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A New Species of *Lophoura** (Shyriidae, Copepoda) from New Zealand Waters

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Abstract

Two specimens of the genus *Lophoura*, obtained from the macrurid *Coelorhyncus fasciatus* taken in deep water off Cape Brett, New Zealand, belong to a new species which is chiefly characterised by possessing two three-branched horns at the posterior end of the cephalothorax, and by the posterior narrowing of the neck region. The fact that the cephalothorax is wrinkled anteriorly in the type specimen but is smooth as well as being longer and more slender in the other specimen leads the author to believe that the wrinkled appearance sometimes also found in other species of this genus may be chiefly due to contraction of the cephalothorax.

SPECIES of the genus *Lophoura* have so far been taken only on deep water fishes, such as the macrurids, and thus are not taken very frequently. The author was particularly grateful to the Dominion Museum, Wellington, for the opportunity to dissect out and examine two specimens which were attached to a specimen of *Coelorhyncus fasciatus* which had been taken by the Marine Department at a depth of 400 fathoms, 22 miles north of Cape Brett on 22.11.62. Both specimens were mature females, both with egg sacs, although in one case the egg sacs had ruptured and contained only a few eggs. Unfortunately neither specimen had the male attached.

Lophoura laticervix n.sp.

METHOD OF ATTACHMENT: Both specimens were obtained from the same host fish. In each case they were situated just behind the host's head, the head and neck of the parasite being deeply buried in the host's tissues, and surrounded for much of their length by a substantial cyst. The parasite's trunk, egg strings and respiratory cylinders were all free and turned posteriorly from the point of attachment to lie close to the host's skin. The head and neck curved ventrally from the trunk, so that they too tended to be directed posteriorly from the point of entry.

DESCRIPTION: Head rounded (1.3mm to 1.5mm x 1.3mm to 1.5mm) and well separated from the rest of the cephalothorax by a sharp groove. First antennae apparently represented by two very shallow nodules on the dorsal surface of the head. Second antennae anterodorsal, nodular, one-fifth length of head, half as wide as long, directed anteriorly. Mouth apical, guarded by two anteroventral nodules immediately below it which are united at their bases, together being half as wide as the head.

* The type material is held by the Dominion Museum, Wellington.

