

***Gammaropsis utinomii* New to Korea (Crustacea: Amphipoda: Photidae)**

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ABSTRACT

Gammaropsis utinomii (Nagata, 1961), an incompletely known species of gammaridean amphipod, is redescribed in detail based on the specimens from the southern coast of Korea. The expanded basis of pereopod 7 of this species allows it to be distinguished from its congeners.

Keywords: Amphipoda, Photidae, *Gammaropsis utinomii*, Korea

INTRODUCTION

Nagata (1961) recorded the species, *Eurystheus utinomii* as a species of the family Photidae from the Seto Inland Sea, Japan. The genus *Eurystheus* was later synonymized with the genus *Gammaropsis* of the family Isaeidae by Barnard (1969), and later the families Isaeidae and Photidae were combined as Corophiidae by Barnard (1973). However, since then, most authors except Barnard and Karaman (1991), have maintained the Photidae as a valid family (Myers and Lowry, 2003). The genus *Gammaropsis* is currently subdivided into six subgenera; *Gammaropsis*, *Megamphopus*, *Paranaenia*, *Pseudeurystheus*, *Podoceropsis* and *Segamphopus*. Barnard and Karaman (1991) placed *G. utinomii* in the subgenus *Segamphopus*, due to a characteristic range of length ratio of gnathopod articles. Later Ren (2006) transferred *G. utinomii* to the subgenus *Gammaropsis*, following the classification of Barnard and Karaman (1991). This decision was based upon the feature of *G. utinomii* bearing an accessory flagellum and gnathopod 2 carpus subequal to propodus. *Gammaropsis* was an artificial genus mixed with a number of loosely related taxa and has been recently revised (Myers, 2009).

The original description of *Gammaropsis utinomii* by Nagata (1961) was incomplete, without illustrations for mouthparts. Recently, Ren (2006) redescribed this species from the China Sea. However, the redescription in Chinese is not supported by detailed illustrations, either. In this paper we provide a full description including the mouth parts of the male *G. utinomii* from the Korean south coast with a

brief description of the female, especially on the sexually dimorphic characters.

SYSTEMATIC ACCOUNTS

Order Amphipoda Latreille, 1816

Suborder Gammaridea Latreille, 1803

Family Photidae Boeck, 1871

Genus *Gammaropsis* Liljeborg, 1855

¹**Gammaropsis utinomii* (Nagata, 1961) (Figs. 1-4)

Eurystheus utinomii Nagata, 1961, p. 34, fig. 2; 1965, p. 312.

Gammaropsis utinomi: Hirayama, 1984, p. 80.

Gammaropsis (Segamphopus) utinomii: Barnard and Karaman, 1991, p. 193.

Gammaropsis (Gammaropsis) utinomii: Ren, 2006, p. 358, fig. 150.

Material examined. 1 ♂, 2 ♀ ♀, Maryang, Gangjin-gun, 2 July 2004, Y.H. Kim.

Description. Male. Body (Figs. 1A, 2A) 8.8 mm long. Head about 1.3 times as long as wide, about 0.8 times as long as pereonites 1-2 combined. Rostrum not elongated. Eye subquadrate, medium in size, located closely to cephalic lobe. Cephalic lobe subacute. Pereonites and pleonites smooth dorsally. Epimeral plates 1-3 with posterodistal tooth. Urosomites 1-2 with a pair of weak dorsolateral keels and setae distally.

Antenna 1 (Fig. 2B) setose, slightly less than 2/5 length of body; length ratio of peduncular articles 1-3=1.00 : 1.36 : 1.00; peduncular article 1 stouter than other articles, with ventrodorsal triad of unequal spines; peduncle and flagellum

