

Two human cases of *Thelazia callipaeda* infection in Korea

Sung-Tae HONG^{1)*}, Yun-Kyu PARK¹⁾, Sang-Kum LEE²⁾, Jin-Hyung YOO³⁾,
Ae-Seek KIM⁴⁾, Youn-Hee CHUNG⁵⁾, Sung-Jong HONG⁶⁾

Department of Parasitology and Institute of Endemic Diseases¹⁾, Seoul National University College of Medicine, Seoul 110-799, Department of Clinical Pathology²⁾ and Department of Ophthalmology³⁾, Seoul Paik Hospital, Seoul 100-032, Kim's Clinical Pathology Clinic⁴⁾, Seoul 137-060, Somang Ophthalmology Clinic⁵⁾, Seoul 137-060, Department of Parasitology⁶⁾, College of Medicine, Gyeongsang National University Chinju, 660-280, Korea

Abstract: *Thelazia callipaeda* were observed from a 7-month old baby who lived in Uijongbu in 1989 and from a 42-year old man who lived in Anyang in 1994. These are the 23th and 24th records of human thelaziasis in Korea as the literature are concerned.

Key words: *Thelazia callipaeda*, case record, SEM

Total 22 cases of human thelaziasis had been recorded in Korea (Ahn *et al.*, 1993). The authors confirmed total 10 adult worms of *Thelazia callipaeda* isolated from a baby and a man in Korea, and briefly recorded their histories.

Case 1: A 7-month old Korean male infant who lived in Uijongbu, Kyonggi-do, was consulted to a private ophthalmology clinic by his mother in October 1989 because of moving worms in his conjunctival sac. He was transferred to the Seoul Baik Hospital, and the worms were removed from his eyes. His mother stated that she had climbed a mountain in Tongduchon with him.

