

REPORT OF *EPISTHMIUM CANINUM* (VERMA, 1935) YAMAGUTI, 1958 (DIGENEA: ECHINOSTOMATIDAE) IN MAN

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INTRODUCTION

Worms of the genus *Episthmium* Lühe, 1909 have been reported from birds, and only one species from dogs, *Episthmium caninum* (Verma, 1935) Yamaguti, 1958 (syn. *Episthochasmus caninum* Verma, 1935), (Kobayashi, 1942). Recently in follow up studies of praziquantel in human opisthorchiasis many species of trematodes were recovered from the stools of patients (Radomyos *et al.*, 1984). Some of the intestinal worms were identified to be new species in Thailand (Radomyos *et al.*, 1982, 1983). Further studies were undertaken to collect post treatment stools to search for, and identify other species. In the course of stool examinations 18 *Episthmium caninum* were identified, and reported herein.

MATERIALS AND METHODS

During the course of a clinical trial of praziquantel in human opisthorchiasis (Bunnag and Harinasuta, 1980, 1981) at the Hospital for Tropical Diseases, Bangkok, stool specimens were collected for three consecutive days following treatment. The search for worms was done by the sedimentation method and examination under a stereoscopic microscope. All recovered worms were fixed in 8% formalin and stained with either Semichon acetic carmine or trichrome and mounted in permount. Key to identification of the different species of flukes were according to Yamaguti, (1971).

Episthmium caninum was recovered from the stool of a Thai male farmer, age 44, from Roi-Et province, who was admitted to the Bangkok Hospital for Tropical Diseases in August, 1982. Stool examination was positive for *Opisthorchis viverrini* and hookworm and he was treated with a single dose of praziquantel 40 mg/kg body weight. The specimens were confirmed by Professor M. Ohbayashi.

RESULTS

The results of the post treatment stool examinations of the patient were as follows: 207 *Opisthorchis viverrini*, 2 female *Enterobius vermicularis*, 61 *Phaneropsolus bonnei*, 13 *Prosthodendrium molenkampi*, 7 *Echinostoma ilocanum*, and 18 *Episthmium caninum*. Description of seven of the eighteen *Episthmium caninum* worms are as follows:

The body (Fig. 1) is elongated with tapering rounded ends, the anterior being more attenuated, 0.931 (0.773-1.237) mm long and 0.376 (0.350-0.433) mm wide. The minute tegumental spines which cover the entire length of the body surface beginning at the posterior margin of circumoral disc and extending to mid-portion of the hind testis. The anterior end is provided with a circumoral disc and surmounted with 24 spines. The collar spines are prominent and interrupted dorsally by an oral sucker. Six of them exist on both dorsal sides arranged in one row, whereas the lateral and ventral

