

A New Species, *Caprella multituberculum* (Amphipoda, Caprellidae) from the East Sea in Korea

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ABSTRACT

A new species of Caprellidae, *Caprella multituberculum* collected from 3 localities in the coast of the East Sea in Korea, is described and illustrated. This new species is very close to *Caprella soyo* Arimoto, 1934 from Japan, but is distinguished from it by having the more numerous small tubercles on body surface, the shorter flagellum of antenna 1 and the smaller appendages of abdomen. Moreover, the shape of propodus of gnathopod 2 reveals several prominent differences between the two.

Key words : new species, *Caprella*, Caprellidae, Amphipoda, East Sea, Korea

INTRODUCTION

Caprella is the largest genus of the family Caprellidae (Crustacea, Amphipoda) and so far about 130 species have been reported in the world (Takeuchi, 1993). Until now Korean caprellids have been reported a total of 30 species of 5 genera (*Caprella*, *Paraprotella*, *protella*, *Protomima* and *Pseudoproto*) by Mayer (1903), Kim and Lee (1975, 1978), Lee and Kim (1980), Lee (1986, 1988), and Lee and Lee (1993). Among them, 26 species are belong to the genus *Caprella*.

We found out a new species of the genus *Caprella* among specimens collected from 3 localities (Taep'ŏ, Namae and Sach'ŏnjin) in the coast of the East Sea in Korea (Sea of Japan) from March to July 1991, and describe it with illustrations in this paper. Type specimens will be deposited in the Korea Natural History Museum, Seoul, which construction is being planned. Dissected paratypes and other specimens are stored in the department of Biology, Dankook University.

DESCRIPTION

Order Amphipoda Latreille, 1816 단각 목

Suborder Caprellidea, Leach, 1814 바다대벌레 아목

Family Caprellidae Leach, 1814 바다대벌레 과

Genus *Caprella* Lamarck, 1804 바다대벌레 속

***Caprella multituberculum*, n. sp.** 두드러기바다대벌레(신칭) (Figs. 1-3)

Type specimens. 54 ♂♂, 2 ♀♀ collected at Sach'ŏnjin(37° 50' N, 128° 53' E), 27 July 1991, by I. H. Kim. Holotype ♂, allotype ♀ and undissected paratypes (50 ♂♂) will be deposited in the Korea Natural History Museum. Dissected paratypes (3 ♂♂, ♀) are stored in the dept. of Biology, Dankook University.

Other material examined. 7 ♂♂, 9 ♀♀ collected at Namae(37° 56' N, 128° 48' E), 23 March 1991, by C. M. Lee; 2 ♂♂, 9 ♀♀ collected at Taep'o(38° 10' N, 128° 37' E), 24 March 1991, by C. M. Lee.

Male. Body (Fig. 1A) length about 22mm, long and slender. Surface of body, antennae and pereopods (Fig. 1A) with numerous small tubercles, these tubercles (Fig. 1E) having a sensory hair. Pereonite II longer than any other segment; pereonites I and III subequal in length and slightly shorter than pereonite II; pereonites IV and V subequal in length and slightly shorter than pereonite III; pereonites VI and VII taken together slightly longer than 2/3 of pereonite V; head round, about 1/3.5 as long as pereonite I (Fig. 1A).

Antenna 1 (Fig. 1A) about 1/2.5 of body length; its peduncle with many sensory hairs; 11-segmented flagellum subequal in length to peduncular segment 3. Antenna 2 (Fig. 1A) about half length to peduncle of antenna 1.

