AEGISTHUS MUCRONATUS Giesbrecht, 1891 Izumi 1985 Bull. Biogeogr. Soc. Japan 38(7): 45-50

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Aegisthus mucronatus Giesbrecht, 1891
(Figs. 1, 2)

Aegisthus mucronatus Giesbercht, 1891: 476; Giesbrecht, 1892: 537, pl. 46, figs. 46–49, pl. 51, figs. 2, 3, 5, 10; Breemen, 1908: 183, fig. 197a–c; Wilson, 1932: 304, fig. 182; Rose, 1933: 292, 293, fig. 374; Johnson, 1937: 505, 508, pl. 1.

Aegisthus longicornis T. Scott, 1894: 104, pl. 11, figs. 31–44.

Aegisthus atlanticus Wolfenden, 1902: 33.

Aegisthus dubius Sars, 1916: 8, 14, pl. 8; Rose, 1933: 292, 294, fig. 375.

Material. One female specimen, length about 2 mm. Only the specimen was found in the materials which was collected by the beam-trawl of 4 m span at staiton 13 (KH-81-4), 38°30.2′N, 144°56.6′E–38°31.6′N, 144°56.4′E, far off east of Kinkazan, the northern Japan proper, depth 7,530–7,560 m, time 11:42–17:00, July 29, 1981.

Description. The following is based on the above-mentioned specimen, which has been dissected.

The colour of body is dirty white and translucent, and without indications of presence of eyes or pigmented spots.

The body (Fig. 1 A–C) is slender, almost cylindrical in shape and furnished with many spinules on the dorsum. The dorsal surface of the cephalon and metasome has no network of ridges. The cephalon is less than 1/2 of the total body length and much longer than the metasome. The rostrum is very long, narrow and sharply pointed, about 1/4 as long as the cephalon (including the rostrum). The metasome is much longer than the urosome. The metasome and urosome segments are fringed on their posterior margins with serratures, and single spine is present at each postero-lateral corner of the cephalon and four metasome segments (Fig. 1 B, C and D). The caudal rami are very short and fused to each other; they are attached to the ventral surface of the anal segment, and provided with extremely long, setiferous caudal spines, which is 4.48 times as long as the total body length The caudal spines are coalescent throughout their course until just at the jointed end (art.) The distal portion of the caudal spines is partly damaged and not fully observed (Fig. 1 A–C).

The antennule (Fig. 1 B and E) is very large, as long as the cephalon, six-segmented and sparsely setiferous. The first segment is much less than 1/4 as long as the antennule; the upper margin is largely concave and its distal portion is produced into a conical process with an apical seta. The second segment is the longest, and $1\frac{1}{3}$ times as long as the first segment. The third segment is a little shorter than the second, and provided with a long aesthetasc, about 3/4 as long as the antennule, on the distal end. The fourth segment is a little longer than 1/2 of the third. The fifth segment is the shortest, 1/5 as long as the fourth, and furnished with seven unequal apical setae.

The antenna (Fig. 1 F) is about 1/2 as long as the antennule. The coxa is very short. The basis and the first segment of the endopodite are fused to form an allobasis. The allobasis is long, cylindrical in shape, 1/2 as long as the endopodite (second segment of the endopodite), and furnished with a short seta on the distal inner margin. The endopodite is a little less than 2/3 as long as the allobasis, and bears spinules on the outer margin, two setae on the distal inner margin and five long setae at the apex.

The mandible and maxillule were damaged during dissection.

The maxilla (Fig. 1 G). The syncoxa is elongated and has three setiferous small endites. The basis is rather elongate and furnished with one endite bearing three apical setae. The distal inner portion of the basis is produced into a short process which is armed with two stout curved spines at the apex. The endopodite consists of three small segments; the first segment is provided with one seta; the second segment with three, and the thrid segment with three apical setae.

The maxilliped (Fig. 2 A) is small. The basis is very short. The first segment of the endopodite bears a row of setae on the basal portion and several setae on the distal outer margin, and there are three stout spatulate spines and a filiform seta on the distal inner margin. The second segment is very small, setose on the outer margin, and bears three apical setae.

