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A new alpheid shrimp of the genus *Betaeus* from the Pacific coast of central Japan (Crustacea: Decapoda: Caridea)

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***Abstract*.—A new alpheid shrimp, *Betaeus gelasinifer*, is described and illustrated from the Pacific coast of central Honshu, Japan. The new species is characterized by a set of the following characters: the frontal margin of the carapace is moderately indented; the palm of the first pereiopod is relatively deep and usually bears a shallow excavation on the ventral surface; the lateral surface of the palm of the first pereiopod lacks granules, tubercles or setae; the mesial spine at the posterolateral corner of the telson is noticeably elongate; and the endopod of the uropod overreaches the posterior margin of the telson by 0.3 of its length. It represents a second species of the genus from Japanese waters. A brief note on the taxonomy of the genus is provided.**

Introduction

Most of the 14 recognized species of the genus *Betaeus* are distributed in temperate waters in the Indian and Pacific Oceans (Table 3), though the alpheids are generally inhabitants of subtropical or tropical regions. Furthermore, species in the genus are known to be free living or associated with other invertebrates such as abalone, sea urchins, and porcelain crab (Jensen, 1995). In this paper, we describe a new species, *Betaeus gelasinifer*, based on samples collected from Hamana Lake, Miura and Boso Peninsula, central Japan, during a continuous survey of the decapod crustacean fauna of the area. This new species is the second representative of *Betaeus* from Japanese waters.

The specimens examined in this study are deposited in the Hayama Siosai Museum, Kanagawa (HSM), Muséum National d'Histoire Naturelle, Paris (MNHN), National Fisheries University, Shimonoseki (NFU), Natural History Museum and Institute, Chiba (CBM), Nationaal Natuurhistorisch Museum, Leiden (RMNH), and Sabiura Marine Park Research Station, Kushimoto (SMP). The abbreviation CL is used for carapace length, as measured from the anterior margin to the midpoint of the posterior margin of the carapace.

Taxonomy

Betaeus gelasinifer new species

Figs. 1–5

New Japanese name: Ekubo-teppouebimodoki

Betaeus sp. : Nomura *et al.*, 1998: 43, Fig. 1K.

Material examined.—Holotype. RMNH D 48600, ♂ (CL 6.3 mm), Kominato, Boso Peninsula, intertidal, 24 June 1994, coll. K. Nomura.

Paratypes. MNHN-Na 13605, 1 ♂ (CL 4.8 mm), 2 ovig. ♀♀ (CL 4.5, 5.2 mm), Bay mouth of the Hamana Lake, Shizuoka Prefecture, intertidal, 3 December 1994, coll. M. Itoh; CBM-ZC 5209, 2 ♂♂ (CL 5.7, 6.8 mm), 1 ♀ (CL 4.7 mm), 2 ovig. ♀♀ (CL 4.6, 7.1 mm), Hasama, Tateyama, Boso Peninsula, intertidal, 16 May 1996, coll. T. Komai; NFU530-2-2132, 1 ovig. ♀ (CL

5.8 mm), Hasama, Tateyama, Boso Peninsula, intertidal, 18 May 1996, coll. K. Nomura; RMNH D 48601, 2 ♂♂ (CL 5.5, 7.1 mm), 4 ovig. ♀♀ (CL 5.3–7.1 mm), Kominato, Boso Peninsula, intertidal, 10 May 1997, coll. K. Nomura; HSM-Crm-0078, male (CL 5.6 mm), Hayama, Miura Peninsula, intertidal, 25 June 1997, coll. K. Hagiwara.

Other material. SMP-1671, 2 ovig. ♀♀ (CL 5.8, 6.8 mm), Banda, Tateyama, Boso Peninsula, intertidal, 25 May 1998, coll. K. Tsuchiya.

Description.—Moderately large alpheid shrimp. Body (Figs. 1A, 5) robust. Rostrum absent (Fig. 2A). Carapace (Figs. 1A, 2A, 2B) with frontal margin exceeding anterolateral margin, moderately indented medially; dorsal surface with scattered very short setae; orbital hood well developed, unarmed anteriorly; anterolateral margin unarmed; pterygostomian angle broadly rounded; cardiac notch distinct.

Abdomen (Fig. 1A) rounded dorsally, four anterior somites with pleura broadly rounded, that of fifth somite rectangular posteroventrally; dorsal surface of each somite with sparse very short setae. Sixth somite 0.2–0.3 times as long as carapace, with articulated triangular posteroventral flap; posterolateral process blunt. Telson (Fig. 2J) 0.4 times as long as carapace, 1.7–1.9 times as long as anterior width; dorsal surface with sparse, very short setae and 2 pairs of moderately strong spines, anterior pair arising from midlength; lateral margins nearly parallel in anterior half, slightly convergent in posterior half; posterior margin strongly convex, with numerous long setae and 2 pairs of spines at each posterolateral corner, mesial spines much longer than lateral spines, and exceeding posterior margin of telson.

Eyes (Figs. 2A, B) covered by anterior part of carapace in dorsal and lateral views, fully exposed in anterior view; ocular peduncle with small dorsal spine.

Antennular peduncle (Figs. 2A–C) relatively robust, about half of carapace length, overreaching distal margin of blade of antennal scaphocerite. Stylocerite reaching 0.6–0.9 length of second segment, terminating in acute spine; first segment with strong subdistal tooth on ventromesial margin, laterodistal margin produced in triaugular process; second segment 1.7–2.4 times as long as distal width and 1.2–1.6 times as long as visible part of first segment; third segment subequal to visible part of first segment. Lateral flagellum (Fig. 1A) shorter than carapace, branches fused for 10–14 articles, shorter, aesthetascs-bearing branch composed of 2–4 articles; mesial flagellum subequal to carapace length.

