

Research Note

**On the Caudal Papillae of Male of *Thelazia callipaeda*
Railliet and Henry, 1910**

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(Received for publication; September 12, 1983)

Key words: caudal papillae, *Thelazia callipaeda*

Thelazia callipaeda has been recorded from the eye of dogs, cats, badgers, foxes, monkeys and rabbits in Asian region, and also recorded from the human eye in China, Korea, India, the Far Eastern U.S.S.R., Yugoslavia and Japan.

In the original description of *T. callipaeda* by Railliet and Henry (1910), only the female was described, and the male was first described by Houghton (1917). Houghton (1917), after studying some ocular male worms from a dog of Tungchow (Stukey's material), noted four preanal papillae, and a small post-anal projection. Faust (1927), after the re-examination of Stukey's material and the study of his own collection from dogs of Tungchow and Peiping, noted that in all specimens of the China collection the Caudal papillae consist of five paired and one unpaired precloacal sessile button-shaped structures and two pairs of similar post-cloacal ones. Faust (1928) in his subsequent publication made the further statement that study of a large number of specimens requires the following additions: The number of pairs of preanal papillae varies from six to eight rather than being constantly six. Faust

further stated in his textbook that there are 6 to 8 pairs of sessile preanal papillae and 2 similar pairs in a postanal position.

After that, Hsü (1933) reported 8 to 10 pairs of preanal papillae and five pairs of postanal papillae (three ventral, one sub-ventral and one lateral) in all of human and dog materials. On the other hand, Dekhterev (1929, 1930; cited from Skrjabin *et al.*, 1971) reported the presence of 12 pairs of preanal and 2 pairs of postanal papillae in one case, and 9 pairs of preanal and 5 pairs of postanal papillae in another case.

Recently, Bhaibulaya *et al.* (1970) considered that this species has four pairs of postcloacal papillae and one pair of phasmids and then Arizono *et al.* (1976) pointed out that there were actually one pair of adanal papillae, three pairs of postanal papillae and one pair of phasmids on the tail of *T. callipaeda* at the observations with the scanning electron microscope. Moreover, Furukawa (1981) studied on the morphology of adult worms of *T. callipaeda* with the scanning electron microscope, and he reported eight pairs of preanal, one pair of adanal, four pairs of postanal papillae and one pair of large papillae.

When we (Kagei *et al.*, 1981) reported a human case of *Thelazia callipaeda* infection in Tokyo, Japan, we pointed out that

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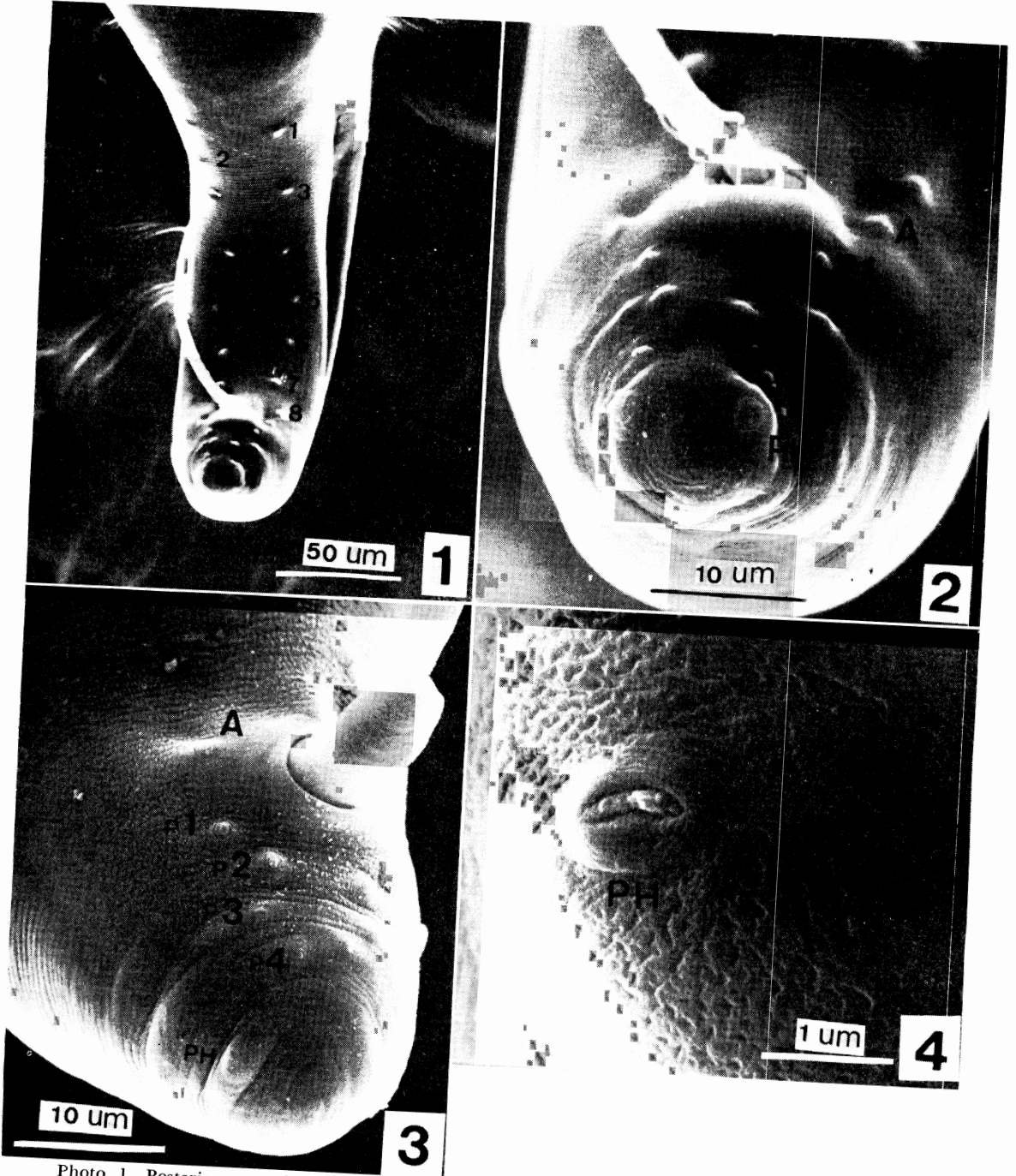