Mouthparts (Fig. 2) typical of genus. Incisor of left mandible divided into 5 teeth, lacinia mobilis also separated into 5 teeth, with setal row of 3 plumose setae (Fig. 2A); incisor of right mandible divided into 5 teeth, lacinia mobilis divided into 5 teeth faintly, with setal row of 2 plumose setae (Fig. 2B); each molar (left, right) with 1 plumose seta at outer end (Figs. 2A, B). Upper lip (Fig. 2C) with numerous setules on distal margin. Inner and outer lobes of lower lip (Fig. 2D) with a few small tubercles and numerous setules on distal and inner margins. Outer lobe of maxilla 1 with 7 fork-like, bifurcate spines on distal margin; segment 1 of palp very short; segment 2 of palp longer than outer lobe, with 6 spiniform teeth on distal margin, 6 setae on inner margin, 10 setae on inner surface (Fig. 2E). Inner lobe of maxilla 2 rather oval, with many long setae on round apical and inner margins; outer lobe rectangular, with many long setae on distal margin (Fig. 2F). Inner lobe of maxilliped with 3 spiniform teeth on distal margin, a row of plumose setae planted on surface of inner margin; outer lobe about as long as inner lobe, with 7 spiniform teeth and 2 strong spiniform setae on inner margin; segment 1 of palp short and stout, segment 2 scarcely twice as long as broad, inner margin with long setae, segment 3 slightly shorter than 2, its distal and inner margins crowded with long setae (Fig. 2G).

Gnathopod 1 (Figs. 1A, B) with propodus twice as long as width; propodus with a pair of grasping spines near proximal end; inner margin of dactylus and propodus serrated.

