

Brief Communication

A new host and locality record for *Trichostrongylus retortaeformis* (Zeder, 1800) (Nematoda : Trichostrongyloidea : Trichostrongylidae) from the Japanese grass vole, (*Microtus montebelli*) (Milne-Edwards) (Rodentia : Microtidae) in Nagano Prefecture, Japan

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Six parasitic nematode species including one trichostrongylid species, were obtained from 4 individuals of Japanese grass voles (*Microtus montebelli*) which were captured at Kami-kochi (ca. 36°10'N, ca. 137°45'E) in the central part of mainland Honshu, Japan between July and October, 1989.³⁾ Up to present no record on the trichostrongylid nematode species from *M. montebelli* has been published.^{2,4)} In this paper, the morphological data are give to improve the definitive identification of this trichostrongylid and to advance the precision of studies helminth faunas associated with the rodents endemic in Japan.

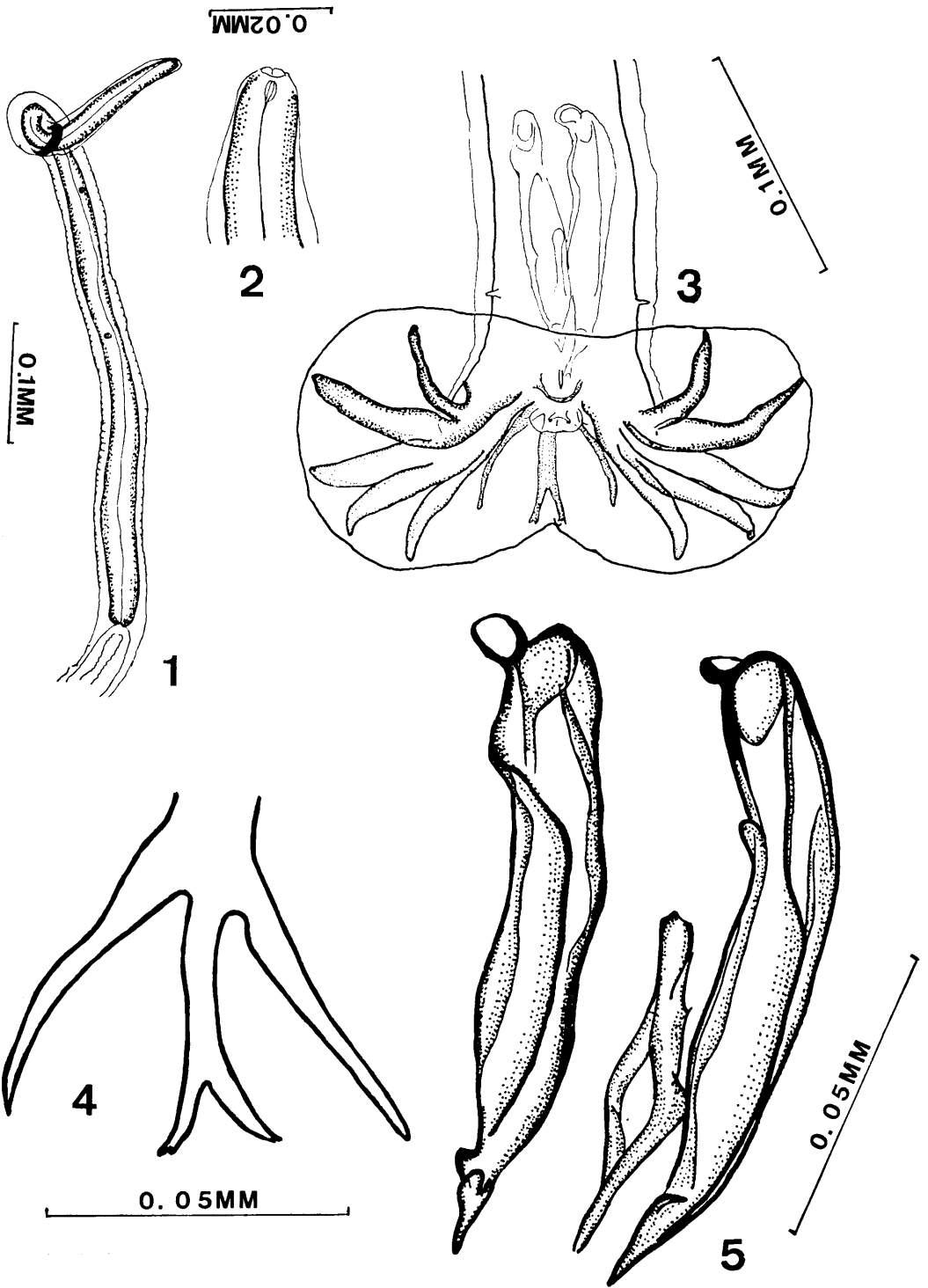
Description of *Trichostrongylus retortaeformis* (Zeder, 1800). One male from the small intestine of a vole was available. Male (One specimen): Small filiform nematode; body length 3.6 mm; body width at base of esophagus 40 μ m at mid-body 50 μ m, and at base of bursa 80 μ m. Cuticle without ridge (synophe). Small head without cephalic vesicle (Figs. 1, 2 and 6). Nerve ring at 130 μ m from head end. Excretory pore unknown. Length of esophagus 0.6 mm. Bursa symmetrical (Figs. 3 and 7); antero-ventral rays slightly shorter than postero-ventrals; these rays sharing common base; postero-lateral rays slightly shorter than other laterals, antero-laterals and mid-laterals almost the same in size; externo-dorsal rays and dorsal ray sharing common stem; dorsal ray ca. 40 μ m in length and divided distally into 2 parts (Fig. 4); dorsal lobe reduced. A pair of prebursal papillae present. Genital cone simple in structure, with a single ventral raylet and a pair of short dorsal raylets. Paired spicules equal in size and shape to each other (Figs. 5 and 8); right spicule 0.11 mm and left one 0.12 mm in length and both 20 μ m in width; bards present near their distal tips; brown in color. Gubernaculum small and boat-like in form (Fig. 5), 60 μ m in length and 15 μ m in width; brown in color. Female: Undetected.

