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TREMATODES OF FISHES FROM THE RED SEA. PART 6. ON FIVE DISTOMES INCLUDING ONE NEW GENUS AND FOUR NEW SPECIES

H. F. Nagaty

Department of Parasitology, Faculty of Medicine, Abbasia, Cairo, Egypt

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On Five Distomes Including One New Genus and Four New Species*

H. F. Nagaty

Department of Parasitology, Faculty of Medicine, Abbasia, Cairo, Egypt

Part 6 in this series includes descriptions of 5 trematodes of which one is recorded for the first time from a fish occurring in the Red Sea and 4 are new species, one representing a new genus. The author collected this material in Egypt and completed its study at the University of Nebraska during the tenure of a Fulbright Scholarship Award for 1953-54. Type specimens are kept at the Parasitology Department, Faculty of Medicine, Abbasia, Cairo, Egypt. All measurements are in mm.

Family Opecoelidae

* Helicometra hypoditis* Yamaguti, 1934

(Fig. 1)

Two mature specimens were collected from 4 specimens of *Serranus* (=*Epinephalus*) sp., locally called “Koshar,” from Ghardaga.

**Diagnosis:** Body tapering anteriorly, broadly rounded posteriorly; 2.16 and 2.03 long, 1.21 and 1.01 maximum width. Acetabulum 0.33 in diameter, near anterior third of body. Oral sucker 0.21 by 0.25 in diameter; forebody 0.33 long. Prepharynx short; pharynx 0.98 long by 0.14 wide; esophagus short; intestinal ceca ending 0.2 from posterior end of body. Testes tandem, lobed, wider than long, 0.29 by 0.52 to 0.59; in posterior half of body. Cirrus sac curved in an S-shape, extending from middle of acetabulum to genital atrium near pharynx. Genital pore median, ventral to pharynx. Ovary directly anterior to testes; wider than long; lobed; size 0.16 by 0.24. Seminal receptacle large, pyriform, immediately anterior and to right of ovary. Vitellaria mostly extracecal, from level of pharynx to near posterior end of body. Uterus between ovary and acetabulum; eggs yellowish, thin-shelled with long filament about twice as long as egg shell which measures 0.04 to 0.06 by 0.03 to 0.04.

This species is previously known from *HyPodytis rubipittnis* in the Inland Sea, Japan.

Family Sphincterostomatidae

* Megacreadium tetrodonitis* n. g., n. sp.

(Fig. 2)

Only one mature specimen was obtained from the alimentary tract of *Tetradon* sp. from Ghardaga.

**Diagnosis:** Length 13.5, maximum width 4.7; with almost parallel sides; cuticle smooth. Oral sucker large and globular, 2. in diameter, highly cellular. Surrounding mouth are 2 large muscular, lateral lobes and one smaller, median, posterior lobe, each scalloped or frilled with short processes. Acetabulum salient, smaller than oral sucker; 0.7 in diameter; at junction of 1st and 2nd quarters of body length. Sucker ratio 1: 0.35. Pharynx poorly developed, with circular muscles only; measuring 0.5 long by 0.84 wide. Prepharynx and esophagus lacking. Ceca broad, opening posteriorly through ani.

Testes 8, entire, more or less globular, 0.4 to 0.6 in diameter, in two irregular, longitudinal rows of 3 on the left and 5 on the right, intercecal, slightly anterior to middle of body. Cirrus sac absent; seminal vesicle an elongate sac measuring 1 by 0.6 in diameter, situated to right of and slightly anterior to acetabulum; prostatic cells free in parenchyma. Genital pore submedian, very slightly to the left, immediately anterior to acetabulum. Ovary spheroid, entire, pretesticular, of about same size as testes, slightly to right of midline, near end of anterior third of body length. Shell gland complex to left of ovary closely posterior to acetabulum. Seminal receptacle not observed. Vitelline follicles comparatively small and numerous, extending from posterior end of body almost to ovary. Uterus compact, to left of midline, extending from slightly posterior to acetabulum to pharynx, so that approximately half of it is anterior to genital pore. A short metraterm leads posteriorly to genital pore. Eggs yellowish, ovoid, large, measuring 0.14 by 0.09; shell without filaments or knobs.

