

TWO NEW CRANGONID SHRIMPS OF THE GENUS *METACRANGON*
(DECAPODA, CARIDEA) FROM JAPAN

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ABSTRACT

Two new crangonid shrimps of the genus *Metacrangon*, *M. proxima* and *M. miyakei*, are described and illustrated from Japan. The former species, from Sagami Bay, Pacific coast of Japan, is very similar to *M. variabilis* (Rathbun, 1902) from the Bering Sea, but it is distinguished from *M. variabilis* by the shape of the rostrum, of the stylocerite of the antennule, of the scaphocerite, and of the palm of the first pereopod, the armament of the carapace, and the disposition of the dorsolateral spines of the telson. The latter species, which was previously reported by Miyake (1982) under the name of *M. angusticauda* (De Haan, 1849) as an unidentified species from off Tango Peninsula, Sea of Japan, appears unique in the genus in having an additional median spine between two principal median spines.

Zarenkov (1965) reviewed *Crangon, s.l.*, and *Sclerocrangon, s.l.*, and related genera based on morphology and reproductive traits, and then recognized seven genera, including the last three listed here as new, i.e., *Crangon, s.s.*; *Sclerocrangon, s.s.*; *Notocrangon*; *Nectocrangon* (= *Argis*); *Mesocrangon*; *Metacrangon*; and *Rhynocrangon*. Nineteen species previously assigned to *Crangon, s.l.*, or *Sclerocrangon, s.l.*, were referred to *Metacrangon* by Zarenkov (1965). Recently, *Metacrangon angusticauda* was transferred to a new genus, *Syncrangon*, by Kim and Hayashi (2003). These species share the following characters: the endopod of the first pleopod is longer than the appendix masculina in males, the gastric region is depressed below the general level of the carapace, and the posteroventral angles of the sixth abdominal somite are flared. This genus contains about 22 species and subspecies (Zarenkov, 1965; Butler, 1980; Komai, 1994, 1997; Kim and Hayashi, 2003). All but four of the species occur in the northern hemisphere from the subtidal zone to 2850 m (Komai, 1995, 1997). Although 12 species and subspecies are recorded from East Asian waters (Zarenkov, 1965; Komai, 1994; 1997; Kim and Hayashi, 2003), the taxonomic status of some species is incompletely known (Komai, 1994).

In the course of a revisionary study on the crangonid shrimps in East Asian waters, two undescribed species were found. One, from Sagami Bay, closely resembles *Metacrangon variabilis* (Rathbun, 1902) from the Bering Sea in general features. The other species was previously recorded as an unidentified species of this genus by Miyake (1982) based on one specimen with a color photograph from off Taiza, Tango Peninsula, Kyoto Prefecture. Fortunately, the specimen could be examined and proved to be an undescribed species. The new species is similar to *M. sinensis* Fujino and Miyake, 1970, from the East China Sea.

MATERIALS AND METHODS

Specimens examined in this study are deposited in the institutions indicated by the following abbreviations: NSMT, Showa Memorial Institute, National

Science Museum, Tokyo (with a code Cr R); PUIZ, Invertebrate Zoology Laboratory of Pukyong National University, Busan; USNM, National Museum of Natural History, Smithsonian Institution, Washington, D.C.; ZLKU, Zoological Laboratory of Kyushu University, Fukuoka. The specimens belonging to ZLKU are now deposited in the Kitakyushu Museum and Institute of Natural History, Kitakyushu.

For comparative purpose, the following specimens were examined: *Metacrangon sinensis* Fujino and Miyake, 1970: Hansan Island, southern coast of Korea, 40–50 m, beam trawl, 26 June 1992, coll. K. W. Lee, 15 males (CL 3.2–3.9 mm), 17 females (CL 3.7–7.8 mm), PUIZ 74; *Metacrangon variabilis* (Rathbun, 1902): off Akutan Island, Bering Sea, 166 m, “Albatross” St. 3548, 23 females (CL 7.5–9.3 mm), 1 ovig. female (CL 8.1 mm), USNM 26703.

The carapace length, abbreviated as CL, which is measured from the posterior margin of the orbit to the posterior middorsal margin of the carapace, is used as an indication of the size of the specimens.

SYSTEMATICS

Metacrangon proxima, new species

Figs. 1–3

Material Examined.—Pacific coast of central Japan. Holotype: Amadai-ba, Sagami Bay, 280 m, 25 July 1953, female (CL 8.2 mm), NSMT-Cr R: 751. Paratypes: same data as holotype, 1 female (CL 7.6 mm), NSMT-Cr R: 751.—Off northwest of Jogajima Island, Sagami Bay, 450 m, 13 July 1963, 1 male (4.8 mm), 1 female (CL 5.4 mm), NSMT-Cr R: 2108.

Description of Females.—Body (Fig. 1) stout. Integument firm, pubescent.

Rostrum (Fig. 1) short, 0.1–0.2 times as long as carapace, directed forward or slightly ascending, triangular, tip subacute; dorsal surface concave; ventral carina shallow, obtuse, not extending distal margin anteriorly. Carapace (Fig. 1) 1.1–1.2 times as long as broad; postorbital margin rather produced anteriorly but not acute; median carina extending to near posterior margin of carapace, armed with 2 acute spines; anterior median spine moderately strong, arising from anterior about 0.2 of carapace, not overlapping rostrum; posterior median spine arising from about 0.7 of carapace; gastric submedian spine situated at about 0.4 length of carapace; antennal spine ascending, slightly falling short of apex of rostrum; minute marginal tooth ventral to antennal spine; branchiostegal spine strong, directed

forward, overreaching rostrum; pterygostomial spine small; hepatic spine distinct, accompanied inferiorly by deep hepatic groove; orbital notch very deep; longitudinal suture extending from just superior to minute tooth ventral to antennal spine, to about midlength of carapace.