Antenna (Figs. 2A, B, D) with basicerite bearing strong ventrolateral tooth, slightly overreaching distal margin of first segment of antennular peduncle, anterodorsal margin produced in small blunt process. Scaphocerite 2.7–3.2 times as long as wide; lateral margin nearly straight; distolateral tooth strong, distinctly overreaching distal margin of rounded blade. Carpocerite subcylindrical, 4.0–4.5 times as long as wide, overreaching distal end of antennular peduncle. Flagellum (Fig. 1A) distinctly longer than carapace, stout, somewhat flattened.

Mandible (Fig. 1B) with 2-segmented palp, distal segment rounded, with numerous long setae marginally; incisor process with 5 blunt teeth; molar process with 4 clusters of dense short setae on mesial face. Maxillule (Fig. 1C) with bilobed palp, lateral lobe narrower than mesial lobe, bearing 5 long setae, mesial lobe bearing 1 long apical bristle; distal endite subovate, with double row of small spines and stiff setae on mesial margin; proximal endite slender, with cluster of spiniform setae distally. Maxilla (Fig. 1D) with short palp; distal endite bilobed, with row of long setae marginally; proximal endite composed of single small lobe;

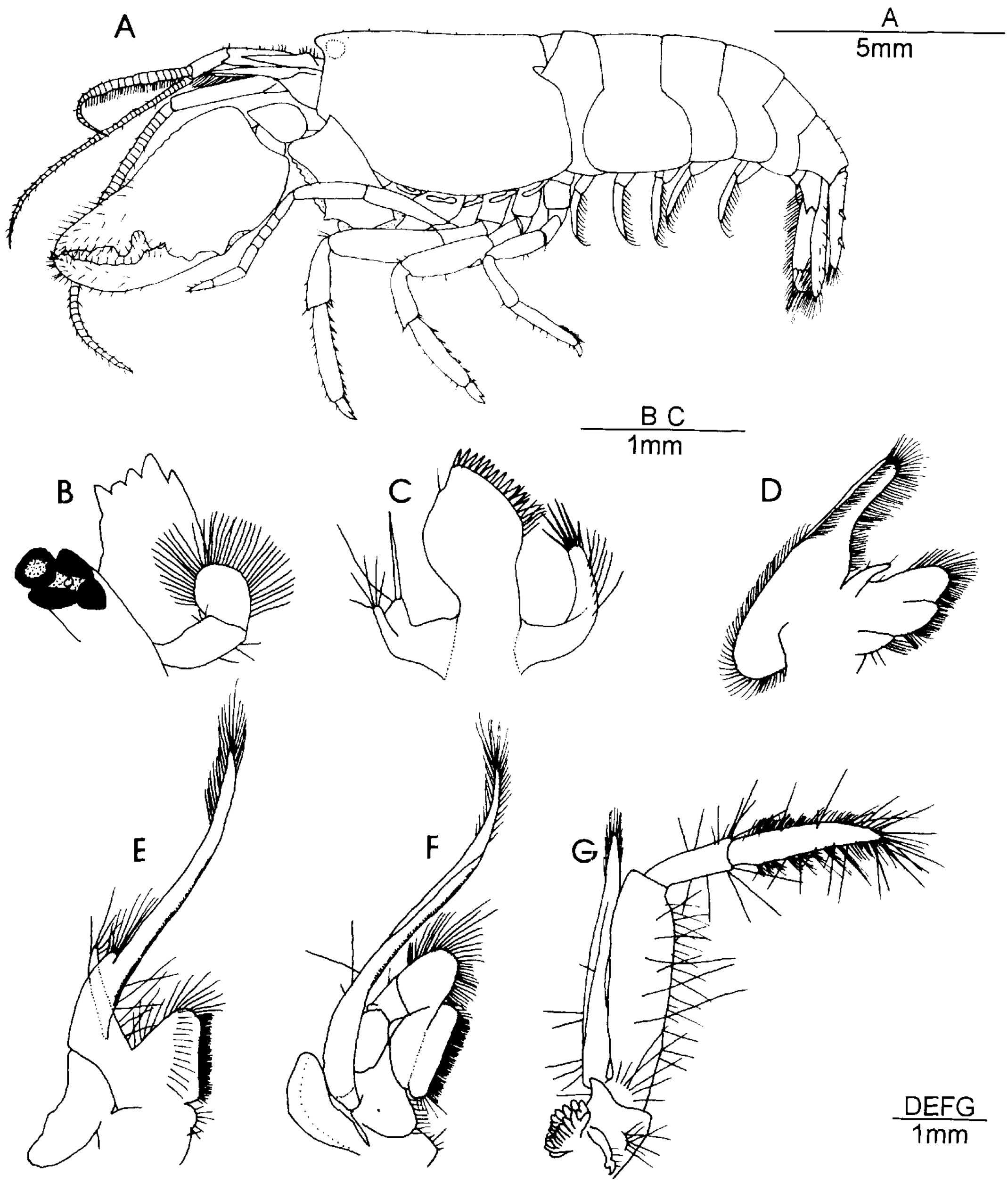

Fig. 1. *Betaeus gelasinifer* new species: A, paratype male (CBM-ZC 5209, CL 6.8 mm), lateral view; B–G, paratype male (RMNH D 48601a, CL 7.1 mm), right mouthparts: B, mandible; C, maxillule; D, maxilla; E, first maxilliped; F, second maxilliped; G, third maxilliped.