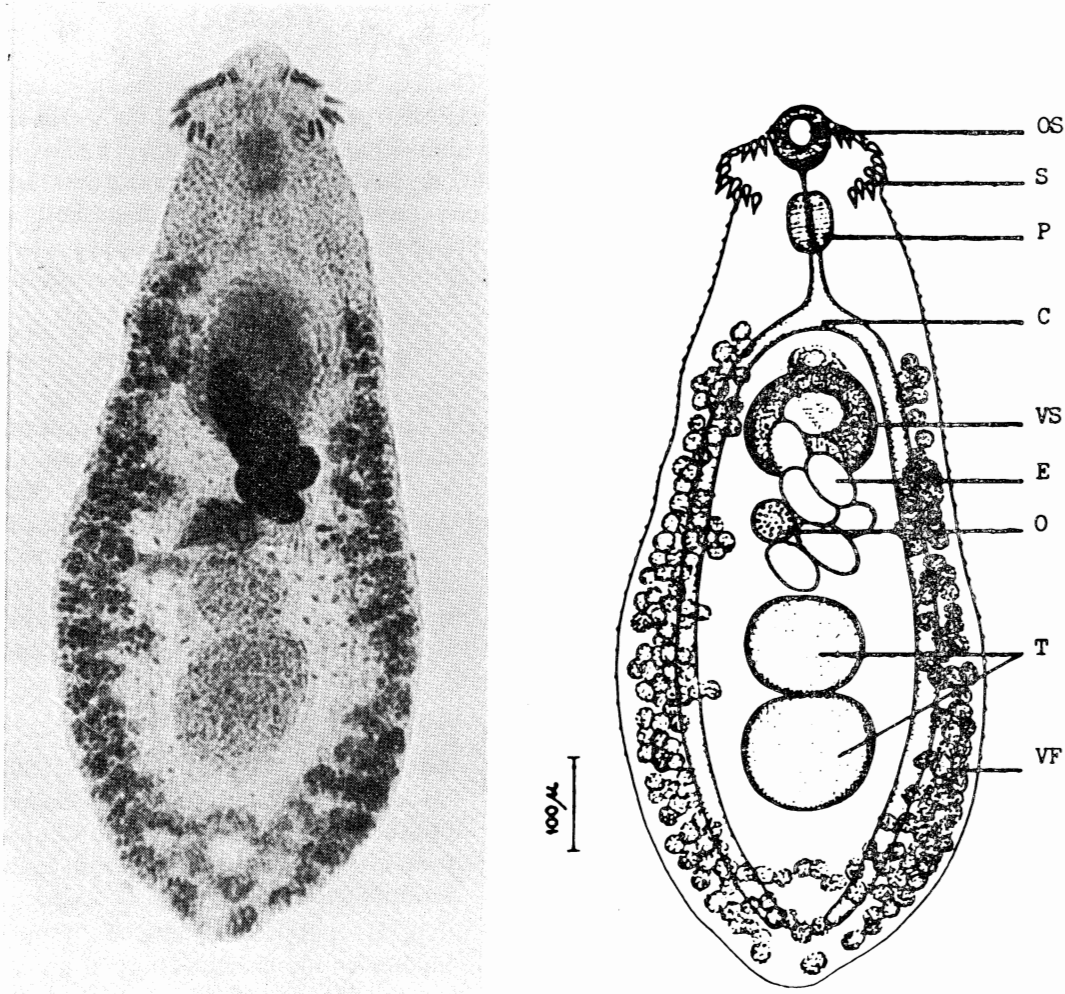


Fig. 1—*Episthmium caninum*.

OS = oral sucker, S = spine, P = pharynx, C = caeca, VS = ventral sucker, E = egg, O = ovary
T = testes, VF = vitelline follicle.

ones are distinctly arranged in 2 continuous alternating rows. Oral sucker is slightly subterminal, 64(53-81) microns and 66(59-77) microns. The pharynx is oval and the dimension were 71(48-84) microns and 63(54-77) microns. Two intestinal caeca extend to subcaudal region. The ventral sucker is relatively large and lies at the posterior end of the anterior third of the body measuring 126(79-151) microns by 136(105-154) microns.

The testes are large; the anterior one is transversely oval measuring 108(72-141) microns by 164(125-197) microns, while the posterior one is 145(113-179) microns by 170(143-195) microns. Subglobose bodies lie one behind another and are situated in the posterior half of the body. The cirrus pouch is immediately anterior to the ventral sucker and is filled with the seminal vesicle and ejaculatory duct. The genital pore is



Fig. 2—Egg of *Episthmium canium*.

immediately anterior to the ventral sucker. The small globose ovary 65(59-69) microns by 68(56-77) microns, is situated on the left of midline between the ventral sucker and the anterior testis. The vitelline gland are regular follicles extending from the level of the genital pore to the posterior end of the body. The uterus is short, containing 4(1-7) eggs. The eggs (Fig. 2) obtained from 3 worms dissected are operculated, thin-shelled, greenish-yellow in colour and the size is 95(84-102) microns by 64(56-69) microns.

DISCUSSION

Episthmium sp. are usually found in birds and rarely in mammals. This is first report of finding of this species of worm in man. The host was found to harbour several species of intestinal flukes including *Episthmium* sp.. However, the most predominant fluke was *Opisthorchis viverrini*. It is therefore, possible that the *Episthmium* sp. infestation was an accidental one which the host acquired from eating raw fish, the second intermediate host of *Opisthorchis viverrini*.

SUMMARY

The first finding of *Episthmium* sp. in man is reported. Characteristics of the worm are given in detail. The infestation is an accidental one acquired from consuming raw fish, which serves as an intermediate host of *Opisthorchis viverrini*. The pathogenic role of *Episthmium* sp. in man needs further investigations.

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