TWO NEW DIGENETIC TREMATODES,
PARAMONORCHEIDES BROTULIDORUM N. SP.
(MONORCHIIDAE) AND DINOSOMA LOPHIOMI N. SP.
(HEMIURIDAE), FROM DEEP SEA FISHES FROM JAPAN

Gerd TOMAN
(Meguro Parasitological Museum, Tokyo)

ABSTRACT: A new monorchiid trematode, Paramonorcheides brotulidorum n. sp. was collected from the intestine of Neobythites fasciatus. It differs from the closest related species P. sirembonis YAMAGUTI, 1938, in larger body size, larger sucker ratio, shorter esophagus, more anterior location of acetabulum, more posterior location of genital pore, and smaller eggs, surrounded by a thick coating. A new hemiurid, Dinosoma lophiomi n. sp. was obtained from the stomach of Lophiomus setigerus. The large seminal vesicle and a tubular sheath enclosing hermaphroditic duct distinguishes it from all other species of the genus.

INTRODUCTION

Paramonorcheides brotulidorum was obtained alive from the intestine of Neobythites fasciatus (Brotulidae) on Nov. 23, 1972. Dinosoma lophiomi was taken from the stomach of deep-frozen Lophiomus setigerus (Lophiidae) collected March 29, 1972. The hosts were caught by commercial trawler off Heda, Suruga Bay, Japan. The trematodes were fixed in Schaudinn’s solution under a cover glass with light pressure, stained with Heidenhain’s hematoxylin and mounted in balsam in different sized microcover glasses for examination on ventral and dorsal sides of the worms. The figures were drawn with the microprojection method. All measurements are in mm, unless otherwise indicated.

Paramonorcheides brotulidorum n. sp.
(Figs. 1 & 4)

Host: Neobythites fasciatus (Brotulidae).
Location: Intestine.
Locality: Suruga Bay, off shore, in depths 280–530 m.
Date: Nov. 23, 1972.
Frequency: One out of two hosts examined.
Holotype: MPM Coll. No. 17665.
Description: Based on one gravid speci-

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Present address: Ist. zool. Institute, Sec. Marine Biology, University of Vienna, Austria 1090
Fig. 1. Paramonorchides brotulidorum n. sp. from intestine of Neobythites fasciatus, entire worm, holotype, ventral view; Figs. 2 & 3. Dinosoma lophiomi n. sp., from stomach of Lophiomus setigerus (2, entire worm, holotype, ventral view; 3, terminal genitalia of paratype, ventral view)

(C, cirrus; Ex, excretory vesicle; GA, genital atrium; GP, genital pore; HD, hermaphroditic duct; I, intestinal caecum; LC, Laurer’s canal; M, metraterm; OV, ovary; PP, pars prostatica; S, sheath enclosing hermaphroditic duct; SV, seminal vesicle; T, testis; TO, terminal organ; UT, uterus; VT, vitellaria)
central dorsal lobe, giving off Laurer's canal, which forming a short loop before opening dorsad, and uniting with vitelline duct to form ootype surrounded by scattered shell gland cells at equatorial level in median line. Uterine coils occupying most of hindbody, forming longitudinal loops, overlapping partially testes and ovary; metraterm dextral to acetabulum, opening into terminal organ at its anterior end. Terminal organ saccular, curved, 0.626×0.202, armed inside with tall hair-like spines, 50-60μ long, similar to those of cirrus; provided with muscular sphincter, 0.115×0.10, at its distal end and opening into genital atrium dorsal to cirrus pouch. Vitellaria forming symmetrical bunches of lobed follicles, extending on anterior half of each testis in acetabular region, each follicle measuring 0.12-0.2 in diameter. Eggs more blunt on one and more pointed on the other pole, 17-25×10-12μ, egg shell itself is of usual thickness but surrounded by a thick transparent coat, measuring 2.5μ (Fig. 4). Excretory vesicle saccular, two collecting arms extending to acetabular level dorsal to caeca; pore terminal.

Discussion: Three species were previously recorded in the genus Paramonorchideis, P. awatati YAMAGUTI, 1938, P. sirembonis YAMAGUTI, 1938, from Japan and P. spicularis YAMAGUTI, 1970, from Hawaii. The present species is closely related to P. sirembonis but differs from it in many aspects such as a larger sized body, larger sucker ratio (1:2.2 in P. brotulidorum n. sp. vers. 1:1.13-1.14 in P. sirembonis), shorter esophagus, more anterior location of the acetabulum, larger seminal vesicle, more posterior opening of the genital pore from the caecal bifurcation, and smaller eggs, surrounded by a transparent coating. The specific name of the trematode refers to the family of the host, harboring three out of four members of this genus.

Dinosoma lophiomi n. sp.
(Figs. 2 & 3)

Host: Lophius setigerus (Lophiidae).
Location: Stomach.
Locality: Suruga Bay, off-shore, from depths 280-530 m.
Date: March 29, 1972.
Frequency: Four out of one host.
Holotype: MPM Coll. No. 17530.
Description: Based on four gravid specimens. Body elongate, finely scaled; body proper 3.39-4.17 long, maximum width 0.86-1.37 at level of vitellaria; tail unarmed, 1.52-2.78 long, constricted off from body proper some distance posterior to vitellaria. Oral sucker subterminal, 0.20-0.28×0.26-0.35, surrounded by small preoral lobe. Pharynx barrel-shaped, 0.10-0.13×0.13-0.15; esophagus short; caeca reaching into tail. Acetabulum in anterior half of body, 0.46-0.58×0.50-0.60. Sucker ratio 1:1.7-2.1 (1:1.7 in holotype).

Testes subglobular, diagonal, 0.23-0.45×0.21-0.43, in anterior part of second third of body proper. Seminal vesicle immediately anterior to testes, 0.59-1.25×0.17-0.28, posterodorsal to acetabulum, bent and large; a slightly winding seminal duct extending forward to form well differentiated, oval pars prostatica, 0.23-0.28×0.14-0.19, preacetabular, surrounded by numerous prostatic cells free in parenchyma. Hermaphroditic duct narrow, 0.18-0.2 long, enclosed in thin membranous, but distinct tubular sheath covered outside with longitudinal muscle fibers; genital atrium short, 0.05-0.06 long, covered externally with circular muscle fibers. Genital pore median, at level of pharynx (Fig. 3).

Ovary postequatorial, submedian, 0.21-0.32×0.33-0.49; small receptaculum seminis
present, 0.1×0.13, overlapping ovary dor­sally. Vitellaria two, compact, oval, 0.38­0.47×0.30-0.43, immediately postovarian. Uterus extending into tail, overlapping partially caeca and testes, narrowing ante­rior to testes to form metraterm ventro­dextral to pars prostatica. Eggs elongate oval, 22-25×7-10μ. Excretory arms unit­ing dorsal to pharynx; pore terminal.

Discussion: This species is characterized by a large seminal vesicle and a tubular sheath enclosing the hermaphroditic duct—which is by no means a true hermaphro­ditic pouch. None of the previous described species possess these characteristics. The closest relationship seems to exist to D. synaphobranchi YAMAGUTI, 1938, but above mentioned differences are obvious. NIKOLAEVA (1966) described D. thoria from Arnoglossus from the Mediterranean, but her species does not seem to belong to Dinosoma, nor fit this species in any other existing genus of the Hemiuridae. If more precise re-description is made, it might belong to Glomericirrus.

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