The leg 1 (Fig. 2 B). The both rami are subequal in length, three-segmented, and armed with long plumose setae. The first segment as long as the distal two subequal segments combined. The distal two segments are fused together, though the division is well marked.

The leg 2–4 (Fig. 2 C–E). The both rami are subequal in length, about $1\frac{1}{2}$ times as long as those of the leg 1, and all three-segmented. The second segment of both rami is about 1/2 as long as the first or the third segment. The endopodite bears long plumose setae. In the exopodite, the inner margin also bears long plumose setae, while the outer margin bears stout dagger-shaped setae, serrate on both margins; the terminal seta is elongate, falcate, serrate on the outer margin and ciliate on the inner margin. The various details can be taken from the figures. Their setal formula are as follows:

leg 1:	Exp. (1, 1, 131)	Enp. (1, 1, 221)
leg 2:	Exp. (1, 1, 232)	Enp. (1, 2, 221)
leg 3:	Exp. (1, 1, 332)	Enp. (1, 1, 221)
leg 4:	Exp. (1, 1, 223)	Enp. (1, 2, 321)

The leg 5 (Fig. 2, F) is very large, curved inwards, sword-like in shape, and armed with characteristic five large lanceolate setae, both margins of which are faintly serrated, except for the ciliated basal portion. The leg is indistinctly three-segmented. The first segment is well-defined by a suture line (dl) just above a short outer marginal seta, and it is about 1/5 as long as the leg. The second segment is entirely fused with the third segment, though the division remains very poorly marked by ridges (d2) at the base of the first lanceolate seta; the segment is about $1\frac{1}{2}$ times as long as the first segment. The third segment is as long as the proximal two segments combined, and provided with two outer lateral and two terminal lanceolate setae; between the two terminal ones there is a filiform seta. The innermost terminal lanceolate seta is a little less than 1/2 as long as the leg.

The leg 6 (Figs. 1 B and 2 G) is present on the genital segment, very minute, rod-like in shape and provided with two terminal setae.

Remarks. The present female specimen appears to be identical in all essential details with the descriptions and figures of *A. mucronatus* given by the previous authors, Giesbrecht (1892), Breemen (1908), Wilson (1932), Rose (1933), Johnson (1937), etc. The variability in the body length of the female is apparently considerable; 2 mm (the present author), 2.2–2.3 mm (Wilson, 1932), 2.4 mm (Scott, T., 1895), and 2.55 mm (Giesbrecht, 1892; maximum body length: Lang, 1948). The length of the caudal spines also varies greatly; 4.48 times as long as the body length (the present author), 3.5 times (Giesbrecht, 1892; Wilson, 1932; Lang, 1948) and 4.124 times (Scott, T., 1894). Accoding to Johnson's description (1937, p. 505), "the caudal spine in both sexes is from 4·1/2 to 5 times the body length" in the fifth copepodid stage. The above-mentioned differences may be due to the individual and geographical variations.

A. mucronatus has been widely distributed in the Atlantic Ocean (Scott, T., 1894; Wolfenden, 1902, 1911; Breemen, 1908; Sars, 1916; Rose, 1933; Wilson, 1932; Lang, 1948). In the Indian Ocean, it has been recorded from off the Cape of Agulhas (Stebbing, 1910) and off the Laccadive Islands (Sewell, 1940), and in the Pacific Ocean, from far off west of the Galapagos Islands (3°S, 99°W: type locality: Giesbrecht, 1891, 1892), the Selebes and Banda Seas, the Molucca Strait) (Scott, A., 1909), the Coral Sea (Farran, 1936), and off the coast of southern California (Johnson, 1937). The present record, from off the northern Japan, seems to be the first in the northwestern part of the Pacific.

A. mucronatus has almost always been caught by the bathypelagic hauls, except for the several surface records at night by Soctt, A (1909).