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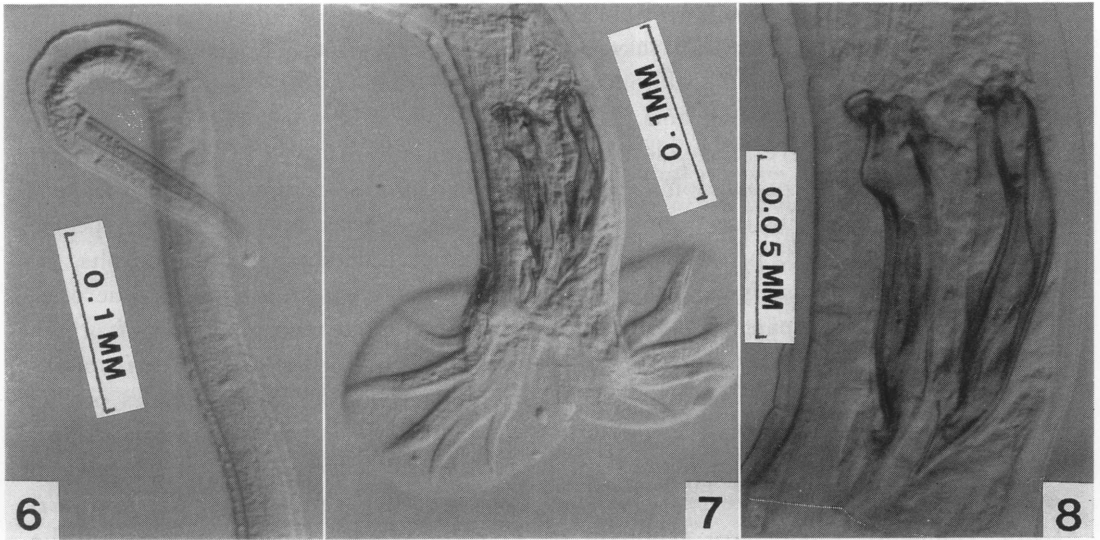
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Figures 1-5. *Trichostrongylus retortaeformis* of male from *Microtus montebelli* in Kami-kochi, Japan.