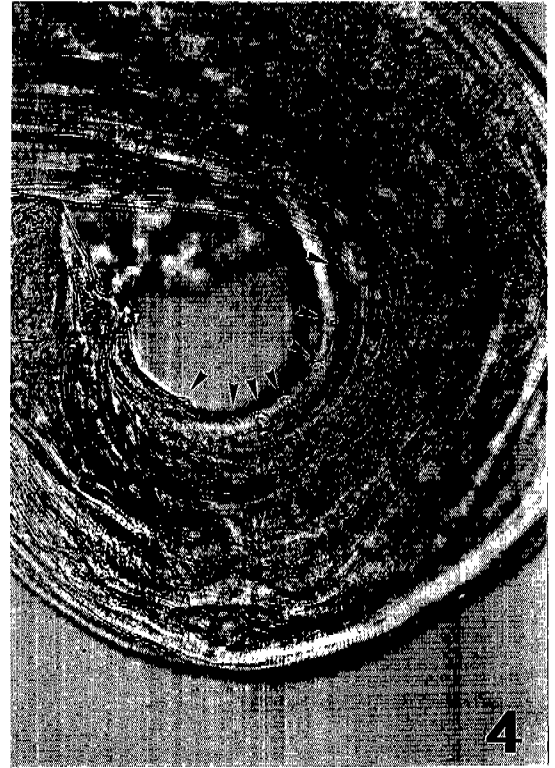
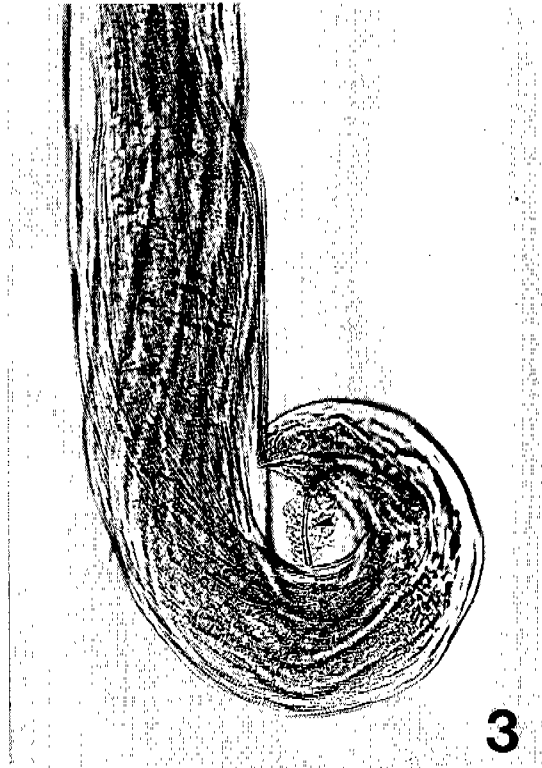
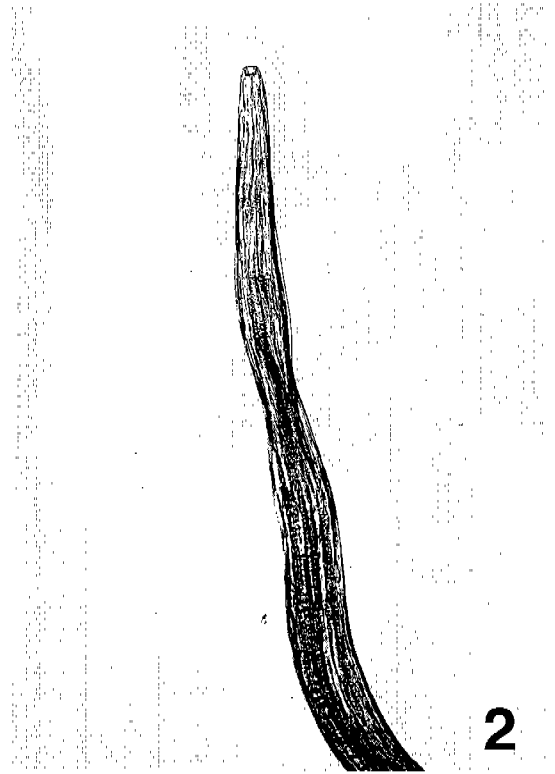
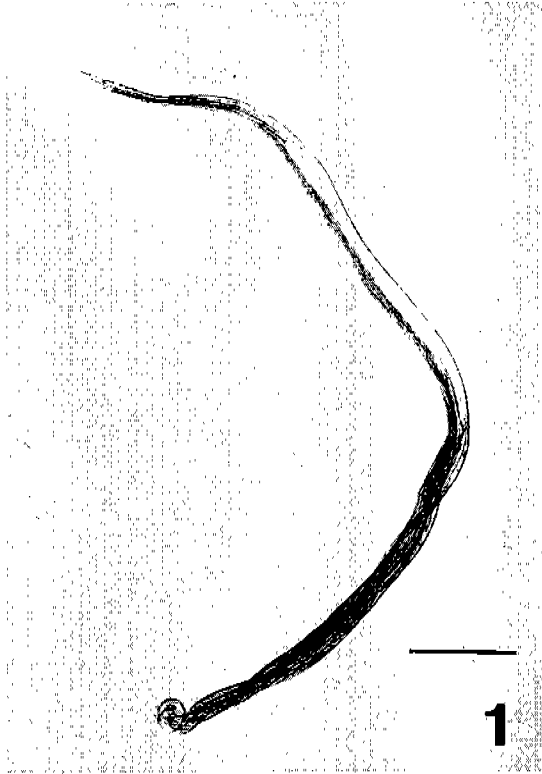
Total five worms were recovered from the baby and consulted to the Department of Parasitology, Seoul National University College of Medicine. The worms were identified as *T. callipaeda*. One was a female and four were males. The male worms were cylindrical, whitish and slender, and sized 9.7 mm in average length and 0.2 mm in maximum width (Fig. 1). Transverse cuticular striations covered

