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(COPEPODA, CALIGIDAE)

BY

BRIAN KENSLEY

South African Museum, Queen Victoria Street, Cape Town, South Africa

Reprinted from: CRUSTACEANA, Vol. 18, Part 2, 1970



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INTRODUCTION

The intertidal fauna of northern South West Africa is relatively unknown, the coastline (the "Coast of Death") being inhospitable and almost inaccessible. In October 1968, an expedition of the State Museum, Windhoek, South West Africa, accompanied by a member of the South African Museum, visited this coast. A collection of intertidal fauna and flora was made, amongst which were found two specimens of a hitherto undescribed species of *Caligus*. A later trip by the State Museum brought in one other specimen.

***Caligus mortis* n. sp. (figs. 1, 2)**

Rocky Point, South West Africa, 18°59'S 12°29'E; October 1968; one ovigerous female holotype (South African Museum, cat. no. A12708) and one female paratype (State Museum, Windhoek, cat. no. N.C. 220).

Torra Bay, South West Africa, 20°28'S 13°15'E; 1 female paratype (South African Museum, cat. no. A12709).

Both the Rocky Point and the Torra Bay specimens were taken alive, free of any host, in intertidal rock pools. Four species of fish were caught in these pools, viz. *Chorisochismus dentex*, *Clinus superciliosus*, *Blennius cristatus*, and *Blennius cornutus*, of which the latter was the most common.

Description. — Female, overall length (excluding egg cases) 2.8 mm. Egg cases 2.0 mm in length. Carapace slightly more than half the total length, oval, broadest in the posterior region. The cephalic area is longer than the thoracic area, which is as wide as long, and roughly quadrangular. The posterior sinus is moderately wide, not reaching to the mid-region of the thoracic area. The free thoracic segment is very short. The genital segment is about half the carapace length, with the anterior end having a broad taper, the rest of the segment rectangular, slightly wider than long. The abdomen is unsegmented, one third the genital segment length, slightly longer than broad, with a narrow posterior slit.

The first antenna (fig. 1b) has a slender terminal segment, about as long as

the basal segment, with eight terminal setae. The basal segment has numerous plumose setae on the antero-lateral surface.

The second antenna (fig. 1c) consists of four segments, the terminal one being a stout hook.

The mandible, situated within the oral cone, appears to be typical of the genus.

The first maxilla (fig. 1d) situated laterally to the second antenna, is a sharply-pointed hook with a stout base.

The second maxilla (fig. 1e) flanks the oral cone and is acutely triangular.

The first maxilliped (fig. 2a) is three-segmented. The middle segment is

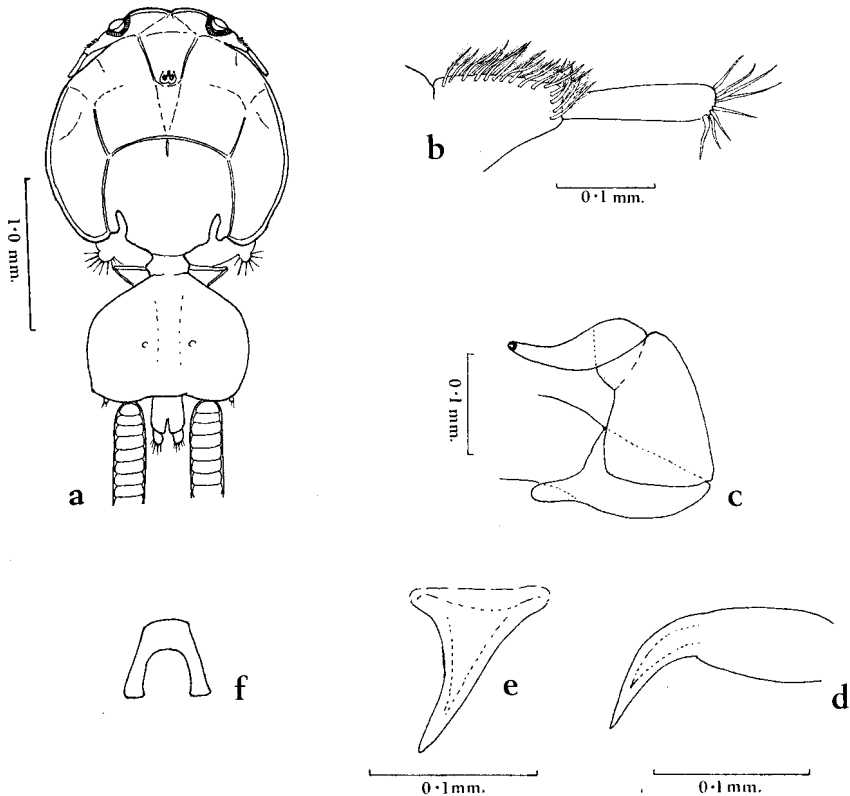


Fig. 1. *Caligus mortis* n. sp. a, holotype, dorsal view; b, first antenna; c, second antenna; d, first maxilla; e, second maxilla; f, sternal furca.

longer than, and about one third the thickness of the basal segment. A sharp scale-like spine is situated at about one third of its length from the distal end. The distal end of the middle segment is produced into a thin terminally curved spine, the tip of which meets the slender third segment.

