

# Taxonomic Notes on Some Korean Species of the Genus *Ampelisca* (Amphipoda, Ampeliscidae)

Young Hyo Kim, Ye Eun and Kyung Sook Lee\*

Department of Biological Science, College of Advanced Sciences, Dankook University, Cheonan 330-714, Korea

**Key Words:**

*Ampelisca*  
Ampeliscidae  
Amphipoda  
Korea

While examining specimens collected in the shallow waters of Korea from 1995 to 2004, we found that *Ampelisca bocki* Dahl and *A. naikaiensis* Nagata were newly added to Korean fauna. We also provide description for *A. brevicornis* (Costa) based on materials collected from Korea. As a result, six species of *Ampelisca* are reported in Korea.

Gammaridean amphipods are the most numerous and diverse group of the benthic crustaceans and very important as a food source for larger crustaceans and fish. Among them, the family Ampeliscidae is an important component of many littoral marine soft-bottom fauna. A total of 229 species from four genera (*Ampelisca*, *Byblis*, *Byblisoides* and *Haploops*) of Ampeliscids have been reported worldwide (Barnard and Karaman, 1991), including 19 Japanese ampeliscid species (Ishimaru, 1994), but only four species have been reported from Korea (Kim, 1991; Kim and Lee, 2003).

Among them, the genus *Ampelisca* Krøyer, 1842 is one of the most diverse genera. Although 153 species have been described from the world, only three species have been reported in Korea (Kim, 1991). *Ampelisca bocki* Dahl, 1945 and *A. naikaiensis* Nagata, 1959, new to Korea, are described in this study. *Ampelisca brevicornis* was recorded in Korea by Kim (1991). However, his figures were very briefly and without description. Therefore, the description for species is also provided in the present report on the basis of materials collected from Korea.

## Materials and Methods

We collected specimens mainly using a light-trap and scooping with a fine mesh hand-net from the shallow waters of Korea during 1995-2004. The specimens were fixed with 80% ethyl alcohol. Specimens were dissected in glycerol on cobb's aluminium hollow slide. Drawings and measurements were performed with the aid of a drawing tube. The body length was measured from the tip of rostrum to apex of the telson, along the dorsal margin of the body. All examined specimens were deposited in the Department of Biology, Dankook

University.

## Description

Order Amphipoda Latreille, 1816  
Suborder Gammaridea Latreille, 1803  
Family Ampeliscidae Costa, 1857  
Genus *Ampelisca* Krøyer, 1842

*Ampelisca bocki* Dahl, 1945  
(Figs. 1-2)

*Ampelisca bocki* Dahl, 1945, pp. 2-6, figs. 1-3; Nagata, 1959, p. 274; Nagata, 1965, p. 152; Imbach, 1967, p. 55.

## Material examined

2♂♂, Namchang (Haenam-gun), May 20, 1998, C. M. Lee; 1♂, Cheongsando Isl., May 22, 1998, C. M. Lee; 2♂♂, Nohwado Isl., May 23, 1998, C. M. Lee.

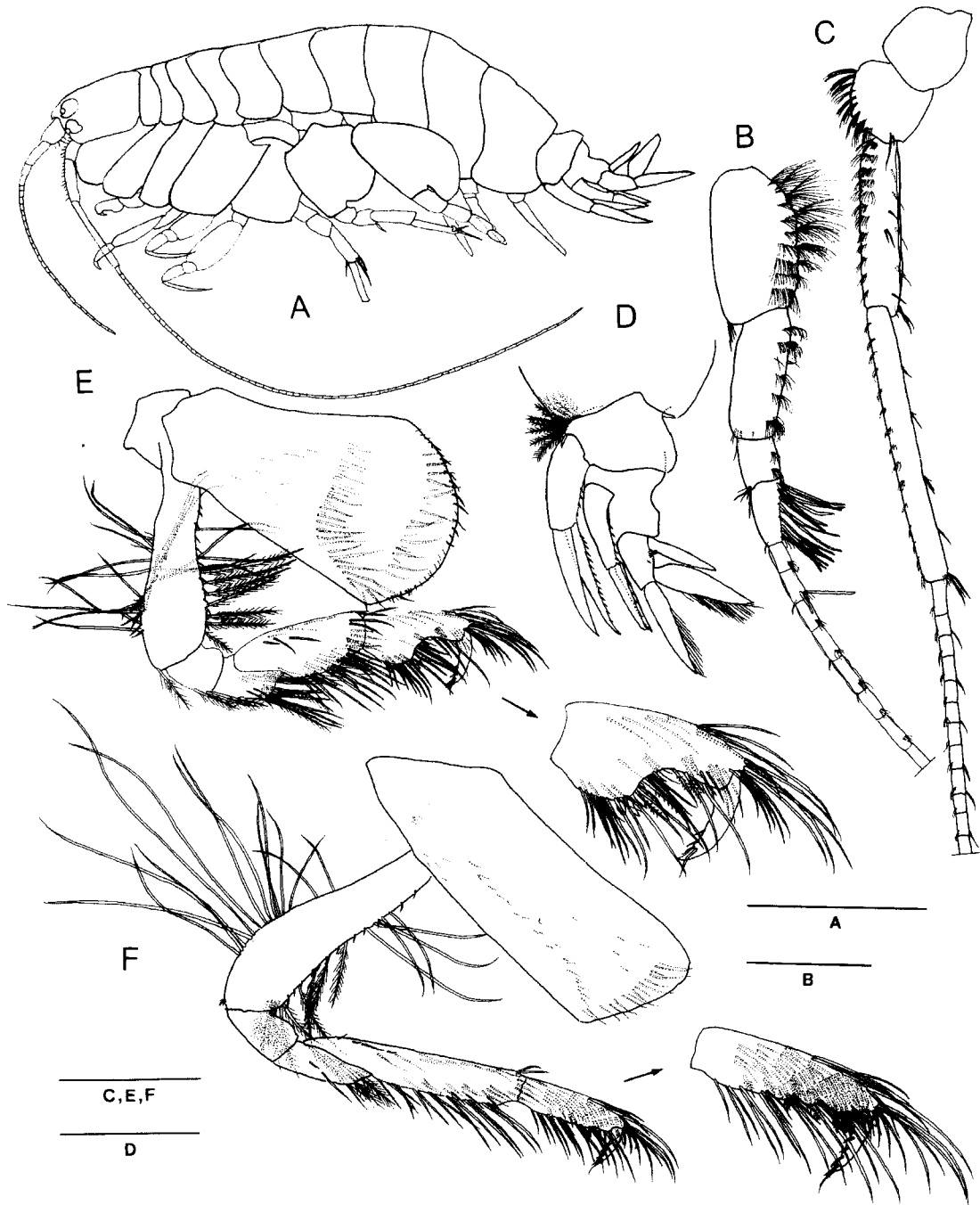
Adult male: Body length (Fig. 1A) about 7.3 mm, body smooth and rather slender; corneal lens of eyes two paired, visible laterally; the dorsal process of the first urosomal segment dorsally with a slight bend in front and behind raised (Fig. 1D).

