

ON THE HELMINTHUM OF FRANCISCANA, *PONTOPORIA BLAINVILLEI*

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ABSTRACT

Three helminthes, *Anisakis typica* (Diesing, 1860), *Procamallanus* sp. and *Corynosoma cetaceum* Johnston and Best, 1943, were isolated from a Franciscana, *Pontoporia blainvillei* (Gervais, 1842), collected at Punta del diablo, Uruguay. This is the new host-record against these helminthes.

INTRODUCTION

In January 1973, many materials were obtained from the stomach of a Franciscana, *Pontoporia blainvillei* (Gervais, 1842), collected at Punta del diablo, Uruguay, for scientific studies. These materials consists of two species of nematodes and one of Acanthocephala and all mounted as microscopic preparations in glycerinejelly, lactophenol or gum-chloral after the fixation in 70% ethyl alcohol. Further details may now be added the description of the species.

Anisakis typica (Diesing, 1860)

Materials: Thirty-one worms obtained from the second stomach of Franciscana.

The materials consisted of 2 larvae, 10 males and 19 females (Table 1).

The worms (Photograph 1) were whitish in color, in alcohol fixation.

TABLE 1. COLLECTION RECORDS OF HELMINTHES IN THE STOMACH OF FRANCISCANA *PONTOPORIA BLAINVILLEI* (GERVAIS, 1842)

Species of Parasites	Sex	No. Worms recovered	Habitat
<i>Anisakis typica</i>	Larvae	2	
	Male	10	2 nd stomach
	Female	19	
<i>Procamallanus</i> sp.	Female	2	2 nd stomach
<i>Corynosoma cetaceum</i>	Male	111	3rd and 4th
	Female	99	stomach

Description: Anisakinae, Nematoda. Three lips each bearing a bilobed anterior projection which carries the single dentigerous ridges (arrow at Photograph 2); interlabia absent; lateral cervical alae absent; cervical papillae bear the nerve-ring. Body attenuate more toward anterior than toward posterior extremity, which ends conically. Cuticle with cuticular striations 19–59 μ broad. Excretory gland with duct opening between ventro-lateral lips; oesophagus composed of two portion; anterior muscular portion (M. at Photograph 3) and posterior ventriculus (V. at Photograph 3), the latter being oblong and somewhat sigmoid or else as broad as long; no ventricular appendix or intestinal caecum.

Male: 28.3 to 56.4 mm in length by 0.60 to 1.39 mm in breadth; anterior muscular portion 2.28–3.62 mm in length at the body length 28.3–47.0 mm, ventriculus 0.90–1.50 mm in length; tail (0.16–0.26 mm in length. Photograph 4) compressed dorso-ventrally with dorsal median rounded keel and with lateral alae. It is curved ventrally and bears numerous papillae; 10 pairs of postanal papillae without doublepapilla, of which 1, 2 and 3 are conical and near the tip; 4 to 10 shorter and near the cloaca; spicules unequal, the right spicules (R. of Photograph 5) measured 0.94 mm while the left (L. of Photograph 5) measured 2.86 mm at the worm of body length 46.0 mm (ratio, 1 : 3.04).

Female: 21.7 to 90.8 mm in length by 0.56 to 2.00 mm in breadth; vulva in 10.2–11.3 mm (46.3–47.0%) from anterior extremity of body. Anterior muscular portion 1.98–3.52 mm; Ventriculus 0.56–1.20 mm at female of body length 21.7–42.4 mm. Tail length 0.14–0.30 mm (Photograph 6).

Larva: 25.4 and 25.8 mm in length and 0.56 and 0.57 mm in breadth, with length muscular region of esophagus of 1.96 and 2.02 mm, ventricular length of 0.84 and 0.83 mm (Photograph 8) and tail length of 0.08 and 0.12 mm (Photograph 9). The larvae had the characteristic boring tooth on their lip mass (Photograph 7 and 10), and the one-shaped cuticular mucron on their tail end, and their long ventriculi were connected with their intestines obliquely. Therefore, the authors consider that these larvae belong to the Type-I larva of *Anisakis* described by Berland (1961).

Discussion: Examination of the material detailed above shows that this species is characterized by the very marked inequality of the spicules (1 : 3). This range is clearly distinct from that found for *A. simplex* (1 : 1.6).

The postanal papillae are also different from *A. simplex* (*A. typica* 10 pairs; *A. simplex* 6 pairs with one double papilla).

It is interesting that Davey (1971) described that although *A. simplex* distributed on the worldwide, but more particularly in colder temperature and polar water, *A. typica* found on warmer temperature and tropical waters between 40°N and 36°S.

A. typica were recorded only from cetaceans of the families Stenidae, Delphinidae and Phocaenidae. Accordingly, this host (*Pontoporia blainvillei*; Platanistidae) is the new record against *A. typica*.

Procamallanus sp.

Materials: Two females were obtained from the second stomach of a Franciscana.

Description: Camalanidae; Spiruroidea; Nematoda. The materials consisted one mature and one immature female (Table 1 and Photograph 11). The worms whitish in color, in alcohol fixation. Body slender; attenuated towards both extremities. The materials are in length from 29.1 mm and 41.7 mm, and in breadth from 0.31 mm and 0.54 mm. The cuticle thick, and finely striated transversely. The anterior end without lip bears 6 papillae—2 lateral and 4 median. The brownish-yellow buccal capsule (Photograph 13) is broadly barrel-shaped, and its anterior opening is hexagonal. It is in length 0.10 mm and 0.12 mm, and in breadth 0.08 mm and 0.09 mm. The internal surface of the wall of buccal capsule is provided with ridge like thickenings, numbering 12-13, which traverse it in a spiral fashion. The esophagus is divided into the two parts. The anterior muscular portion is club-shaped and measured 0.65 mm and 0.66 mm in length by 0.12 and 0.14 mm in maximum width. The posterior glandular portion measures 0.95 mm and 1.05 mm in length, and unlike the muscular part, has a uniform breadth. The intestine was conspicuous on account of its being full of partly digested blood. The nerve ring encircles at narrowest point of the muscular esophagus, 0.36 mm from the anterior end. Excretory pore situated in the region of the nerve ring and a short distance from anterior to junction of muscular and glandular portion of esophagus.