Abdomen (Fig. 1) weakly sculptured; first and second somites with obsolete median carina in holotype and large female paratype, but in small female and male paratypes no trace of median carina on first somite; third to fifth somites each with low, broad median carina. Pleura of first to fourth somites broadly rounded ventrally, that of fifth somite with acute small tooth posteroventrally; sixth somite 0.4–0.5 times as long as carapace; submedian carinae and dorsolateral carinae distinct; posterolateral process terminating in sharp tooth; posteroventral corner with small tooth. Telson (Fig. 1) about 0.8 times as long as carapace, tapering to acute apex, grooved medially, armed with 3 pairs of dorsolateral spines, first pair situated at slightly anterior to midpoint of telson, second pair situated at about posterior one-fourth, third pair subterminal; posterior margin with 2 pairs of long setae ventrally, inner pair slightly longer than outer one.

Eye (Fig. 2A) with eyestalk somewhat longer than corneal width, with prominent distodorsal and moderate proximoventral tubercles; corneal region moderately small, not inflated.

Antennule (Fig. 2B) with slender peduncle, reaching about distal 0.3 of scaphocerite; proximal segment distinctly longer than distal 2 segments combined, anterolateral angle strongly produced, ventromesial carina with small spine; second segment longer than distal segment, anterolateral angle strongly produced; distal segment with obscure or small process dorsodistally; stylocerite moderately slender, falling short of distal margin of proximal segment, separated from proximal segment by narrow U-shaped incision, lateral margin rounded; outer flagellum composed of 8 articles, inner flagellum longer than outer one.

Antenna (Fig. 2C) with scaphocerite moderately stout, 0.5–0.6 times as long as carapace, 2.9–3.2 times as long as wide, lateral margin somewhat concave, distolateral spine separated from blade by deep notch, reaching or just short of distal margin of produced blade, mesial margin slightly convex, nearly parallel with lateral margin; basicerite bearing strong anteroventral tooth, anterodorsal corner produced into triangular lobe; carpocerite nearly reaching distal margin of blade of scaphocerite.

Mandible (Fig. 2D) slender, 4-toothed, ventral 2 teeth stronger than dorsal ones. Maxillule (Fig. 2E) with proximal endite somewhat slender; distal endite with 6 spines on truncate mesial margin; palp weakly curved, bilobed distally, inner lobule with 1 apical seta. Maxilla (Fig. 2F) with distal endite appearing as small lobe; palp curved inward, with tuft of apical setae; scaphognathite broad, bilobed, anterior lobe rounded distally, posterior lobe subtruncate, posterior margin fringed with long setae. First maxilliped (Fig. 2G) with palp narrow and flat, nearly reaching base of lash of exopod; caridean lobe narrow, with arcuate lateral margin; epipod large, lateral margin slightly concave. Second maxilliped (Fig. 2H) with distal 2 segments of endopod mesially bearing setae of various length; dactylus with 3 long spines on proximal part and assemblage of short setae on

distal part; exopod overreaching carpus of endopod, with well-developed lash; epipod wing-like in shape. Third maxilliped (Fig. 2I) overreaching scaphocerite by length of ultimate segment, distal 2 segments flattened dorsoventrally; ultimate segment with small apical spine; antepenultimate segment armed with 2 small subdistal spines on ventral margin; exopod with well-developed lash; epipod appearing as rounded lobe.

First pereopod (Fig. 2J) overreaching scaphocerite by distal one-fourth of chela length, palm (Fig. 2K) 3.2–3.4 times as long as wide, cutting edge strongly oblique, lateral margin nearly parallel with mesial margin; carpus with 2 lateral teeth, ventral tooth larger than dorsal one; merus armed with 1 small dorsodistal tooth, distolateral margin unarmed or armed with 1 small tooth. Second pereopod (Fig. 2L) slender, short, slightly falling short of distal margin of scaphocerite; chela (Fig. 2M) with dactylus about 0.3 times as long as palm, with rows of minute bristles on cutting edge as well as fixed finger; carpus 1.7–2.0 times as long as chela; ischium with row of setae on ventral margin; coxa with strap-like lateral process. Third pereopod (Fig. 2N) slender, overreaching scaphocerite by length of dactylus; dactylus (Fig. 2O) short, tapering distally, bearing fine setae distally; carpus 1.0–1.1 times as long as distal 2 segments combined. Fourth pereopod (Fig. 2P) stout, reaching distal margin of scaphocerite, dorsal and ventral margins from propodus to ischium with long setae; dactylus (Fig. 2Q) subspatulate, tip terminating in thin, corneous process; propodus 1.3–1.7 times as long as dactylus; carpus 0.8–1.1 times as long as dactylus. Fifth pereopod (Fig. 2R) similar to fourth, but somewhat shorter and less setose than fourth; slightly falling short of tip of branchiostegal spine of carapace.

Branchial formula as follows (r: rudimentary):

	Maxillipeds			Pereopods				
	1	2	3	1	2	3	4	5
Pleurobranchs	–	–	–	1	1	1	1	1
Arthrobranchs	–	–	–	–	–	–	–	–
Podobbranchs	–	–	–	–	–	–	–	–
Epipods	1	1	r	–	–	–	–	–
Exopods	1	1	1	–	–	–	–	–

In holotype and large female paratype, thoracic sternum with tooth on fifth somite, blunt process on sixth and seventh somites, tubercle on eighth somite. In small female and male paratypes, thoracic sternum with acute tooth on fifth to seventh somites, blunt tubercle on eighth somite.

In holotype and large female paratype, abdominal sternites with blunt tubercle on each of first to fifth somites. In small female and male paratypes, abdominal sternites with tooth on each of first to fourth somites, tubercle on fifth somite. All specimens with acute preanal spine on sixth abdominal sternite.

