

Studies on the hippolytid shrimps from Japan, II. : Redescription of *Eualus spathulirostris* (Yokoya)

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Studies on the hippolytid shrimps from Japan, II.

Redescription of *Eualus spathulirostris* (Yokoya)¹⁾

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In 1933 Yokoya described a new species under the name *Spirontocaris spathulirostris* from three stations of the continental shelf of Japan. However, according to Holthuis' (1947) monograph, this characteristic species was ranged under the species incertae, for the original diagnosis is short and insufficient, though with an illustration, and no further specimens have been reported upon since then.

Recently we came across six specimens belonging to the genus *Eualus*, collected by the research vessel "Yôkô-Maru" of the Seikai Regional Fisheries Research Station near the bottom of the Yellow Sea. These specimens seem to be referred to Yokoya's species, which is described in this paper with more detailed accounts as *Eualus spathulirostris* (Yokoya).

We are very grateful to Mr. Hideo Yamashita for providing us with this interesting material and physical conditions of the Yellow Sea area.

Eualus spathulirostris (Yokoya)

(Figs. 1, 2)

Spirontocaris spathulirostris Yokoya, 1933, p. 28, fig. 10—Off Iwate Pref., Sôyô-Maru Station 70 (40° 50' 36" N, 141° 50' 36" E), 285 m deep, Bottom temp. 7.0°C, coarse sand; Off Tsushima Is., Station 474 (34° 48' 00" N, 129° 16' 15" E), 219 m deep, Bottom temp. 9.5°C, sandy mud, gravel, shells; Tsugaru Strait, Station 652 (41° 27' 08" N, 140° 23' 00" E), 110 m deep, Bottom temp. 14.0 °C, gravel.

Spirontocaris spathulirostris, Holthuis, 1947, p. 23—No new locality.

Material examined. Six specimens were dredged from four stations of the northern Yellow Sea by the research vessel "Yôkô-Maru" near the bottom. 36° 00' 00" N, 122° 53' 00" E, 68 m deep, Oct. 19, 1962, Time 07: 35,

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Bottom temp. 8.58 °C, Cl. 18.23 ‰ - 2 females, ZLKU No. 10906; 34° 59' 07" N, 123° 45' 00" E, 80 m deep, Oct. 21, 1962, Time 10: 51, Temp. 9.01 °C, Cl. 18.53 ‰ - 1 female, ZLKU No. 10908; 35° 50' 04" N, 123° 14' 08" E, 70 m deep, March 17, 1963, Time 21: 25, Temp. 7.33 °C, Cl. 18.51 ‰ - 1 ovigerous female, ZLKU No. 10909; 36° 00' 04" N, 123° 00' 02" E, 72 m deep, July 13, 1963, Time 08: 35, Temp. 6.76 °C, Cl. 18.25 ‰ - 1 male, 1 female, ZLKU No. 10910.

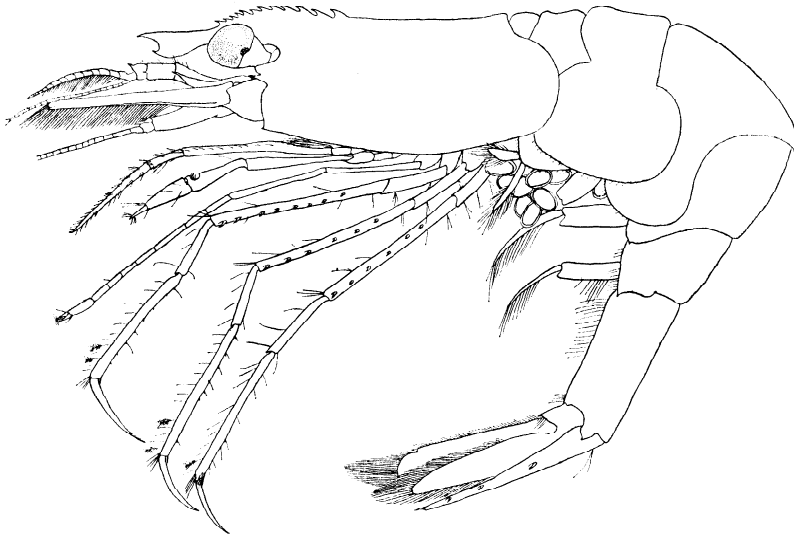


Fig. 1. *Eualus spathulirostris* (Yokoya), ovigerous female, $\times 5.2$.