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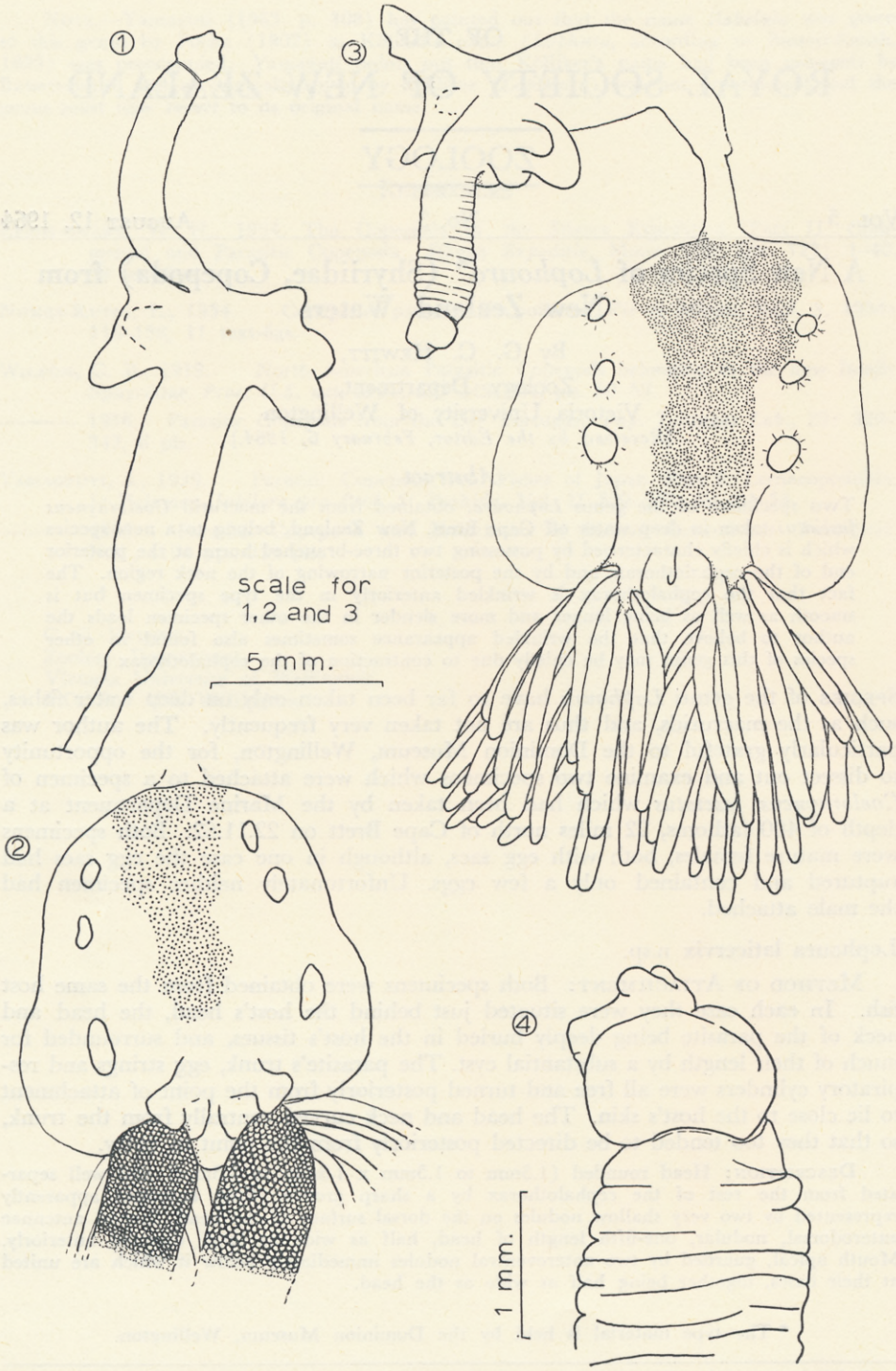

Lophoura laticervix n.sp. Figs. 1–4. 1—Cephalothorax, horns and neck of second specimen; 2—ventral surface of trunk of second specimen; 3—type specimen, with trunk seen in dorsal view; 4—head of type specimen.

Cephalothorax, excepting the separated part of the head, long and broad; in the type specimen it is obviously wrinkled over the anterior half of its length and less obviously wrinkled over the posterior half and is shorter and broader (6.3mm x 1.7mm) than in the other specimen (8.2mm x 1.3mm) in which it is quite smooth.

The cephalothorax is immediately followed by the two horns which have a combined width of 7.6mm to 8.4mm. In both specimens the horns are irregularly but clearly three-branched.

The horns are followed by the neck, which is cylindrical and long (9.4mm to 9.6mm) and very broad anteriorly (2.5mm to 2.7mm) but near the midpoint gradually narrows to half this diameter and then, just posterior to the midpoint, narrows suddenly to one-third the greatest diameter.

The trunk is large and very broad (10.7mm to 10.9mm x 11.0mm to 11.1mm), heart-shaped, reaching its maximum width just anterior to the postero-lateral angles and narrowing to three-fifths this width anteriorly; both anterior and posterior angles are rounded, the posterior angles curving slightly ventrally and extending back as broad postero-lateral lobes which are one-seventh the length of the trunk. Both dorsal and ventral surfaces of the trunk possess three pairs of pits, two small anterior pairs and one larger posterior pair, which are produced by the contraction of the dorso-ventral muscles. The trunk bears two processes, each about one-third the length of the trunk, on the ventral surface between the abdomen and the postero-lateral lobes; each of these processes bears from 22 to 26 respiratory cylinders which are from 5mm to 6mm in length. The dorsal surface bears posteriorly two groups of three small processes from among which the egg strings arise. The egg strings in the type specimen are partially empty, but in the other specimen they are 25mm long by 2.8mm in diameter and contain a very large number of multiserially arranged eggs.