scaphognathite with anterior lobe narrowed distally. First maxilliped (Fig. 1E) with long, slender palp, overreaching distal margin of distal endite; distal endite with slightly concave mesial margin; proximal endite narrow, with sparse setae on mesial margin; exopod with narrow caridean lobe, flagellum long, with numerous plumose setae distally; epipod large, slightly bilobed. Second maxilliped

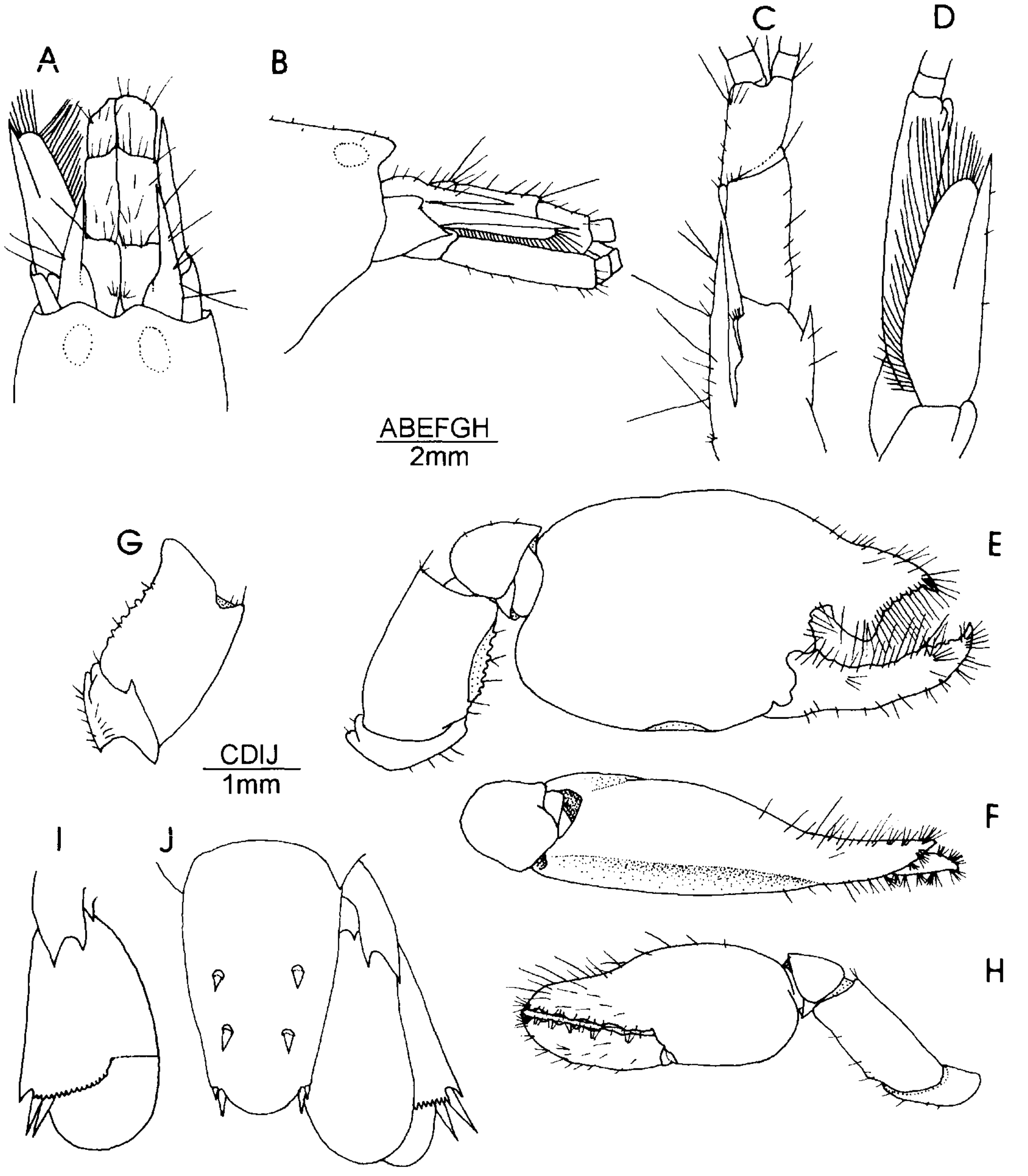

Fig. 2. *Betaeus gelasinifer* new species, holotpe male (RMNH D 48600, CL 5.9 mm): A, anterior part of carapace and cephalic appendages, dorsal; B, same, lateral; C, antennule, ventral; D, antenna, dorsal; E, right first cheliped, lateral; F, same, chela, dorsal; G, same, merus and ischium, mesial; H, left first cheliped, lateral; I, uropodal exopod, dorsal, setae omitted; J, telson and right uropods, dorsal, setae omitted.

(Fig. 1F) with dactyl narrow, with dense setae on mesial margin; exopod long, with numerous plumose setae distally; epipod suboval. Third maxilliped (Fig. 1G) stout, slightly falling short of or reaching distal margin of antennular peduncle: ultimate segment 5.6 times as long as deep, tapering distally, with numerous transverse rows of serrulate stiff setae on dorsal and mesial faces, distal margin with tuft of long stiff setae and 0–3 short spines; penultimate segment about half length of ultimate segment, with long setae on distal margin; antepenultimate segment 1.5 times as long as ultimate segment, becoming flat proximally, with sharply edged ventromesial margin; basis short, separated from antepenultimate segment with distinct suture; coxa with prominent, hooked process arising from anterolateral angle; exopod well developed, distinctly overreaching distal margin of antepenultimate segment; epipod with terminal hook.

