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J∅rgen Lützkn [a] & Brian Jones [b]

[a] Institute of Comparative Anatomy , University of Copenhagen , Universitetsparken 15, 2100 DK, Denmark

[b] Fisheries Research Division , Ministry of Agriculture and Fisheries , P.O. Box 19-062, Wellington, New Zealand

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TWO NEW SPECIES OF *HERPYLLOBIUS* (PARASITIC COPEPODA) FROM NEW ZEALAND AND THE ANTARCTIC

JØRGEN LÜTZEN

Institute of Comparative Anatomy, University of Copenhagen, Universitetsparken 15, 2100 DK, Denmark

and

BRIAN JONES

Fisheries Research Division, Ministry of Agriculture and Fisheries, P.O. Box 19-062, Wellington, New Zealand

ABSTRACT

Herpyllobius hartmanae n. sp. and *H. rotundus* n. sp. are described and illustrated, and the location on their polychaete worm hosts is noted.

INTRODUCTION

The present paper describes two copepods which parasitise annelids from the Southern Hemisphere. The first was dredged by USNS *Eltanin* in the Ross Sea area, Antarctica, and was presented to the senior author by the late Dr Olga Hartman. It proved to belong to the family Herpyllobiidae, and to represent a new species, which we have named after Dr Hartman.

The second species, which also belongs to the family Herpyllobiidae, was dredged from Cook Strait, New Zealand. It was referred to the junior author by Mr G. B. Read of the National Museum, Wellington, New Zealand.

The Herpyllobiidae parasitise polychaete worms. A stalk divides the body into two portions, one of which lies within the host, and according to the terminology introduced by the senior author, is called the *endosoma;* whereas the other or *ectosoma,* is external and may bear the two ovisacs. The existing species are treated in a monograph by Lützen (1964, 1967), who has also dealt with the anatomy and biology of selected species (1966, 1968). There are two well known genera, *Herpyllobius* Steenstrup & Lütken and *Eurysilenium* Sars, and one ill-known genus *Phallusiella* Leigh-Sharpe.

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Herpyllobius hartmanae n. sp. Fig. 1A

MATERIAL: A specimen of *Laetmonice producta* Grube, with a total of 40 or 41 segments, measuring 170 × 60 mm (without setae), parasitised by 18 parasites. Eleven occurred on the right side on the parapodia of setigers 13, 14, between setigers 18 and 19, 21 and 22, 24 and 25, and 32 and 33; the remainder on the left side on the parapodia of setigers 10, 12, 13, 17, 19, and between setigers 30 and 31.

Ross Sea, 75° 32′ S, 178° 50–42′ W, 476–496 m, 26 January 1967.

The parapodia of setigers 14, 21 and 22 with four attached copepods were removed and sent to the senior author for examination. The description consequently refers only to these four specimens. Figure 1A shows the type specimen, which is kept in the Allan Hancock Foundations collections, University of Southern California, Los Angeles (Cat. No. 673).

DESCRIPTION: The ectosoma of the four specimens are similarly shaped, and the largest measures 5.1 mm in length, 4.1 mm in height, and 3.2 mm in maximum width. The corresponding dimensions in the smallest specimen are: 2.6 mm, 2.0 mm, and 1.5 mm. The top side is evenly vaulted with the greatest height at a level between the stalk and the genital swellings. The underside is fairly flat, and the short stalk emanates from the middle of it. The genital swellings are situated terminally and are relatively inconspicuous. Two minute sclerotised dots were present immediately above the inner margin of one of the genital swellings in the type specimen. In the other specimens one or two similar dots could be traced in the same region.

The endosoma was examined in three specimens. Its posterior part containing the sclerotised holdfast is richly lobulated. The endosoma is otherwise fundamentally tongue shaped, although this is obscured by the fact that it is heavily folded and that its thickened margins may protrude into leaf-shaped lobules or short finger shaped processes that may branch.

The males are attached to the area above the genital swellings or between the stalk and the genital swellings.

The ovisacs produced by the largest specimen seen are about 9 mm long and 1.8 mm broad. They are straight or very slightly curved, and terminally rounded. Among the 18 parasites present, 11 carried ovisacs.

POSITION ON HOST: The occurrence along the host's body has been mentioned. The species tends to show a preference for the mid portion; it is always located on the neuropodium with the posterior part of the ectosoma directed laterally, and almost exclusively on the ventral side, usually at the base of the rami or between them.

Herpyllobius rotundus n. sp. Fig. 1B

MATERIAL: A specimen of *Harmothöe* sp. with two parasites: one on the right side between setigers 11 and 12, and one on the left side between setigers 24 and 25.

Turakirae Trench, Cook Strait, 41° 30′ S, 174° 54′ E, 640–658 m, 6 September 1972.

Figure 1B shows the type specimen, which is held in the National Museum, Wellington, New Zealand (Cat. No. Z.Cr. 1973).

DESCRIPTION: The ectosoma is spherical and its diameter is 1.1 mm in both specimens. The genital swellings are prominent and close set. Four minute sclerotised dots are arranged in a semicircle above the genital swellings, and a slight hump is partially encircled by these dots. The stalk is short, and the distance between the stalk and the genital swellings is equal to half the length of the genital swellings.