First pleopod (Fig. 2S) with endopod reaching about distal one-third of exopod, sparsely setose, slightly curved laterally, rounded distally. Second pleopod (Fig. 2T) with endopod reaching distal one-third of exopod, 2-segmented, 2 segments subequal in length, distal segment with marginal setae, proximal segment with longer setae on mesial margin than those on lateral margin.

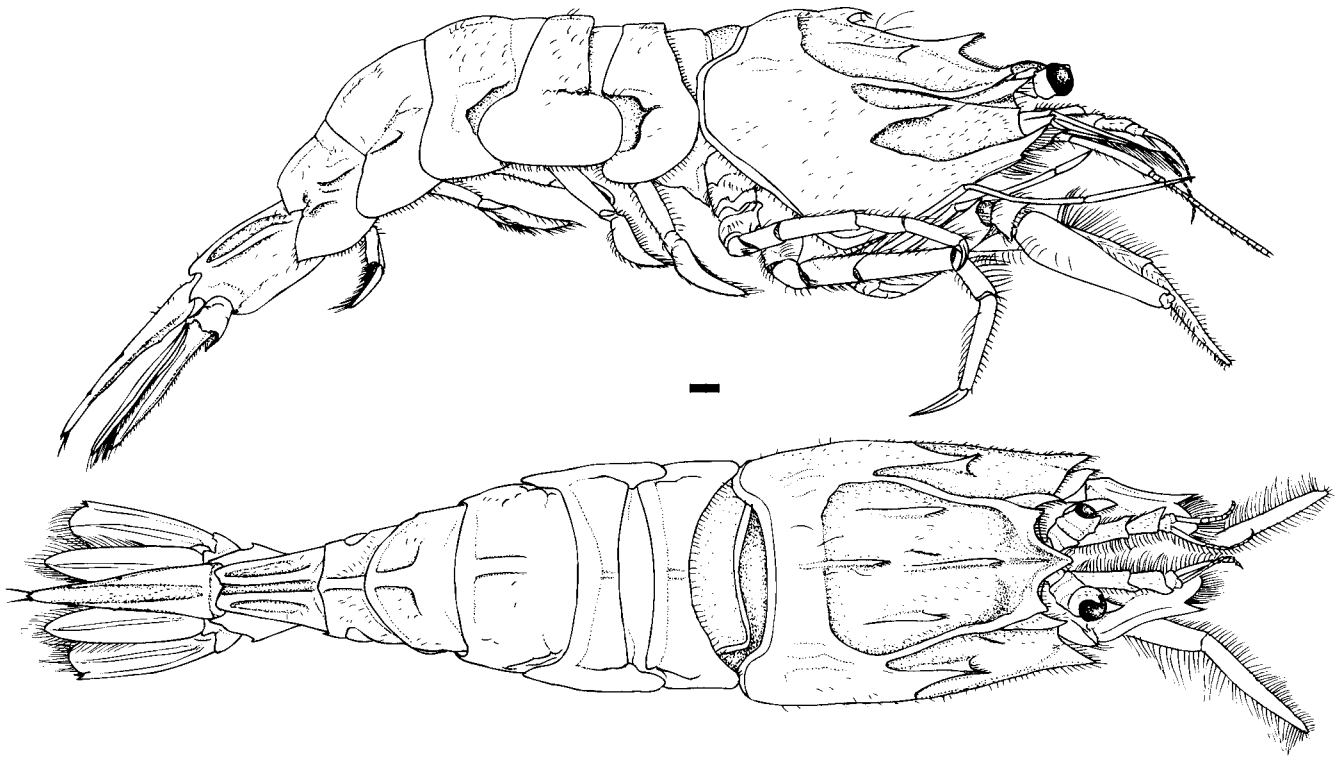


Fig. 1. *Metacrangon proxima* sp. nov. Holotype (NSMT-Cr R: 751), female (CL 8.2 mm) from Sagami Bay. Entire animal in lateral view (top) and dorsal view (bottom). Scale 1 mm.

Uropod (Fig. 1) with endopod falling short of tip of telson; exopod shorter than endopod, lateral margin slightly convex, terminating in small tooth, small spine just mesial to lateral tooth.

Sexual dimorphism.—Male with body more slender than in females.

Outer antennular flagellum (Fig. 3A) longer and more divided than that of females, composed of 12 articles.

First pleopod (Fig. 3B) with endopod short, curved laterally, reaching about proximal one-third of exopod. Endopod of second pleopod (Fig. 3C) with appendix masculina (Fig. 3D) much short than endopod, bearing 12 long spines.

Coloration.—Not known.

Size.—Male CL 4.8 mm, females CL 5.4–8.2 mm.

Etymology.—The species name is derived from the Latin, *proxima* (= nearest), referring to the close relationship to *M. variabilis*.

Distribution.—Sagami Bay, Pacific coast of central Japan; 280–450 m.

Remarks.—The present new species is very similar to *M. variabilis* (Rathbun, 1902) from the Bering Sea and *M. sinensis* Fujino and Miyake, 1970, from the East China Sea in general features, such as the straight and depressed rostrum directed forward, the similar disposition of the spines of the carapace, the presence of a median carina on the first to fifth abdominal somites, and the smooth ventral