First pereiopods (Fig. 1A) usually equal or subequal, not carried flexed in both sexes. Chelae (Figs. 2E–H, 4A–D) considerably variable in shape and armature of cutting edges of fingers; 0.7–1.1 times as long as carapace, 1.9–2.3 times longer than greatest depth; strongly compressed laterally, inverted, thus dactyl on ventral side. Dactylus 0.7–1.2 times as long as palm, slightly to noticeably curved dorsally, terminating in acute or subacute tip; ventral surface with scattered setae and few tufts of setae distally; lateral surface with few tufts of setae distally and row of simple long setae or row of tufts of short setae; mesial surface with row of simple setae or tufts of setae adjacent to cutting edge; cutting edge in usual males slightly protuberant distally and with few small, blunt teeth proximally; cutting edge in females and part of male (Fig. 2H) with row of low blunt or obtuse teeth interspersed by thin ridges. Palm with dorsal profile slightly sinuous to nearly convex (including fixed finger) in lateral view; dorsal surface bluntly ridged, smooth or sometimes with row of low tubercles; lateral face nearly flattened, naked, mesial face convex with scattered short setae, both faces smooth, without granules or tubercles; ventral surface usually with shallow excavation somewhat proximal to base of dactylus. Fixed finger broadly based, terminating in acute or subacute tip, crossing with tip of dactylus; dorsal surface with scattered short or long setae; lateral face with scattered setae and row of numerous tufts of short to long setae adjacent to cutting edge; cutting edge in males usually armed with very large tooth just proximal to midlength and deep notch just proximal to large tooth; cutting edge in females and part of male with row of low subacute or blunt teeth insterspersed by thin ridges. Carpus short, cup-shaped, with minute setae on surfaces. Merus 1.5–2.0 times longer than greatest depth, triangular in cross section; dorsal margin bluntly ridged, produced distally in blunt or subacute process; lateral face without setae, ventrodistal angle forming broadly rounded process, ventrolateral margin sinuous with strong tubercle proximally; mesial face without setae, ventrodistal angle slightly produced, ventromesial margin with row of small tubercles and few short setae; ventral surface shallowly concave, without setae. Ischium with dorsal surface uneven; lateral face unarmed; mesial face with small to large tubercle or spine arising from midlength of distal margin or unarmed; ventral surface with few low tubercles distally or unarmed, but with rows of setae.

Second pereiopod (Fig. 3A) overreaching distal margin of antennal carpocerite by half length of dactylus. Chela about 3.5 times as long as wide. Dactylus subequal in length to palm, terminating in tiny, simple claw; cutting edge sharp. Fixed finger terminating in tiny, simple claw; cutting edge sharp, with row of minute spinules. Carpus 1.2 times as long as merus, divided in 5 articles, first article 2.3–2.4 times as long as second article. Merus and ischium about 5 times as long as greatest depth. Ischium subequal in length to carpus.

Third pereiopod (Fig. 3B) robust, overreaching distal margin of antennal carpocerite by length of dactylus. Dactylus

