

Systematic Study of Amphipoda (Crustacea) in Korea
VI. *Gammarus hoonsooi*, a New Species of Freshwater
Gammarid (Gammaridae) from the South Korea

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韓國產 端脚類의 系統分類學의 研究

VI. 南韓淡水產 옆새우科(甲殼類)의 1新種 *Gammarus hoonsooi*

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적 요

경상북도 안동군 雲山에서 채집된 淡水產 *Gammarus*屬의 1新種이 확인되어 *Gammarus hoonsooi*라고 명명하여 기재한다. 본 種은 제 3 꼬리다리의 內肢와 外肢의 비율이 1/2보다 작아서, 남한에 서식하는 다른 종들과 구분되며, 이 비율이 비슷한 *G. birsteini* Karaman & Pinkster 1977과는 제 2 촉각의 자루마디에 털이난 모양과 제 3 가슴다리의 네째 마디의 앞가장자리에 4~6몽치의 긴 털이 나 있는 점이 뚜렷이 다르다.

There had been only a few works on freshwater gammarid amphipods from Korea (Uéno, 1940a, 1940b, 1966; Kim & Lee, 1977) before Lee and Kim (1980) described five species of freshwater *Gammarus* including four new species.

The specimens collected at Unsan, Andong-gun during the extensive sampling journey in Kyongsangbuk-do, is recognized as a new species. All the type specimens are deposited in the Department of Biology, Dankook University.

Order Amphipoda Latreille 1816

family Gammaridae Leach 1813

genus *Gammarus* Fabricius 1775

Fig. 1, Fig. 2

Material

Holotype : 1♂, body length 8.5mm, Unsan(雲山), Andong-gun, Kyongsang buk-do, April 13, 1986, H.J. Ma and I.S. Seo leg.

Paratypes : 59♂♂, 108(90 ovig.)♀♀, Unsan, April 13, 1986, H.J. Ma & I.S. Seo leg.

Diagnosis: The endopod of uropod 3 very short, its inner ramus being only $1/3$ to $1/2$ of the outer ramus. Both margins of endopod and exopod are fringed with only simple hairs.

Description: Small species, body length of larger male 8.5mm. Eyes distinct, reniform. Antenna 1 (Fig. 1, A) is half as long as or little longer than half the body length; inferior margin of the second peduncular segment of antenna 1 with 1 or 2 setae tufts, 1 setae tuft on the third peduncular margin, the main flagellum and accessory flagellum have 18~24 and 3~4 segments respectively. Antenna 2 (Fig. 1, B) has a slender gland cone, longer than the tip of the third peduncular segment; peduncle segments 4 and 5 are almost equally long, the diameter of peduncle segment 4 is thicker than peduncle segment 5; peduncle segment 4 with two setae tufts on the ventral margin and three setae tufts on the inferior margin, the longest setae being longer than the diameter on which they are implanted; peduncle segment 5 (Fig. 1, C) with six transverse rows of setae on the inferior margin, each row has 5~6 long setae, one or two of them stuck out on ventral margin, four or five transverse rows of setae on the dorsal margin, the longest setae on the peduncle segments 4, 5 are longer than the diameter of the segments on which they are implanted; 7~9 segmented flagellum (Fig. 1, D) is slender and is armed with 2 transverse groups of setae, as long as or shorter than the length of the segment on which they are implanted.

Gnathopod 1 (Fig. 1, E) the palm being oblique and set with a strong medial palmar spine; strong palmar angle spine together with smaller spines can be found along the posterior margin and the inner surface of the hand. Gnathopod 2 (Fig. 1, F) with strong medial palmar spine, with 4 palmar angle group, the last three segments of the third pereopod (Fig. 1, G, H) bear groups of long setae along the posterior margins; the segment 4 is important character to this species, the 4~6 setae tufts on the anterior margin (other species 3~4), its setae longer than two times of the diameter on which they are implanted, 8~9 setae tufts on the posterior margin; the segment 5 with five setae tufts on the posterior margin, its setae longer than three times of the diameter on which they are implanted; six segment with 4~6 setae tufts, among them distal 3~4 setae tufts intermixed with one or two spines.