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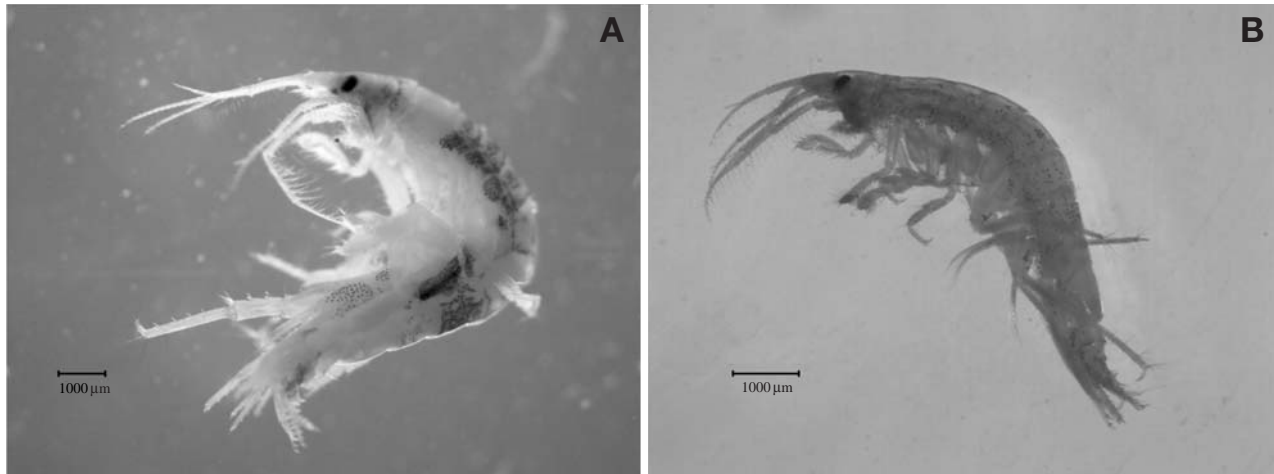


Fig. 1. *Gammaropsis utinomii* (Nagata): A, male, 8.8 mm; B, female, 7.0 mm.

with long setae ventrally; accessory flagellum well developed, 6-articulate, slightly shorter than peduncular article 3; flagellum 15-articulate, longer than peduncle, with ventrodistal aesthetascs on articles.

Antenna 2 (Fig. 2C) setose, subequal in length to antenna 1; peduncular articles 1-3 short; peduncular article 4 as long as article 5; peduncle and flagellum with unequal setae ventrally; flagellum 13-articulate, longer than peduncular article 5, with a pair of spinules on the articles.

Lower lip (Fig. 2D) inner lobe well developed, heart-shaped, pubescent apically; outer lobe with subacute mandibular process, pubescent anteriorly.

Mandible (Fig. 2E) incisor produced forward, 5-dentate; lacinia mobilis minutely serrulate; molar process strong and massive, truncate, with 1 pappose seta; accessory row with 8 dentate spines; palp well developed, 3-articulate, proximal article short, middle article subrectangular and longest, distal article strongly setose, claviform, surrounded by setae, about 0.8 times as long as middle one.

Maxilla 1 (Fig. 2F) inner plate bearing subacute apex without seta, lateral margin with pubescence; outer plate armed with 10 simple or dentate spines; palp 2-articulate, longer than outer plate, proximal article short, distal one with 6 conical spines apically and 15 simple setae subapically.

Maxilla 2 (Fig. 2G) inner plate smaller than outer, with row of 18 oblique pectinate setae medially, inner margin with simple setae; outer plate rounded apically, with simple setae.

Maxilliped (Fig. 2H) inner plate about half length of outer, inner and apical margins covered with row of pectinate setae, apical margin with 3 conical teeth; outer plate not reaching end of article 2 of palp, inner margin nearly straight, with 8 conical teeth and inner side with simple setae, apical margin with 6 rather strong setae; palp 4-articulate, article 2 longest,

about 2.3 times as long as article 3, inner margin with several clusters of setae, article 3 surrounded by simple setae subapically, distal article slender, about 0.6 times as long as article 3, with elongate claw apically.

Gnathopod 1 (Fig. 3A) small, coxa subquadrate, 0.72 times as wide as long, with 5 posteroventral serrations; basis subrectangular, strongly narrowing proximally, with 7 long setae posteriorly; carpus elongate, 1.39 times as long as propodus; carpus and propodus bearing several clusters of setae posteriorly and medially; propodus palm oblique, serrulate, corner defined by 1 spine; dactylus falcate, 0.67 times as long as propodus, overreaching palm, inner margin serrulate, with 4 spinules.

