

**Newly Recorded *Byblis japonicus*
(Malacostraca: Amphipoda: Ampeliscidae) from Korea**

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ABSTRACT

Byblis japonicus is newly reported from Korea. Redescription is made in detail with figures which show a few differences as compared with the previous description from Japan.

Key words: *Byblis*, Ampeliscid, Amphipoda, Korea

INTRODUCTION

Amphipods of the family Ampeliscidae constitute an important component of many littoral marine soft-bottom fauna. A total of 229 species from 4 genera (*Ampelisca*, *Byblis*, *Byblisoides* and *Haploops*) has been reported worldwide (Barnard and Karaman, 1991), including only 3 Korean *Ampelisca* species (Kim, 1991).

Byblis japonicus Dahl, 1945 belong to the family Ampeliscidae is revealed to be a new record from Korea. *B. japonicus* has been recorded by Dahl (1945) and Nagata (1960, 1965) with descriptions or figures. Among them, the gender of the type specimen was not described by Dahl (1945) and based on the Dahl's figures (1945) and Nagata's description (1960) it might be female. However, Nagata's description and figures were very brief, providing only a few morphological characteristics of the head, peduncle of antenna 1, uropod 3 and telson of male and coxae 1-4 and epimeral plate 3 of female. In this paper, we made a full description of *B. japonicus* based on

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the samples collected from Korea.

MATERIALS AND METHODS

Specimens were collected mainly using by a light-trap from the shallow waters of Korea from 1995 to 1999. 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. Measurements for the body length were made from the base of the first antenna to the telson. All examined specimens were deposited in the Department of Biology, Dankook University.

RESULTS

Order Amphipoda Latreille, 1816

Suborder Gammaridean Latreille, 1803

Family Ampeliscidae Costa, 1857

Genus **Byblis* Boeck, 1871

***Byblis japonicus* Dahl, 1945 (Figs. 1-5)

Byblis japonicus Dahl, 1945, p. 14, figs. 8-10; Nagata 1960, p. 168, pl. 13, figs. 19-23; Irie & Nagata, 1962, p. 19; Nagata 1965, p. 153, fig. 6; Nagata 1966, p. 334; Hirayama, 1991, p. 81.

Byblis japonica: Hirayama, 1983, p. 102.

Material examined. 1♂, Namchang (Haenam-gun) 20 May 1998; 1♂, Jukrim (Geojedo Is.) 18 Jul. 1999; 1♂, Hongwon, 27 May 1995; 1♀, Pyeongsan-ri (Namhae-gun) 14 Jul. 1999; 3♀♀, Daechoengdo Is., 10 Aug. 1998; 1♂, Chubongdo Is., 10 Jul. 1998.

Description. Adult male. Body length (Fig. 1A) about 9 mm, rather slender. corneal lens of eyes two paired, one pair located on upper distal end of head, the other located on apex of anterior head lobe. Coxa 4, posterior tooth moderately attenuated and acute. Basis of pereopod 5 prominently produced posteriorly. First urosomite rise slightly behind.

Antenna 1 (Fig. 1B). A little shorter than 1/2 of body length; peduncle as long as head; length ratio of peduncular articles 1-3 = 1 : 1.85 : 0.59; peduncular article 1 much stout rather than 2, 3; a row of setal tufts on the ventral edge of peduncle and flagellum; its flagellum 33 segmented.

Antenna 2 (Fig. 1C). A little shorter than body length, 1.7 times as long as antenna 1; peduncular articles 1-3 short, but stubby, peduncular article 4 slightly longer than 5; a row of setal tufts on the dorsal edge of peduncle; its flagellum 52 segmented, 1.36 times as long as peduncle.

Lower lip (Fig. 1D). Outer and inner lobes with densely pubescent on inner margin.