margin of the pleura of the anterior four abdominal somites. However, *M. proxima* sp. nov. differs from *M. variabilis* in the following features. (1) The anterior and lateral margins of rostrum are more raised (Fig. 1) than those of *M. variabilis* (Fig. 4A); (2) the ventral carina of rostrum is shallow, obtuse, and not produced anteriorly (Fig. 1), whereas in *M. variabilis* it is deep, sharp, and produced anteriorly (Fig. 4B); (3) in females the postorbital margin of carapace is more produced anteriorly (Fig. 1) than that of *M. variabilis* (Fig. 4A); (4) the median carina of carapace is higher and sharper (Fig. 1) than that of *M. variabilis* (Fig. 4B); (5) the spines on the carapace (except the branchios-tegal and pterygostomial spines) are longer and stronger (Fig. 1) than those of *M. variabilis* (Fig. 4B); (6) the orbital cleft of the carapace is deeper (Fig. 1) than that of *M. variabilis* (Fig. 4B); (7) the first pair of dorsolateral spines of the telson is situated slightly anterior to the midpoint of the telson in *M. proxima*, whereas in *M. variabilis* it is situated considerably behind the midpoint of the telson; (8) the dorsodistal process of distal segment of the antennular peduncle is obscure or small in *M. proxima* (Fig. 2B), whereas it is prominent in *M. variabilis* (Fig. 4A); (9) the lateral margin of the stylocerite of antennule is smooth and rounded in *M. proxima* (Fig. 2B), whereas in *M. variabilis* it is angular (Fig. 4A); (10) the scaphocerite is more slender (Fig. 2C) than that of *M. variabilis* (Fig. 4A) (2.8–3.1 times as long as wide versus 2.2–2.4 times); (11) the mesial margin of the scaphocerite is slightly convex and nearly parallel with the lateral margin in *M. proxima* (Fig. 2C), whereas in *M. variabilis* it is moderately convex and not parallel with the lateral margin (Fig. 4A); and (12) the palm

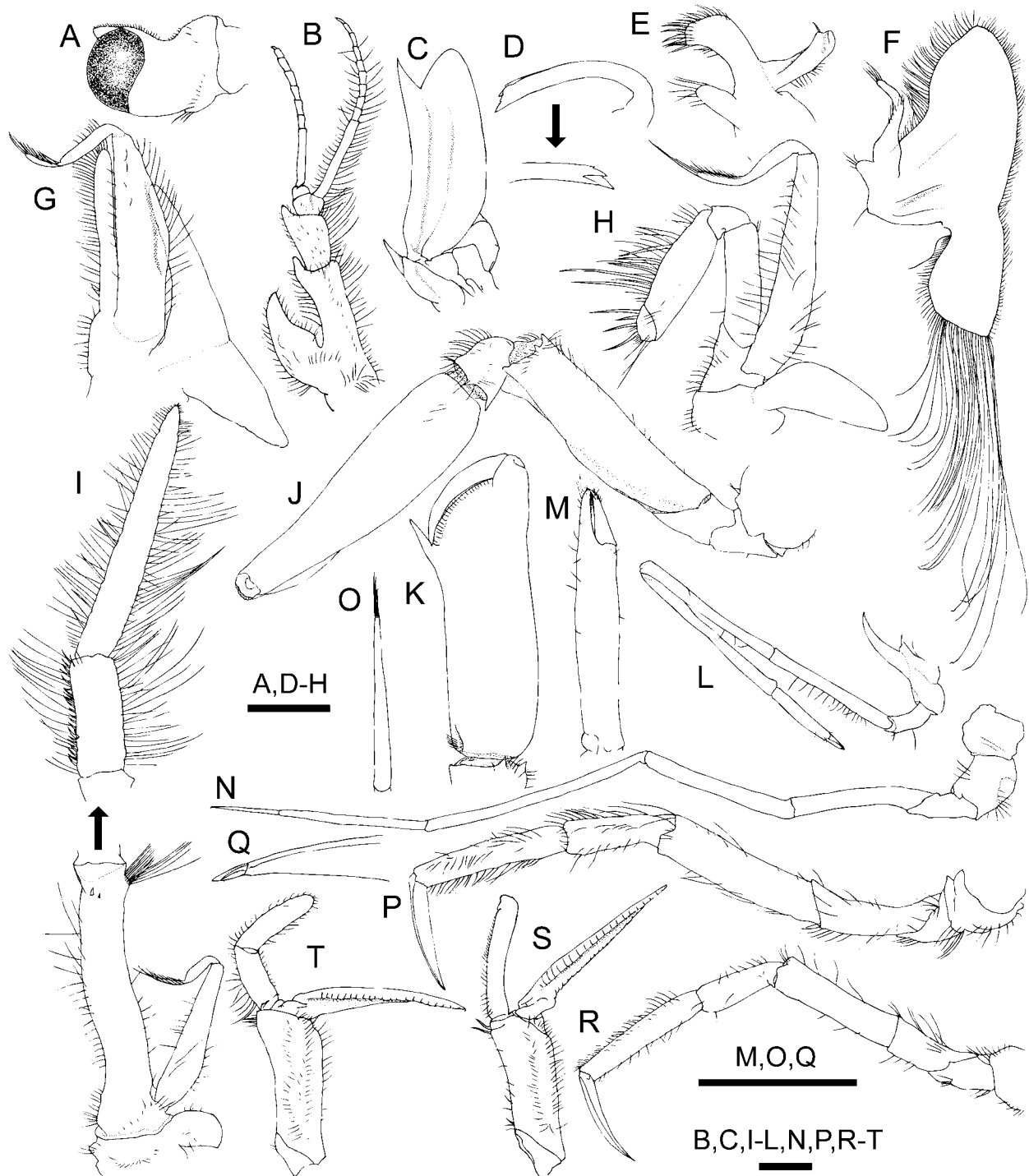


Fig. 2. *Metacrangon proxima* sp. nov. Holotype (NSMT-Cr R: 751), female (CL 8.2 mm) from Sagami Bay. Appendages dissected from left side. A, eye, lateral; B, antennule, dorsal; C, antenna, dorsal; D, mandible, external and internal; E, maxillule, external; F, maxilla, external; G, first maxilliped, external; H, second maxilliped, external; I, third maxilliped, flexor; J, first pereopod, lateral; K, same, chela, flexor; L, second pereopod, lateral; M, same, chela, lateral; N, third pereopod, lateral; O, same, dactylus, lateral; P, fourth pereopod, lateral; Q, same, distal part of dactylus, lateral; R, fifth pereopod, lateral; S, first pleopod, ventral, exopodal setae omitted; T, second pleopod, ventral, exopodal setae omitted. Scale 1 mm.

of first pereopod is more slender (Fig. 2K) than that of *M. variabilis* (Fig. 4C) (3.2–3.4 times as long as wide versus 2.6–2.9 times).