Gnathopod 2 (Fig. 3B) similar in structure to gnathopod 1 but much longer and larger; coxa large, rounded-quadrate, lacking ventral serration; relative length of carpus much shorter than that of gnathopod 1; propodus 0.80 times as long as carpus, palm less distinct than that of gnathopod 1.

Pereopod 3 (Fig. 3C) coxa similar to coxa 2; basis to propodus rather linear and subrectangular, length ratio=1.00 : 0.21 : 0.53 : 0.49 : 0.51.

Pereopod 4 (Fig. 3D) quite similar to pereopod 3, but coxa (Fig. 3G) larger than coxa 3.

Pereopod 5 (Fig. 3E) coxa (Fig. 3H) bilobate, anterior lobe roundly protruded downward, with 1 posteroventral spine; basis ovate, slightly expanded anteriorly, with row of spines anteromarginally; merus broader than carpus and propodus, about 1.3 times as long as carpus, slightly shorter than propodus.

Pereopod 6 (Fig. 3F) similar to pereopod 5, except coxa (Fig. 3I), but articles (especially basis and merus) generally larger, broader and longer than those of pereopod 5.

Pereopod 7 (Fig. 4A) elongate, coxa (Fig. 3J) semitriangular-

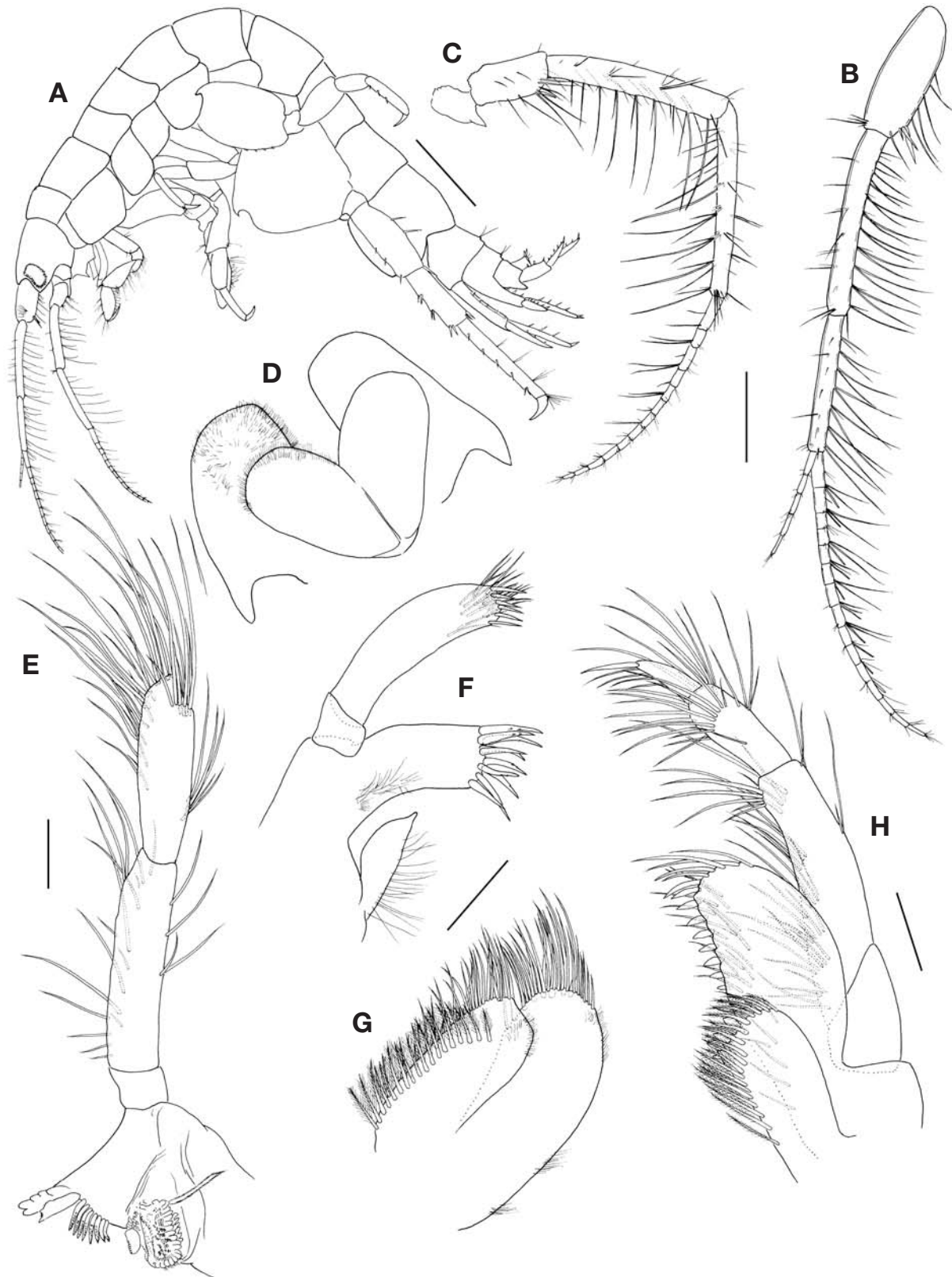


Fig. 2. *Gammaropsis utinomii* (Nagata), male: A, habitus, lateral; B, antenna 1; C, antenna 2; D, lower lip; E, mandible; F, maxilla 1; G, maxilla 2; H, maxilliped. Scales bars=1.0 mm (A), 0.4 mm (B, C), 0.1 mm (D-H).