Pereopod 4 (Fig. 1, I)—fourth segment armed with four setae tufts along the anterior margin, among them two distal tufts intermixed with one or two spines the setae longer than the diameter on which they are implanted, on the posterior margin with 7~9 setae tufts, the setae long and rich; the fifth segment with 4 setae tufts on the posterior margin, its setae longer than three times of the segment on which they are implanted; the sixth segment with long hair intermixed with spines on the posterior margin; with zero or one setae tuft on the anterior margins of the fifth and sixth segments.

Pereopod 5 (Fig. 1, J)—basal segment with 14 setules on the posterior margin, 6 spines on the anterior margin and one long setae on the frontal margin and setae tufts on the distal end; fourth segment with one or two spines intermixed short setae, on the tip 2 sp-

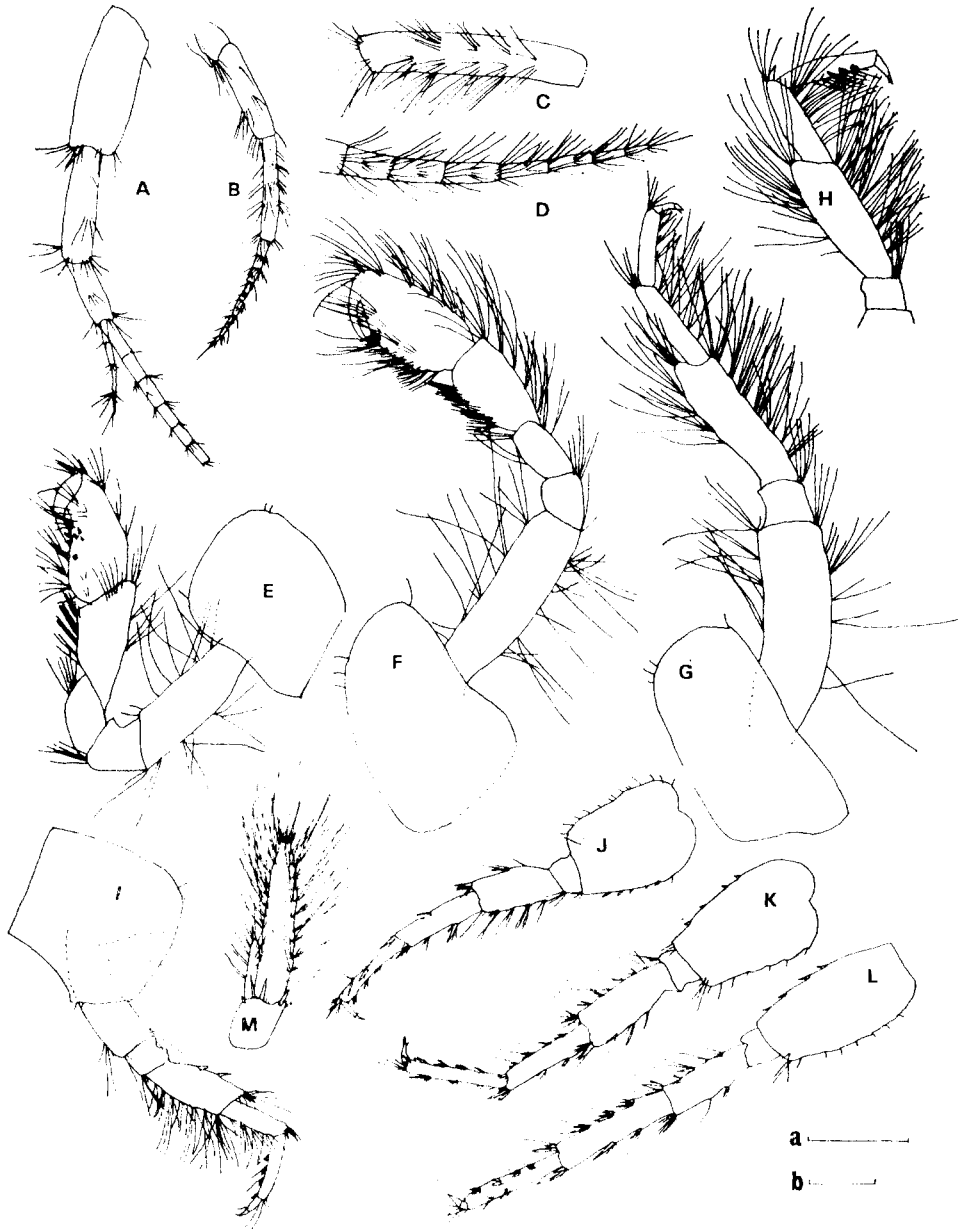


Fig. 1. *Gammarus hoonsooi* n. sp., paratypes male: A. antenna 1; B. antenna 2; C. peduncle segment 5 of antenna 2; D. flagellum of antenna 2; E. gnathopod 1; F. gnathopod 2; G. pereopod 3; H. pereopod 3; I. pereopod 4; J. pereopod 5; K. pereopod 6; L. pereopod 7; M. uropod 3. (Scale bars: 0.5mm a: A, C, D, E, F, G, H b: B, I, J, K, L, M)