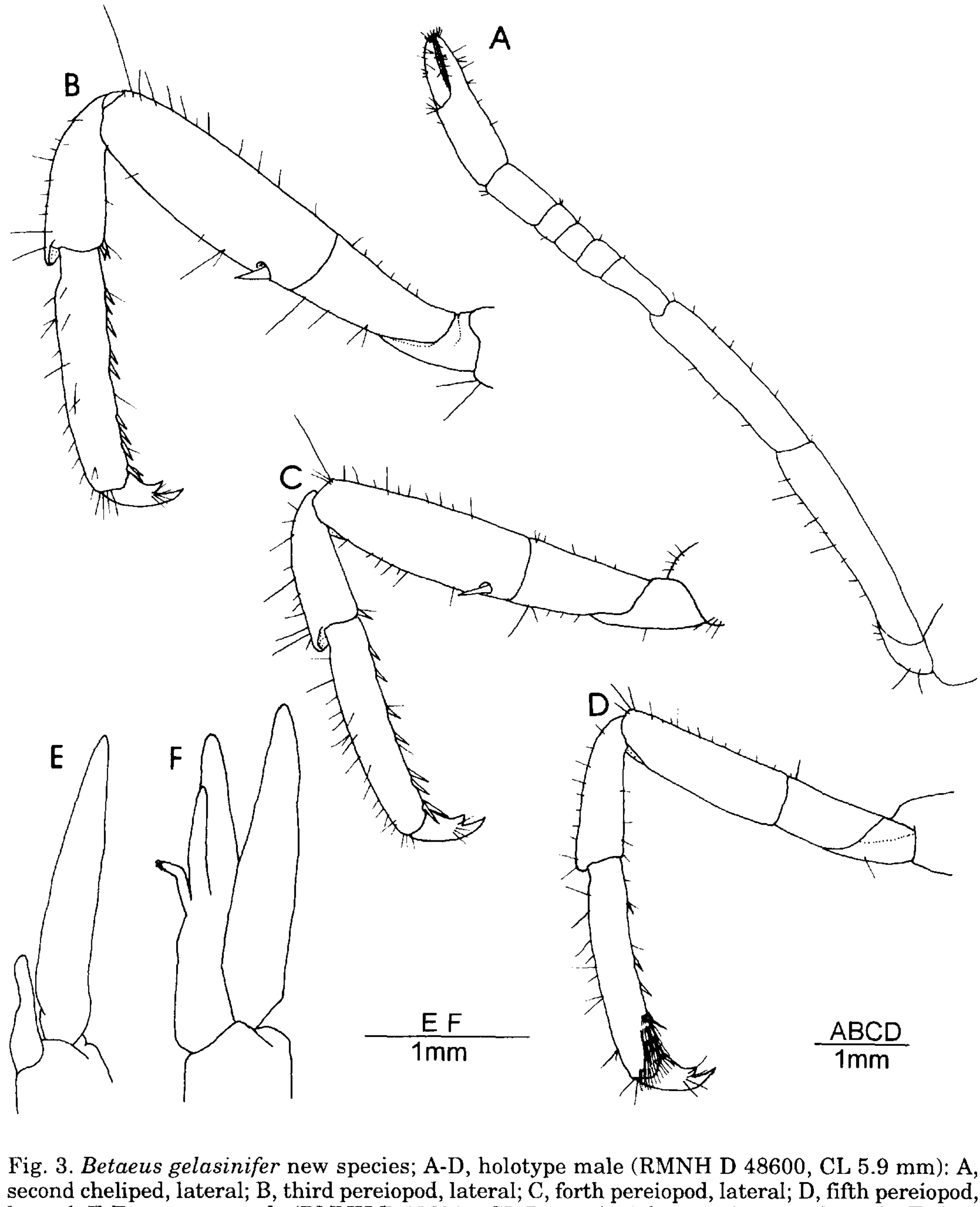

Fig. 3. *Betaeus gelasinifer* new species; A-D, holotype male (RMNH D 48600, CL 5.9 mm): A, second cheliped, lateral; B, third pereiopod, lateral; C, forth pereiopod, lateral; D, fifth pereiopod, lateral. E-F, paratype male (RMNH D 48601a, CL 7.1 mm), right anterior two pleopods: E, first pleopod, setae omitted; F, second pleopod, setae of endopod and exopod omitted.

about 1/4–1/3 times as long as propodus, twice length of proximal depth, distinctly biunguiculate, flexor unguis less than half length of distal unguis. Propodus strongly compressed laterally, slightly narrowed distally, about 5.0 times longer than greatest depth; extensor surface with sparse tufts of short setae; flexor surface with 8–10 spines arranged in double row and 2 or 3 distal spines. Carpus about 3.0 times as long as deep, becoming deeper distally; extensor surface with sparse setae; flexor distal margin with 1 or 2 spines. Merus weakly compressed laterally, 2.8–3.5 times as long as greatest depth across midlength, with strong ventrolateral spine arising from slightly distal to proximal margin; dorsal margin slightly convex, with sparse setae. Ischium unarmed, 1.3–1.9 times as long as distal depth.

Fourth pereiopod (Fig. 3C) similar to third pereiopod in shape and armature, but somewhat shorter, overreaching anterior margin of antennal basicerite by length of dactylus; flexor surface of propodus with 5–9 spines arranged in double row and 2 distal spines; flexor distal margin of carpus unarmed or armed with 1 spine; merus with strong ventrolateral spine. Fifth pereiopod (Fig. 3D) shorter than fourth pereiopod, overreaching anterolateral margin of carapace by length of dactylus; propodus laterally or ventrolaterally with transverse rows of short, fine setae in distal 0.3, flexor surface with 4–6 spines arranged in single row and 1 or 2 distal spines; carpus and merus unarmed.

Branchial formula summarized in Table 1.

Male first pleopod (Fig. 3E) with small endopod tapering distally to rounded apex, with several plumose setae; exopod slender. Male second pleopod (Fig. 3F) with appendix masculina 5.6 times as long as proximal width, 0.4 times as long as endopod, bearing scattered long spiniform setae in distal two-thirds; appendix interna small, half length of appendix masculina.

Uropod (Fig. 2I, J) with protopod ending in 2 dorsal, pointed lobes, lateral lobe longer than mesial lobe. Endopod overreaching posterior margin of telson by 0.3 length. Exopod with straight lateral margin, bearing 1 or 2 large movable spines just mesial to posterolateral tooth; diaeresis (Fig. 2I) with about 20 small fixed spines.

Variation.—This new species exhibits a considerable variation in morphology of the chelae of the first pair of pereiopods. Among the 16 examined specimens with intact first pereiopods (six males and 10 females), 13 specimens (four males and nine females) have equal or subequal first pair of pereiopods, and the remaning three (two males and one female) have distinctly unequal first pereiopods. Regarding the armature of the cutting edge, four forms can be categorized as follows.

Form A (Fig. 4A): the cutting edge of the dactylus is armed with row of low teeth interspersed by thin ridges; the cutting edge of the fixed finger is also armed with row of low teeth interspersed by thin ridged; there is no hiatus between the dactylus and fixed finger.

Form B (Fig. 4B): the cutting edge of the dactylus is armed with small blunt teeth and a shallow notch at about the midlength; the cutting edge of the fixed finger bears a prominent notch slightly proximal to the midlength and the re-

Table 1. Branchial formula of *Betaeus gelasinifer* new species.

