eggs asymmetrically spindle-shaped, operculate, 109-118 by 34-41 μ in dimensions. Embryo developed to morula stage in uterus, and esophagus and intestine visible in an egg.

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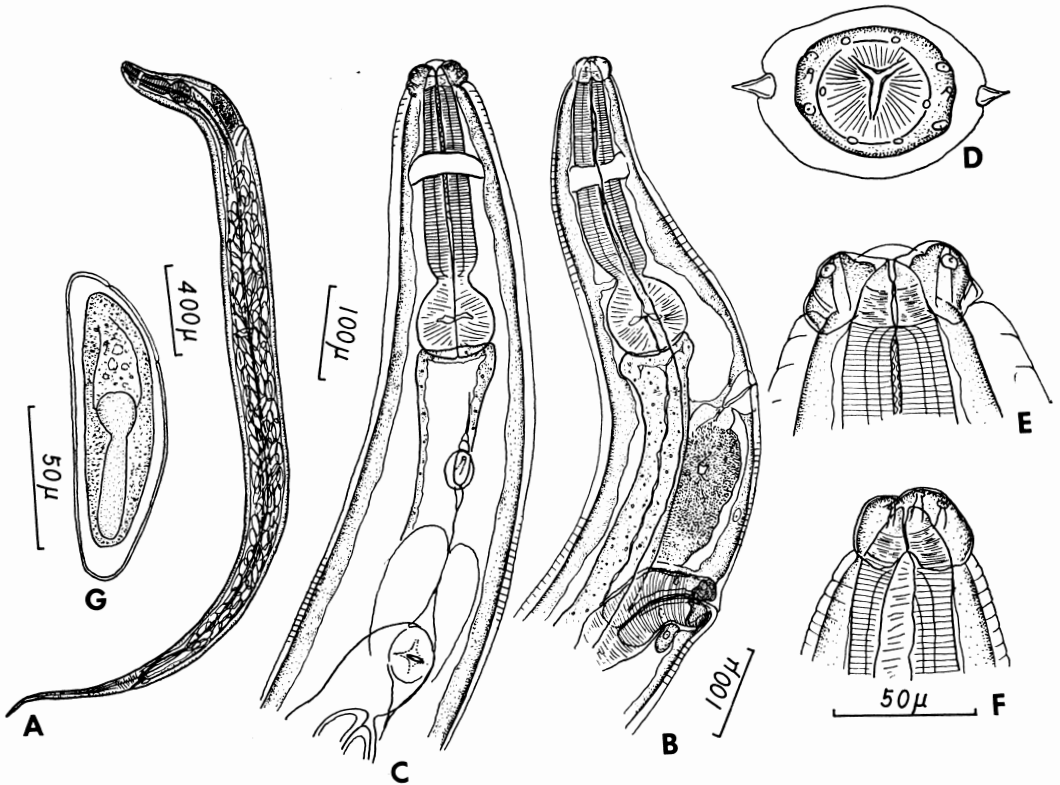


Fig. 1 *Syphacia frederici* Roman, 1945.

A. Female, lateral view. B-C. Anterior part of female, lateral view (B) and ventral view (C). D-F. Anterior extremity of female, apical (D), ventral (E) and lateral (F) views. G. Egg.

2. *Syphacia mesocriceti* Quentin, 1971
(Fig. 2)

Host: *Mesocricetus auratus*
(Waterhouse)

Habitat: Cecum.

Locality: Niigata City.

Date: October, 1979.

Many worms of both sexes were collected. Each five males and females were measured.

Body relatively large for a *Syphacia*. Cuticle striated transversely. Mouth almost triangular, without lips and encircled by four submedian papillae near amphids and inner circle of six small papillae.