Antenna 1 (Fig. 1B). Short, extending to peduncle of antenna 2; length ratio of peduncular articles 1-3=1:0.86:0.35; rows of setal tufts on the ventral edge of peduncle; its flagellum 26 segmented.

Antenna 2 (Fig. 1C). Slightly longer than the body; about 3 times longer than antenna 1; peduncular articles 1-3 short, peduncular article 4 shorter than 5; a row of setal tufts on the dorsal edge of peduncular article 3, 4 and 5; its flagellum 64 segmented.

Gnathopod 1 (Fig. 1E). Characteristic in form; propodus of the palm has a wide, shallow and rounded incision near the point of attachment of the dactylus; basis slightly longer than 1/3 the length of gnathopod 1,

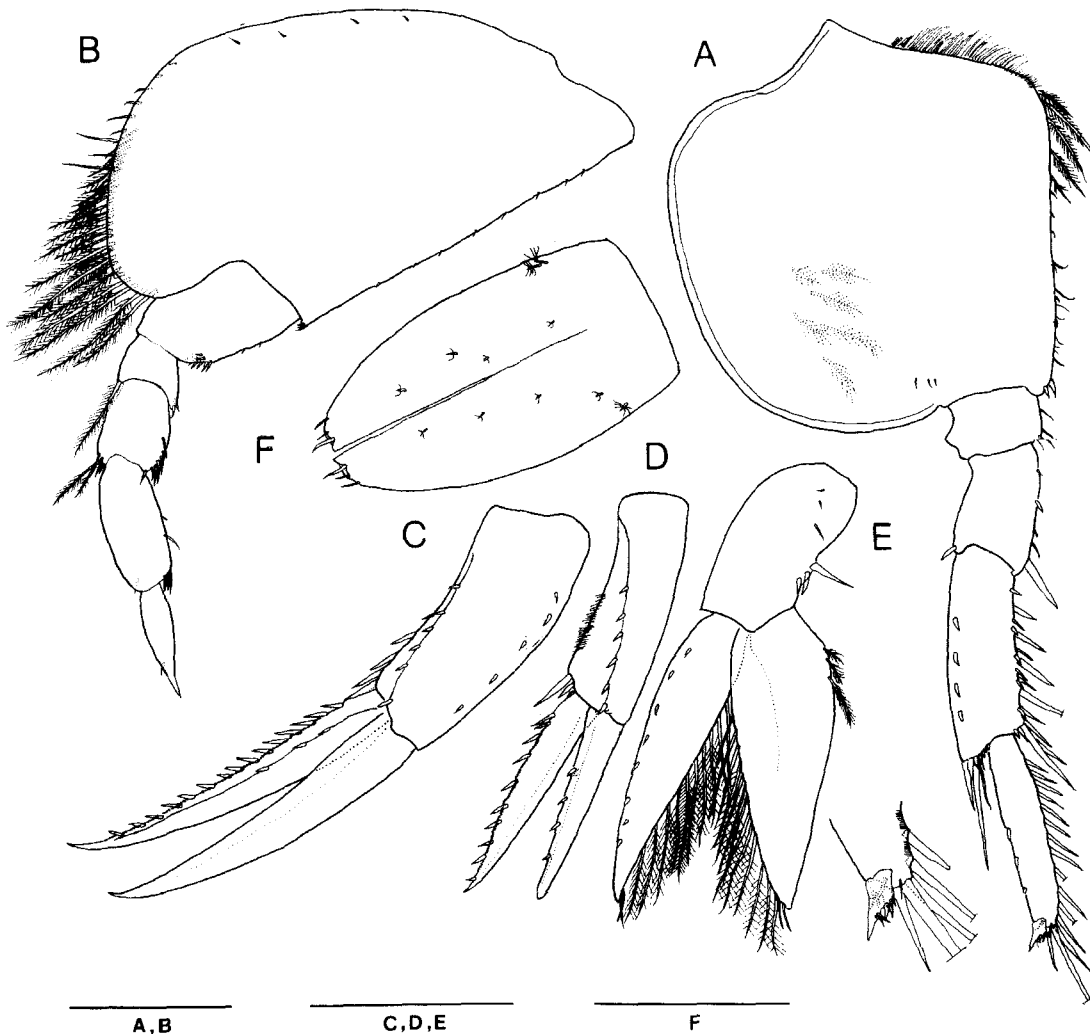
\*To whom correspondence should be addressed.  
Tel: 82-41-550-3449, Fax: 82-41-551-9229  
E-mail: marineboy@dankook.ac.kr



**Fig. 1.** *Ampelisca bocki* Dahl, 1945, Male. 7.3 mm. A, Habitus, lateral. B, Antenna 1. C, Antenna 2. D, Pleonal epimeron 3 and urosomites. E, Gnathopod 1. F, Gnathopod 2. Scale bars=0.3 mm (B), 0.5 mm (C, E, F), 1 mm (D), and 2 mm (A).

anterior margin with 8 plumose setae, 2 simple setae and 12 short setae, posterior margin with 1 plumose seta, 11 long simple setae and 8 short setae, 10 simple setae medially; ischium shorter than merus; propodus slightly shorter than carpus; posterior margin of merus, carpus and propodus with long and short setae; dactylus 0.54 times the length of propodus, with a few setules.

Gnathopod 2 (Fig. 1F). Slender; basis slightly longer than 1/3 the length of gnathopod 2, anterior margin with 10 plumose setae, 5 long and 12 short setae, posterior margin with 14 long simple setae; carpus 0.88 times the length of basis; propodus with numerous short setae on inner surface; dactylus 0.35 times the length of propodus, similar to one of gnathopod 1.



**Fig. 2.** *Ampelisca bocki* Dahl, 1945, Male. 7.3 mm. A, Pereopod 6. B, Pereopod 7. C, Uropod 1. D, Uropod 2. E, Uropod 3. F, Telson. Scale bars=0.3 mm (F) and 0.5 mm (A-E).

