

AUSTRALIAN ACANTHOCEPHALA

No. 8

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SUMMARY

This paper deals with three species: (1) *Mediorhynchus corcoracis* n. sp. from *Corcorax melanorhamphus* from Queensland, New South Wales and South Australia; it was also recognised from *Corvus bennetti* from South Australia. The parasite is near *M. tenuis* Meyer but differs in size and in having 12 spiral rows each containing 11-13 hooks. (2) *Arhythmorhynchus frassoni* (Molin) is recorded from a sea curlew, *Numenius cynopus* from Central Queensland coast. (3) *Longicollum pagrosomi* Yamaguti was found in a bream, *Mylio australis* (Sparidae) from the lower Brisbane River. It was known previously from Japanese fish.

PARASITE	Host
<i>Mediorhynchus corcoracis</i> n. sp.	<i>Corcorax melanorhamphus</i> Vieillot <i>Corvus bennetti</i> North
<i>Arhythmorhynchus frassoni</i> (Molin 1858)	<i>Numenius cynopus</i> Vieillot
<i>Longicollum pagrosomi</i> Yamaguti 1935	<i>Mylio australis</i> Gunther

All the measurements given in this paper were made on specimens cleared in methyl salicylate. Type material has been deposited in the South Australian Museum.

Mediorhynchus corcoracis n. sp.

(Fig. 2-9)

Numerous specimens of this parasite, varying in size from the larval to the adult form, have been found on a number of different occasions in the intestine of *Corcorax melanorhamphus* (type host). Most of the bird hosts were from New South Wales; one was from the Upper Burnett River, Queensland (collected by the late Dr. T. L. Bancroft); and we have found it in four *Corcorax* collected at Elwomple, South Australia, by Mr. F. Jaensch. Some parasites obtained by Professor J. B. Cleland from a crow, *Corvus bennetti*, near Oodnadatta, South Australia, were identified by us as belonging to the same species. About 80 specimens were available for examination.

ADULT FORM

The worms are long and slender and the body of many specimens is flexed towards the anterior and posterior extremities. The largest males are 25-33 mm. long, and the females 42-63 mm. The maximum width (a) anteriorly in the males is 0.45 mm. and in the females 0.50 mm.; (b) in the mid-body region of males, 0.7-1.4 mm. and of females 0.8-1.3 mm.; and (c) posteriorly 0.7 mm. in both sexes. The armed portion of the proboscis in the male is 0.62-0.68 mm.

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long, and in the female 0.64-0.75 mm. long. There is an unarmed neck 0.10-0.14 mm. long. The proboscis and neck of most specimens resemble in shape a truncated cone. The armed portion of the proboscis consists of two parts; an anterior portion which bears 12 spiral rows of 11-13 large hooks per row and a posterior portion which bears 12 spiral rows of about 10-12 smaller and more spiniform hooks, placed rather irregularly towards the neck. The width of the anterior region of the proboscis is 0.19-0.24 mm.; at the junction of the two sets of hooks it is 0.28-0.38 mm.; and at the neck region it is 0.37-0.44 mm. The size and shape of some of the hooks is shown in fig. 7.

