Ann. Parasitol. Hum. Comp.,
1984, t. 59, nº 5, pp. 531-534.

NOTE ON *DIPETALONEMA (CHENOFILARIA) JAPONICA* UNI, 1983 FROM JAPANESE BLACK BEAR

Supplementary description

S. UNI*

SUMMARY. Supplementary description was made on the specimens of *D. (Chenofilaria) japonica* from the black bear *(Selenarctos thibetanus japonicus)* of Japan. Scanning electron microscopy (SEM) revealed the *en face* view of the head and the terminal tip of the tail of the female adults. The tail of the male is described in this report, and the microfilaria is confirmed. The adult specimens were found predominantly in the subcutaneous connective tissue near the scapula along with one microfilaria. Microfilariae were not found in the blood.

Sur *Dipetalonema (Chenofilaria) japonica* Uni, 1983 de l'Ours noir du Japon. Description complémentaire

RÉSUMÉ. Description complémentaire de *D. (Chenofilaria) japonica* parasite de l'Ours noir du Japon, filaire qui n'était connue précédemment que par une seule femelle. La tête, en vue apicale et la pointe caudale des femelles sont étudiées au microscope à balayage (SEM). La queue du mâle et la microfilaire sont décrites et figurées. Les adultes et une microfilaire ont été trouvés dans le tissu connectif sous-cutané dans la région scapulaire. Il n'y a pas de microfilaires sanguines.

Dipetalonema (Chenofilaria) japonica was described on only one female adult taken from the Japanese black bear by the author in the previous paper (Uni, 1983). In May 1983, four females and one fragment of a male of the same parasite were collected by the author from two black bears *(Selenarctos thibetanus japonicus)* of the type locality, Akita, of the northern part of the main island of Japan. The supplementary description of females, microfilariae and a male of this species will be presented. *En face* view of the head and the terminal end of the tail of these specimens are examined by SEM.

Three females and one fragment of a male were collected from the subcutaneous tissues on the scapula region of one bear. One microfilaria was found in the solution in which a piece of the skin had been preserved. No microfilariae were found on the blood smears. One gravid female of the species was taken from the mesentery of

* *Department of Medical Zoology, Osaka City University Medical School, Osaka 545, Japan.*
Accepté le 14 novembre 1983.

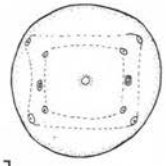
another bear. No microfilariae were found on the blood smears. Six female and five male ticks, *Haemaphysalis japonica* Warburton (Ixodides), were collected from the body surface of the former bear. Microfilariae of this species were found in the gut. The preservation method, drawing, measurement and SEM examination of this material followed the previous paper (Uni, 1983).

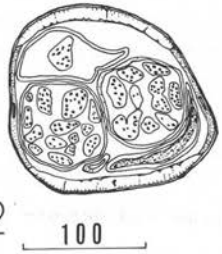
FEMALE (4 specimens) : Body length 37-42 mm, body width at midbody 168-181 μm, nerve ring from anterior end 267-277 μm, esophagus 856-977 μm, vulva from anterior end 0.87-1.1 mm, and tail 242-303 μm. *En face* view as in *figures 1 and 10*. SEM revealed four pairs of submedian papillae, one pair of amphids and a round mouth at the center. The esophagus was not divided distinctly, but a joint-like structure was found in the inner delicate chitinous wall at a distance of 611-666 μm from the anterior end (*fig. 3*, arrow). Of the four female specimens, three possessed trifurcated conical protuberances in the tail end, and the fourth possessed four protuberances *(fig. 4 and 12)*. SEM of the lateral view revealed the phasmidial pore at the proximal part of the outer protuberance *(fig. 13)*. The surface of cuticle showed only transverse striations at midbody *(fig. 11)*. Large embryos (11-13 μm in width) were recognizable in the uterus in the cross-section at the midbody level. The excretory canal was stained heavily in the large lateral chord *(fig. 2)*.

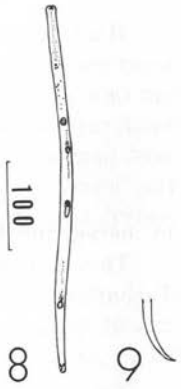
MICROFILARIA (5 specimens) : Microfilariae were taken out from the uterus of a gravid female, measuring 394-404 μm long and 8-14 μm wide. Anterior end was slightly rounded, and one pair of refracticle bodies was located at the mouth. The distance from the anterior extremity to each specific point was similar to the data of the previous paper (Uni, 1983). The tail end was curved ventrally on the lateral view *(fig. 9)*. The microfilaria found in the preserved solution measured 420 μm long and 16 μm wide. No microfilariae were found in the blood smears made from two bears ; thus, they appear to distribute predominantly in the skin rather than in the blood of the host animal.

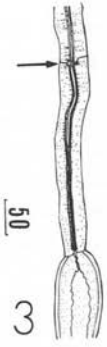
FIG. 1 to 13. — *Dipetalonema (Chenofilaria) japonica*. Scale bar unit ; μm.