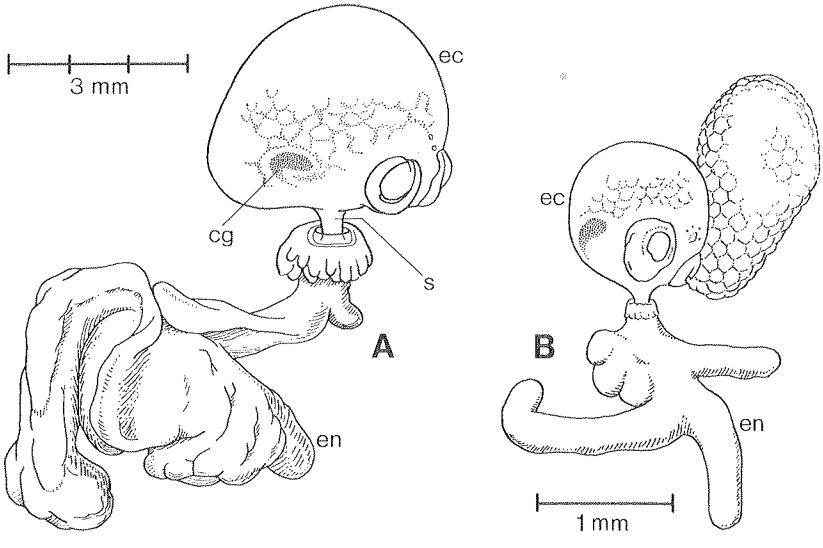

FIG. 1—(A) *Herpyllobius hartmanae* n. sp., female; (B) *Herpyllobius rotundus* n. sp., female (cg, cement gland; ec, ectosoma; en, endosoma; s, stalk).

The endosoma was examined in both specimens. Its posterior part is a shapeless lump from which extend several finger-like processes of variable length.

The first female had two males, the second only one. The males are attached to the area above the genital swellings.

The ovisacs are drop shaped, 1.8 mm long and 1.0 mm broad.

Colour in alcohol: ectosoma creamy white, ovisacs bright orange.

COPEPODID STAGE: This stage has often been referred to as the male since the real male, which is bottle shaped and limbless, can often be seen through the copepodid skin. Lützen (1968) examined copepodids from five species of *Herpyllobius* and found that they all had identical body structure and appendages.

The copepodids of *H. rotundus* are 0.112 mm wide by 0.280 mm long (from apex to distal end of caudal rami), making them slightly smaller than those examined by Lützen (1968), but apart from this they are identical with his description.

POSITION ON HOST: The endosoma of both specimens was embedded in the longitudinal muscle fibres of the host's body wall. This species has apparently no preference for any one area of the body wall, as one specimen was recovered from the anterior portion of the body and one from the posterior. In both specimens the genital region of the ectosoma was directed towards the dorsal midline of the host.

DISCUSSION

The present finds raise the known number of species of *Herpyllobius* to 11, and the number found in the Southern Hemisphere to 5. With the exception of *H. haddoni,* in which the area around the genital swellings is without ornamentation, the species may be referred to either of two types. In the first, represented by *H. antarcticus, cordiformis, australis, gravieri,* and *nipponicus,* the two genital swellings are separated by a protruding and heavily sclerotised bulge, to the upper limit of which the males are attached. The two present species belong to the second type, formerly only represented by *H. arcticus, polynoes,* and *elongata,* in which the area above the genital swellings shows four sclerotised dots that are usually arranged in a semicircle; the males are normally attached to this region.

In *H. hartmanae* the dots could be traced only with difficulty. Both the ecto- and endosoma resemble those of *H. polynoes,* but there is no hump-like tubercle partially encircled by the dots as in that species. In addition, since the location of the parasites on the host's body has shown to be an excellent specific character (Lützen 1964, p. 271) it should be mentioned that in contrast to *H. polynoes,* which exclusively attaches to the prostomium, *H. hartmanae* occurs on the neuropodium of its host.

The genital area of *H. rotundus* is essentially similar to that of *H. polynoes,* but it may be most easily distinguished by the absence of two additional sclerotised dots between the genital swellings and the stalk. The structure of both ecto- and endosoma resembles very much that of *H. arcticus,* in which species, however, there is no tubercle in the area encircled by the genital swellings and the four dots.

LITERATURE CITED

LÜTZEN, J. 1964: A revision of the family Herpyllobiidae (parasitic copepods) with notes on hosts and distribution. *Ophelia 1*: 241–74.

———— 1966: The anatomy of the family Herpyllobiidae (parasitic copepods). *Ophelia 3*: 45–64.

———— 1967: *Herpyllobius elongata* n. sp. and other herpyllobiids (parasitic copepods) from the coastal waters of southern British Columbia and northern Washington. *Canadian Journal of Zoology 45*: 491–6.

———— 1968: On the biology of the family Herpyllobiidae (parasitic copepods). *Ophelia 5*: 175–87.