



# HOKKAIDO UNIVERSITY

Title	THE FIRST RECORD OF BREVISTRIATA BERGERARDI DURETTE-DESSET, 1970 FROM AN ASIATIC CHIPMUNK, TAMIAS SIBIRICUS LINEATUS SIEBOLD, IN HOKKAIDO, JAPAN
Author(s)	ASAKAWA, Mitsuhiro; OHBAYASHI, Masashi
Citation	Japanese Journal of Veterinary Research, 34(3-4), 291-294
Issue Date	1986-10-31
DOI	<a href="https://doi.org/10.14943/jjvr.34.3-4.291">https://doi.org/10.14943/jjvr.34.3-4.291</a>
Doc URL	<a href="https://hdl.handle.net/2115/3025">https://hdl.handle.net/2115/3025</a>
Type	departmental bulletin paper
File Information	KJ00002374439.pdf



BRIEF COMMUNICATION

THE FIRST RECORD OF *BREVISTRIATA BERGERARDI*  
DURETTE-DESSET, 1970 FROM AN ASIATIC CHIPMUNK,  
*TAMIAS SIBIRICUS LINEATUS* SIEBOLD,  
IN HOKKAIDO, JAPAN

Mitsuhiko ASAKAWA<sup>1</sup> and Masashi OHBAYASHI<sup>2</sup>

(Received for publication August 6, 1986)

Key words : *Brevistriata bergerardi* DURETTE-DESSET, 1970 ; *Tamias sibiricus lineatus* ; Japan ; subarctic region ; first record

The phylogenic system of internal parasites which occur specifically in small mammals (mainly, orders Insectivora and Rodentia) with regard to the host phylogenic and zoogeographic system in the Far East has been studied. In this research note the authors recorded the first finding of a species belonging to the genus *Brevistriata* (Brevistriatinae ; Heligmonellidae) in Japan. The specimens (two males and three females) were obtained from the small intestine of a male Asiatic chipmunk, *Tamias sibiricus lineatus* SIEBOLD [= *Eutamias sibiricus* (LAXMANN)], collected in August, 1984, in Otaru, Hokkaido (northern part of Japan).

**Description** Comparatively large nematode, body coiled. Measurements are shown in tab. 1 (in mm). Cuticle with discontinuous, alternating ridges except dorsal left quadrant of body (carene ; fig. 1). Carene with ridges almost equal in size to those on ventral left and dorsal right side of body (type C by DURETTE-DESSET, 1983 ; fig. 2). Number of ridges on carene 14 in male and 10 in female. Number of ridges at mid-body 43-46 (♂) and 40-47 (♀), and inclination of axis of ridges from sagittal axis almost frontal. Male (two specimens) : Bursa symmetrical ; formula of bursal rays type 2-2-1 ; postero-lateral rays slightly longer than antero-ventrals ; three lateral rays almost same in size ; externo-dorsal and dorsal rays remarkably long, slender and arising from common stem ; dorsal ray divided at posterior end (fig. 3). Spicules equal (0.45 in length) and brown in color. Gubernaculum reduced, 0.049 in length.

<sup>1</sup> Laboratory of Parasitology, Department of Veterinary Medicine, College of Dairying, Ebetsu 069-01, Japan

<sup>2</sup> Department of Parasitology, Faculty of Veterinary Medicine, Hokkaido University, Sapporo 060, Japan

TABLE 1 *Measurements of Brevistriata bergerardi from Tamias sibiricus lineatus* (in mm)