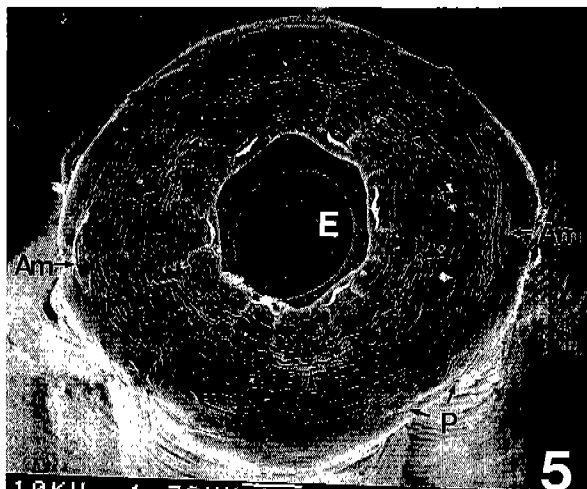
whole surface of the worm. The number of the striations was 320 to 380/mm at head portion, 200 to 220 in mid-portion, and 160 to 320/mm at tail portion. Its buccal cavity was microscopically trapezoid, located anteriorly with no lips or teeth-like structure (Fig. 2). The long spicule protruded from the cloaca (Fig. 3). All of the preanal papillae were not observed due to the spiral coiling of the tail, but seven pairs of the papillae were observed on a microscopic plane (Fig. 4). The vaginal opening of the female worm located anterior to esophago-intestinal junction.

Their surface ultrastructural findings were observed with scanning electron microscopy. In the buccal cavity, dual inner margins were observed; one was round and deep in the cavity and the other was hexagonal on anterior surface of the cavity. Opening of the esophageal lumen was found triangular at the base of the buccal cavity. Along the outer hexagonal surface of the mouth, located cuticular elevations at the 6 angular portions, and six seagull-shaped cuticular thickenings were found between the elevations (Fig. 5). A pair of amphids, which are known as a kind of chemoreceptor, were observed at the outer

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* Corresponding author





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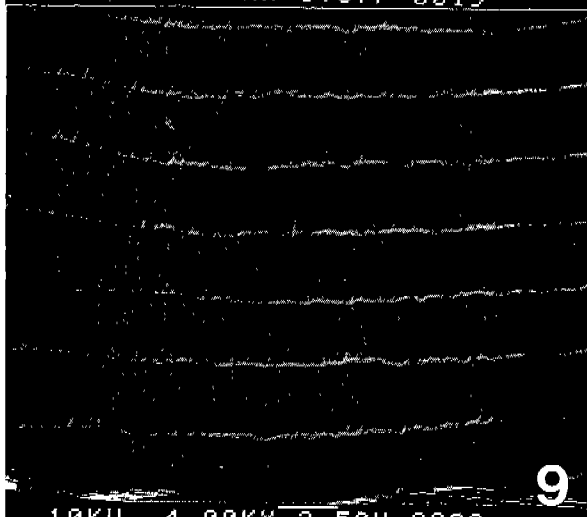
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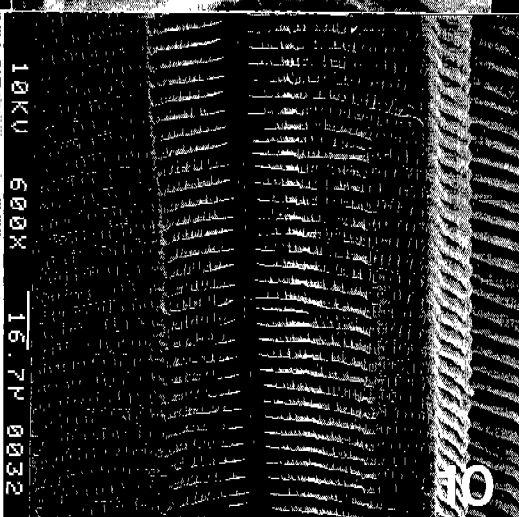
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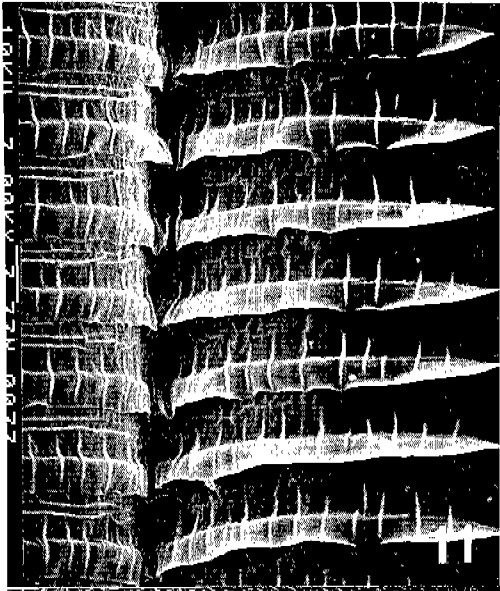
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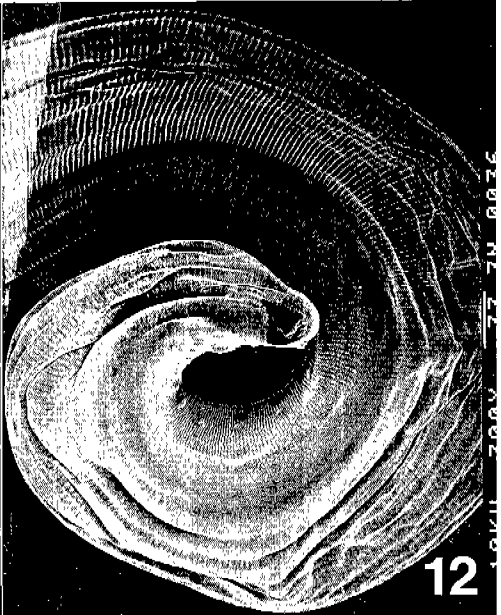
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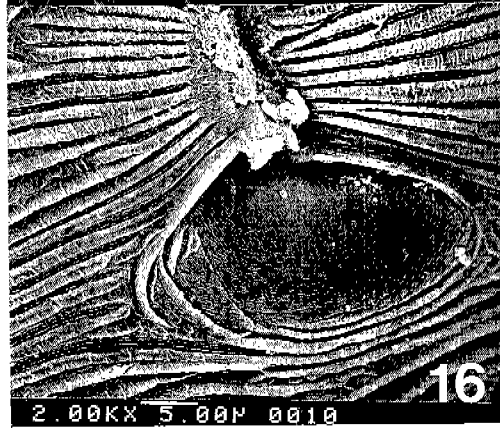
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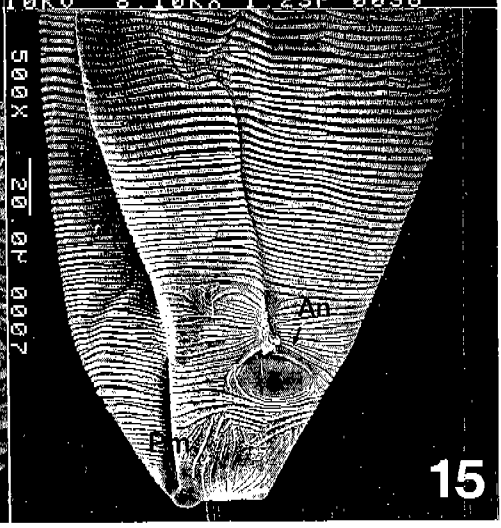
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16