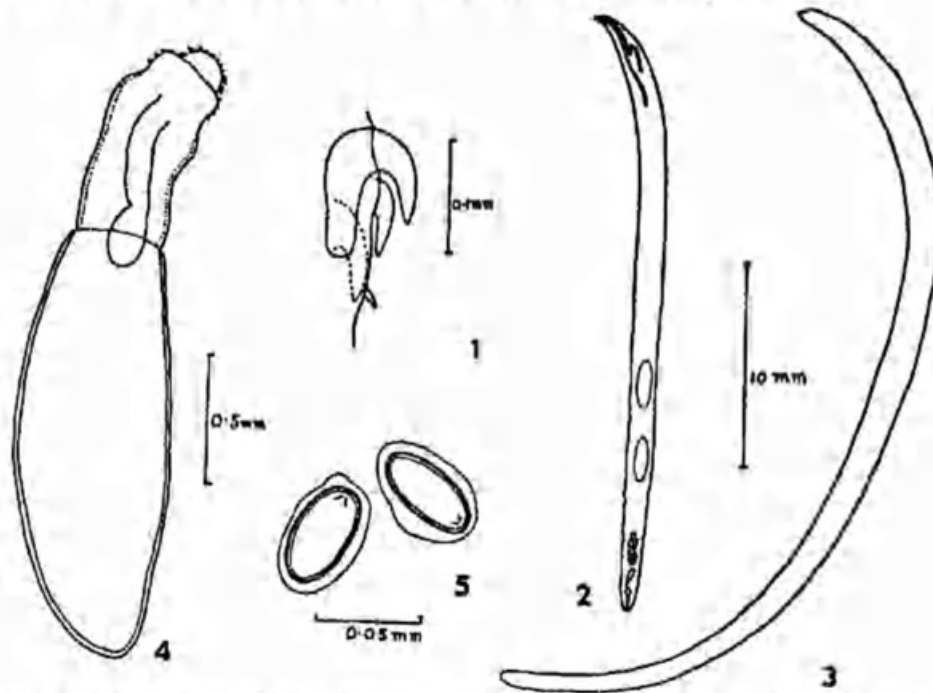


Fig. 1, *Arhythmorhynchus frassoni*, largest hook on ventral side of proboscis.

Fig. 2-5, *Mediorhynchus corcoracis*: 2, male; 3, female (to same scale as fig. 2); 4, larva emerging from cyst; 5, ripe eggs.

The proboscis sheath is 0.75-1.04 mm. long and arises in the proboscis at the junction of the two sets of hooks. The sheath is divided into two portions by the proboscis retractor. There are two long and slender lemnisci, the maximum dimensions of which are 4.0 mm. in length and 0.12 in width. They contain numerous large nuclei. In none of the male specimens examined do they extend as far back as the testes, as is the case with *Mediorhynchus tenuis* Meyer 1931. The body wall is thick and the lacunar system consists of a long horizontal canal from which arise numerous circular vessels.

Two testes, 1.6-2.6 mm. long and 0.4-0.7 mm. wide, are placed in tandem in the posterior half of the worm. They are of about equal size. There are eight elliptical to spherical cement glands placed very closely together. One specimen seems to possess nine glands. The male genital opening is terminal.

The female genital structure in the largest female is about 1.9 mm. long. Elliptical eggs mounted in balsam are 50-58 μ long and 28-36 μ wide (fig. 5).

LARVAL FORM

A number of larvae just emerging from the cyst stage were also included in the material from *Corcorax melanorhamphus*—which is an insectivorous bird. In most cases the neck and a partly everted proboscis had been freed from the cyst case. The maximum length of these larvae was 2.20-2.71 mm. The cyst case is elliptical. We estimate that its length would be 1.6-1.9 mm., and its width 0.53-0.66 mm.

SYSTEMATIC POSITION

This species is very close to *Mediorhynchus tenuis* Meyer (1931, 68). For some time we thought that we might be examining specimens of that species larger than those described by Meyer. Our parasites, however, differ significantly from *M. tenuis* in the number of proboscis hooks. *M. tenuis* is armed with 12 spiral rows of 9 hooks per row, while our specimens have 12 spiral rows of 11-13 hooks per row. No fully everted proboscis of our specimens bears rows of only 9 hooks. The anterior portion of the proboscis of *M. corcoracis* is a more heavily armed structure than that shown in fig. 8 of Meyer's description of *M. tenuis*. The male specimens of our species are much larger than those of Meyer's species and in no specimen do the lemnisci extend as far as the testes.

ARHYTHMORHYNCHUS FRASSONI (Molin 1858)

(Fig. 1)