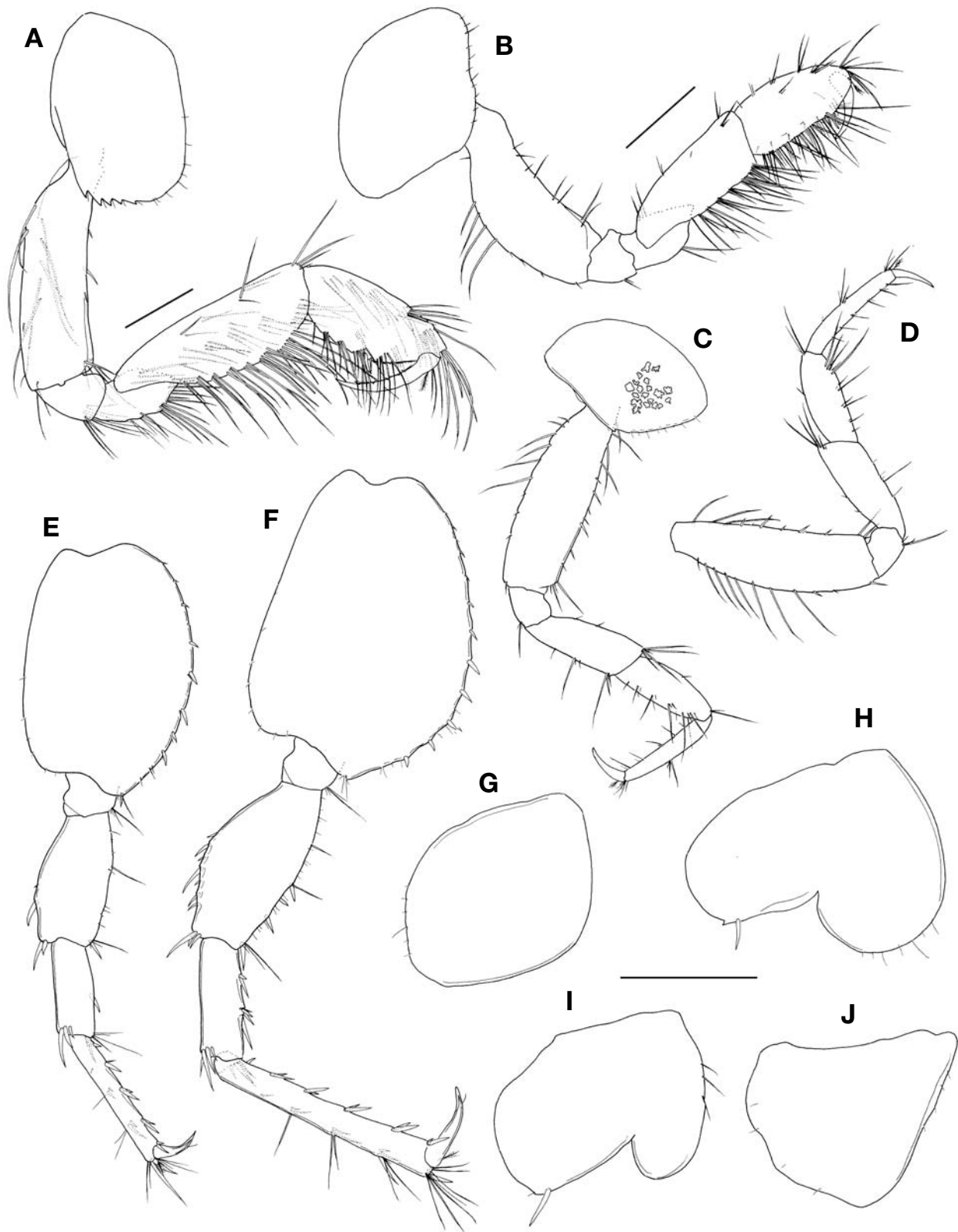


Fig. 3. *Gammaropsis utinomii* (Nagata), male: A, gnathopod 1; B, gnathopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, pereopod 6; G, coxa 4; H, coxa 5; I, coxa 6; J, coxa 7. Scales bars=0.4 mm (B-J), 0.2 mm (A).