Pereopod 6 (Fig. 2A). Posterior lobe of basis is remarkably broad; anteroproximal margin of basis with 5 plumose setae and numerous fine setose; carpus as long as propodus, posterior margin with 4 spines; dactylus small, apex thin and acute.

Pereopod 7 (Fig. 2B). Posteroventral lobe of basis expanding ventrally, posterior margin oblique, with dense plumose setae, does not reach posterodistal margin of ischium; merus shorter than carpus, posterodistal margin with 1 plumose seta and 1 short seta; dactylus spiniform.

Uropod 1 (Fig. 2C). Fully reaching end of uropod 2; peduncle shorter than rami, outer ventral margin with one longitudinal row of 5 spines and dorsal margin with two longitudinal rows of 5 and 6 spines; inner ramus as long as outer ramus, dorsal margin with 15 spines, somewhat serrated; outer ramus without any ornament.

Uropod 2 (Fig. 2D). Peduncle as long as inner ramus,

dorsal margin with one longitudinal row of 6 spines and dorsodistal margin with 3 spines; inner ramus longer than outer ramus; dorsal margin of both rami somewhat serrated.

Uropod 3 (Fig. 2E). Peduncle shorter than rami; inner ramus slightly longer than outer ramus, ventral margin with 8 spines; dorsal margin of inner ramus and ventral margin of outer ramus with plumose setae.

Telson (Fig. 2F). Longer than its breadth, cleft to 4/5 of its length; each lobe bears a few pinnate setae on dorsal surface, distal end of each lobe with 1 spine and 2 spinules.

Remarks: Our specimens are congruent to Dahl's original description. However, a few morphological difference are found between our specimens and type specimens: (1) in the original description, distal end of

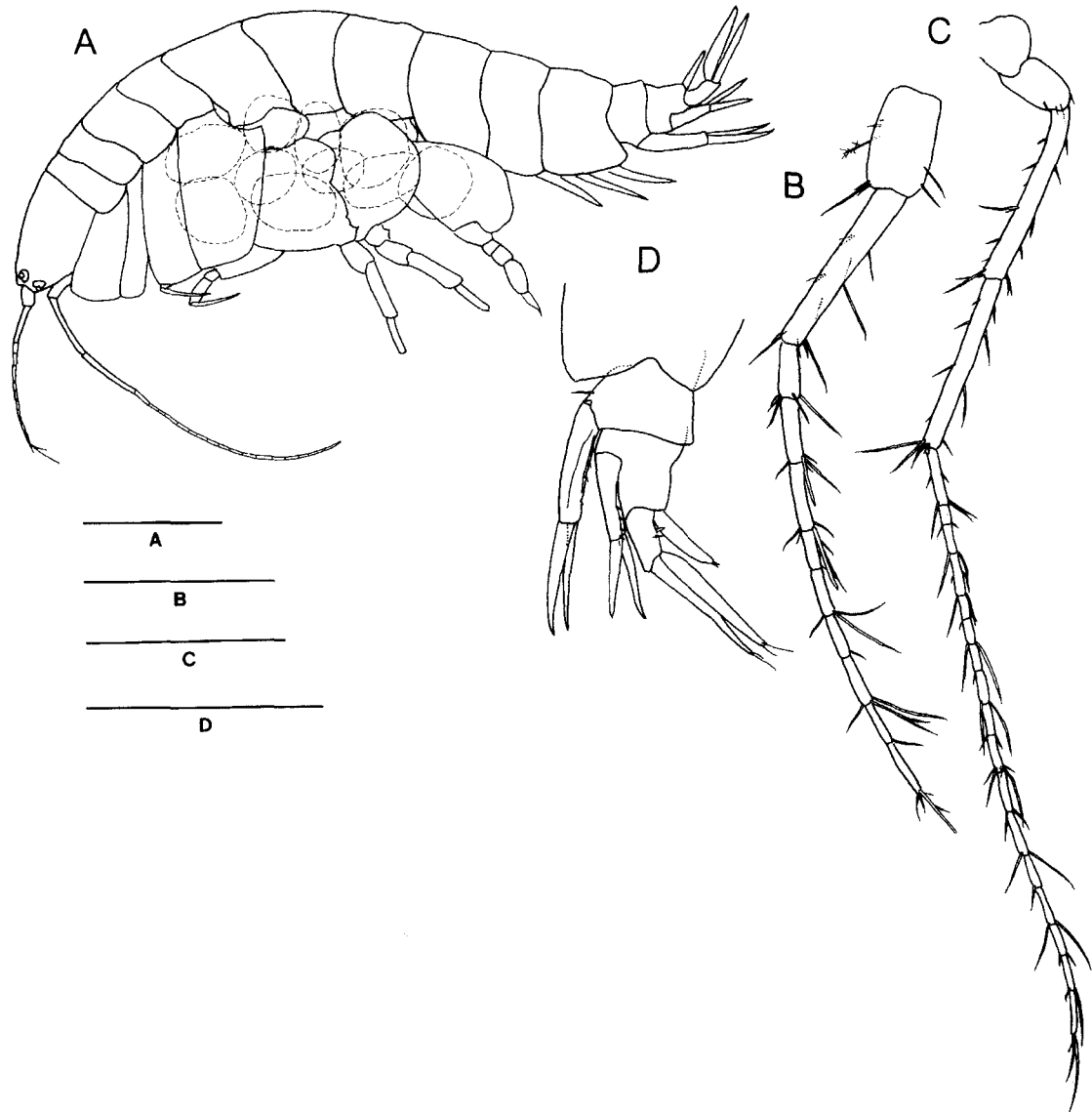


Fig. 3. *Ampelisca naikaiensis* Nagata, 1959, Female. 6.2 mm. A, Habitus, lateral. B, Antenna 1. C, Antenna 2. D, Pleonal epimeron 3 and urosomites. Scale bars=0.3 mm (B), 0.5 mm (C), and 1 mm (A, D).

telson covered with marginal hairs, while it is with 1 spine and 2 spinules in our specimens; (2) the telson is cleft to 3/4 of its length in the original description, while 4/5 in our specimens; (3) in the original description, third pleonal epimeron was with more quadrate posteroventral corner than our specimens.

*Ampelisca naikaiensis* Nagata, 1959  
(Figs. 3-4)

*Ampelisca naikaiensis* Nagata, 1959, pp. 270-274, figs. 6-8; Nagata, 1960, p. 168; Nagata, 1965, p. 153, figs. 4 (subfigs. 5-7).