As Rathbun (1904) pointed out some variation of *M. variabilis*, in the elevation of the rostrum and the sculpture of

the median carina of the abdominal somites, characters (1), (3), (4), (5), and (6) above can vary interspecifically or intraspecifically in *Metacrangon* species, and thus they should be used with caution. Because the specimens examined are a few for each species, the evaluation of

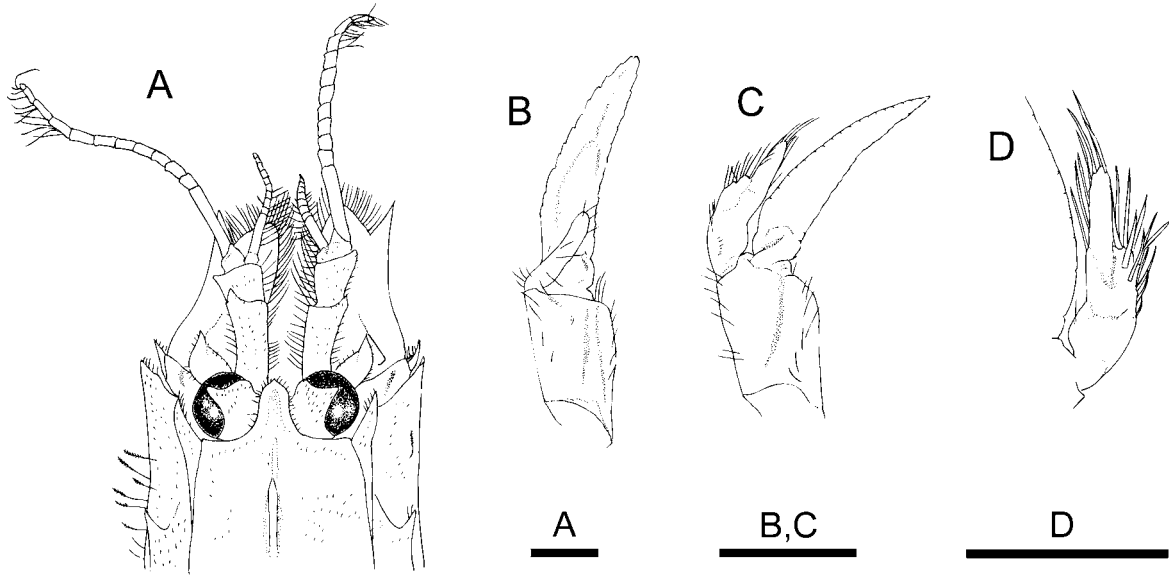


Fig. 3. *Metacrangon proxima* sp. nov. Paratype (NSMT-Cr R: 2108), male (CL 4.8 mm) from Sagami Bay. A, anterior part of carapace and cephalic appendages, dorsal; B, first pleopod, ventral, exopodal setae omitted; C, second pleopod, ventral, exopodal setae omitted; D, appendix masculina, dorsal. Scale 1 mm.

interspecific and intraspecific variation is not satisfactory at present.

Metacrangon proxima sp. nov. differs from *M. sinensis* in having (1) the relatively slender rostrum; (2) the shallow and not anteriorly produced ventral carina of the rostrum; (3) the produced postorbital margin; (4) the smooth, rounded lateral margin of the stylocerite of antennule; (5) the slender scaphocerite (2.8–3.1 times as long as wide *versus* about 1.5 times); (6) the concave lateral margin of the scaphocerite; (7) the distolateral spine of scaphocerite separated from the blade by a deep notch; (8) the acute anteroventral tooth of the basicerite of antenna; and (9) the parallel mesial and lateral margins of the palm of first pereopod.

Metacrangon miyakei, new species

Figs. 5, 6

Metacrangon sp.—Miyake, 1982: 71, pl. 24-fig. 1 (under *M. angusticauda* De Haan, 1849; see “Remarks” below).

Metacrangon longirostris.—Miyake, 1998: 71, pl. 24-fig. 1. [Not *Metacrangon longirostris* (Yokoya, 1933)].

Material Examined.—Sea of Japan. Holotype: Off Taiza, Tango Peninsula, 110 m, 24 Sep. 1981, coll. M. Tomiyama, female (CL 8.2 mm), ZLKU 1177.

Description.—Body (Fig. 5) stout. Integument firm, sparsely pubescent.

Rostrum (Fig. 5) relatively long, slightly more than 0.2 times as long as carapace, directed forward, apex truncate;