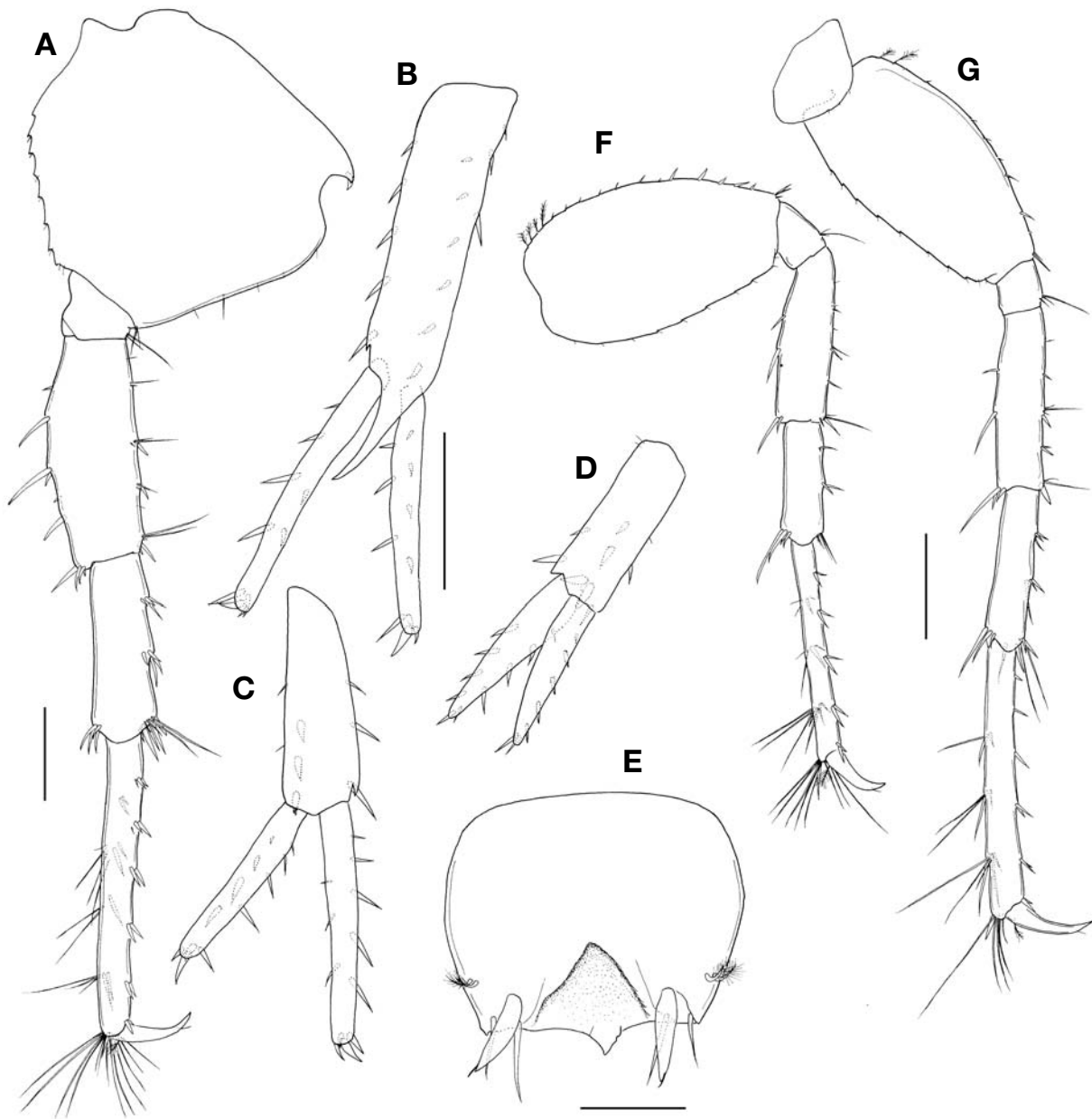


Fig. 4. *Gammaropsis utinomii* (Nagata), male: A, pereopod 7; B, uropod 1; C, uropod 2; D, uropod 3; E, telson. Female: F, pereopod 6; G, pereopod 7. Scales bars=0.4 mm (A-D, F, G), 0.1 mm (E).

gular, narrowing ventrally; basis strongly broadened and expanded, about 1.3 times as wide as long, narrowing distally, anteroproximal corner concave, with 1 curved tooth and 1 small spine, distal half of posterior margin serrate, with 8-9 serrations; length ratio of articles 2-7=1.00 : 0.21 : 0.82 : 0.67 : 1.06 : 0.27.

Uropod 1 (Fig. 4B) peduncle rectangular, with 3 rows of spines and long distopeduncular process; inner ramus slender, 0.9 times as long as peduncle, about 1.2 times as long as

outer ramus.

Uropod 2 (Fig. 4C) peduncle with 2 rows of 3 spines and 2 setules, slightly shorter than inner ramus; outer ramus distinctly shorter than inner.

Uropod 3 (Fig. 4D) peduncle slightly longer than outer ramus, slightly shorter than inner.

Telson (Fig. 4E) subrectangular, entire, broader than long, triangularly hollow posteromedially, with a pair of distolateral penicillate setae, 1 terminal robust spine and 2 setae

on each side.

Female. Body (Fig. 1B) about 7.0 mm long. Similar to male, but gnathopod 2 comparatively small, propodus palm more distinct than that of male, with serrulated inner margin like palm of gnathopod 1; pereopods 6-7 (Fig. 4F, 4G) basis and merus slender, not or weakly expanded.

Distribution: China, Japan, Korea.