Three male specimens of this species were found in 1910 in the intestine of a sea curlew, *Numenius cyanopus*, from Gladstone, Queensland. The parasites are long and slender, the longest measuring 27 mm. The body just posterior to the region which contains the lemnisci is swollen most noticeably and is 0.4-0.7 mm. wide. The swelling contains two testes placed almost in tandem. The remainder of the body is cylindrical, except the posterior portion which is broader and slightly flattened. The proboscis of none of the specimens was completely everted. One, however, was about seven-eighths everted and we consider that its armed portion when fully everted would be about 0.9 mm. long. It is swollen slightly near its middle where it is 0.30 mm. wide. The proboscis bears numerous hooks, seventeen being visible in each row, and we estimate that when the proboscis is fully extended each row would show about 20 hooks. The differentiation in the size and shape of the hooks is most marked. Those at the anterior end of the proboscis are smaller and possess recurved rooting processes. A few hooks on the ventral side of the swollen region of the proboscis are large and prominent and possess strong rooting processes. The posterior hooks are longer and more slender and their axis makes an angle of almost 90° with the axis of the proboscis. The anterior region of the body bears spines. These extend much further along the ventral surface of the worm than along the dorsal. The cement glands are very long and are pressed closely together. Our specimens agree closely with the accounts given by Lühe (1911) and Meyer (1933, 93). Saeftigen's pouch is 1.4-1.7 mm. long.

This species has previously been reported from *Numenius arquatus*, *N. tenuirostris* and other birds in Europe.

LONGICOLLUM PAGROSOMI Yamaguti 1935

(Fig. 10)

Three male specimens of this parasite were identified in some material obtained from the intestine of a bream, *Mylio australis* (Sparidae), caught in the Brisbane River, Queensland, in 1918. The length of the cylindrical body varies from 4.9-5.1 mm. All possess a very long neck, at the anterior extremity of which is an armed proboscis. The combined length of the neck and proboscis is 4.7-5.6 mm. The anterior portion of the proboscis is swollen into a spherical structure which was firmly embedded in the intestinal wall of the host. One proboscis had already been freed from the tissue of the host and was badly damaged. One had completely collapsed and the hooks of the other were disarranged when the remaining two specimens were dissected out by one of us. The proboscis of the best preserved specimen is 0.85 mm. long and consists of a

bulb about 0.40 mm. in diameter and a cylindrical portion about 0.45 mm. long and 0.2 mm. wide. In size and shape the proboscis of our specimen resembles very closely that of *Spirorhynchus alemniscus* Harada 1935, as shown in fig. 9 of Harada's description. We have not been able to determine with certainty the number and arrangement of proboscis hooks. There appear to be about 12 longitudinal rows of about 11-13 hooks per row. The double-walled proboscis sheath is long and arises just posterior to the last proboscis hook.

