A NEW BLOOD FLUKE APOROCOTYLE THERAGRAE N. SP. (DIGENETIC TREMATODE : APOROCOTYLIDAE) FROM A MARINE FISH, THERAGRA CHALCOGRAMMA.

Atsuo Ichihara

(Meguro Parasitological Museum, Tokyo)

ABSTRACT: Aporocotyle theragrae n. sp. (Digenetic Trematode : Aporocotylidae) is described from the blood vessel of an Alaskan pollack, Theragra chalcogramma (PALLAS) from the adjacent Seas of Hokkaido. It differs from the four already known species in body shape, arrangement of body spine groups, ratio of esophageal length to body length, undulating caeca, and vas deferens being looped.

INTRODUCTION

Four species have been reported in the genus Aporocotyle ; A. simplex Odhner, 1900, A. orientalis Yamaguti, 1934, A. spinoscanalis Williams, 1958, and A. margolisi Smith, 1967. Smith (1967) tabulated these four species and compared his species A. margolisi with the others. The present examination of author’s materials obtained from an Alaskan pollack, Theragra chalcogramma, do not agree with the respective description of four known species. A new species A. theragrae n. sp., therefore, is proposed.

MATERIALS AND METHODS

Fully matured three specimens were collected from the blood vessel of one examined fish, which was caught in the adjacent Seas of Hokkaido on February 13, 1968. The worms were slightly pressed under cover glass in 70% alcohol, stained with Heidenhain Hematoxylin and mounted in balsam.

Aporocotyle theragrae n. sp.

(Figs. 1-6)

Host: Theragra chalcogramma (PALLAS)
Location: Blood vessel
Locality: Adjacent Seas of Hokkaido
Date: February 13, 1968

Type and paratypes: In Meguro Parasitological Museum, No. 14715

Description: Based on three whole mounted specimens. Body leaf-shaped, 6.6-7.7 mm in length, maximum width 2.1-2.3 mm in the middle of body. Anterior end of body slightly pointed. Left margin of body gently concaves at the midlevel of the last third of body. Body surface covered with minute spines, 15µ long, forming fan-shaped groups. These groups scattered on both side, ventral and dorsal, laterally at 10-40µ intervals at most 20µ wide row (Fig. 2), except for the anterior
extremity of body. Groups of ventral surface bears slightly wider in range than those of dorsal surface. In a small area sinistral to genital pore on dorsal surface, 0.6 × 0.2 mm in holotype and 0.44 × 0.16 mm in paratype, were covered with same nature of spine groups.

Mouth ventroterminal; esophagus 0.89–1.20 mm in length, divided into three parts, is surrounded by glandular cells throughout its course which increase their size towards the bifurcation of caeca. Anterior part is bucal cavity, oval, 0.11–0.17 mm × 0.095–0.10 mm. On inner wall of this bucal cavity some cuticular cells are seen. Middle thin cuicular part, 0.53–0.84 mm in length, has many hairs 20 μ long in inner wall, and is surrounded by numerous small glandular cells, 45 μ long. Posterior thick cuticular part, 0.20–0.30 mm in length, is surrounded by large elongated cells, 70–110 μ in length, bifurcated at midlevel of first one third of body. Ratio of esophageal length to body length 1:6.0–7.7. Intestine H-shaped. Anterior slightly undulating limbs 0.55–0.90 mm in length. Posterior limbs well undulating, extending to posterior extremity of body. Left caecum terminates at caudal end of body near median line. Irregular shaped testes, 98–125 in number, occupying all available intercecal space from caecal bifurcation to near the level of genital pore. Vas deferens clearly looping on right side dorsal to uterus. Cirrus pouch retort-shaped, 0.38–0.39 × 0.18–0.24 mm, lies in left side near midlevel of the lower third of the body, containing vesicula seminalis, short pars prostatica, large prostate cells and narrow ductus ejaculatorius. Cirrus protruded into shallow genital atrium, and formed cone-like appearence in holotype.

Transversely elongated ovary, 0.29–0.36 × 0.52–0.61 mm, submedian, irregularly incised in holotype and in one paratype, situated at posterior tenth of body length. Germiduct arising from posteroentral surface of ovary, running backwards, dorsal to vitelline reservoir, turning to right to receive vitelline duct. Ootype spindle shaped, surrounded by shell gland cells at midway between ovary and posterior end of body. Receptaculum seminis uterinum conspicuous. Uterus strongly convoluted, occupying whole intercecal spaces between ootype and posterior border of testes. Distal end of uterus connected with a well developed inverted comma-shaped metraterm by narrow duct. Proximal end of metraterm surrounded by glandular cells somewhat swelled, inside of which has many fine hairs. Distal end of metraterm connected with female pore by a narrow passage which opens into genital artium ventral to male pore. Vitellaria consisting of small follicles, surrounding the caeca except for its dorsal side from anterior caecal limb to level of ovary. Uterine eggs thin shelled, oval to elliptical, 26–32 × 18–20 μ, (Fig. 4). Spawned eggs attached on the surface of the worm near genital pore, however, have thick shell (Figs. 5, 6). Excretory vesicle tubular, very short, collecting tubes run anteriorly, ventral to caeca.

Discussion: Present species differs from the closely related species A. simplex ODHNER, 1900, and A. orientalis YAMAGUTI,

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**EXPLANATIONS OF FIGURES**

Fig. 1. Entire worm, dorsal view, holotype. Fig. 2. Spine groups of body surface, showing their arrangement, paratype. Fig. 3. Terminal genitalia, dorsal view, holotype. Figs. 4–6, Eggs. 4. uterine eggs, unsegmented, thin shelled. 5. spawned eggs, 4-cell stage, thick shelled. 6. matured eggs, thick shelled.

**ABBREVIATIONS USED IN FIGURES**

| CP | cirrus pouch |
| OC | oral cavity |
| VD | vas deferens |
| EV | excretory vesicle |
| I | intestine |
| M | metraterm |
| RSU | receptaculum seminis uterinum |
| T | testis |
| U | uterus |
1934 in the body shape, arrangement of body spine groups, ratio of esophagus to body length, vas deferans being looped, and undulating caeca. Zhukov (1960) collected worms from Theragra chalcogramma in Sea of Japan and described them as A. simplex. A. simplex of Zhukov appears to have close resemblance with present species, but it is too roughly described to compare. Arrangement of body spine groups and egg size were not related in his description.

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LITERATURE