	Maxillipeds			Pereiopods				
	1	2	3	1	2	3	4	5
Pleurobranch	–	–	–	+	+	+	+	+
Arthrobranch	–	–	+	–	–	–	–	–
Podobranch	–	–	–	–	–	–	–	–
Setobranch	–	–	–	+	+	+	+	+
Epipod	+	+	h	h	h	h	h	–
Exopod	+	+	+	–	–	–	–	–

h: hook-like epipods

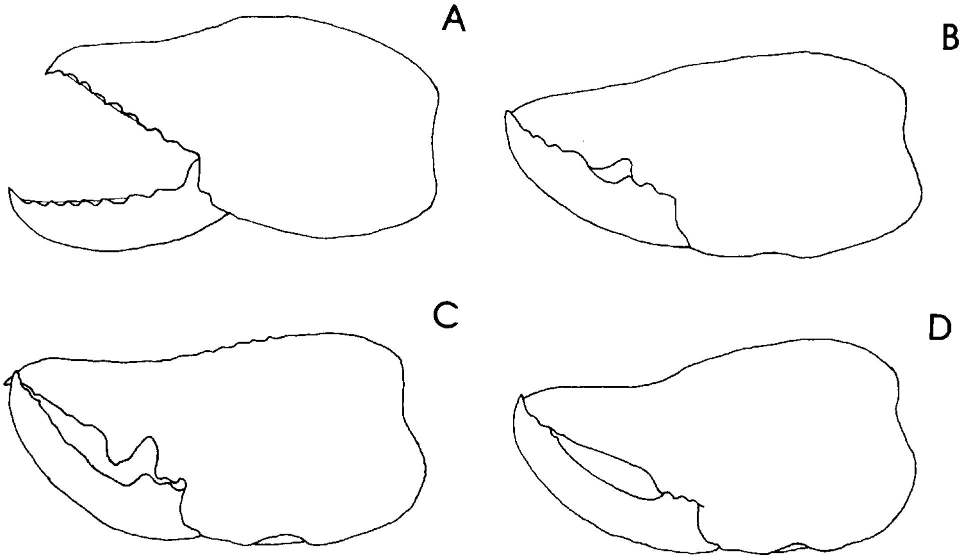

Fig. 4. Four forms of chelae of first pereiopods of *Betaeus gelasinifer* new species: A, SMP-1671 (ovig. female, CL 5.8 mm); B, RMNH D 48601e (ovig. female, CL 6.1 mm); C, CBM-ZC 5209a (male, CL 6.8 mm); D, RMNH D 48601a (male, CL 7.1 mm).

maining margin is armed with a row of low teeth; there is a small hiatus between the dactylus and fixed finger.

Form C (Fig. 4C): the cutting edge of the dactylus is slightly protuberant distally and bears a few blunt teeth proximally; the cutting edge of the fixed finger is armed with a prominent blunt tooth and a deep notch just proximal to the large tooth; there is a prominent hiatus between the dactylus and fixed finger.

Form D (Fig. 4D): the cutting edge of the dactylus is slightly protuberant distally and bears a few blunt teeth proximally; the cutting edge of the fixed finger is armed only with a few small teeth proximally, lacking tooth or notch; there is a prominent hiatus between the dactylus and fixed finger.

The relation between the combination of the forms of the chela and size (indicated by the carapace length) is summarized in Table 2. Among the six male specimens, three have the combination CC, two have the combination AC; and one, the largest specimen (CL 7.1 mm) has the combination DD. Among the 10 females, nine have the combination AA, and one has the combination AB. From the specimens available for examination, it is suggested that this new species normally has equal first pereiopods and that the armature of the chela is sexually dimorphic. The female (RMNH D 48601e; CL 6.1 mm) appears to be rather abberant, because it has the combination AB. Regarding the male specimens with unequal chelae, there is a possibility that the smaller chela (form A) may be in the process before changing to the adult form (form C). It is recommended to examine more abundant specimens to evaluate the morphological variability of this species.

The presence or absence of an excavation on the ventral surface of the palm of the first pereiopods also shows variation (Table 2). In males, the excavation is absent from smaller chela (Form A) only in the case of unequal condition. In females, the presence or absence of the excavation is quite variable as shown Table 2.

Measurements.—Both sexes reach up to CL 7.1 mm and about 20.0 mm in total length.

Table 2. Relation between size and morphology of the first chelae of *Betaeus gelasinifer* new species.

Specimens No.	Sex	CL (mm)	Size of left and right chelae	Form of chela [1] (Relative size)		Excavation on ventral surface of palm of 1st chela	
				left	right	left	right
MNHN-Na 13605a	♂	4.8	equal	C	C	+	+
RMNH D 48601b	♂	5.5	equal	C	C	+	−
HSM-Crm-0078	♂	5.6	unequal	A (smaller)	C (larger)	−	+
RMNH D 48600	♂	5.9	unequal	C (larger)	A (smaller)	+	−
CBM-ZC 5209a	♂	6.8	equal	C	C	+	+
RMNH D 48601a	♂	7.1	subequal	D	D	+	+
MNHN-Na 13605b	ovig. ♀	4.5	equal	A	A	+	+
CBM-ZC 5209e	ovig. ♀	4.6	equal	A	A	−	−
CBM-ZC 5209c	♀	4.7	equal	A	A	+	−
MNHN-Na 13605c	ovig. ♀	5.2	equal	A	A	−	−
RMNH D 48601d	ovig. ♀	5.3	equal	A	A	+	+
SMP-1671b	ovig. ♀	5.8	equal	A	A	−	−
NFU530-2-2132	ovig. ♀	5.8	equal	A	A	+	+
RMNH D 48601e	ovig. ♀	6.1	unequal	A (smaller)	B (larger)	−	+
SMP-1671a	ovig. ♀	6.8	equal	A	A	+	+
CBM-ZC 5209d	ovig. ♀	7.1	equal	A	A	+	+