Description. The species is the peculiar form, measuring 18-27 mm in body length (Fig. 1). The carapace is provided anteriorly with a high keel which is thin and continuous with the proximal part of the rostrum. There are 9 to 12 small teeth on the keel. The rostrum is compressed, reaching the distal end of the antennular peduncle. There is no tooth on the distal half of the upper border. The lower border is somewhat dilated distally, bearing one or two teeth on the dilated portion. The antennal spine is well-developed, and the pterygostomial spine is small but conspicuous (Fig. 2a).

The abdomen is smooth. The pleura of the first three somites are broadly rounded. The pleuron of the fourth somite ends in a small but acute tooth, and that of the fifth has the rather large spine on the posterior end. The sixth somite is long, twice as long as the fifth. The telson is slightly longer than the sixth abdominal somite, with three pairs of dorsal spines; the first pair lies on the proximal third portion,

the second pair on the distal third, and the third pair on the midway between the second pair and the posterior margin. The posterior margin bears three pairs of spines, the outer is the smallest, the median is the longest (Fig. 2b).

The eye is large and globular. The cornea is much broader than the stalk.

The basal segment of the antennular peduncle is longer than the distal two segments combined. The stylocerite reaches the end of the basal segment. The second segment is rather long, twice as long as the third, with a marginal spine on the outer side. The third segment bears also a small marginal spine on the top of the segment. The upper antennular flagellum is thickened and setose in the proximal 11-14 segments (Fig. 2c). The scaphocerite is slender, about 4.5 times as long as broad. The outer side is straight, ending in a sharp spine (Fig. 2d). The molar process of the mandible bears rows of spinules on the edge, and the incisor process is rather large which ends in four teeth. The two-segmented palp is behind the incisor process in ventral view (Fig. 2e).

The third maxilliped reaches the tip of the scaphocerite. The ultimate segment is almost three times as long as the penultimate. The antepenultimate segment is very long, about 1.5 times as long as the ultimate. There is a small exopod reaching the proximal fourth or third of the antepenultimate.

The branchial formula is as follows:

	Maxillipeds			Pereiopods				
	1	2	3	1	2	3	4	5
Pleurobranchs	—	—	—	1	1	1	1	1
Arthrobranchs	—	—	—	—	—	—	—	—
Podobranchs	—	1	—	—	—	—	—	—
Epipods	1	1	1	1	1	1	—	—
Exopods	1	1	1	—	—	—	—	—

The first pereiopod is slender, exceeding the tip of the antennular peduncle but failing to reach the tip of the scaphocerite. The merus is long, about 1.5 times as long as the carpus which has the deep hollow near the distal articulation. The carpus is slender, subequal or slightly shorter than the narrow chela. The second pereiopod is more slender, exceeding the scaphocerite by the length of the chela. The merus and the ischium are subequal in length. The carpus is subdivided into seven joints, of which the proximal third being considerably longer than the others. The last three pereiopods are also very slender and long. The third pereiopod reaches beyond the chela of the second pereiopod. The merus is 2.5 times as long as the carpus, with six to eight small