The second maxilliped (fig. 2b) is three-segmented, the basal segment being stout and about four times the width of the two distal segments. The latter are

indistinguishably fused, forming a claw which is proximally straight, distally curved, with a short spine in the inner surface of the claw.

The branches of the sternal furca (fig. 1f) are divergent, apically truncate, with a u-shaped bay between them.

The first thoracic leg (fig. 2f) is uniramous, three-segmented. The basal segment is about one third the length of the middle segment, with a short papilla

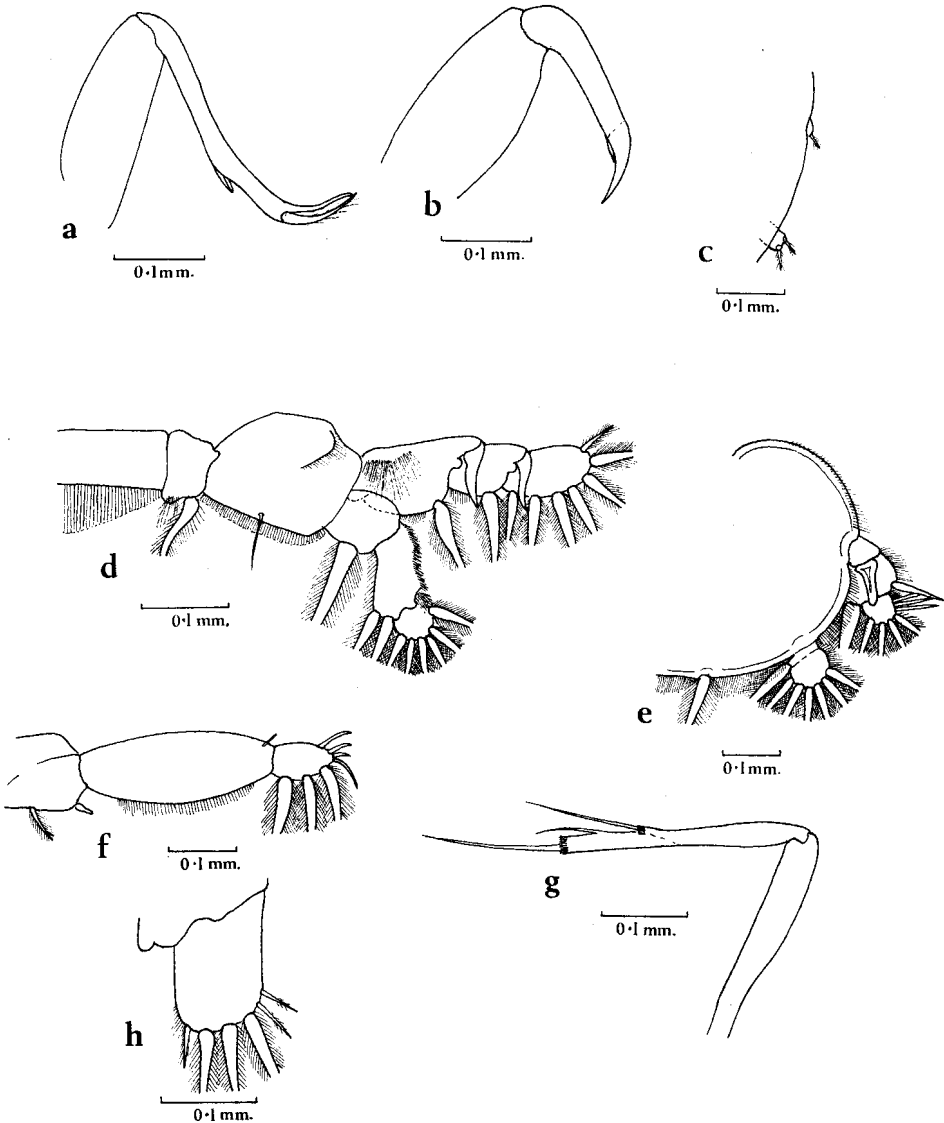


Fig. 2. *Caligus mortis* n. sp. a, first maxilliped; b, second maxilliped; c, fifth thoracic leg; d, second thoracic leg; e, third thoracic leg; f, first thoracic leg; g, fourth thoracic leg; h, caudal ramus.

at the distomedial corner representing the endopodite, and a short plumose seta at the mid-point of the posterior edge. The middle segment has a short spinule near the distolateral corner, and a row of fine hairs on the medial edge. The distal segment has four terminally hooked spines and three stout plumose setae.