#### Material examined

1♀, Geojedo Isl., June 27, 1995, B. J. Kang.

Adult female: Body length (Fig. 3A) about 6.2 mm; anterior edge of head slightly incised; lower front margin obliquely; posteroventral margin of pleonal epimeron 3 in parallel with dorsal process of the first urosomal segment (Fig. 3D).

Antenna 1 (Fig. 3B). Short, a little longer than head, extending somewhat the distal end of peduncle of antenna 2; length ratio of peduncular articles 1-3=1:1.78:0.54; flagellum 8 segmented.

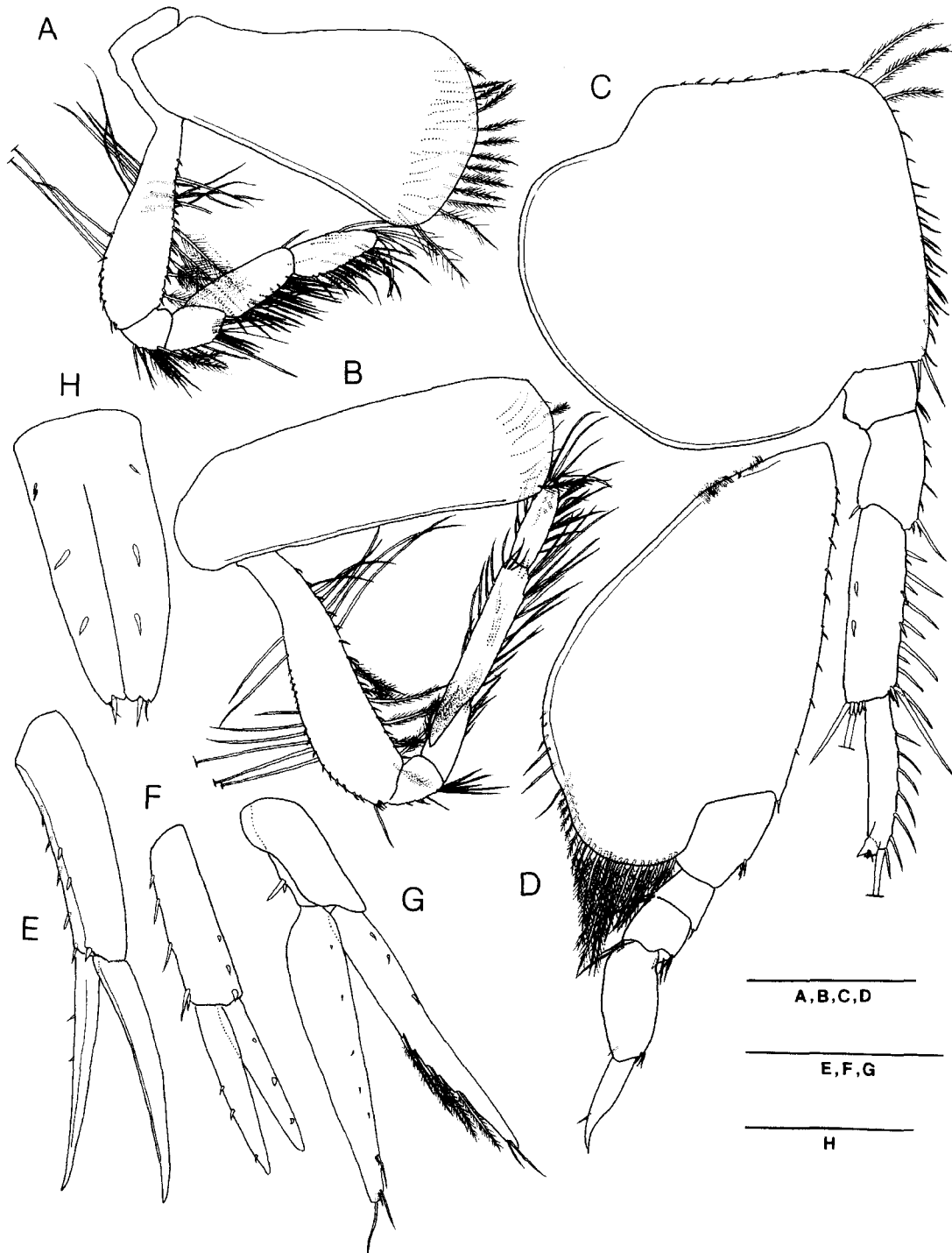


Fig. 4. *Ampelisca naikaiensis* Nagata, 1959, Female. 6.2 mm. A, Gnathopod 1. B, Gnathopod 2. C, Pereopod 6. D, Pereopod 7. E, Uropod 1. F, Uropod 2. G, Uropod 3. H, Telson. Scale bars=0.2 mm (H) and 0.4 mm (A-G).

Antenna 2 (Fig. 3C). Slender, with the length a half of body; article 4 subequal in length 5; its flagellum 17 segmented, 1.27 times as long as peduncle.

Gnathopod 1 (Fig. 4A). Rounded distal margin of coxa 1 with 13 plumose setae; basis slightly longer than 1/3 as

long as gnathopod 1, anterior margin with 5 plumose setae and 15 short setae, posterior margin with 8 long simple setae; ischium shorter than merus; propodus shorter than carpus; posterior margin of ischium, merus, carpus and propodus with long and short setae; dactylus