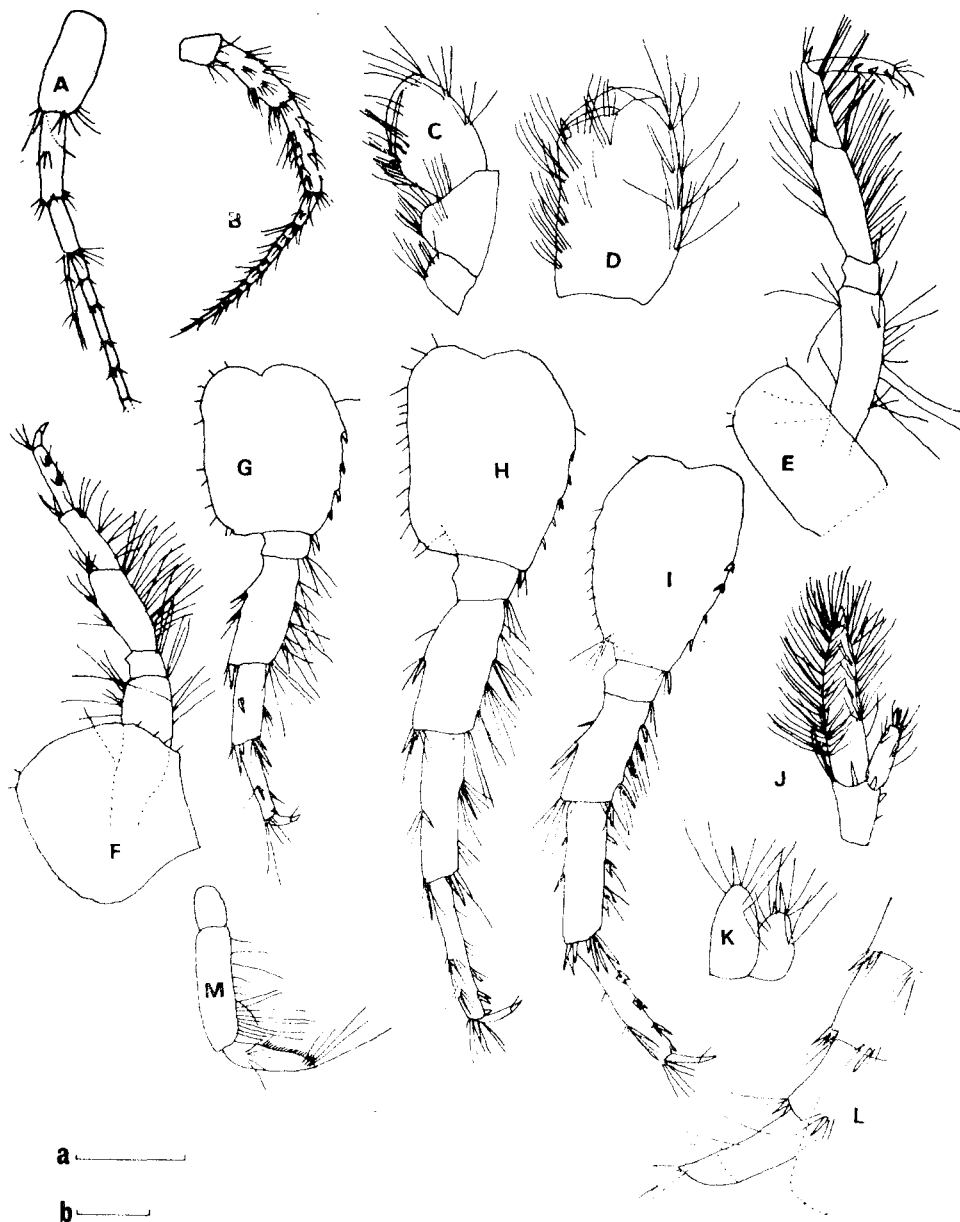


Fig. 2. *Gammarus hoonsooi* n. sp., paratypes female: A. antenna 1; B. antenna 2; C. gnathopod 1; D. gnathopod 2; E. pereopod 3; F. pereopod 4; G. pereopod 5; H. pereopod 6; I. pereopod 7; J. uropod 3; male: K. telson; L. urosome; M. mandibular palp. (Scale bars: 0.5mm a: C, D, G, H, I, J, K, L, M b: A, B, E, F)

ines intermixed with long setae on the posterior margin, anterior margin with 6 long setae tufts, its long setae longer than the diameter on which they are implanted; segment 5 with 2 setae tufts, distal end 2~5 spines intermixed with short setae on the posterior margin, on the anterior margin with 3 setae tufts with a long spine on the first and third tufts, setae longer than the diameter of the segment on which they are implanted; segment 6, on the posterior margin 2 long setae tufts intermixed with spine, on the anterior margin with four setae tufts intermixed with two or three spines. Pereopod 6 (Fig. 1, K)—the length of basal segment is shorter than the two times of the width, posterior margin with 13 setules, 2 long setules on inner side of rear distal corner; anterior margin with 7 spines; anterior margin of segment 4 with 7 tufts of relatively long setae, often with spines, length of setae slightly longer than diameter of that segment, on the posterior margin with 2 spines intermixed with a few setae, the distal end of both margins with spines and setae; segment 5 with 3~5 setae tufts intermixed with spines on the anterior margin, 2 setae tufts with long spines on the posterior margin, distal end with 4~5 spines on the posterior margin. Pereopod 7 (Fig. 1, L)—second segment with 4 spines on the anterior margin and a long setae on the front inner side, on the posterior margin with 8 setules, with 2 long setules on the corner, and 2 setules on inner side of rear distal corner, as a whole the shape of basal segment slender than that of *G. sobaegensis*; segment 4 with 5 setae tufts on the anterior margin, with 2 spines on the posterior margin, distal end with only long setae or setae intermixed with a spine, the length of setae shorter or equal to