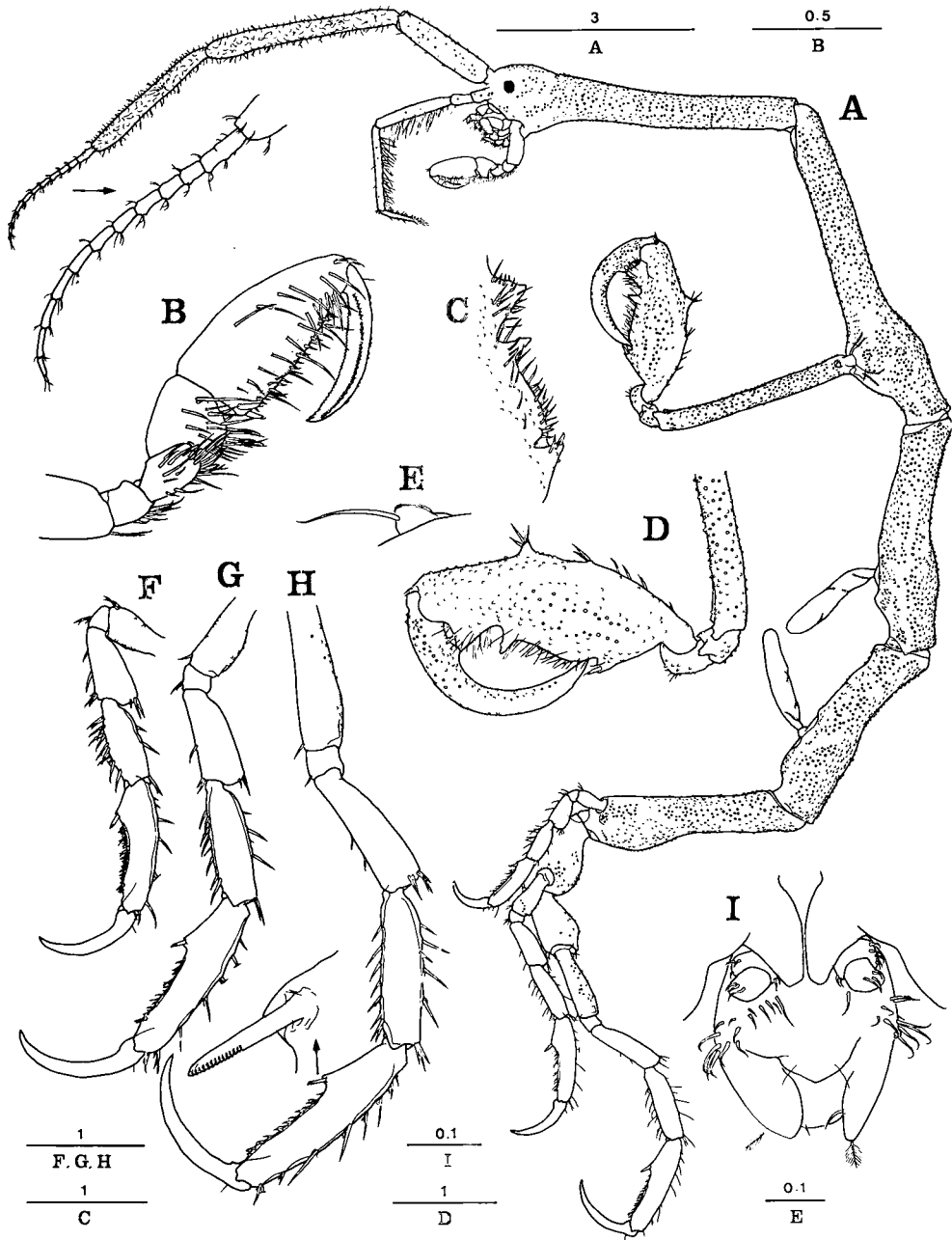


Fig. 1. *Caprella multituberculum*, n. sp., male: A, lateral view; B, gnathopod 1; C, palm of gnathopod 2, inner; D, gnathopod 2; E, tubercle on surface of body; F, pereopod 5; G, pereopod 6; H, pereopod 7; I, abdomen. (unit of scales in mm).

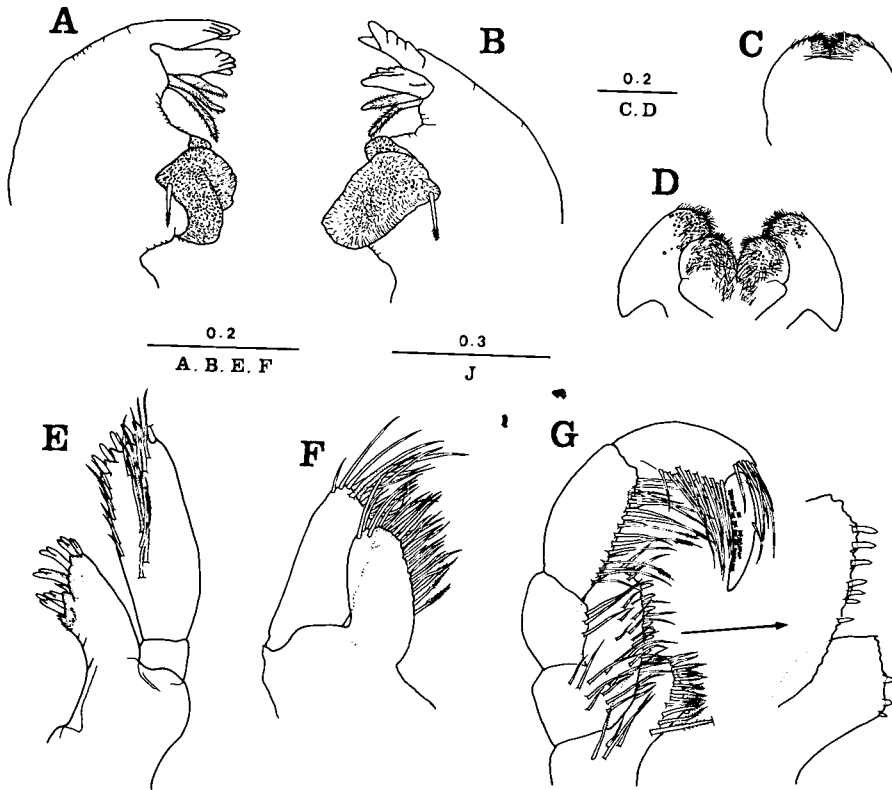


Fig. 2. *Caprella multituberculum*, n. sp., male: A, left mandible; B, right mandible; C, upper lip; D, lower lip; E, maxilla 1; F, maxilla 2; G, right maxilliped. (unit of scales in mm).