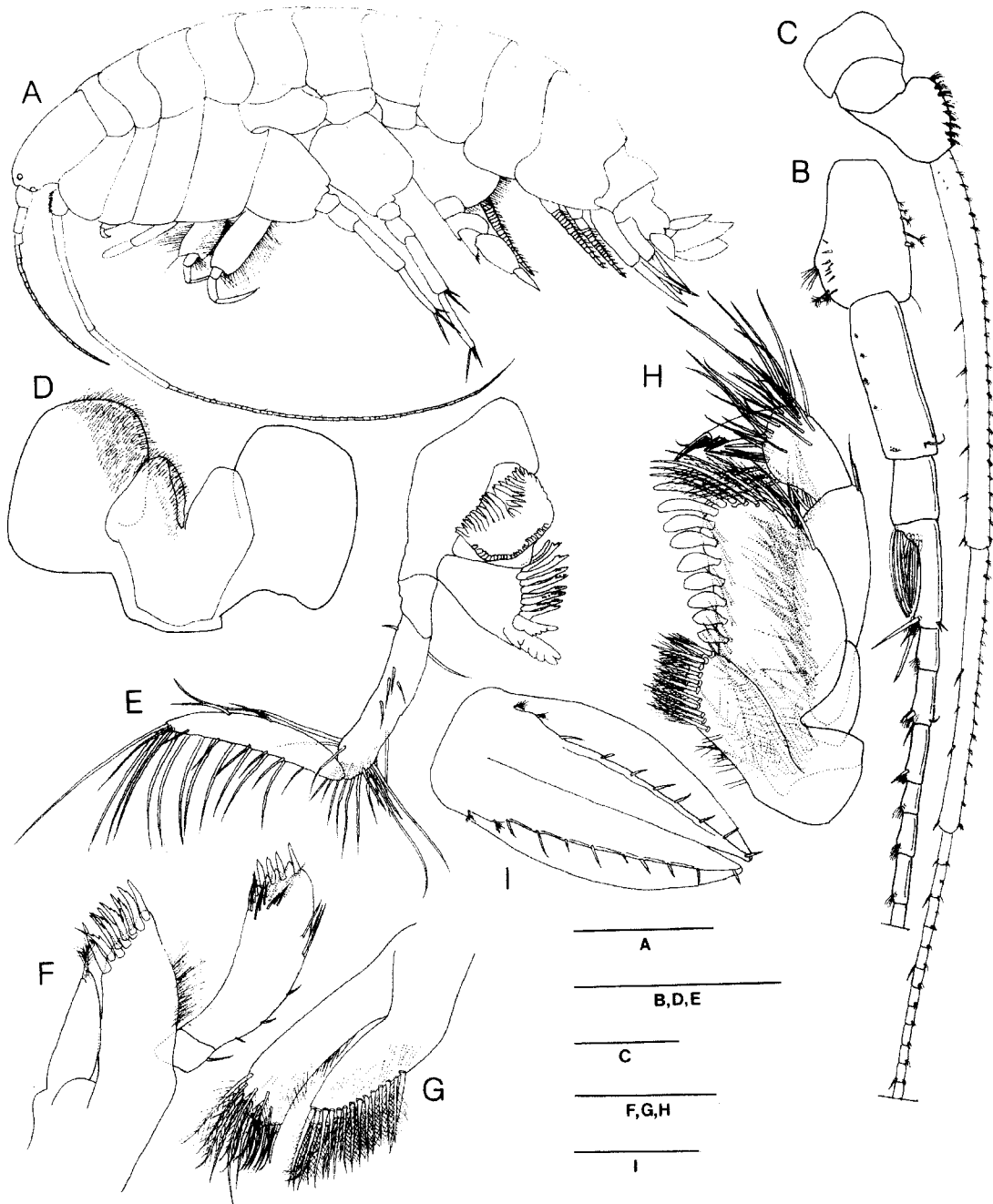


Fig. 5. *Ampelisca brevicornis* (Costa, 1853), Male. 12.8 mm. A, Habitus, lateral. B, Antenna 1. C, Antenna 2. D, Lower lip. E, Mandible. F, Maxilla 1. G, Maxilla 2. H, Maxilliped. I, Telson. Scale bars=0.3 mm (F-I), 0.5 mm (B-E), and 2 mm (A).

slightly longer than 1/2 as long as propodus.

Gnathopod 2 (Fig. 4B). Long and slender, similar to gnathopod 1; basis about 2/5 times the length of gnathopod 2, anterior margin with 7 plumose setae, 6 long and 17 short setae, posterior margin with 8 long simple setae; propodus 0.43 times the length of carpus, with numerous short setae on inner surface.

Pereopod 6 (Fig. 4C). Basis broad, anteroproximal

margin with 3 plumose setae; carpus slightly longer than ischium and merus combined, posterior margin with 2 spines.

Pereopod 7 (Fig. 4D). Posteroventral lobe of basis expanding ventrally, posterior margin oblique, with dense plumose setae, reaching somewhat posterodistal margin of ischium; merus slightly shorter than carpus; propodus longer than merus and carpus combined; dactylus