The abdomen is short and disc-shaped, being 2.1mm to 2.3mm x 2.2mm to 2.4mm. It articulates with the trunk postero-ventrally and has a longitudinal anal slit projecting on to it from the postero-ventral part of the trunk.

Total body length 31–35mm.

COLOURATION: Both specimens have patches of dark brown pigment over the anterior three-quarters of the medium third of the trunk on both dorsal and ventral surfaces.

DISCUSSION

The present species may be separated from all previously described species by the nature of the neck and of the horns at the base of the cephalothorax. In the present species there are two horns, each of which are three-branched. In *Lophoura kamoharai* (Yamaguti) 1939, *L. cardusa* (Leigh-Sharpe) 1934, and *L. cornuta* (Wilson) 1919, the horns are profusely branched; in *L. tripartita* (Wilson), 1936, the horns are three-branched as in the present material, but there are three of them; in *L. bouvieri* (Quidor) 1912 there are three short spherical processes of four short unbranched horns; in *L. gracilis* (Wilson) 1919, the horns are in the form of irregular knobs; in *L. edwardsii* Kölliker, 1853, as described by Wilson (1919) the horns are represented by four short, blunt processes, and this species can also be distinguished from the present material by the roughened nature of its cephalothorax.

The present material most closely resembles one of Nunes-Ruivo's specimens (1954, p. 127, fig. 5 b), which he describes as *Rebelula edwardsii* (Kölliker) but can be separated from the latter by the particularly wide neck region which narrows rapidly posteriorly. This feature has not been recorded in any other species so far described.

The difference in the cephalothoracic regions of the two present specimens is also of interest. In one case the cephalothorax is wrinkled for much of its length and in this case it is shorter and broader than in the other specimen in which it is completely smooth. This could well be an indication that the cephalothorax is contractile and could be moved about within the flesh of the host. If this is the case, it would be unwise to use a comparison of the cephalothoracic region for systematic purposes unless it was contracted (wrinkled) or extended (smooth) in both specimens under consideration.

NOTE.—Yamaguti (1963, p. 308) has pointed out that the name *Rebelula* was given to this genus by Poche (1902) as Köliker's name (*Lophura,* according to Bassett-Smith, 1899) was preoccupied. Yamaguti points out that Kölliker's name had been mis-spelt by Bassett-Smith and as originally given by Kölliker (*Lophoura*) was not preoccupied and the genus must now revert to its original name.

REFERENCES

LEIGH-SHARP, W. H., 1934. The Copepoda of the Siboga Expedition. Part II. Commensal and Parasitic Copepoda. *Siboga Expeditie,* Mono. 29b, Liv. 123: 1–40, 39 text-figs.

NUNES-RUIVO, L., 1954. Copépodes parasites de poissons. *Vie et Milieu,* Supl. 3, 1954: 115–138, 11 text-figs.

WILSON, C. B., 1919. North American Parasitic Copepods belonging to the new family Sphyriidae. *Proc. U.S. nat. Mus.,* 55: 549–604, pls. 50–59.

——— 1936. Parasitic Copepods from the Dry Tortugas. *Pap. Tortugas Lab.,* 29: 329–347, 6 pls.

YAMAGTUTI, S., 1939. Parasitic Copepods from Fishes of Japan. Part 6. Lernaeopodoida, I. *Volumen Jubilare pro Prof. S. Yoshida,* Vol. II 529–578, pls. 34–58.

——— 1963. Parasitic Copepoda and Branchiura of Fishes. Interscience Publishers, N.Y., 1104 pp., 333 pls.

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