Remarks. Despite the paucity of the original description and illustration, there is no doubt that our specimens belong to *Gammaropsis utonomii* (Nagata, 1961). This species is characterized by having the ventral serrations of coxa 1, the simple propodus of gnathopod 2, the expanded merus of pereopod 6, and, especially, the strongly expanded basis of pereopod 7 in the male. Our specimens agree with the descriptions of Nagata (1961) and Ren (2006), except for two minor morphological differences: (1) in our male specimen, gnathopod 2 carpus is 1.25 times as long as the propodus (against subequal in length in Nagata and Ren's descriptions) and (2) in Nagata's original description, the basis of pereopod 7 in the male bears 2 anteroproximal teeth (while with only 1 tooth and 1 spine in our specimen). Ren's specimens collected from the China Sea bear both morphological forms of the pereopod 7. This morphological difference appears to be an intraspecific variation.

ACKNOWLEDGEMENTS

We wish to thank Ed A. Hendrycks (Canadian Museum of Nature, Ottawa, Canada) for his kind reading, editing and critical revision of the manuscript and Dr Xiao-Chun Wu (Canadian Museum of Nature, Ottawa, Canada) for assistance

with translation the Chinese paper consulted in this study. This research was supported by a grant from the Ministry of Environment of the Korean Government (NIBR 074-1800-1844-326-260-00).

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Received June 8, 2010
Accepted July 8, 2010