Photo. 1 Posterior part of male of *Thelazia callipaeda*, showing precloacal papillae (1-8).
 Photo. 2 Posterior end of same male, showing 1 pair of adcloacal (A), 3 pairs of postcloacal papillae (1-3) and phasmid (PH).
 Photo. 3 Posterior end of other male, showing 1 pair of adcloacal (A), 4 pairs of postcloacal papillae (1-4) and phasmid (PH).
 Photo. 4 Phasmid (PH) with a opening of phasmidial gland at the center.

there was disagreement on the number and arrangement of caudal papillae of the male worm of this species. Because of many disagreements on the number and arrangement of caudal papillae of this nematode as mentioned above, we reexamined the posterior part of this worm with the light and the scanning electron microscope.

The eyes of dogs in Kobe and Oita Prefectures, Japan, were examined by two of the present authors (Uga and Kugi). The parasites found under the nictitating membrane were picked out with fine forceps. The nematodes were washed in physiological saline, and then 10 males were fixed in 70% hot alcohol. On the occasion of the light microscopic investigation, the specimens were made transparent with glycerine alcohol. Sometimes it was difficult to see the postcloacal papillae, because the posterior part of the adult male was strongly curled. However, it became possible to see when the posterior part was cut off with razor blade.

Other specimens (15 males) were fixed in 2% glutaraldehyde in 0.1 M phosphate buffer, pH 7.4, at 4 C for 2 hours, and post-fixed in 2.5% OsO₄ in 0.1 M phosphate buffer at 4 C for 1.5 hours. They were then dehydrated through a graded series of alcohol, coated with Au-Pd alloy, and observed by Hitachi S-700 scanning electron microscope at 25 KV.

By the light microscopical examination, we found eight pairs of precloacal papillae on 9 specimens, although one specimen had seven pairs of precloacal papillae. Adcloacal papillae were one pair and postcloacal papillae were 4 pairs. In the arrangement of postcloacal papillae, the first one pair near the cloaca and the 2nd pair of middle position of the tail were situated subventrally, and the 3rd pair of postcloacal papillae was medioventrally. The larger pairs were situated subventrally near the tip of the tail.

It became evident by the present

scanning electron microscopy that the most of the specimens had eight pairs of precloacal papillae subventrally (Photo. 1, 1-8) except some had one unpaired preanal papilla (Photo. 1, 2), and then had a pair of adcloacal papillae at the sublateral portion (Photo. 2 and 3, A). However, postcloacal papillae were 3 pairs (Photo. 2, P 1-3) and/or 4 pairs (Photo. 3, P 1-4), and a large pair near the tip of the tail was phasmids with a opening of phasmidial gland at the center (Photos. 2-4, PH).

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東洋眼虫雄虫尾部に見られる感覚乳頭数とその配列について

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東洋眼虫雄虫尾部の感覚乳頭数とその配列に関しては数多くの報告がなされているが、その結果は非常にばらつきがあり、種同定上極めて問題がある。そこで本報告では光学並びに走査型電子顕微鏡でもって雄虫

尾部を観察した結果、*precloacal papillae* 8 対 (まれに対をなさないものが見られる)、*adcloacal papillae* 1 対、*postcloacal papillae* 3 対ないしは 4 対、*phasmids* 1 対であることが確認された。