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Generic diagnosis of *Megacreadium*. Fairly large, unspined trematodes; oral sucker very large, highly cellular, with two lateral and one posterior muscular lobes around mouth; pharynx weakly muscular; two ani present. Testes 8, in two more or less longitudinal rows of 5 and 3, in middle third of body; saccular seminal vesicle; no cirrus sac; prostatic cells free in parenchyma. Ovary pretesticular, entire; seminal receptacle not observed; vitellaria of small follicles, extending from near posterior border of ovary to posterior end of body; uterus to left of acetabulum, extending anterior to genital pore. Genital pore submedian, preacetabular. Eggs large, without filaments. Parasites of marine fishes. Type species: *M. tetrodontis*.

Discussion: Except for the 8 testes, *Megacreadium* has some similarity to the genus *Sphincterostoma* Yamaguti, 1937, for example in its cellular oral sucker, sucker ratio, and lack of cirrus sac. *Sphincterostoma* also has muscular preoral lobes, but it differs in having two testes and its ceca join the excretory vesicle. The number of testes and the presence of ani are generic characters in both the Lepocreadiidae and the Opecoelidae. It might be noted that the status of the family Sphincterostomatidae is rather uncertain. Yamaguti established it in 1937 and it still contains only the single species, *Sphincterostoma branchiosiegi*. Later, Yamaguti (1954) included it, along with many genera of Opecoelidae and Lepocreadiidae, in the Allocreadiidae. It is recognized here tentatively pending knowledge of more species or life cycles.

**FAMILY GORGORDERIDAE**

*Phyllodistomum leilae* n. sp. (Fig. 3)

| Plant specimens were obtained from the intestine of *Pseudoscopus harid*, locally known as “harid,” from Ghardaga. |

**Diagnosis:** Body tapering toward both ends, not abruptly broadened; 6.3 long by 1.83 in maximum width. Cuticle transversely striated. Acetabulum at junction of 1st and 2nd fourths of body length, 0.44 in diameter. Oral sucker 0.5 in diameter; esophagus very short and narrow, glandular; pharynx lacking; ceca with numerous indentations, ending blindly near posterior end of body; right cecum somewhat longer than the left.

Testes fairly large, somewhat longer than wide, indented, intercecal, in middle 3rd of body length, oblique, right testis in advance of left, overlapping each other by about ¼ length. Seminal vesicle ovoid, median, entirely anterior to acetabulum. Ovary ovoid, entire, pretesticular, to left of midline, partly overlapping left cecum, at junction of anterior and middle thirds of body length. Vitellaria of two masses, each composed of 7-9 lobes, mainly intercecal, closely anterior to ovary. Seminal receptacle posterior to ovary. Uterus filling most of intercecal space posterior to testes, extending almost as far back as posterior end of right cecum, then anteriorly between left testis and ovary, to right of ovary, between vitellaria to genital pore midway between suckers. No eggs in uterus. Excretory vesicle narrow, extending to posterior border of ovary before bifurcating.

**Discussion:** This species is characterized by its very short esophagus, irregularly constricted ceca, and a sucker ratio of 1:0.88. It is perhaps most similar to *P. pacificum* Yamaguti, 1951 from *Caranx equula* in Japan, but differs in more lobed vitellaria, less lobed ovary, longer posttesticular distance, and constricted ceca.

**FAMILY HEMIURIDAE**

*Hysterolecitha teuthis* n. sp. (Fig. 4)

| Only one specimen was obtained from the alimentary canal of *Teuthis marmorata*, locally called “Sigan,” from Ghardaga. |

**Diagnosis:** Body elongated, with parallel sides; length 3.25; width 0.73; both ends broadly rounded, slight indentation at excretory pore; cuticle smooth. Acetabulum 0.44 in diameter, occupying most of 2nd fourth of body length. Oral sucker 0.29 in diameter; sucker ratio about 1:1.5. Pharynx small; no prepharynx or esophagus; ceca simple, broad, with shoulders anteriorly, a constriction on each side opposite anterior half of acetabulum, and a peculiar fold opposite posterior half of acetabulum. Ceca end blindly at posterior end of body.

Testes two, oblique, ovoid, entire, immediately posterior to acetabulum; seminal vesicle free
in parenchyma, sinuous, extending from anterior border of acetabulum to about ¼ distance between acetabulum and intestinal bifurcation; pars prostatica well developed, surrounded by prostatic cells; genital atrium sucker-like, a short distance posterior to bifurcation. Ovary ovoid, about same size as testes, median, at anterior end of posterior 3rd of body length. Vitellaria immediately postovarian, composed of 7 digitiform processes directed laterally and posteriorly. Uterus filling most of body posterior to acetabulum, separated testes from ovary and extending posterior to ovary and vitellarium; eggs 0.036 by 0.021.

