

DESCRIPTION. Three specimens of the parasite were recovered from each of two hosts, from Cook Strait, and one from each of two hosts from Oamaru. In three cases, all were immature, including one post larva; in one host all were mature worms with large numbers of gravid proglottids. The description is based on observations of living specimens in sea water, five stained whole mounts, and serial transverse sections of a mature proglottid.

External Characters. When freed from the mucosa, the worms are easily recognized by the bright, orange pigment globules under the surfaces of the bothridia. In the stomachs of all of the sharks examined were numbers of small red-orange crabs, *Ommatocarcinus macgillivrayi*. Presumably the coloration of the bothridia is derived from that of the crabs and the pigment selectively absorbed through the cuticle of the bothridia alone. When the scolex is mounted in balsam or piccolyte, the pigment is gradually dissolved away, and in most specimens, after several weeks is completely removed from the bothridia.

The proglottids begin as distinct segments with prominent lacinae immediately behind the short neck, although the anlage of genitalia are not apparent for some distance behind this. All proglottids are broader than long, and large numbers of fully gravid proglottids are retained by the strobila. In the type specimen the last 79 proglottids had fully formed, branched uteri filled with eggs; in the last 24 of these, the eggs had been shed completely through a longitudinal, mid-ventral slit in the proglottid which formed when the worm was placed in sea water. The lacinae are distinct throughout the length of the proglottid.

Scolex and Neck. At the apex of the scolex is a slight, rounded prominence surrounding an ovoid, muscular knob which can be seen at times to withdraw almost completely within a small cavity in the prominence and at other times to be everted as much as two-thirds of its diameter beyond the margins of the prominence. The whole complex is sessile—i.e., does not consist of an extensible myzorhynchus bearing a muscular knob within a tubular pit; rather, the knob alone appears to be mobile.

The apex of each bothridium bears a relatively large, muscular, triangular pad whose bases curve inward and downward around the inner margins of the hook pairs. At the tip of each pad is a rather indistinct accessory sucker. The bothridial faces are deep set and the muscles of the bothridia strongly developed; on the opposite surfaces the cuticle bears heavy wrinkles which give the bothridia a solid, massive appearance.

The hooks of each pair are generally similar in shape, but each inner hook is heavier and possesses a greater curvature than its companion; when measured in a straight line laid along its maximum breadth, the larger hook measures only slightly greater than the outer hook, owing to the lesser curvature of the latter.

Strobilar Musculature. Both superficial and deep (inner) longitudinal muscle layers are well developed and maintain their development throughout the length of the proglottid. The superficial longitudinal muscles are formed of a continuous layer of fibres immediately under the basement membrane and send thin processes inward among dense parenchymal nuclei to a depth of approximately 0.050mm. The boundary between the cortical and medullary parenchyma is formed of the layer of inner longitudinal musculature arranged in discrete, pyriform bundles 0.038–0.060mm long by 0.010–0.035mm wide in transverse sections. The layer of muscle bundles is approximately 0.060mm thick and exists in a continuous circle surrounding the medullary region of the proglottid. Circular muscles as such cannot be identified in the densely packed parenchyma and must be attributed to a few scattered fibres at the junction of longitudinal muscles and medulla.

Male Genitalia. In cross section the testes are arranged two or three deep in two lateral fields between the excretory vessels and uterine tube on each side of the proglottid. They are relatively small and crowded together, and extend almost to the posterior end of, and ventral to, the ovary. The vas deferens is a simple, narrow, thin-walled tube extending in tight coils ventral to the vagina from the end of the cirrus pouch to the middle of the proglottid. The cirrus pouch is a small, ovoid structure limited entirely to the region lateral to the excretory canal. It contains a short cirrus forming one or two coils; the latter, when everted, is a simple, straight sided, short structure covered with minute, delicate spines. Within the cirrus pouch an ejaculatory duct forms several coils. This is surrounded, along with the cirrus, by a few prostatic cells. The gonophore alternates irregularly, and is located in the anterior quarter of the proglottid margin.

Female Genitalia. The vagina has a thick cellular wall, and its narrow lumen possesses a heavy, cuticular lining. It opens anterior and ventral to the cirrus in the back wall of the short genital atrium and after passing inward under the cirrus pouch, turns in the dorsal midline of the medulla and continues directly to the ovarian isthmus.

The ovary is not "X" shaped in cross section, as is most typical of *Tetraphyllidea*, but consists of a single, thick layer of dense follicles divided into two lobes closely approxi-