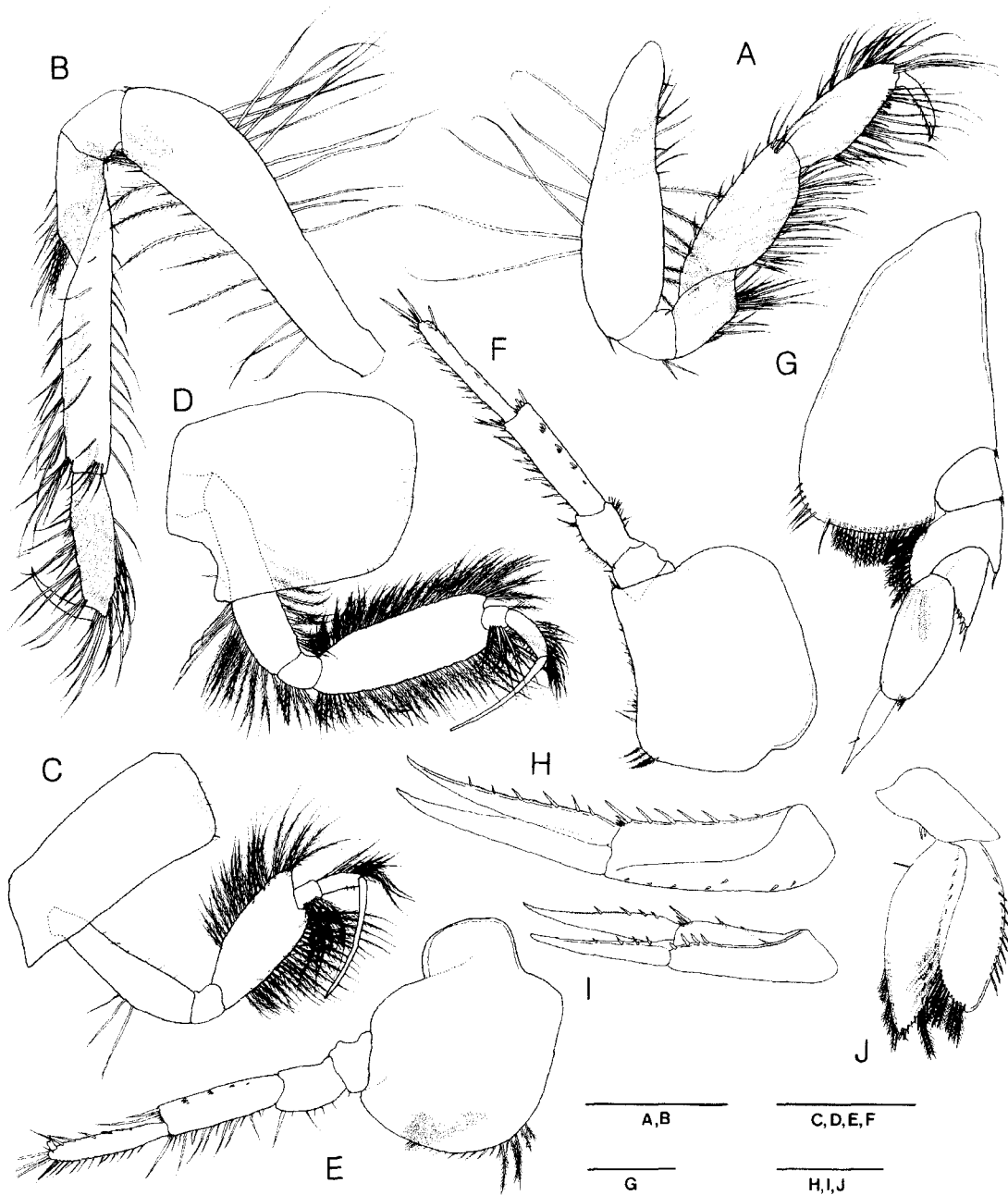


Fig. 6. *Ampelisca brevicornis* (Costa, 1853), Male. 12.8 mm. A, Gnathopod 1. B, Gnathopod 2. C, Pereopod 3. D, Pereopod 4. E, Pereopod 5. F, Pereopod 6. G, Pereopod 7. H, Uropod 1. I, Uropod 2. J, Uropod 3. Scale bars=0.5 mm (A, B, G, H-J) and 1 mm (C-F).

spiniform.

Uropod 1 (Fig. 4E). Fully reaching beyond the end of uropod 2; peduncle as long as outer ramus, dorsal margin with 2 rows of 8 spines; inner ramus slightly shorter than outer ramus; outer edge of inner ramus with 2 spines.

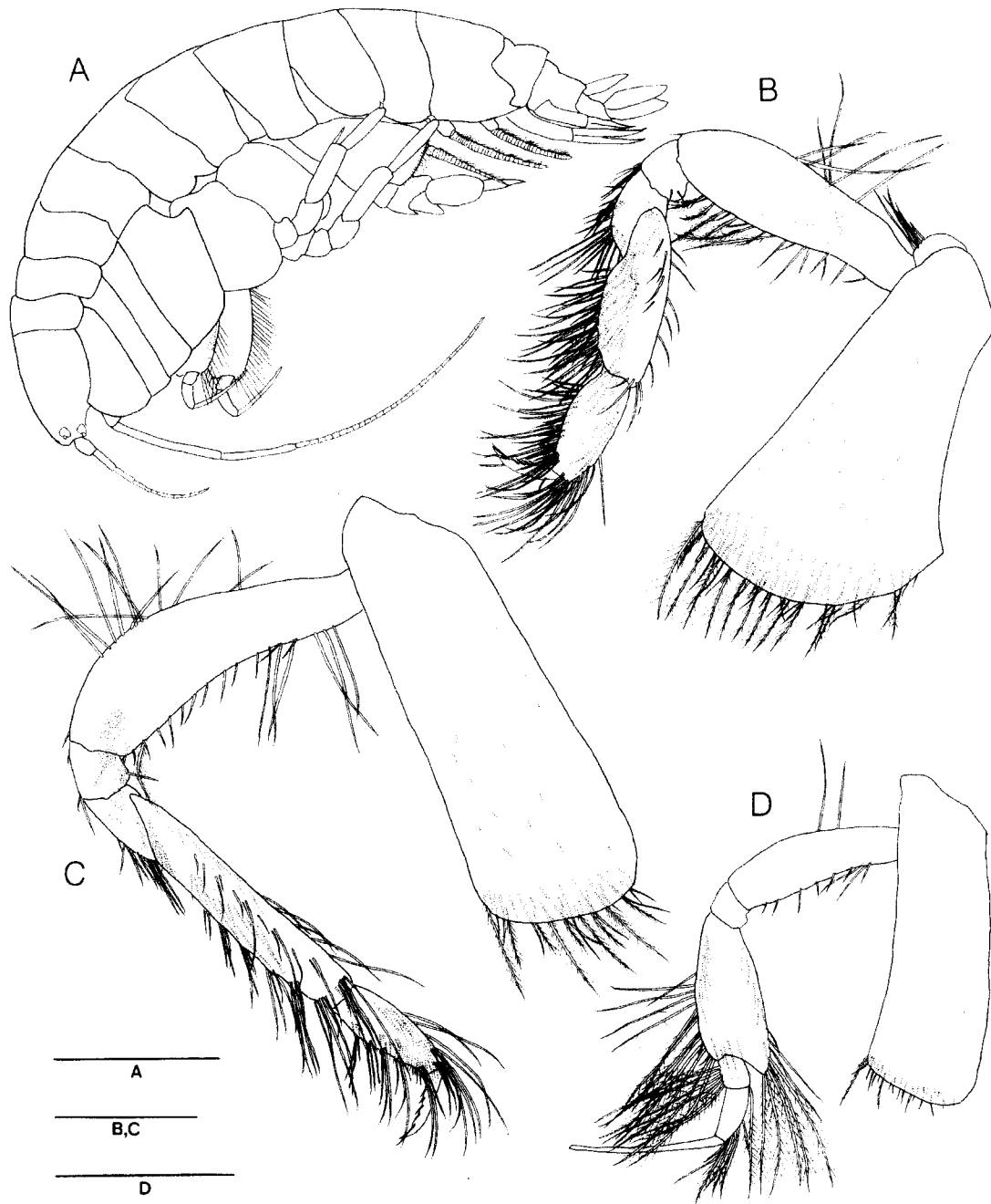
Uropod 2 (Fig. 4F). Outer ramus as long as peduncle, slightly longer than inner ramus.

Uropod 3 (Fig. 4G). Peduncle 1/2 the length of rami; both rami subequal in length; distal margin of inner

ramus with 5 plumose setae.

Telson (Fig. 4H). Narrow, deeply cleft; each lobe with 2 spines dorsally, 2 or 1 spinule on outer proximal margin; distal end of each lobe with 1 spine and 1 spinule.