Male: Body relatively thick, coiled ventrally, 1.39–1.88 mm in length and 130–167 μ in maximum width. Lateral alae

absent. Distance from cephalic apex to nerve ring and excretory pore 93–100 μ and 0.26–0.36 mm, respectively. Esophagus 137–167 μ in length and 28–37 μ in maximum width. Esophageal bulb 63–78 μ long by 52–67 μ wide. Three mamelons with conspicuous annulations present: anterior mamelon 67–89 μ long, posterior edge 0.61–0.78 mm from caudal apex; middle mamelon 67–81 μ long, posterior edge 0.50–0.67 mm from caudal apex; posterior mamelon 70–111 μ long, posterior edge 0.33–0.42 mm from caudal apex. Testis curved back on a level with anterior mamelon. Two pairs of papillae preanal and one pair of large papillae postanal. Spicule narrows at about middle of its

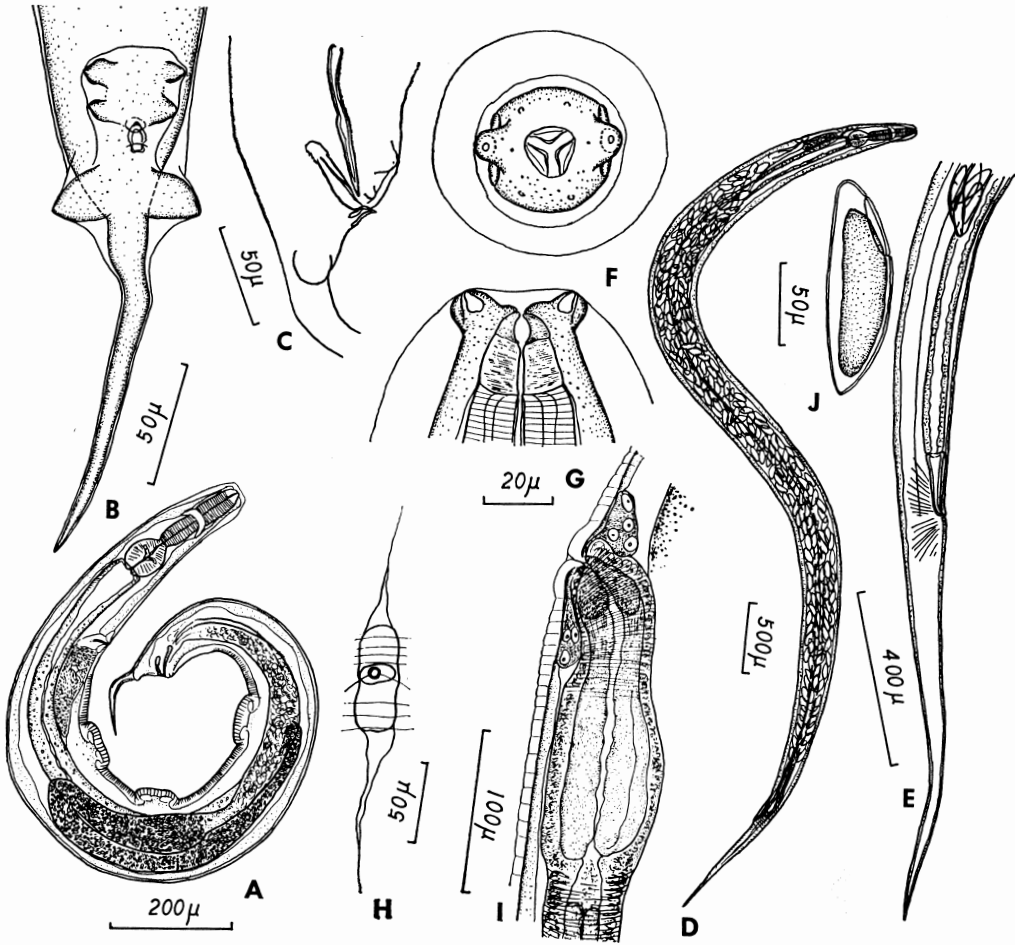


Fig. 2 *Syphacia mesocriceti* Quentin, 1971.