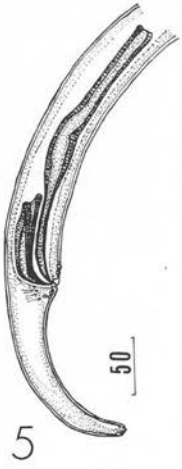
1. Cephalic extremity of female, *en face* view.
2. Cross-section at midbody of female.
3. Structure of esophagus. Joint-like structure, arrow.
4. Posterior extremity of female, ventral view.
5. Posterior of male, lateral view.
6. Posterior of male, ventral view.
7. Posterior extremity of male, ventral view.
8. Microfilaria, ventral view.
9. Posterior of microfilaria, lateral view.
10. *En face* view of head by SEM. Papillae (arrows), amphid (*). X920.
11. Transverse striations of cuticle at midbody by SEM. X3,500.
12. Terminal tail end of female by SEM. Latero-ventral view. X4,500.
13. Phasmidial pore (*), lateral view enlarging the area with arrow in fig. 12. X4,700.

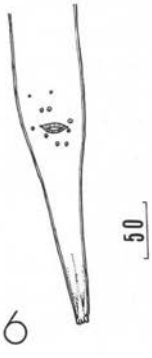

1
50


2
100


100
8
9

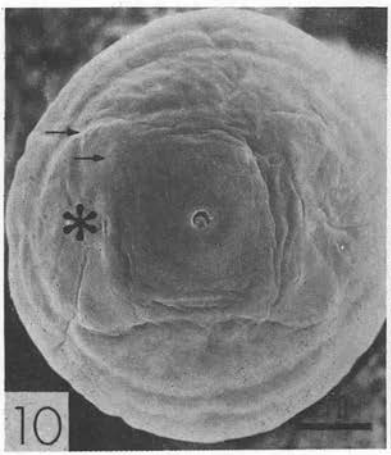

50
3

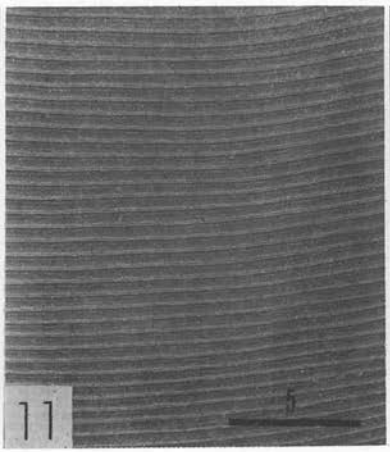

50
5

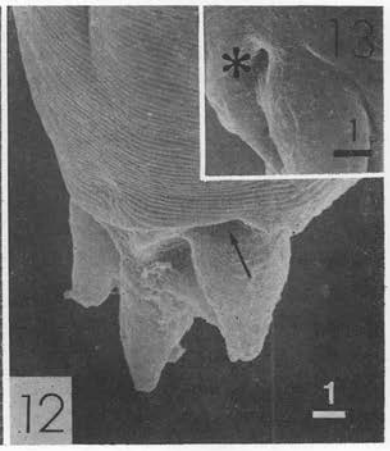

50
6


10
7


50
4


10


11
5


12
1
13
1

MALE : One fragment of the posterior part of a male was found from the subcutaneous connective tissue on the shoulder. Tail 174 μm long. Left spicule 266 μm long and right spicule 86 μm long. The ratio of left spicule to right spicule is 3.1 *(fig. 5)*. Small papillae were adjacent to the cloaca, showing four pairs clearly and one upper most pair seen obscurely *(fig. 6)*. The cloaca was covered by a thickened cuticle. This feature was similar to that around the anus in females. The tail end of the ventral view showed four protuberances *(fig. 7)*.

TICK (6 females and 5 males) : Two of the eleven ticks, *Haemaphysalis japonica* Warburton (Ixodides), were examined by light microscopy. Microfilariae of the present species were found in the gut of the ticks, measuring 385-430 μm long and 9.6-15 μm wide. No developmental features were recognized.

Some new data had been reported by Bain *et al.* (1982) on the taxonomy and evolutional line of *Dipetalonema*, just before publishing of the earlier paper on *D. (Chenofilaria) japonica* from Japan by the author (Uni, 1983). According to their report, *Chenofilaria* was placed in synonymy with *Acanthocheilonema*. The genus *Cercopithifilaria* (Eberhard, 1980) was established on some species separated from *Acanthocheilonema* and *Loxodontofilaria*. Thus, the present species *D. japonica* may be classified in the genus *Cercopithifilaria* on the basis of the undivided esophagus, the size and shape of spicules and the arrangement of caudal papillae of the male.

ACKNOWLEDGEMENTS. The author wishes to thank Dr. C. Shoho for his helpful suggestions, and Mr. T. N. Sterin, Institute of Pathology Case Western Reserve University, for editing this manuscript.

REFERENCES

BAIN O., BAKER M., CHABAUD A. G. : Nouvelles données sur la lignée *Dipetalonema*. *Ann. Parasitol. Hum. Comp.*, 1982, *57*, 593-620.

EBERHARD M. L. : *Dipetalonema (Cercopithifilaria) kenyensis* subgen. et sp. n. (Nematoda : Filarioidea) from African baboons, *Papio anubis*. *J. Parasitol.*, 1980, *66*, 551-554.

UNI S. : Filarial parasites from the black bear of Japan. *Ann. Parasitol. Hum. Comp.*, 1983, *58*, 71-84.