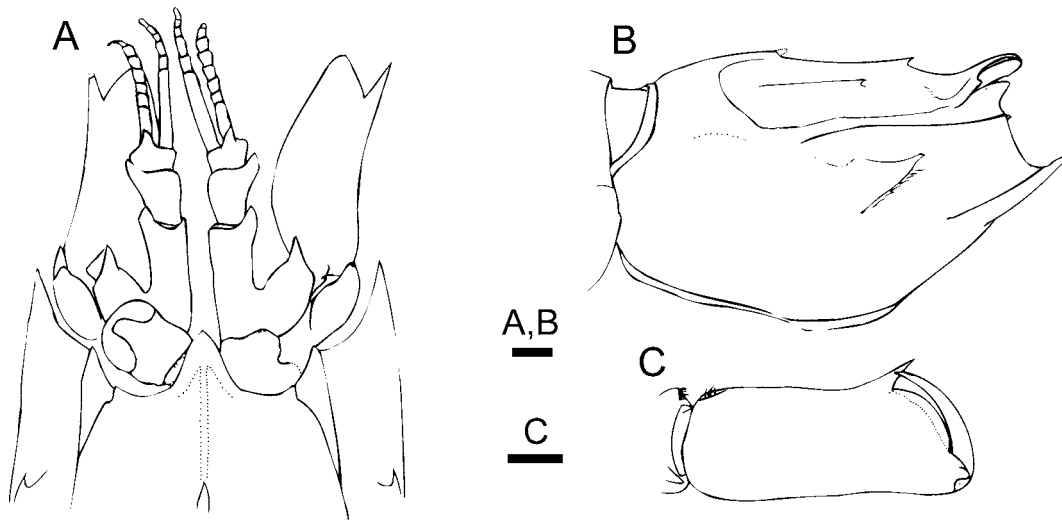


Fig. 4. *Metacrangon variabilis* (Rathbun, 1902). Ovigerous female (CL 8.1 mm, USNM 26703) from off Akutan Island, Bering Sea. A, anterior part of carapace and cephalic appendages, dorsal, right eye and setae omitted; B, carapace, lateral, setae omitted; C, chela of left first pereopod, flexor. Scale 1 mm.

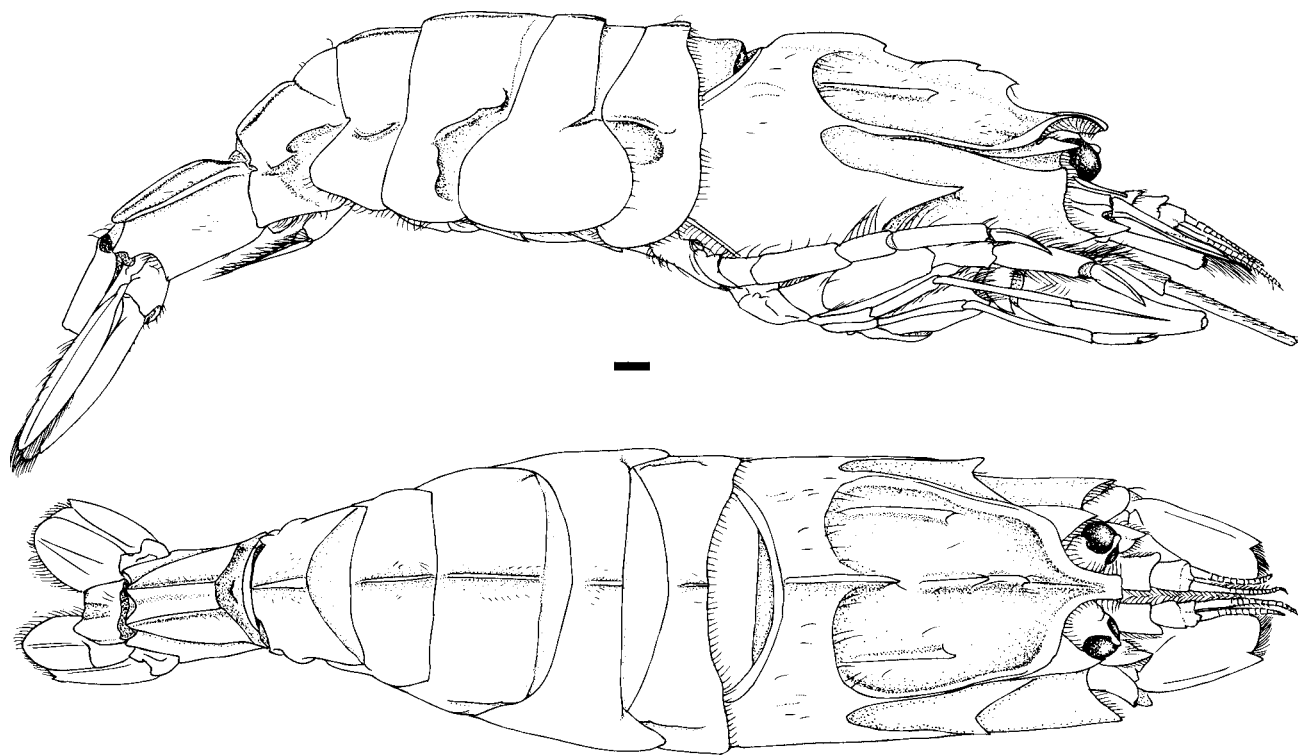


Fig. 5. *Metacrangon miyakei* sp. nov. Holotype (ZLKU 1177), female (CL 8.2 mm) from off Tango Peninsula, Sea of Japan. Entire animal in lateral view (top) and dorsal view (bottom). Scale 1 mm.

dorsal surface slightly concave, with somewhat raised lateral margins; ventral carina shallow, anteriorly not extending to distal margin of rostrum. Carapace (Fig. 5) nearly as long as broad; postorbital margin sloping obliquely backward; median carina armed with 2 principal spines; anterior median spine larger than posterior spine, arising from 0.2 length of carapace, with small additional spine (just posterior to anterior median spine); posterior median spine obtuse, small, arising from 0.6 of carapace; gastric submedian spine situated at 0.4 length of carapace; antennal spine strong, slightly ascending, reaching anterior one-third of rostrum, accompanied by moderately deep furrow inferiorly; branchiostegal spine nearly straight forward, reaching distal margin of rostrum, supported by sharp carina; pterygostomian spine minute; hepatic spine distinct, supported by oblique carina, followed by hepatic groove along inferior part of its base; orbital notch moderately deep; longitudinal suture extending from just superior to antennal furrow ventral to antennal spine, to about half of carapace.