A. Male, lateral view. B-C. Posterior part of male, ventral (B) and lateral (C) views. D. Female, lateral view. E. Posterior part of female, lateral view. F-G. Anterior extremity of female, apical (F) and ventral (G) views. H. Excretory pore, ventral view. I. Vulva and vagina, lateral view. J. Egg.

length, 74–81 μ long. Gubernaculum 43–46 μ long and terminal hook of gubernaculum 11–15 μ long. Tail slender, 155–207 μ long.

Female: Body tapered to both extremities, 6.9–7.5 mm in length and 232–376 μ in maximum width. Lateral alae arise anterior to nerve ring and end on a level with anus. Distance from cephalic apex to nerve ring, excretory pore and vulva 167–174 μ , 0.44–0.52 mm and 0.74–0.84 mm, respective-

ly. Esophagus 278–303 μ in length and 54–59 μ in maximum width. Esophageal bulb relatively long, 115–126 μ in length by 96–104 μ in width. Tail very long, conical, 0.87–0.96 mm in length. Eggs asymmetrically elliptical, operculate, 129–137 by 33–39 μ in dimensions.

Discussion

The females of *S. frederici* collected in

this survey are morphologically identical with those described by Roman (1945, 1951) and Quentin (1971).

S. mesocriceti was first described by Quentin (1971) based only on females. Later, Dick *et al.* (1973) recovered males and redescribed this species. The present specimens are almost identical with the original descriptions of *S. mesocriceti*.

From Japan, five *Syphacia* species have been hitherto known, i.e. *S. obvelata* (Rudolphi, 1802), *S. emileromani* Chabaud *et al.*, 1963, *S. mesocriceti* Quentin, 1971, *S. montana* Yamaguti, 1943 and *S. muris* (Yamaguti, 1935) (e.g. Yamaguti, 1935, 1941, 1943; Chabaud *et al.*, 1963; Ishimoto, 1974). *S. mesocriceti* was once recorded from laboratory-reared hamsters (Kaneko *et al.*, 1977), but has not been described. *S. frederici* has been only known from Europe and Africa (e.g. Roman, 1945, 1951; Baruš *et al.*, 1975; Tenora and Mészáros, 1975; Mas-Coma and Feliu, 1977), therefore this is the first record in Japan. *S. frederici* differs from other *Syphacia* species reported from Japan in having sharply-pointed lateral alae arising immediately behind the lips, and *S. mesocriceti* is also distinguished from them by the absence of lips and in having triangular mouth and submedian papillae lying near amphids.

Some of the oxyuroids of rodents, i.e. *Syphacia obvelata* and *Aspicularis tetraptera*, have been known to parasitize man accidentally (Riley, 1919; Akagi, 1924; Sakaida, 1957). Since the golden hamsters are reared as pets or experimental animals and are often infected with *S. mesocriceti*, the eggs of this oxyuroid may have many chances to be ingested by man. The human infectivity with *S. mesocriceti* should be investigated in future.

Summary

Syphacia frederici Roman, 1945 and *S. mesocriceti* Quentin, 1971, were recovered

from the field mouse, *Apodemus speciosus speciosus*, and the golden hamster, *Mesocricetus auratus*, respectively, in Niigata Prefecture, Japan, and were redescribed. This is the first record of *S. frederici* from Japan.

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齧歯類より得られた2種の *Syphacia* 属線虫

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新潟県において野生のアカネズミ *Apodemus speciosus speciosus* より *Syphacia frederici* Roman, 1945 を、また動物商より購入したゴールデンハムスター *Mosocricetus auratus* より *S. mesocriceti* Quentin, 1971 を得た。本邦では *S. frederici* は未記録であり、一方 *S. mesocriceti* については十分な記載がない

ので、これら2種の形態を再記載した。既知の本邦産 *Syphacia* 属線虫とは、*S. frederici* は口唇の直後から始まる突出した側翼を有することにより、*S. mesocriceti* は口唇を欠くこと等により明らかに区別される。