the diameter of that segment; segment 5 with 3~4 rows of spines on the anterior margin intermixed with short setae. Uropod 3 (Fig. 1, M) is important character to this species—both margins of both rami are all fringed with simple hairs; endopod is very short almost $1/2 \sim 1/3$ of exopod; second article of exopod very short; inner margin of endopod with 1~4 setae tufts on the half distal end.

In female normal sexual dimorphism observed, body length 6~8 mm. Antenna 1 (Fig. 2, A), flagellum with 23-jointed. Antenna 2 (Fig. 2, B), flagellum with 7-jointed. Gnathopod 1 (Fig. 2, C) with one large and two small spines at proximal end where terminal joint fits. Pereopods 3, 4 (Fig. 2, E, F) with longer setae like as male. Pereopods 5~7 (Fig. 2, G-I) is shorter than those of male; the basal segment of pereopod 5 is broader than that of male, 6 setae tufts on the anterior margin of the fourth segment, long setae longer than the diameter on which they are implanted. The basal segment of pereopod 7 is slender than that of pereopod 5, and distal end narrow. Uropod 3 (Fig. 2, J) is smaller than that of male, but setation is very like that of male.

Remarks : This species is peculiar to any other species in South Korea. Setation of uropod 3 is very characteristic, only simple hairs are implanted on the both margins of both rami, endopod is shorter than any other species found in South Korea but rather similar that of *G. birsteini* Karaman & Pinkster, 1977. *Gammarus hoonsooi*, n.sp. is distinguished from *G. birsteini* by the anterior margin of fourth segment of pereopod 3 bearing several long

setae tufts.

Etymology : The specific name *hoonsooi* is in honor of my professor Hoon soo Kim, the pioneer of Crustaceology in Korea.

ABSTRACT

A new species of freshwater gammarid amphipod was found from Unsan, Andong-gun, Kyongsangbuk-do in Korea. Description is given under the name of *Gammarus hoonsooi*. This species differs from all other species of the genus in having small endopod and several long setae tufts on the anterior margin of the segment 4 of pereopod 3.

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