

Research Note

On *Globocephalus samoensis* and *G. longemucronatus* of Wild Boar from Hyogo Prefecture, Japan

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A helminthological survey was made by the necropsy-examination of a wild boar, *Sus scrofa leucomystax* (Temminck et Schlegel), which died by the traffic accident in the suburbs of Ashiya City, Hyogo Prefecture, Japan. The wild boar (female with 3 fetuses in the uterus, about 3 years old, 55 kg in body weight, autopsied on May 9, 1983) harbored 22 hookworms (16 males and 6 females) in the small intestine. By the following morphological characteristics and measurements of the worms, the 15 males and 5 females among them were identified as *Globocephalus samoensis* (Lane, 1922) and the remaining 1 male and 1 female as *G. longemucronatus* Molin, 1861 (Globocephalinae: Nematoda).

Description

Globocephalus samoensis (Lane, 1922)

Body rather stout, the cuticle thick with cuticular transverse striation, 0.006-0.009 mm apart; the anterior end bent dorsally, bluntly rounded. Mouth directed anterodorsally. Buccal capsule subglobular, with very stout walls, without cutting plates or teeth at its margin, but provided with a pair of large and bicuspid subventral buccal lancets near the base of the capsule (arrow at Photo. 2).

Male. Body 4.85-5.70 × 0.31-0.41 mm. Buccal capsule (Photo. 1 and 2) 0.13-0.14 × 0.11-

0.12 mm. Esophagus (Photo. 1) club-shaped, 0.56-0.65 × 0.10-0.13 mm. Nerve ring (N at Photo. 1) encircles the esophagus, 0.38-0.43 mm from head end. Excretory pore situated 0.48-0.57 mm from head end. Spicules (Sp at Photo. 5) very fine, rod-shaped, with slight spatulate enlargements at the ends, equal, 0.40-0.48 mm long, with curved tip, there is a trapezoidal gubernaculum, 0.062 mm long. Bursal structure as shown in Photograph 5. Ventral ray cleft at the distal end; three lateral rays divergent and arising from common trunk, abruptly slender at the distal end; externo-dorsal ray arising from the trunk of dorsal ray; dorsal ray (Photo. 6) bifurcated at about two-thirds, each branch bifurcated at about half, of which external digitate bifurcated at the terminal.

Female. Body 5.82-6.61 × 0.38-0.52 mm. Buccal capsule 0.16-0.17 × 0.14-0.16 mm. Club-shaped esophagus 0.72-0.74 × 0.13-0.16 mm. Nerve ring 0.43-0.48 mm from head end. Excretory pore 0.51-0.56 mm from head end. Conical tail (Photo. 4) 0.09-0.11 mm long, with a mucron (M at Photo. 4) 0.014-0.016 mm long. Vulva (V at Photo. 3) a little behind the middle of the body, 3.64-4.30 mm (60.9-65.7%) from head end. Uteri divergent; uterine eggs oval, thin-shelled.

Globocephalus longemucronatus Molin, 1861

Body stout, the cuticle thick with cuticular transverse striation. Mouth directed anterodorsally. Buccal capsule oval (Photo. 7 and 8), the subventral lancets in the buccal caps-

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ule rudimentary.

Male. Body 5.33×0.35 mm; buccal capsule 0.15×0.10 mm. Clubshaped esophagus (Photo. 7) 0.61×0.13 mm. Nerve ring (N at Photo. 7) 0.42 mm from anterior end. Spicule (Sp at Photo. 11) very fine, equal, 0.64 mm long. Bursal structure similar to *G. samoensis* as shown in Photograph 11. However, dorsal ray (Photo. 12) bifurcated at about two-thirds, each branch terminating in tridigitate, of which external digitate is somewhat longer.

Female. Body 5.45×0.40 mm. Buccal capsule 0.15×0.11 mm. Esophagus 0.64×0.15 mm. Nerve ring and excretory pore 0.43 mm and 0.51 mm from head end, respectively. Tail (Photo. 10) conical without a mucron, 0.18 mm long. Vulva (V at Photo. 9) situated a little behind the middle of the body, 3.12 mm (58.9%) from head end.