Abdomen (Fig. 5) weakly sculptured; first to fifth abdominal somites with low but distinct median carina, that of fifth somite somewhat flattened anteriorly; pleura of first to fourth somites rounded ventrally, that of fifth somite rather produced posteroventrally but not acute terminally; sixth somite 0.4 times as long as carapace, pair of submedian carinae present, each posterior margin rounded, posterolateral process strong, posteroventral corner terminating in minute tooth. Telson (Fig. 5) broken, missing distal half, with distinct median groove evidence.

Eye (Fig. 6A) with eyestalk relatively short, slightly longer than corneal width, dorsal tubercle prominent,

ventral tubercle small but subacute; corneal region relatively small.

Antennule (Fig. 6B) with peduncle reaching midlength of scaphocerite; proximal segment slightly longer than distal 2 segments combined, anterolateral angle moderately produced, ventromesial carina with small tooth subproximally; second segment slightly longer than distal segment, anterolateral angle moderately produced; distal segment with subacute process distally; stylocerite moderately broad, reaching base of distolateral protuberance of proximal segment, separated from proximal segment by deep U-shaped incision, lateral margin obtusely angled, terminating in subacute tooth; outer flagellum overreaching distal margin of scaphocerite by distal one-fourth composed of 11 articles, inner flagellum longer than outer one, composed of 14 articles.

Antenna (Fig. 6C) with scaphocerite stout, 0.5 times as long as carapace, 1.9 times as long as wide, lateral margin slightly convex, distolateral spine separated from blade by shallow notch, falling slightly short distal margin of rounded blade, mesial margin slightly sinuous; basicerite with obtuse anteroventral tooth, anterodorsal angle rounded; carapocerite falling short of distal margin of scaphocerite.

Mouthparts (Fig. 6D–I) similar to those of *M. proxima* sp. nov. Third maxilliped (Fig. 6I) overreaching distal margin of scaphocerite by distal one-third of ultimate segment, distal 2 segments flattened dorsoventrally; ultimate segment about 2.0 times as long as penultimate segment, with small apical spine; penultimate segment 1.7 time as long as wide; antepenultimate segment longer than ultimate segment, with 2 small subdistal spines on ventral margin;