Remarks: Our specimens are congruent to Nagata's original description. However, one morphological difference is found between our specimens and type specimens: (1) in the original description, each lobe of telson with 5 spinules. However, it is found to be with 2 spines dorsally



**Fig. 7.** *Ampelisca brevicornis* (Costa, 1853), Female. 11.0 mm. A, Habitus, lateral. B, Gnathopod 1. C, Gnathopod 2. D, Pereopod 3. Scale bars=0.5 mm (B, C), 1 mm (D), and 2 mm (A).

and 2 or 1 spinule on outer proximal margin.

*Ampelisca brevicornis* (Costa, 1853)  
(Figs. 5-8)

*Araneops brevicornis* Costa, 1853, pp. 171-172; 1857, p. 180, pl. 1, fig. 2 (cited from Bellan-Santini, 1982).

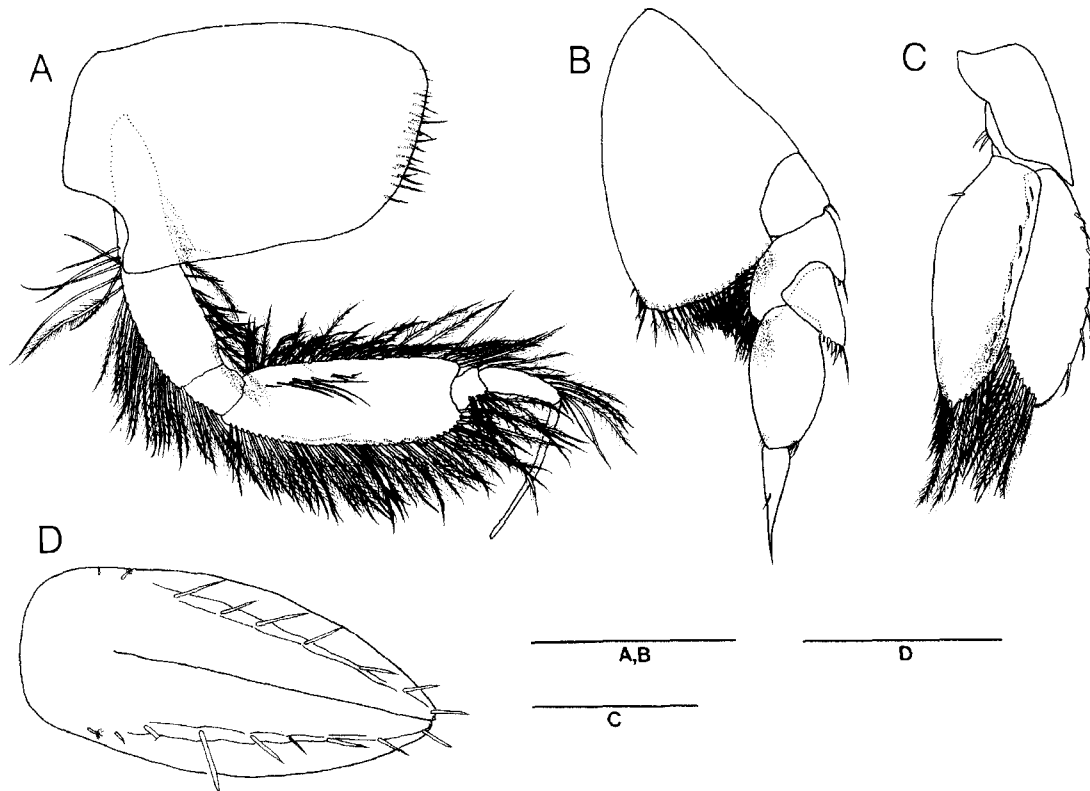
*Ampelisca brevicornis* Chevreux and Fage, 1925, pp.

77, 78, figs. 67, 68; Schellenberg, 1942, pp. 146, 147, fig. 119; Nagata, 1959, pp. 265, 266, fig. 2; Nagata, 1965, pp. 150, 151, fig. 4-1; Imbach, 1967, pp. 55-57, pl. 3; Karaman, 1975, pp. 7, 9, 12, figs. I-III; Bellan-Santini, 1982, pp. 22, 26, figs. 15, 16; Ledoyer, 1982a, pp. 56, 58, fig. 13; Kim, 1991, pp. 54, 55, fig. 13A-I.

*Ampelisca* sp. cf. *brevicornis* Dahl, 1945, pp. 9-12, fig. 8.

*Ampelisca laevigata* Sars, 1895, p. 169, pl. 59, fig. 1.





**Fig. 8.** *Ampelisca brevicornis* (Costa, 1853), Female. 11.0 mm. A, Pereopod 4. B, Pereopod 7. C, Uropod 3. D, Telson. Scale bars=0.3 mm (D), 0.5 mm (C), and 1 mm (A, B).

#### Material examined

1♂, Daecheongdo Isl. (Ongjin-gun), August 10, 1999, Y. H. Kim; 4♀♀, Uldo Isl. (Ongjin-gun), August 22, 2001, Y. H. Kim; 1♂, Paengmok (Jindo Isl.), June 28, 2004, Y. H. Kim; 1♂ 4♀♀, Chopyeong (Jindo Isl.), June 30, 2004, Y. H. Kim; 1♀, Gosapo (Byeonsan-myeon), October 1, 2004, Y. H. Kim.

Adult male: Body length (Fig. 5A) about 12.8 mm, body smooth and rather slender; corneal lens of eyes two paired, visible laterally, ventral pair situated at anteroventral edge of head; merus of pereopod 7 subequal in length to carpus of which back lobe drawn out into a long, broad and rounded corner; posteroventral corner of third pleonal epimeron somewhat sinuated, with moderately strong tooth.

Antenna 1 (Fig. 5B). Short, a little longer than the head, extending somewhat to the distal end of fourth peduncular article of antenna 2; length ratio of peduncular articles 1-3=1: 1.17: 0.46; a row of setal tufts on the ventral edge of flagellum; its flagellum 19 segmented.

Antenna 2 (Fig. 5C). Shorter than the body, weakly setose; about 3 times the length of antenna 1; peduncular articles 1-3 short, peduncular article 4 slightly

longer than 5; a row of setal tufts on the dorsal edge of peduncular article 3; its flagellum 44 segmented, 1.33 times the length of peduncle.

Lower lip (Fig. 5D). Outer and inner lobes with densely pubescent on inner margin.

Mandible (Fig. 5E). Incisor produced inward, with 6 blunt teeth, lacinia mobilis well developed, 9 accessory teeth, serrate, and molar process truncate; palp triarticulate, proximal article short, article 2 about 0.9 times the length of article 3.