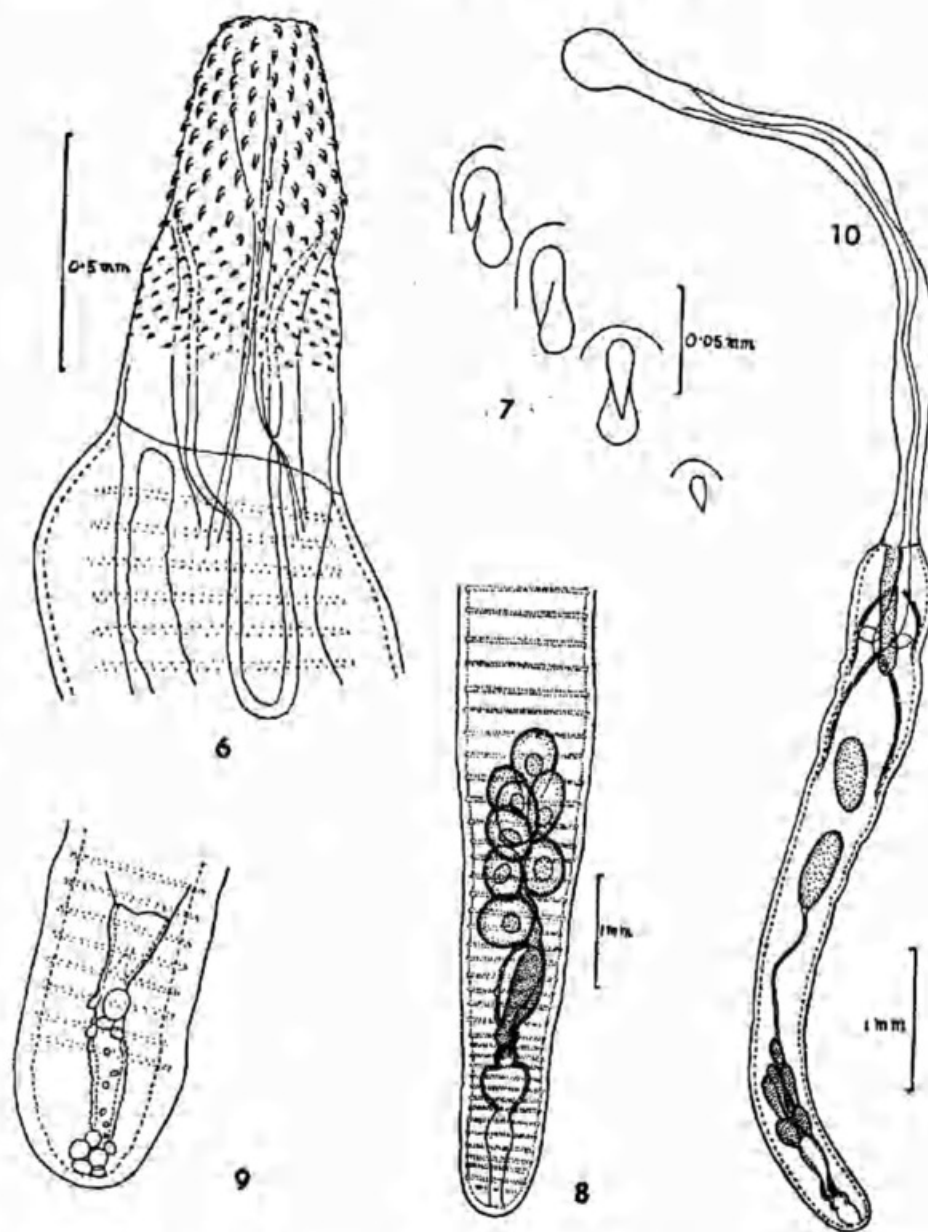


Fig. 6-9, *Mediorhynchus corcoracis*: 6, proboscis; 7, proboscis hooks; 8, posterior region of adult male; 9, posterior region of young female.
Fig. 10, *Longicollum pagrosomi*, male.

The maximum diameter of the body is at the anterior region of the parasite and is 0.53-1.1 mm. An elliptical mass is present near the posterior extremity of the proboscis sheath. Two lemnisci, arising at the junction of the body and the neck, are present in one specimen and are 0.8 mm. long. The body wall is thick and the lacunar system reticular. Two oval testes, 0.49-0.63 mm. long and 0.23-0.28 mm. wide, are placed obliquely in tandem. There are six cement glands which appear to consist of 3 pairs. The most posterior pair are elliptical,

the others are much longer. Each gland communicates with the bursa by means of its own slender duct, very much like the ducts in *Tenuiproboscis misgurni* Yamaguti 1935.

Our specimens agree in most details with those of *Spirorhynchus alemniscus* Harada 1935. Yamaguti (1939), however, considered this species as synonymous with *Longicollum pagrosomi* described by him in the same year (1935, 257), from the upper part of the large intestine of *Pagrosomus unicolor*, the larval stage occurring in many other Japanese fish. The proboscis of our specimens with a small terminal bulb resembles that of Harada's material very closely. Yamaguti's species possesses a short cylindrical proboscis. Well developed lemnisci were observed in one of our specimens. Harada's material was obtained from *Scatophagus argus* and *Lutianus russelli* from Formosa; Yamaguti (1935) reported immature and mature forms from various marine fishes including *Sparus longispinis*.

Harada created a family, Spirorhynchidae, to receive his genus (1935, 20). Yamaguti placed his genus *Longicollum* along with *Pomphorhynchus* and *Tenuiproboscis* in the Pomphorhynchidae (1939, 328), and stated that Harada's *Spiracanthorhynchus* (sic) was a synonym. Strand (Folia Zool. Hydrobiol., Riga, 1942, 388) pointed out that *Spirorhynchus* Harada was preoccupied by Da Cunha in 1915, and accordingly renamed it *Spirorhynchodes*. Hence we place in the synonymy of *Longicollum* Yamaguti 1935 the following:—*Spirorhynchus* Harada nec Da Cunha, *Spiracanthorhynchus* Yamaguti (error for *Spirorhynchus*) and *Spirorhynchodes* Strand 1942; and Spirorhynchidae Harada as a synonym of Pomphorhynchidae Yamaguti (1939, 328).

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