Discussion: H. rosea Linton, 1910, type of the genus, is from Teuthis (= Acanthurus) at Tortugas, Florida. H. acanthuri Annereaux, 1947 is also from that genus of fish. H. teuthis, however, is most similar to H. lintoni Srivastava, 1939 from Arius dussumieri in the Arabian Sea, agreeing in size, sucker ratio, broad prostatic gland, and location of gonads. The chief difference is in egg size, 0.036 by 0.021 in H. teuthis as compared with 0.023 to 0.027 by 0.0076 to 0.010 in H. lintoni. It is also very similar to H. nahaensis Yamaguti, 1942 which, however, has a sucker ratio of 1: 1.6 to 2.7, somewhat more anterior acetabulum and ovary, and eggs 0.021 to 0.027 by 0.009 to 0.012. It differs from H. microrchis Yamaguti, 1934 chiefly in sucker ratio and egg size.

**Tubulovesicula serrani** n. sp.  
(Fig. 5)

Only one specimen was obtained from the alimentary canal of Serranus sp., locally called "Koshar," from Ghardaga.

**Diagnosis:** Body more or less fusiform with very long, slender ecsoma equal in length to that of body proper; about ½ of ecsoma extended; total length of trematode 4.5; maximum width 0.8; body length 3.2. Acetabulum wider than long, 0.5 by 0.44; forebody 0.8 long. Oral sucker subterminal, 0.23 in diameter; sucker ratio 1: 2.17; pharynx wider than long, 0.123 by 0.105; no prepharynx or esophagus; two kidney-shaped cecal swellings, one on either side of pharynx; ceca simple, unequal in length, ending blindly; right cecum almost reaching posterior end of ecsoma; left cecum about 0.4 shorter. Testes spheroid, slightly oblique, close to postero-lateral border of acetabulum and partly overlapped by it, at junction of 1st and 2nd fourths of body length; seminal vesicle sinuous, dorsal to posterior half of acetabulum; pars prostatica surrounded by prostatic cells, beginning slightly anterior to midacetabular level; from a ventral view the length of pars prostatica appears to be slightly less than length of seminal vesicle; sinus sac ovoid, thick-walled, containing a hermaphroditic vesicle and hermaphroditic duct; genital pore immediately anterior to intestinal bifurcation. Ovary ovoid, almost twice as large as one testis, to right of midline, posterior to right testis and overlapped dorsally by right cecum. Vitellaria composed of 8 tubes, 4 on each side, just posterior to ovary, extending lateral to ceca; uterus between ovary and ecsoma, extending lateral to ceca, entering only slightly base of ecsoma; eggs ovoid, thick-shelled, 0.027 by 0.020.

Discussion: Manter (1954) has shown that the number of vitelline tubes in a species of Tubulovesicula may be either 7 or 8 arranged in various positions, T. serrani is very similar to T. anguillae Yamaguti, 1934 which also has a very long ecsoma (equal to body length). The chief difference is the very long pars prostatica in T. anguillae where it is much longer than the seminal vesicle; also, in T. anguillae, the uterus extends rather far into the ecsoma and eggs are 0.034 by 0.023 to 0.024. T. serrani differs from T. angusticauda (Nicoll, 1915) in much longer ecsoma and more posterior extent of the pars prostatica.

**Literature Cited**


Explanation of Plate

Fig. 1. Helicometra hypoditis Yamaguti, 1934. Ventral view.
Fig. 2. Megacreadium tetradontis. Ventral view.
Fig. 3. Phyllostomum leilae. Ventral view.
Fig. 4. Hysteroolecitha teuthis. Ventral view.
Fig. 5. Tubulovesicula serrani. Ventral view.

Abbreviations used: din, cecal swelling; d.h., ductus hermaphroditicus; gen. atr., genital atrium; l.t., left testis; mtr., metraterm; ov., ovary; pars pros., pars prostatica; ph., pharynx; sem. v., seminal vesicle; sin. sac., sinus sac; vit., vitelline tube; ut., uterus.