Gnathopod 2 (Figs. 1A, C, D) attached to rather posterior part of pereonite II; its basal segment slightly shorter than pereonite II; propodus about 3/4 as long as segment 1, 2.5 times as long as its greatest width, its anterodorsal part round; palm of propodus with 1 palmar spine at proximal part and 1 subpalmar spine at inner part, normal poison tooth situated nearby triangular projection, with narrow notch between them; outer margin of propodus with 1 large projection bearing 4 setiform spines and 1 small projection bearing 2 setiform spines at medial part, about 4~5 setiform spines at proximal part.

Gills (Fig. 1A) elongated, about 4.5 times as long as its greatest width, slightly shorter than half of pereonites III.

Pereopod 5 (Fig. 1F) subequal to pereonite V; pereopod 6 (Fig. 1G) about 1.35 times as long as pereopod 5; pereopod 7 (Fig. 1H) about 1.3 times as long as pereopod 6, its segment 4 with several setiform spines on inner and outer margins, segment 5 (propodus) about 1.46 times as long as segment 4, with a pair of proximal dentate grasping spines on palmar margin and setiform spine groups at eight points of outer margin.

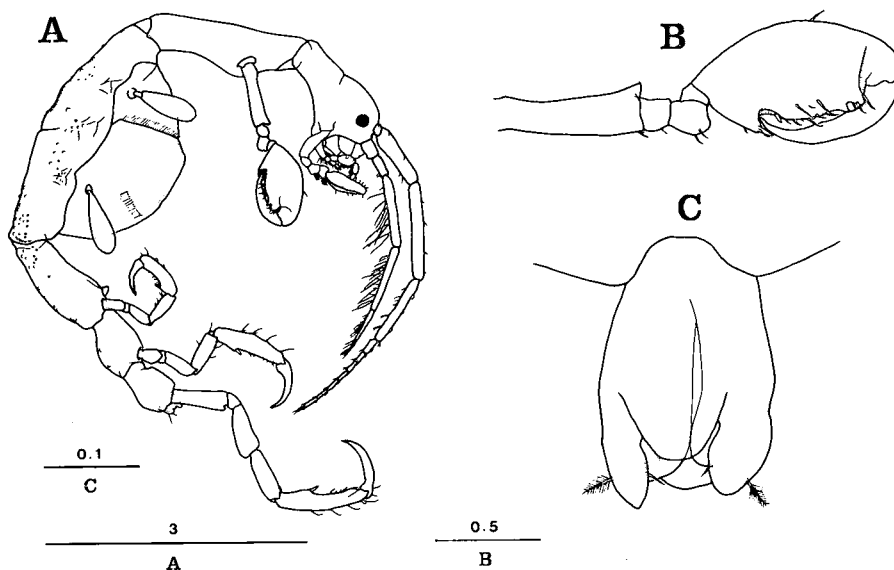


Fig. 3. *Caprella multituberculum*, n. sp., female: A, lateral view; B, gnathopod 2; C, abdomen. (unit of scales in mm).

Abdomen (Fig. 11) typical of genus; with a pair of appendages, slightly smaller than penes, its distal end round and with 3 setae; with a pair of lobes, plumose setae at distal part, each lobes with 1 seta; penes medial.

Female. Body (Fig. 3A) length about 8.3mm. Body surface with a few small tubercles. Pereonite II longer than any other segment; pereonites II and IV subequal in length and slightly shorter than pereonite II; pereonite V slightly shorter than pereonite IV; pereonites VI and VII taken together subequal to pereonite V; pereonite I slightly shorter than head (Fig. 3A).

Antenna 1 (Fig. 3A) subequal to half of body length; 7-segmented flagellum slightly longer than peduncular segment 2. Antenna 2 about as long as peduncle of antenna 1.

Gnathopod 2 (Figs. 3A, B) attached to anterior part of pereonite II; its basal segment about 1/2.5 as long as pereonite II; propodus about 1.4 times as long as segment 1, twice as long as its greatest width. Palm of propodus with 1 palmar spine at proximal part, 1 subpalmar spine at inner part.

Gills (Fig. 3A) elongated, about as long as half of pereonites III.