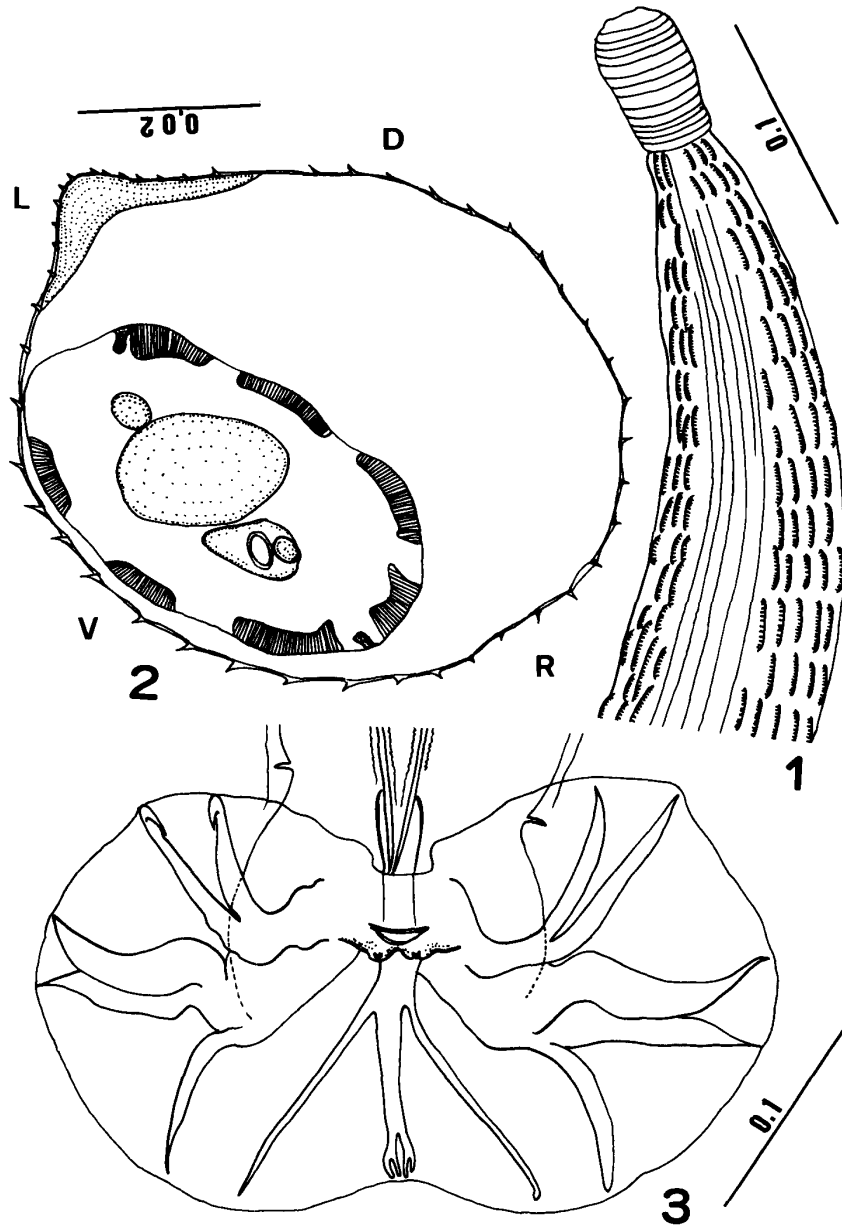
	MALE (N = 2)	FEMALE (N = 3)
Body		
length	4.9	5.7—6.0
width (mid-body)	0.16	0.14—0.15
Cephalic vesicle		
length	0.067	0.064
width	0.038	0.045
Esophagus		
length	0.33	0.34—0.37
Excretory pore		
from head end	0.36	0.39
Nerve ring		
from head end	0.20	0.16—0.25

N: Number of specimens examined

Genital cone flat with a pair of papillae. Female (three specimens): Monodelphic; vestibule about 0.09, sphincter 0.05 and infundibulum 0.08 in length; uterine eggs about 0.073 x 0.035–0.041 in size; vulva at 0.19–0.20 from tail end; tail without spine, 0.04–0.05 in length.

**Discussion** The body and spicule length of this species are slightly longer than original description, but the morphologic characteristics (mainly synlophe and bursa), main measurements and host (genus *Tamias*) of the present specimen correspond almost completely to the description of *Brevistriata bergerardi* DURETTE-DESSET, 1970.

This is the first record of a species belonging to the genus *Brevistriata* in Japan. Heligmonellid nematodes of the Sciuridae species belong to two subfamilies (Pudicinae and Brevistriatinae). These subfamilies are morphologically very similar, but DURETTE-DESSET (1985) considered that they parasitized Sciuridae at different times. Brevistriatinae, starting with a *Heligmonella*-like ancestor, became diversified in Old World Hystricidae and Sciuridae. Sciurids subsequently moved into North America and lost their Brevistriatinae until they came into contact with South American Pudicinae because of low temperature. However, we found the nematode belonging to the subfamily Brevistriatinae in Hokkaido (45°N), a subarctic region.



FIGURES 1-3 *Brevistriata bergerardi* from *Tamias sibiricus lineatus* (scale in mm)  
Fig. 1 Anterior extremity of male, dorsal view  
Fig. 2 Cross-section of mid-body of male D: dorsal side, V: ventral side, R: right lateral side, L: left lateral side  
Fig. 3 Posterior extremity of male, ventral view

## REFERENCES

- 1) DURETTE-DESSET, M.-C. (1970): *Brevistriata bergerardi*, nouveau Nématode Heligmosome, parasite d'un Écureuil en Corée *Bull. Mus. Natl. Hist. Nat.*, 2<sup>e</sup> Sér. 42, 419-423
- 2) DURETTE-DESSET, M.-C. (1983): Keys to genera of the superfamily Trichostrongyloidea In: CIH keys to nematode parasites of vertebrates, No. 10 Eds. ANDERSON, R. C. & CHABAUD, A. G., 1-83, Farnham Royal, Bucks, England: Commonwealth Agricultural Bureaux
- 3) DURRETTE-DESSET, M.-C. (1985): Trichostrongylid nematodes and their vertebrate hosts: Reconstruction of the phylogeny of a parasitic group In: Advances in Parasitology Eds. BAKER, J. R. & MULLER, R., Vol. 24, 239-306, London: Academic Press