Discussion

The genus *Globocephalus* was established by Molin in 1861 for the species *G. longemucronatus* found in domestic pigs in Italy. And then 10 species of this genus are known until now, mostly from pigs.

In Japan, there are three identified and one unidentified species of *Globocephalus*: *G. longemucronatus* Molin, 1861 from the wild boar, *Sus leucomystax leucomystax* by Yamaguti (1935) and Shiota *et al.* (1976), *G. samoensis* (Lane, 1922) from the same host by Yamaguti (1935) and *G. amucronatus* (Smit *et* Notosoediro, 1926) from the wild boar, *Sus riukiuanus* by Shoho *et* Machida (1979). Yamaguti (1935) also found the former two species from the spotted deer, *Sika nippon nippon*. Uchida *et al.* (1979) reported *Globocephalus* sp. from the wild rat, *Dephlothrrix legata*, of Amami Island, Southern Japan.

The present specimen closely resembles *G. samoensis* and *G. longemucronatus* reported by Lane (1922) and Yamaguti (1935).

G. samoensis was described by Lane (1922) under the name *Crassisoma samoense* against the hookworm from swine, and then was established by him in 1923 as genus *Raillietostromylylus* for the same species. The gr-

ounds for the creation of this new genus by him was the presence of rudimentary falciform subventral structures near the buccal aperture. However, Cameron (1924) pointed out that the falciform plates do not exist, denied the independence of the genus *Raillietostromylylus* and considered it as a synonym of *Globocephalus*. This opinion has been supported by Yorke and Maplestone (1926), Neveu-Lemaire (1936), Baylis (1936), and Freitas and Lent (1936).

Lane (1925) upheld his original opinion and Yamaguti (1935) also maintained a conflicting point of view, considering *Raillietostromylylus* as an independent genus. Yamaguti (1953) did not state, however, the grounds on which his identification was based. Moreover, although Yamaguti (1961) assigned to Ancylostomatidae under the name of *Uncinaria samoensis* (Lane, 1922), this nematoda should belong to Strongylidae, because the oral aperture of this hookworm was not guarded by ventral cutting organs.

The chief differences between *G. longemucronatus* and *G. samoensis* are shown by Yamaguti (1935) as follows: although the internal lancet in the buccal capsule of *G. samoensis* is developed very well, that of *G. longemucronatus* is rudimentary. Moreover, *G. longemucronatus* has the oval-shaped buccal capsule, the longer tail without a mucron in the female and longer spicules in the male, and also the terminal digitations of dorsal ray differ from *G. samoensis*. On the basis of these characteristics, the present specimens are separated into two species, *G. samoensis* (Lane, 1922) and *G. longemucronatus* Molin, 1861.

This report is the 2nd record with *G. samoensis* and the 3rd record with *G. longemucronatus*, and a new locality of these worms from *Sus scrofa leucomystax* in Japan.

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短 報

兵庫県産イノシシの *Globocephalus samoensis* と
G. longemucronatus について

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兵庫県の芦屋市郊外において自動車事故で死亡した野生の雌イノシシの腸管に寄生していた線虫を寄生虫学的に詳細な検討を行った。その結果、現在我国では京都からのみ報告のある *Globocephalus samoensis* と *G. longemucronatus* の混合感染であることがわかり、

若干の形態学的知見(口腔の形、口腔内ランセットの有無、雌の尾の形と mucron の有無、交接刺の長さ、背肋の形等)を加え、兵庫県を新しい分布地として報告した。

Photos. 1-6. *Globocephalus samoensis*

Photo. 1. Anterior part (N: nerve ring, arrow: cervical papilla). Photo. 2. Buccal capsule (arrow: buccal lancets). Photo. 3. Vulva (V) of female. Photo. 4. Tail of female (M: mucron). Photo. 5. Bursa of male (Sp: spicule). Photo. 6. Dorsal ray in bursa.

Photos. 7-12. *G. longemucronatus*

Photo. 7. Anterior part (N: nerve ring, arrow: cervical papilla). Photo. 8. Oval buccal capsule. Photo. 9. Vulva (V) of female. Photo. 10. Conical tail of female. Photo. 11. Bursa of male (Sp: spicule). Photo. 12. Dorsal ray in bursa.