[1] See text and Fig. 4

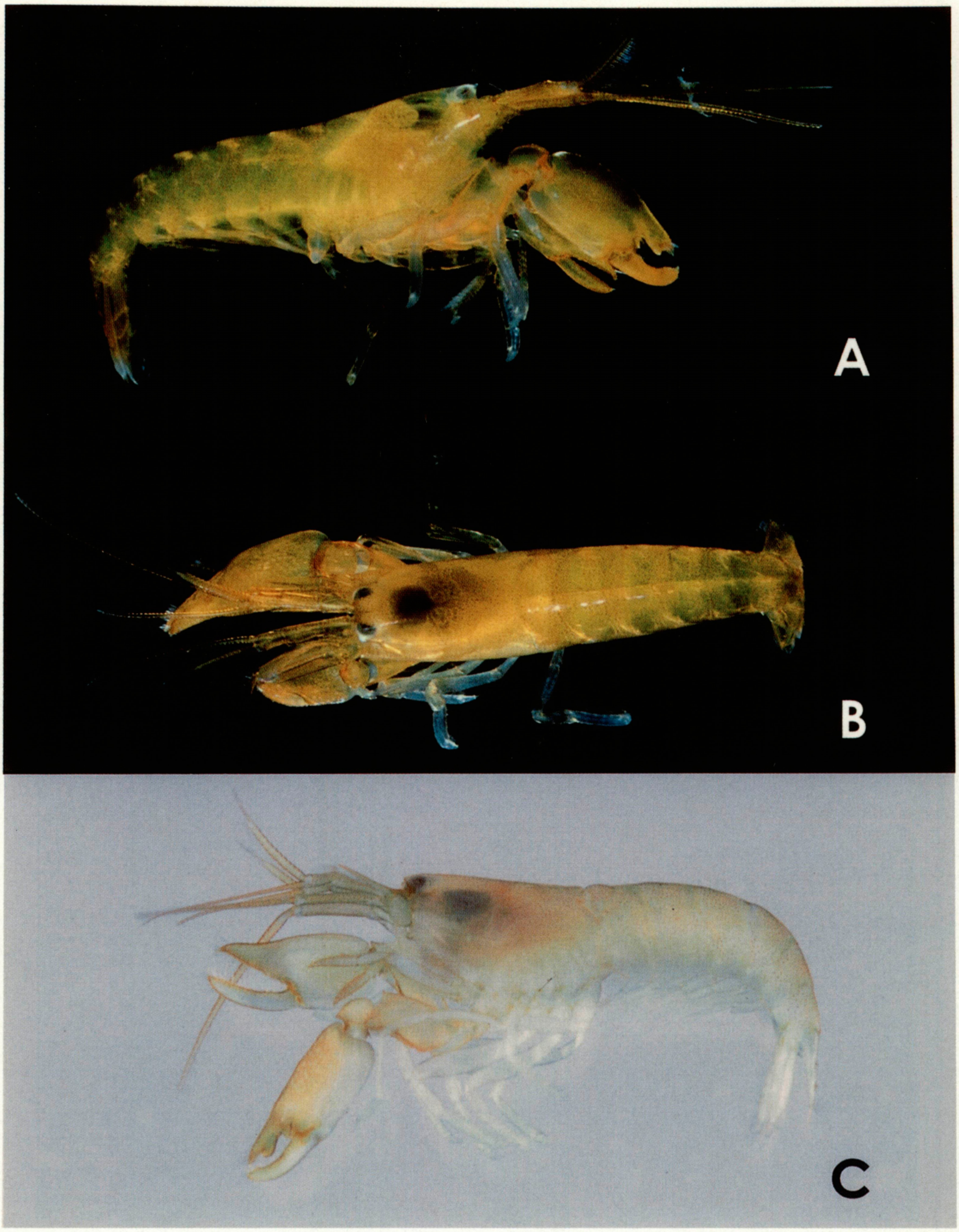

Fig. 5. *Betaeus gelasinifer* new species: A, holotype male (RMNH D 48600, CL 5.9 mm), lateral; B, same, dorsal, photo by K. Nomura; C, paratype male (HMS-Crm-0078, CL 5.6 mm), lateral, photo by K. Hagiwara.

Coloration.—Body and appendages of the holotype (Fig. 5A, B) are uniformly transparent orange in life. The paratype (Fig. 5C; HSM-Crm-0078) is uniformly pale olive green. Both specimens bear fine dark orange spots on the dorsal surfaces.

Habitat.—In Boso Peninsula, *Betaeus gelasinifer* was commonly found in the

Table 3. Distinguishing characters and distribution of the species of the genus *Betaeus*.