Figures 6-8. *Trichostrongylus retortaeformis* of male from *Microtus montebelli* in Kami-kochi, Japan.

Fig. 6. Anterior extremity.

Fig. 7. Posterior extremity, ventral view.

Fig. 8. Spicules and gubernaculum.

Taxonomic summary.

Specimen deposited: Azumi-mura Sonshi Hensan-shitsu, 745 Azumi-mura, Minami-Azumi-gun, Nagano Pref. 390-15, Japan.

Host: *Microtus montebelli* (Rodentia: Microtidae).

Locality: Kami-kochi, Nagano Pref., Japan.

Site in host: Small intestine.

Date of collection: 27 July, 1989.

Discussion. This nematode species belongs to the genus *Trichostrongylus* Loss, 1905 (Nematoda: Trichostrongyloidea: Trichostrongylidae: Trichostrongylinae) in lacking synlophe, accordance of morphological characteristics of ventral and dorsal rays, spicules and genital cone with those of the genus, and presence of gubernaculum.^{10,12} Among the nearly 40 species belonging to this genus,^{5,7,8,15-17,20} the present specimen showed a close similarity with *T. retortaeformis*. Although the body length of the present specimen was slightly smaller than that in the description by Hall,¹³ the morphological characteristics of bursa and gubernaculum, and measurements accorded almost completely with those of *T. retortaeformis sensu* Hall¹³.

Microtus montebelli is a new host for *T. retortaeformis*. The primary hosts of this nematode are wild and domestic hares and rabbits (Lagomorpha: *Lepus* and *Oryctolagus*),^{6,9,14,18,19} but it seems that some rodents are occasionally parasiti-

Fig. 1. Anterior extremity.

Fig. 2. Head end.

Fig. 3. Posterior extremity, ventral view.

Fig. 4. Dorsal ray and externo-dorsal rays, ventral view.

Fig. 5. Spicules and gubernaculum.

tized by *T. retortaeformis*.^{1,20} For example, this nematode obtained from bank voles (*Clethrionomys glareolus*) taken in the Inner Hebrides, England, is notable as a microtid host group.²¹ Thomas²¹ suggested that *T. retortaeformis* was an accidental case for this vole, and that this nematode was widespread as a parasite of *C. glareolus* wherever the vole and rabbits and/or hares lived in close proximity.

Incidentally, the population density of lagomorphs, including juveniles, is very high in Kami-kochi in July. So the present host species may not be a specific but an accidental one, probably because of sharing habitats with lagomorphs, although the present case is the first record of its occurrence in the genus *Microtus*.

There are in Japan, at least six species belonging to the genus *Trichostrongylus*; namely *T. axei*, *T. brevis*, *T. colubriformis*, *T. orientalis*, *T. triramosus* and *T. vitrinus*.^{11,17,22,23} Furthermore Yamaguchi²⁴ reported that 4 females of "*T. instabilis*" were obtained from *Lepus brachyurus brachyurus* collected in Mie Prefecture. Skrjabin *et al.*²⁰ concluded that *T. instabilis* (Railliet 1893) is a synonym of *T. colubriformis*, however, it is unknown whether the species, *T. instabilis sensu* Yamaguti, 1935²⁰ is a synonym of *T. colubriformis* or not because of the absence of males. Therefore the present case seems to be a new local record of *T. retortaeformis* in Japan.

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要 約

1989年7月～10月にかけて長野県上高地で採集されたハタネズミ *Microtus montebelli* 4例中1例の小腸より、従来このネズミでは知られていなかった毛様線虫 *Trichostrongylus retortaeformis* (Zeder, 1800) の雄1虫体を得たので記載した。今回の宿主を含め、*T. retortaeformis* がハタネズミ属 *Microtus* に寄生していたとする報告はこれまでのところ見あたらないが、同じハタネズミ科のヨーロッパヤチネズミ *Clethrionomys glareolus* においては、この線虫本来の宿主とされるウサギ類から偶発的に移行し、多数寄生していた例が既に知られている。よって、今回の寄生もこのような偶発的な例と考えたい。日本ではこれまでに少なくとも5種の *Trichostrongylus* 属線虫が報告されているが、*T. retortaeformis* の確実な報告が無いことから、おそらく今回のものが日本初めてと思われる。