2.00KX 5.00N 0010



15

500X 20.0N 0027

margin of the mouth opening as well as four papillae (Figs. 5 & 6). The amphid was a pocket-shaped depression with a long transverse slit at the center, and was surrounded by compact transverse wrinkles (Fig. 7). The amphid of the other side was obscured by a flower-shaped artifact (Fig. 8).

The intervals between transverse cuticular striations became longer toward the posterior part, and dense corrugations were arranged perpendicularly to the transverse striations (Figs. 9, 10 & 11). The paired preanal sensory papillae were observed on every 12 transverse striations posteriorly as a round crateriform elevation with a central nerve ending which was covered with wrinkled cuticle (Figs. 12, 13 & 14). The tail of the male coiled ventrally, and the anus and spicules were not detected.

The vaginal opening was indistinguishable in a female worm. The anal opening resembled a chestnut, and floored by smooth tissue without striations or wrinkles (Fig. 15). A pair of bead-shaped phasmids, a kind of the chemoreceptor, protruded laterally at the posterior end (Fig. 16).

Case 2: The other case was a 42-year old Korean male who lived in Anyang, Kyonggi-do. In December 1994, he visited a private ophthalmology clinic because of foreign body sensation and itching on his right eye. His inferior conjunctiva was hyperemic and edematous, but superior conjunctiva was not observed. He was treated under the impression of allergic conjunctivitis, but he complained of same symptoms afterwards.