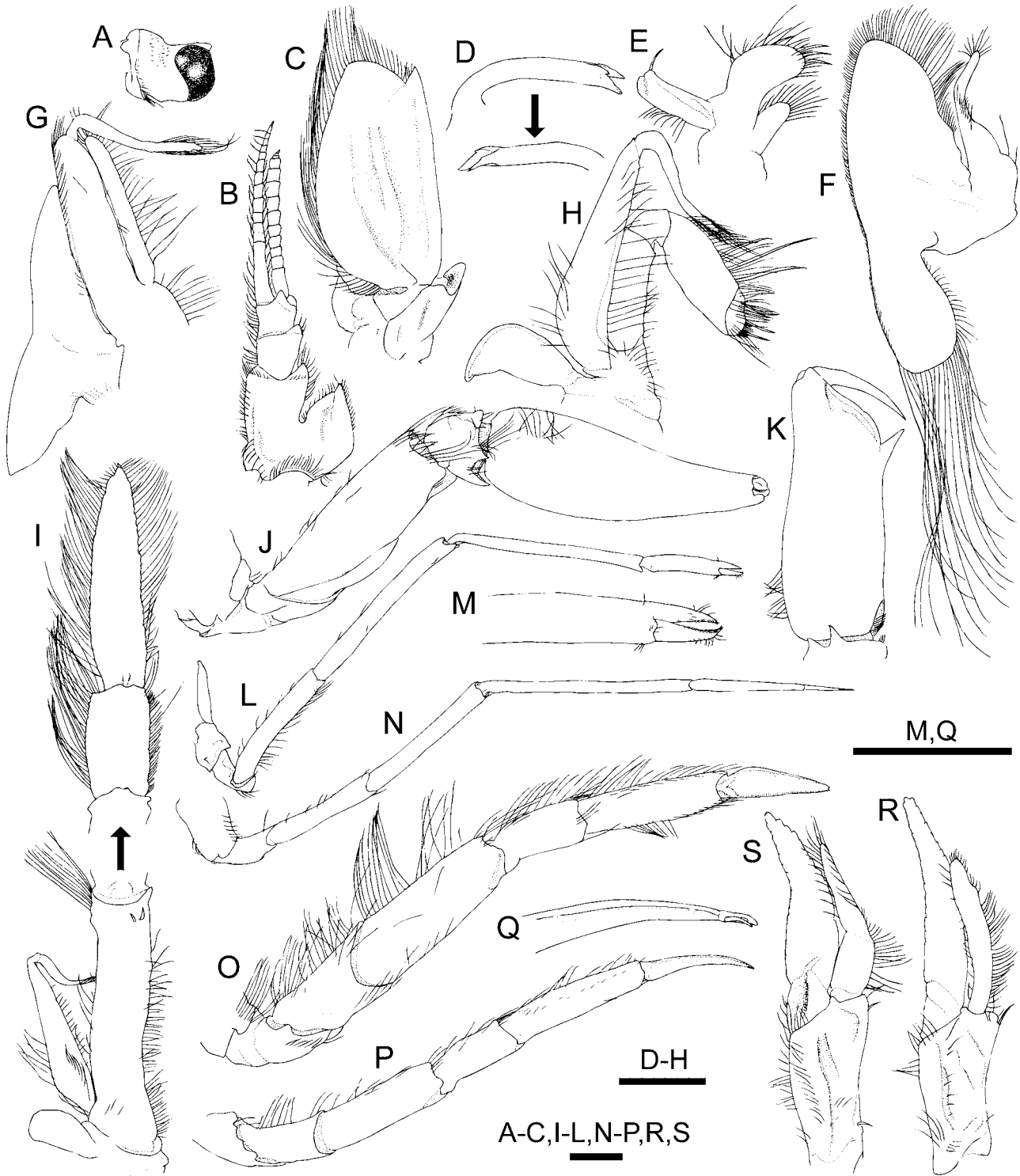


Fig. 6. *Metacrangon miyakei* sp. nov. Holotype (ZLKU 1177), female (CL 8.2 mm) from off Tango Peninsula, Sea of Japan. Appendages dissected from right side. A, eye, lateral; B, antennule, dorsal; C, antenna, dorsal; D, mandible, external and internal; E, maxillule, external; F, maxilla, external; G, first maxilliped, external; H, second maxilliped, external; I, third maxilliped, flexor; J, first pereopod, lateral; K, same, chela, flexor; L, second pereopod, lateral; M, same, chela, lateral; N, third pereopod, lateral; O, fourth pereopod, lateral; P, fifth pereopod, lateral; Q, same, distal part of dactylus, lateral; R, first pleopod, ventral, exopodal setae omitted; S, second pleopod, ventral, exopodal setae omitted. Scale 1 mm.

exopod reaching distal one-fourth of antepenultimate segment, with well developed lash; epipod oval.

First pereopod (Fig. 6J) stout, slightly reaching beyond distal margin of scaphocerite; palm (Fig. 6K) 2.7 times as

long as wide, cutting edge strongly oblique, weakly bilobed, dactylus not overreaching base of fixed finger when closed; carpus short, with 2 strong lateral teeth; merus with 1 weak dorsodistal and 1 minute distolateral teeth, obscured by distal

long setae. Second pereopod (Fig. 6L) slender, reaching about distal one-third of scaphocerite; chela (Fig. 6M) with dactylus 0.3 times as long as palm, fingers with numerous minute bristles on both cutting edges; carpus 1.8 times as long as chela; merus subequal to carpus in length; ischium with ventral margin bearing row of setae, dorsal margin sparsely setose; coxa with strap-like lateral process. Third pereopod (Fig. 6N) slender, slightly falling short of distal margin of scaphocerite; dactylus tapering to distal fine filaments; propodus 2.1 times as long as dactylus; carpus 1.3 times as long as distal 2 segments combined. Fourth pereopod (Fig. 6O) stout, reaching about midlength of scaphocerite, strongly setose from propodus to ischium; dactylus naked, subspatulate, distal spine broken and missing; propodus 1.4 times as long as dactylus; carpus 0.8 times as long as propodus. Fifth pereopod (Fig. 6P) similar to fourth pereopod, reaching tip of antennal spine of carapace; dactylus (Fig. 6Q) terminating in comeous spine inserted on dorsal lobule.

Branchial formula same as *M. proxima* sp. nov.

Thoracic sternum with median tubercle on fifth to eighth somite.

Abdominal sternites with blunt median tubercle on each of first to fifth somites; sixth somite with blunt preanal spine.

First pleopod (Fig. 6R) with endopod reaching about distal one-third of exopod, setose marginally, slightly curved laterally, rounded distally. Second pleopod (Fig. 6S) with endopod reaching distal one-fourth of exopod, 2-segmented, distal segment with marginal setae, proximal segment shorter than distal segment, with longer setae on mesial margin than those on lateral margin.

Uropod (Fig. 5) with endopod obscurely carinated medially; exopod slightly falling short of posterior margin of endopod, lateral margin slightly convex, terminating in small tooth, small spine just mesial to posterolateral tooth.

Coloration.—Reddish brown in ground color, scattered with white spots, but first to third abdominal somites with reversed pattern; uropods rather transparent (Miyake, 1982: pl. 24-fig. 1).

Size.—Only holotype female, CL 8.2 mm, known.

Etymology.—The species is named in the late Dr. Sadayoshi Miyake, for his great contributions to the systematics of decapod crustaceans and for his first recognition of the present species as an unusual form.

Distribution.—Off Taiza, Tango Peninsula, Sea of Japan, 110 m.

Remarks.—*Metacrangon miyakei* sp. nov. appears unique in possessing an additional median spine between the two principal median spines of the carapace, which is lacking in all other congeners. The median carina on the first to fifth abdominal somites, the rounded ventral margin of the pleura of the first to fourth abdominal somites, and the stout stylocerite of the antennule link *M. miyakei* to *M. sinensis*. In addition to the difference of the spine counts on the median carina of the carapace, *M. miyakei* differs from *M. sinensis* in the following particulars: (1) the rostrum is relatively narrow and with a truncate distal margin in *M. miyakei*, whereas in

M. sinensis it is broad and with a rounded distal margin; (2) the ventral carina of the rostrum does not extend anteriorly to the distal margin of the rostrum in *M. miyakei*, whereas in *M. sinensis* it extends anteriorly to the distal margin of the rostrum; (3) the posterior median spine of the carapace is obtuse and smaller than the anterior median spine in *M. miyakei*, whereas in *M. sinensis* it is sharp and larger than the anterior median spine; and (4) the scaphocerite is rather slender (1.9 times as long as wide) and with the slightly sinuous mesial margin, whereas in *M. sinensis* it is relatively stout (1.6–1.8 times as long as wide) and with a strongly convex mesial margin.

Metacrangon miyakei sp. nov. was previously recorded as an unidentified species of this genus under the name of *M. angusticauda* (De Haan, 1849) by Miyake (1982) based on one specimen with a color photograph from off Taiza, Tango Peninsula. Hayashi (1986) considered that Miyake's (1982) specimen reported under the name of *M. angusticauda* might represent *M. longirostris* (Yokoya, 1933), because of the similar color pattern. Miyake (1998) accepted Hayashi's (1986) opinion and changed the species name of *M. angusticauda* to *M. longirostris*. On the other hand, Komai (1994) suggested a necessity that Miyake's (1982) specimen of *M. angusticauda* had to be reexamined in order to establish its specific status. The present study proves that the specimen of Miyake (1982) is not *M. longirostris* but is a new species.

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