The second thoracic leg (fig. 2d) is biramous, the propodus consisting of a short basal segment with a plumose seta at the distomedial corner, and a larger expanded distal segment. The medial margin of the latter has a setiferous membrane, and a setiferous ridge near the distolateral corner. The exopodite is three-segmented, the proximal segment being almost three times the length of the middle segment, which in turn is slightly shorter than the distal segment. The proximal segment bears a single plumose seta at the distomedial corner, a setiferous ridge near the lateral margin and a strong incurved spine at the distolateral corner. The medial margin is fringed with fine setae. The middle segment is similarly armed. The distal segment bears seven plumose setae, which decrease distally in size. The endopodite is three-segmented. The basal segment bears a single plumose seta at about the midpoint of the medial margin. The middle segment is longer than the first or third, with two plumose setae at the distomedial corner, the lateral and median margins fringed with many short setae. The distal segment bears six elongate plumose setae, and has the proximolateral region densely setiferous.

The basal segment of the third thoracic legs (fig. 2e) is expanded and fused with the thoracic region. The margin on either side and between the exo- and endopodite is fringed with fine setae. The exopodite is three-segmented, the basal segment being short, bearing a large flattened spine, which is overlaid by the middle segment. The latter bears a single plumose seta at the distomedial corner, an elongate spine at the distolateral corner and is fringed with fine setae. The distal segment bears four elongate plumose setae and three spines. The endopodite is two-segmented, the basal segment being very short, bearing an elongate plumose seta on the medial margin. The distal segment has six stout plumose setae.

The fourth thoracic leg (fig. 2g) is uniramous, three-segmented, with the basal segment equal in length to the second and third segments together. The suture between the latter is indistinct. The basal segment bears a small simple seta near the distolateral corner. The middle segment is longer than the distal segment, bearing at its distolateral corner a stout elongate spine, the base of which is ringed by a pectinate membrane. The distal segment has an elongate spine at about the midpoint of the dorsal margin, and a larger terminal spine with a pectinate membrane at its base.

The fifth thoracic legs (fig. 2c) are reduced, represented on each side by two separated papillae. The more anterior papilla is much smaller than the other and bears a single plumose seta. The larger papilla bears two plumose setae.

The caudal rami (fig. 2h) are longer than wide, apically rounded, bearing on the inner distal corner a single short seta, which is followed by three stout elongate plumose setae, and two slender setae.

DISCUSSION

The presence of frontal lunules, together with a short free fourth thoracic segment which is not dorsally plated, and a short abdomen, places this species in the genus *Caligus* (cf. Barnard, 1955; Yamaguti, 1963).

Caligus mortis falls into the group of species having the carapace about half or just slightly more than half the entire length, the one-segmented abdomen about one third the length of the genital segment. This group includes *C. minimus* Otto, *C. alalongae* Krøyer, *C. alatus* Heegaard, *C. punctatus* Shiino, *C. parvus* Bassett-Smith, and *C. tetradontis* Barnard. *C. mortis* differs in general proportions from all these species, but also in several details.

C. minimus Otto, 1828, known from the Atlantic and Mediterranean, has an ovate genital segment and stout fourth thoracic legs, as opposed to the roughly rectangular genital segment and slender fourth legs of *C. mortis*. The sternal furcae also differ.

C. alalongae Krøyer, 1863, taken from tunny in the Atlantic and Pacific, has a relatively elongate genital segment and stout fourth thoracic legs.

C. alatus Heegaard, 1943, from the West Indies, differs from *C. mortis* in the shape of the sternal furca, in having the rudimentary fifth legs not dorsally visible and in having the genital segment posteriorly strongly lobed.

C. punctatus Shiino, 1955, recorded from Matusima Bay and Asamushi, Japan, differs from *C. mortis* in the proportionally smaller size of the genital segment and abdomen, and in the stouter fourth thoracic legs.

Amongst the known South African species, *C. mortis* most closely resembles *C. tetradontis* Barnard, 1948, found at Port Elizabeth on the East coast, on *Tetrodon hypselogeneion*. Although the general body proportions of both species are similar, *C. tetradontis* (mature female — 5.0 mm) is larger than *C. mortis* (mature female — 2.8 mm). Several other differences also exist. The furca of the present species is broader, the tips of the prongs being more distinctly truncated. The division of the fourth thoracic leg into a second and third segment is not at all distinct in *C. mortis*, which has a single long terminal spine and a shorter subterminal one, as opposed to the three terminal spines of *C. tetradontis*. The structure of the second maxilliped also differs, that of *C. tetradontis* being almost subchelate, while in *C. mortis* there is no sign of a thumb-like process.

C. parvus Bassett-Smith, 1898, recorded from Bombay and the Galapagos, is similar to *C. tetradontis*, but at 3.4 mm length is still larger than *C. mortis*. The second maxilliped of *C. parvus*, like *C. tetradontis*, is subchelate, while several other differences exist in the furca and appendages.

ACKNOWLEDGEMENTS

I am indebted to Mr. C. G. Coetzee, Director of the State Museum, Windhoek, and Dr. M.-L. Penrith of the South African Museum, for collecting and making the material available.

ZUSAMMENFASSUNG

Das weibliche Tier der neuen Copepoden Art *Caligus mortis* von der nördlichen Küste Süd West Afrikas, wird beschrieben und mit den Weibchen anderer bekannter Arten verglichen.

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