When he visited the clinic again, seven

moving white thread-like worms were removed from his right eye. Among them, five worms were delivered to Department of Parasitology, Seoul National University College of Medicine. The worms were all male and measured average 11.8 mm long and average 0.3 mm wide. The number of transverse cuticular striations was 256 to 320/mm at head portion, 140 to 160/mm at mid-portion, and 173 to 224/mm at tail portion.

The worms from the case 2 were also identified as *T. callipaeda*. He was a driver of a truck who was working in very dusty environment. He remembered no history of contact with flies.

These two are the 23th and 24th human cases of thelaziasis in Korea. There may have occurred many unrecorded cases the worms of which had been thrown into the garbage can since extraction of the worm from the eye is all of the treatment. Therefore much more human infection is actually expected further in Korea. The dog was revealed as its reservoir host in Korea (Hong *et al.*, 1985) and some species of the fly including *Amoita* spp. are suspected as its vector host (Choi *et al.*, 1989). The study on its vector is a subject of further research in this country.

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Figs. 1-4. Light microscopic findings of male *T. callipaeda* from the case 1. **Fig. 1.** Whole worm of a male *T. callipaeda*. (Bar unit: 1 mm) **Fig. 2.** Anterior portion of a *T. callipaeda*, showing the characteristic buccal cavity. **Fig. 3.** Tail portion of a male *T. callipaeda*, showing a long spicule (arrow head). **Fig. 4.** Preanal papillae are lining in a row (arrow heads)..

Figs. 5-14. Scanning electron microscopic views of *T. callipaeda* from the case 1. **Fig. 5.** Front view of the buccal cavity showing margins of the cavity and esophageal lumen (E). The anterior margin is beset with a pair of amphids (Am), sensory papillae (P), cuboidal elevations (arrow heads) and then connections (open triangle). Am: amphid, E: esophagus, P: papillae, arrowhead: cuboidal shape thickening of cuticle, empty triangle: gull shaped cuticular thickening. **Fig. 6.** A pair of sensory papillae are closely observed at the outer anterior margin. **Fig. 7.** An amphid is magnified showing a ventral slit. **Fig. 8.** The other amphid is covered by an artifact. **Fig. 9.** Transverse cuticular striations at the anterior portion, which are compact.

Figs. 10-11. Transverse cuticular striations at the middle portion are less dense than those at the anterior end. **Fig. 12-13.** Tail portion of a male with 7 preanal sensory papillae. **Fig. 14.** One preanal papilla consists of a central nerve and with surrounding crateriform elevation of the cuticle. **Fig. 15.** Tail portion of a female *T. callipaeda*. An: anus, Pm: phasmid. **Fig. 16.** Higher magnification of the anus.

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=초록=

동양안충 인체 감염 2례

홍성태¹⁾, 박윤규¹⁾, 이상금²⁾, 유진형³⁾, 김애식⁴⁾, 정연희⁵⁾, 홍성종⁶⁾

서울대학교 의과대학 기생충학교실 및 풍토병연구소¹⁾, 서울 백병원 임상병리과²⁾ 및 안과³⁾,
김임상병리과의원⁴⁾, 소망안과의원⁵⁾, 경상대학교 의과대학 기생충학교실⁶⁾

동양안충 인체 감염 2례를 보고하고자 한다. 한 예는 7개월된 영아로 눈에서 충체를 발견하여 내원한 결과 동양안충 5마리를 적출하였다. 기생충학적으로 관찰한 바, 암컷 1마리에 수컷이 4마리였으며, 길이가 평균 9.7 mm, 폭이 최대 0.2 mm였다. 이 환자의 어머니는 의정부에 거주하며, 아기와 함께 동두천에 있는 산에 오른 경험이 있다고 하였다. 충체를 암수 한마리씩 주사전자현미경으로 관찰하였다. 두번째 증례는 안양에 거주하는 42세의 트럭운전수로, 오른쪽 눈의 이물감과 가려움을 주소로 내원한 결과 위쪽 결막에서 7마리의 충체를 적출하여 그 중 5마리를 기생충학적으로 관찰하고 그 소견을 기술하였다. 충체는 모두 수컷이었으며, 길이와 폭의 평균이 각각 11.8 mm, 0.3 mm이었다. 이 증례들은 각각 문헌에 보고된 동양안충 국내 증례의 제 23, 24례에 해당한다.

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