Species	Frontal margin of carapace	Lateral surface of palm of 1st chela	Excavation onv entral surfaceof palm of 1st chela	Dactyli of posterior 3 pereiopods	Extension of posterolateral spine of telson against posterior margin of telson	Diaeresis of uropod	Posterior margin of uropodal endopod against posterior margin of telson	Distribution (Literature)
B. australis Stimpson	strongly convex	with brush hairs dorsally	absent	simple	not exceeding	?	?	south to southeastern Australia (Banner & Banner, 1973)
B. emarginatus (H. M. Edwards)	slightly indented	granulated	absent	both margins with tooth	not exceeding	smooth	exceeding	Pacific coast of Chile (Holthuis, 1952)
B. ensenadensis Glassel	convex	finely denticulated	absent	simple	exceeding	serrated	exceeding	Pacific coast of North America (Hart, 1964)
B. gelasinifer new species	indented	smooth	usually present	biunguiculate	exceeding	serrated	exceeding	Pacific coast of central Japan
B. gracilis Hart	deeply indented	smooth	absent	biunguiculate	exceeding	serrated	exceeding	Pacific coast of North America (Hart, 1964)
B. granulimanus Yokoya	deeply indented	granulated	absent	obscurely biunguiculate	not exceeding	with 1 tooth	exceeding	Japan, Korea, China (Yokoya, 1927; Miya, 1972)
B. harfordi (Kingsley)	indented	smooth	absent	biunguiculate	not exceeding	serrated	reaching	Pacific coast of North America (Hart, 1964)
B. harrimani Rathbun	convex	granulated and spinulated	absent	simple	exceeding	serrated	exceeding	Pacific coast of North America (Hart, 1964; Jensen, 1995)
B. jucundus Barnard	slightly convex	with 3 small tubercles	absent	simple	?	smooth	?	South Africa (Barnard; 1947, 1950)
B. lilianae Boschi	slightly convex	granulated and spinulated	absent	simple	not exceeding	smooth	exceeding	Atlantic coast of South America (Boschi, 1966)
B. longidactylus Lockington	convex	finely spinulated	absent	simple	exceeding	serrated	exceeding	Pacific coast of North America (Hart, 1964; Jensen, 1995)
B. macginitieae Hart	convex	smooth	absent	biunguiculate	not exceeding	serrated	exceeding	Pacific coast of North America (Hart, 1964; Jensen, 1995)
B. pingi Yu	slightly indented	granulated	absent	simple	not exceeding	with 1 tooth	reaching	Yellow Sea coast of China (Yu, 1930)
B. setosus Hart	deeply indented	pubescent	absent	biunguiculate	exceeding	serrated	exceeding	Pacific coast of North America (Hart, 1964; Jensen, 1995)
B. truncatus Dana	convex	granulated	absent	simple	not exceeding	smooth	reaching	Pacific and Atlantic coast of South America (Holthuis, 1952; Boschi, 1966)

back of rock crevices in the intertidal zone, where it was emersed at low tide, and usually occurred in male-female pairs. The congeneric *Betaeus granulimanus* sometimes occurred sympatrically, but it seem to prefer cryptic habitats under large stones or boulders in tide pool. The new species was also observed between stones at the intertidal zone near the mouth of the Hamana Lake, Shizuoka Prefecture (M. Itoh, personal communication). This location was in an estuary.

Distribution.—So far known only from Hamana Lake, Miura and Boso Peninsula, the Pacific coast of central Honshu, Japan. These locations are in the warm temperate region.

Etymology.—The specific epithet is a combination of the Latin words, *gelasinus* (= dimple) and *fero* (= bear), in reference to the characteristic excavation on the ventral surface of the palm of the first chela.

Remarks.—The genus *Betaeus* is represented by 14 recognized species, the distinguishing characters and the distribution of these species are summarized in Table 3. The indented frontal margin of the carapace links *Betaeus gelasinifer* to the following six species: *B. emarginatus* (H. M. Edwards, 1837) known from Chile; *B. harfordi* (Kingsley, 1877) from California to Mexico; *B. granulimanus* Yokoya, 1927 from Japan, Korea and China; B. pingi Yu, 1930 from the Yellow Sea coast of China; *B. gracilis* Hart, 1964 from California; *B. setosus* Hart, 1964 from British Columbia to California. The usual presence of a shallow excavation on the ventral surface of the palm of the first pereiopod appears characteristic of the new species. Further, the smooth palm of the first pereiopod, which is devoid of granules or tubercles, immediately distinguishes *Betaeus gelasinifer* from *B. emarginatus*, *B. granulimanus* and *B. pingi*. From *B. harfordi*, the new species differs in having the much more elongate mesial spine on the posterolateral corner of the telson, which overreaches distinctly the posterior margin of the telson. The endopod of the uropod overreaches the posterior margin of the telson by the 0.3 length in the new species, rather than about 0.1 length in *B. harfordi*. The less deeply indented frontal margin of the carapace distinguishes *B. gelasinifer* from *B. gracilis* and *B. setosus*. Further, *B. setosus* is easily separated from the new species by the densely setose carapace, antennae and pereiopods.

Although two nominal species, *B. yokoyai* Kubo, 1936, and *B. murayamai* Yokoya, 1936, were described from the Pacific coast of central Japan, Miya (1972) concluded that they were synonymous with *B. granulimanus*. We agree with Miya's opinion.

The taxonomic position of the two taxa described from the Far East Russia, *Betaeus levifrons* Vinogradov, 1950, and *B. vladivostokiensis* Vinogradov, 1950, remains unclear, because the original descriptions of these taxa are too brief to provide adequate information for establishing specific identity. However, *Betaeus levifrons* is clearly different from *B. gelasinifer* in having a convex frontal margin of the carapace. Moreover, there is a possibility that *B. vladivostokiensis* might be actually referred to the genus *Alpheus* because of the presence of the distinct rostrum and the well developed orbital hood on the carapace.

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