Pereopod 5 slightly longer than pereonite V; pereopod 6 slightly longer than pereopod 5; pereopod 7 slightly longer than pereopod 6, segment 5 (propodus) with a pair of proximal dentate grasping spines on palmar margin (Fig. 3A).

Abdomen (Fig. 3C) typical of genus; with a pair of lobes and plumose setae at distal part, each lobes with a seta.

Etymology. The specific name, *multituberculum* is from the Latin multi (meaning "many") and tuberculum (meaning "tubercle") alluding to the numerous small tubercles on the body surface.

Remark. *Caprella multituberculum* is very close to *Caprella soyo* Arimoto, 1934 from Japan.

Both species have common features such as the similar body form and the body surface bearing numerous small tubercles. But, *C. multituberculum* differs from *C. soyo* in having the more numerous small tubercles on the body surface, the shorter flagellum of antenna 1 (11-segmented in *C. multituberculum*, while 17-segmented in *C. soyo*) and the smaller appendages of abdomen. Also, the several major differences lie in the shape of propodus of gnathopod 2: 1) In *C. multituberculum* the anterodorsal part of propodus of gnathopod 2 is round, while this part of propodus of gnathopod 2 is squarely projected in *C. soyo*. 2) In *C. multituberculum* the palm of propodus of gnathopod 2 has 1 subpalmar spine at the inner part, while it is absent in *C. soyo*. 3) In *C. multituberculum* the outer margin of propodus of gnathopod 2 is furnished with 2 projections bearing setiform spines, while they are absent in *C. soyo*.

REFERENCES

- Arimoto, I., 1934. Caprellidae (Crustacea) collected by Tokyo Imp. Fish. Emper. Sta. T/s "Soyomaru". Dobutsugaku-zasshi (Zool. Mag., Tokyo), **46**: 494-509.
- Kim, H.S. and K.S. Lee, 1975. Faunal studies on the genus *Caprella* (Crustacea: Amphipoda, Caprellidae) in Korea. Korean J. Zool., **18**: 115-126.
- Kim, H.S. and K.S. Lee, 1978. Systematic study of Amphipoda (Crustacea) in Korea. III. Four unrecorded caprellids (Caprellidae) from South Korea. Korean J. Zool., **21**: 1-7.
- Lee, K.S., 1986. Systematic study of Amphipoda (Crustacea) in Korea. V. Description of one hitherto unrecorded species and two known species from Korean waters. Korean J. Zool., **29**: 159-164.
- Lee, K.S., 1988. Fauna of Caprellidae (Amphipoda) of Cheju Island and its adjacent waters, Korea. Korean J. Syst. Zool., Special Issue, **2**: 97-106.
- Lee, K.S. and W. Kim, 1980. Report on a collection of marine animals from Gogunsan Islands. Rep. KACN, **18**: 109-114.
- Lee, K.S. and C.M. Lee, 1993. Caprellids (Amphipoda, Caprellidae) from the East Sea in Korea. Korean J. Zool., **36**: 353-366.
- Mayer, P., 1903. Die Caprellidae der Siboga-Expedition. Siboga-Expeditie, Monogr., **34**: 1-160.
- Takeuchi, I., 1993. *Caprella arimotoi*, a new species (Crustacea: Amphipoda: Caprellidea) from the Seto Inland Sea, Japan. Proc. Biol. Soc. Wash. **106**: 115-121.

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한국산 바다대벌레속(단각목, 바다대벌레과)의 1신종,
Caprella multituberculum

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요 약

동해 연안의 3개 지소에서 채집된 바다대벌레류 1신종을 *Caprella multituberculum* n. sp., 두드러기바다대벌레로 명명하여 기재한다. 이 신종은 일본산 *Caprella soyo* Arimoto, 1934와 매우 유사하나 체표면에 나있는 작은 돌기들이 더 많고, 제 1 더듬이의 길이가 더 짧으며, 복부부속지가 더 작고, 제 2 악지의 propodus의 형태가 다른 점에서 쉽게 구별된다.