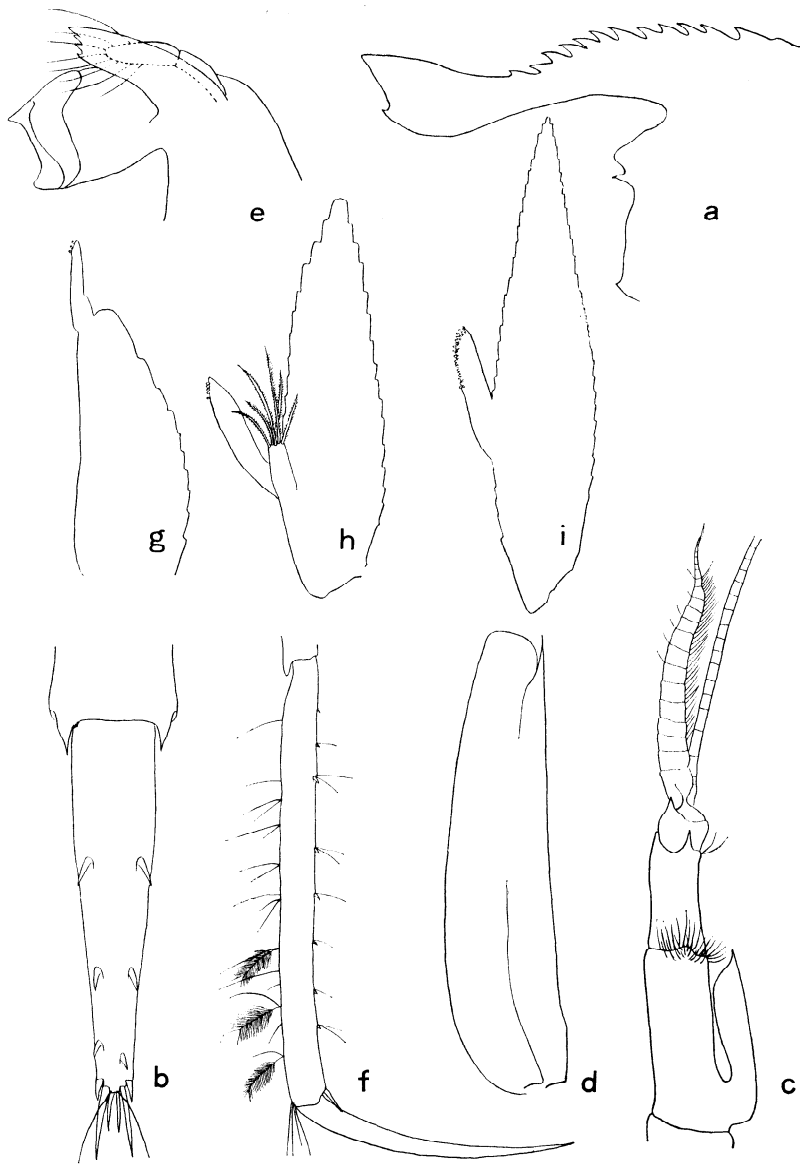


Fig. 2. *Eualus spathulirostris* (Yokoya).

a, Rostrum and anterior part of carapace; b, telson; c, antennular peduncle; d, scaphocerite; e, mandible; f, dactylus and propodus of third pereiopod; g, first pleopod of male; h, second pleopod of male; i, second pleopod of female.

spines along the outer surface. The propodus is twice as long as the carpus, with nine teeth on the ventral surface. There are many hairs mixed with a few plumose ones on the dorsal surface of the propodus. The dactylus is of a strongly curved nail, about more than half of the propodus, without any teeth on the ventral (Fig. 2f). The fourth pereopod exceeds the tip of the scaphocerite by the dactylus. The merus is armed with six or seven spines on the outer surface. The dactylus is slender, about half of the propodus. The fifth pereopod reaches the tip of the scaphocerite and has six or seven spines on the outer surface of the merus.

The endopod of the first pleopod of the male is very small, bearing the appendix interna with a few retinacula placed near the tip of the endopod (Fig. 2g). The second pleopod of the male has the appendix masculina and the appendix interna; the former is furnished with several strong setae, being much shorter than the latter (Fig. 2h). The appendix interna of the female is armed with many retinacula on the distal half (Fig. 2i).

The eggs are about 0.75 mm in diameter.

Remarks. This species is morphologically and ecologically distinct from the other members of this genus as mentioned by Yokoya (1933). He described the species from the Tsugaru Strait, off Iwate Prefecture and off Tsushima Islands at the depth varying between 110-285 m.

Among the benthic decapod crustaceans of the Seikai Regional Fisheries Research Station, which were collected from 42 stations of the East China and Yellow Sea during the year expedition (1962-1963), we found out six specimens of *Eualus spathulirostris* which seem to be restricted in its distribution to the northern Yellow Sea at the depth of about 70-80 m.

Literature

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