Posterior extremity is bluntly rounded; it has length 0.12 mm. Numerous conspicuous muscle strands extend across body cavity region of anus. Tail (Photograph 12) terminates in a small conical tip, 0.05 mm long, at extremity of which are two extremely minute spinal projections, apparent only under the higher magnification.

The vulva is situated on the middle of body (14.5 and 19.4 mm; 46.5 and 49.8% from the anterior part). Eggs were seen in the uteri, which contained a larva.

Discussion: Up to the present, 40 species of *Procamallanus* have been recorded, all of which, exception of the batrachian parasites, *P. xenopodia* and *P. slomei*, are intestinal parasites of marine and freshwater fishes, and 11 species possess the spiral thickenings in the inner surface of the wall of buccal capsule, viz., *P. spiral*, *P. amarali*, *P. hilarii*, *P. hanostlimai*, *P. fariasi*, *P. fulvidraconi*, *P. wrightii*, *P. monotaxis*, *P. murrayensis*, *P. pereirai* and *P. globoconchus*. Five species, *P. amarali*, *P. hilarii*, *P. barrostlimai*, *P. wrightii* and *P. fariasi*, in these species were reported from fishes from Brazil. However, they differ from our species in the following points.

The main points of difference are in the length of posterior glandular esophagus (*P. soiral* and *P. hilarii*) and in the tail of female. In our species the tail of the female appears to have a process with two spines; in other species

there are not spine.

The species resembles *P. montaeis* in some features, but differs in the form of the buccal capsule, which is more spherical.

The present species could not identified, because of not-finding the male. I (N.K.) think that these dolphin is not the definitive host of these worms.

Corynosoma cetaceum Johnston and Best, 1943

Materials: Two hundred-ten worms obtained from the third and fourth stomach of a Franciscana (Table 1). The materials consisted of 111 males and 99 females. The worms (Photograph 14 and 15; scale is mm.) were whitish-yellow in color, in alcohol fixation. They have been preserved in fixative for many days. Observations were based on whole mount with gum-chloral.

Description: Corynosomatinae; Acanthocephala. In body from there is distinct sexual dimorphism (Male: Photograph 14; Female: Photograph 15). Anterior part of trunk bulbously swollen and spined, and in male tapered toward posterior extremity which is about two-third to three-fifth of the body length (Photograph 16), with extro-attached bursa (0.93-1.40 mm by 1.00-1.25 mm. Photograph 23) having the many sucker-like projections in the inner surface of the wall (Photograph 24); female more roundish than male, pouchlike, with small attenuated posterior extremity (Photograph 17). Male very in length from 7.15 mm to 9.25 mm, and in width from 2.35 mm to 2.80 mm. Female in length from 3.90 mm to 4.65 mm, and in width from 2.50 mm to 2.70 mm; maximum width at level of anterior trunk.

Trunk spines (Photograph 20 and 21) of female extending almost entire length of the body ventrally but dorsally reaching only the region of maximum diameter; in males the spines extend along ventral surface to point only a short distance posterior to the hind margin the cement glands, much of hind-trunk devoid of spines (Photograph 22). Trunk spines usually 22.8μ to 65.4μ long in males. Genital spines lacking in males.

Proboscis (Photograph 18) of both sexes arising from discoid swelling of trunk and bent ventrally, cylindrical, 0.80-1.13 mm length; maximum width at lower third of proboscis (0.30-0.40 mm).

Proboscis hooks, sickle-shape, arranged in 18-19 longitudinal rows with 12-13 in each row, becoming gradually stouter ($70.0-75.1\mu$) from apex toward swollen region, than abruptly small. Hooks nearest to base of proboscis smallest in size ($30.6-35.8\mu$).

Proboscis receptacle double-walled, slightly longer than proboscis (1.55-1.75 mm by 0.40-0.53 mm) (Photograph 19).

Lemnisci somewhat shorter than proboscis receptacle, leaf-shaped.

Testes elliptical, 0.93-1.40 mm by 1.00-1.25 mm, lying symmetrically to the posterior region of the for-trunk, reaching anteriorly to the level of the posterior end of the proboscis receptacle.

Six cement glands, immediately posterior to testes, in two groups of these

each.

Egg fusiform with polar prolongations of middle shell; 154.8 (136.6-163.5) μ length and 46.1 (42.6-51.5) μ width (Photograph 25).

Discussion: Although *Corynosoma* had reported 22 species from marine mammals, the present species, except for *C. cetaceum*, differs from these species in size of the body, number of hooks at the proboscis and size of the eggs.

Morphological features and the measurements agreed well with the description of *C. cetaceum* Johnston and Best, 1943 from *Delphinus delphis* and *Tursiops truncatus*. Accordingly, although *Corynosoma* sp. had been reported by Dailey and Brownell (1972) from Franciscana, *Pontoporia blainvillei*, *C. cetaceum* was first record from the present host.

ACKNOWLEDGMENTS

We wish to express our hearty thanks to Dr. Masaharu Nishiwaki of the Ocean Research Institute, University of Tokyo, as the leader of Japanese Scientific Research Expedition against the Franciscana.

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