Maxilla 1 (Fig. 5F). Inner plate bearing 2 apical pinnate setae, outer plate apically with 10 serrate teeth and pubescent on outer margin, palp article 2 with 4 conical teeth and 16 setae apically.

Maxilla 2 (Fig. 5G). Inner and apical margins of inner plate and apical margin of outer plate with pinnate, feeble setae, the inner plate slightly broader than the outer plate.

Maxilliped (Fig. 5H). Inner plate small, with 11 pinnate setae; outer plate slightly reaching beyond article 2 of palp, broad, inner margin with 9 spatulate teeth and 9 setae, apex with 6 slender teeth, the basal part with 7 pinnate setae; palp four articulate, rather slender, article 2 slightly longer than combind article 1 and 3, inner margin with feeble setae, dactylus shorter than article 4, falcate.

Gnathopod 1 (Fig. 6A). Basis slightly shorter than 2/5 the length of gnathopod 1, anterior margin with 7 plumose setae and 4 short setae, posterior margin with 6 long simple setae; ischium shorter than merus; propodus slightly shorter than carpus; posterior margin of merus, carpus and propodus with long and short setae; dactylus about 1/2 the length of propodus.

Gnathopod 2 (Fig. 6B). Slender, similar to gnathopod 1; basis shorter than 2/5 the length of gnathopod 2, anterior part with 10 plumose setae, 4 long and 4 short setae, posterior margin with 12 long simple setae; propodus 0.47 times the length of carpus, with numerous short setae on inner surface.

Pereopod 3 (Fig. 6C). Basis about 1/3 the length of pereopod 3, posterior margin with 3 long setae; ischium short, posterior margin subequal to width in length; merus about 2 times the length of carpus and propodus combined, with produced anterodistal margin, anterior and posterior margins with long plumose setae; carpus slightly longer than 1/2 the length of propodus, posterior margin with 6 long plumose setae; dactylus slightly shorter than merus.

Pereopod 4 (Fig. 6D). Basis about 1/3 the length of pereopod 2, anterior margin with 5 setae and 9 plumose setae, posterior margin with 5 simple setae and 13 plumose setae; merus about 2.1 times the length of carpus and propodus combined, anterior and posterior margins with dense plumose setae; carpus about 1/2 the length of propodus; dactylus about 2 times the length of propodus.

Pereopod 5 (Fig. 6E). Basis slightly shorter than 2/5 the length of pereopod 5, broadly expanded, especially posterior lobe produced; carpus as long as ischium and merus combined, posterior margin with 1, 2, 3, 3, 5 spines in formula.

Pereopod 6 (Fig. 6F). Pereopod 6 similar to pereopod 5 except for coxa and posterior lobe of basis; anteroproximal of basis with 4 plumose setae; carpus slightly longer than ischium and merus combined, posterior margin with 1, 2, 3, 3, 5 spines in formula.

Pereopod 7 (Fig. 6G). Posteroventral lobe of basis expanding ventrally, posterior margin oblique, with dense plumose setae, extending somewhat to posterodistal margin of ischium; merus slightly longer than carpus of which back lobe drawn out into a long, broad and rounded corner, posterior margin with 19 plumose setae; dactylus spiniform.

Uropod 1 (Fig. 6H). Fully reaching beyond the end of uropod 2; peduncle as long as rami, outer ventral margin with one longitudinal row of 7 spines and dorsal margin with 10 spines; inner ramus as long as outer ramus, dorsal margin with 6 spines.

Uropod 2 (Fig. 6I). Peduncle longer than rami; inner ramus longer than outer ramus.

Uropod 3 (Fig. 6J). Peduncle shorter than rami; inner ramus shorter than outer ramus, ventral margin with 10

spines; distal margin of both rami with plumose setae.

Telson (Fig. 5I). Longer than the breadth, deeply cleft; each lobe bears 8-7 setae and 2 pinnate setae on dorsal surface, distal end of each lobe subpointed.

Female: Body length (Fig. 7A) about 11.0 mm, body smooth and rather slender.

Gnathopod 1 (Fig. 7B). Basis slightly shorter than 2/5 the length of gnathopod 1, anterior margin with 6 plumose setae and 10 simple setae, posterior margin with 5 long simple setae; ischium shorter than merus; carpus shorter than propodus and dactylus combined; posterior margin of merus, carpus and propodus with long and short setae; dactylus longer than 1/2 the length of propodus.

Gnathopod 2 (Fig. 7C). Slender, similar to gnathopod 1; basis shorter than 2/5 the length of gnathopod 2, anterodistal part with 7 plumose setae, posterior margin with 12 simple setae; propodus 0.41 times the length of carpus, with short setae on inner surface.

Pereopod 3 (Fig. 7D). Basis about 1/3 the length of pereopod 3, posterior margin with 2 long setae; merus about 1.73 times the length of carpus and propodus combined, with produced anterodistal margin, anterior and posterior margins with long plumose setae; carpus slightly shorter than 2 times the length of ischium, posterior margin with 7 long plumose setae; propodus about 1.72 times the length of carpus, anterior margin with 5 plumose setae and 2 simple setae; dactylus slightly shorter than merus.

Pereopod 4 (Fig. 8A). Basis about 1/3 the length of pereopod 4, anterior margin with 9 plumose setae, posterior margin with 6 simple setae and 18 plumose setae; merus about 1.96 times the length of carpus and propodus combined, anterior and posterior margins with dense plumose setae; carpus slightly shorter, 1/2 the length of propodus; dactylus 1.88 times the length of propodus.

Pereopod 7 (Fig. 8B). Posteroventral lobe of basis expanding ventrally, posterior margin oblique, with dense plumose setae, extending somewhat posterodistal margin of ischium; merus slightly longer than carpus of which back lobe drawn out into a long, broad and rounded corner, posterior margin with 13 plumose setae; dactylus spiniform.

Uropod 3 (Fig. 8C). Inner ramus slightly shorter than outer ramus, ventral margin with 8 spines, distal margin of both rami with plumose setae.

Telson (Fig. 8D). Longer than the breadth, deeply cleft; both lobes bear 6 setae and 2 pinnate setae on dorsal surface, distal end of each lobe subpointed.

Remarks: Our specimens are congruent to Japanese and European forms. However, one morphological difference is found between our specimens and Adriatic specimens previously reported (Karaman, 1971): (1)

according to the Karaman's female description, propodus of pereopod 3 about 2.50 times the length of carpus, whereas 1.72 times in the our specimens.

### Acknowledgements

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