A New Genus of Monogenetic Trematode (Family Diclidophoridae) from a New Zealand Fish

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A New Genus of Monogeneic Trematode (Family Diclidophoridae) from a New Zealand Fish*

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These monogeneans were collected by the senior author in Wellington, New Zealand in 1951 from the gills of Seriolella brama (Günther), the warehou (Family Nomeidae). A study of the three specimens collected indicates they belong to a new genus of the family Diclidophoridae, subfamily Cyclocotylinae.

Eurysorchis australis, n. gen., n. sp. (Figs. 1-8)

HOST: Seriolella brama (Günther)
LOCATION: Gills.
LOCALITY: Wellington, New Zealand.
NUMBER: Three specimens on one host.

DESCRIPTION: (based on 3 specimens; measurements in mm.): Total length including haptor 9.5 to 10.; greatest width of body 0.5 to 1.; greatest width of haptor 1. to 1.5. Haptor not sharply set off from body, with 8 pedunculated suckers. Stalks of suckers short and broad. Body with a slight lateral constriction about 1.3 from anterior end. Haptoral suckers 0.702 to 0.780 by 0.624 to 0.741. Each sucker with a proximal and a distal unpaired selerite, and 4 pairs of other selerites (Fig. 2). The largest selerite is the T-shaped, proximal, unpaired piece. It articulates with an unpaired, median, distal selerite, and with two lateral, or equatorial, selerites. The other three pairs of selerites are circumferential; the proximal pair each has a proximal flange extending its entire length. The distal quadrants of the suckers bear parallel chitinous ridges. One of the proximal quadrants is without ridges, but has a papillated pad; the other proximal quadrant has traces of ridges and no pad.

Anterior suckers on each side of mouth, about 0.195 long. Pharynx about 0.156 long by 0.140 wide; esophagus about 0.546 long, bifurcating dorsal to genital pore. Intestinal ceca largely covered by vitellaria, with lateral and median outpocketings posterior to ovary, uniting in anterior part of haptor, common cecum much branched within haptor.

Ovary median, at beginning of posterior third of body proper, or near middle of total body length (including haptor), consisting of a folded tube. Oviduct arising from left anterior end of ovary; at first convoluted along anterior border of ovary, then extending backward along right side of ovary to join Mehlis' gland immediately posterior to ovary (Fig. 3). Vitelline follicles closely associated with intestinal ceca from a level a little posterior to lateral constrictions of body to posterior end of haptor. Common yolk duct extends backward along right side of ovary, sending an anterior branch to connect with the seminal receptacle and a posterior branch to Mehlis' gland; the anterior branch continuing forward as the vitello-intestinal canal (Fig. 3). Elongate seminal receptacle to right of and mostly anterior to ovary. Vagina lacking. Uterus extending straight forward to genital atrium. Eggs, 13 to 14 in number, ovoid, with both an anterior and a posterior filament. Body of egg about 0.127 by 0.068; posterior filament 0.218 to 0.468

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long, usually with terminal swelling; anterior filament usually somewhat shorter (Fig. 4).

Testes spherical, very numerous, distributed both anteriorly and posteriorly to ovary, and in haptor. Anterior to ovary about 70 testes are in two irregular rows, one on each side between uterus and vitellaria. Posterior to ovary, about 275 testes, filling middle of body between eecae and between branches of eecae in haptor (Fig. 1). Seminal vesicle a slightly coiled tube extending from just anterior to ovary to cirrus. Cirrus (Fig. 5) circular, 0.115 to 0.150 in diameter, almost directly dorsal to genital atrium, with radial muscles, and a ring of 8 hooks. Hooks pointing inwardly; with ventral root and a weakly chitinized, outwardly directed, pointed root. Length of blade about 0.01.

Genital atrium circular, non-muscular, with a ring of 20 to 22 hooks, each hook with slender blade and ovoid base (Fig. 8); length of blade about 0.01; total length about 0.02.

Excretory system not observed.

DISCUSSION: This monogenean is most similar to the genus Echiuopelma described by Ræcke (1945) from the “marge” fish, probably Haemulon album, at Bermuda. It agrees in the character of the haptor and suckers although there is only one, rather than two, pads in the suckers. The testes are both pre- and post-ovarian and the reproductive systems similar except that the organ described as a vagina in Echiuopelma is rather clearly a vitello-intestinal canal in Eurysorchis. The holotype (U. S. N. M. Coll. No. 36926) and sectioned paratype (U. S. N. M. Coll. No. 36927) of Echiuopelma bermudae were kindly loaned by Allen McIntosh and re-examined with particular regard to the “vagina.” This canal arises in the same place as does the vitello-intestinal canal of Eurysorchis. Its actual opening to the outside cannot be observed. The sections show that it does proceed close to the body surface, but the critical section is lacking and the last section available shows the distal end of the tube turning away from the surface. We believe that this so-called vagina is actually a vitello-intestinal canal although more material collected from the type host and locality is needed for final determination.

The chief distinction of the genus Eurysorchis is the genital atrium armed with a ring of hooks. All other genera in the family Diclidophoridae do not possess a spined atrium. Another distinctive characteristic is the wide dispersal of the testes which are very numerous and extend not only posteriorly to the ovary but also into the haptor. In fact, the majority of the testes are in the haptor.

The only other closely related monogenean described is Cyclobothrium Cerfontaine, 1895. It differs in that the suckers are non-pedunculated, and without papillated pads, the genital atrium is unspined, and the testes do not extend into the haptor.

SUMMARY

Eurysorchis australis, a new genus and species of monogenea1 trematode, is described from the gills of SeriolaIa brama, a noned fish of New Zealand. Eurysorchis belongs in the family Diclidophoridae, subfamily Cyclobothriinae. Nearest related genera are Cyclus and Echiuopelma.

LITERATURE CITED

All the drawings were done with the aid of a camera lucida except for Fig. 3 which is a diagram.

The value of the projected scale is in millimeters.

Abbreviations: gp, genital pore; mh, Mehlis gland; od, oviduct; ov, ovary; pp, papillated pad; sr, seminal receptacle; sv, seminal vesicle; t, testes; ut, uterus; vt, vitello-intestinal canal; yd, yolk duct.

Fig. 1. Ventral view of *Euryorchis australis*.

Fig. 2. Haptoral sucker enlarged. The proximal end is at the bottom. Ventral view.

Fig. 3. Diagram of female reproductive system. Ventral view.

Fig. 4. Mature eggs.

Fig. 5. Cirrus. Ventral view.

Fig. 6. Genital atrium. Ventral view.

Fig. 7. Spines from cirrus.

Fig. 8. Spines from genital atrium.