Mandible (Fig. 1E). Incisor produced inward, with 5 blunt teeth, lacinia mobilis well developed, accessory teeth 9, serrate, and molar process truncate; palp triarticulate, proximal article short,

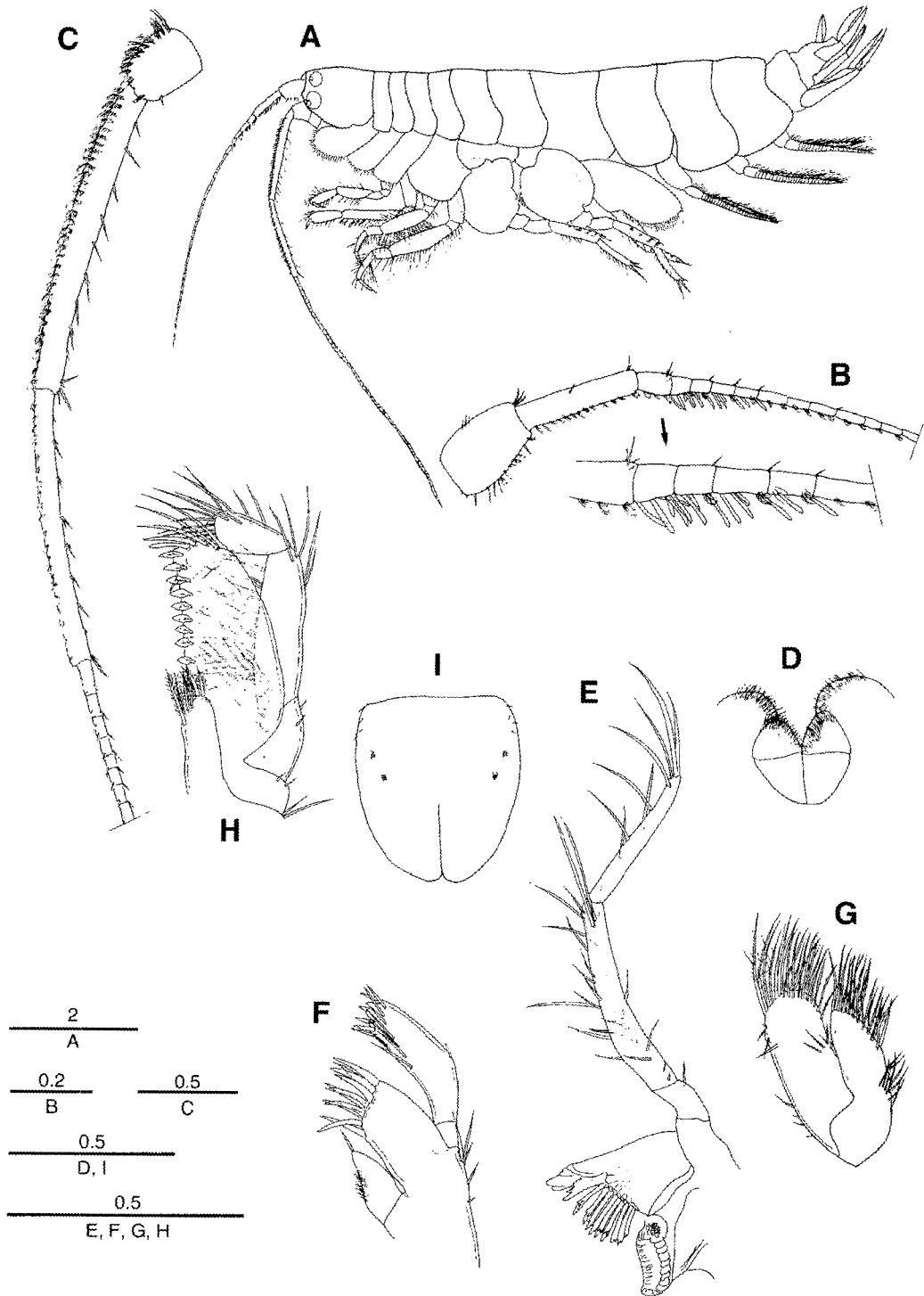


Fig. 1. *Byblis japonicus*, male, 9.0 mm. A, habitus, lateral; B, antenna 1; C, antenna 2; D, lower lip; E, mandible; F, maxilla 1; G, maxilla 2; H, maxilliped; I, Telson. Unit of scales in mm.

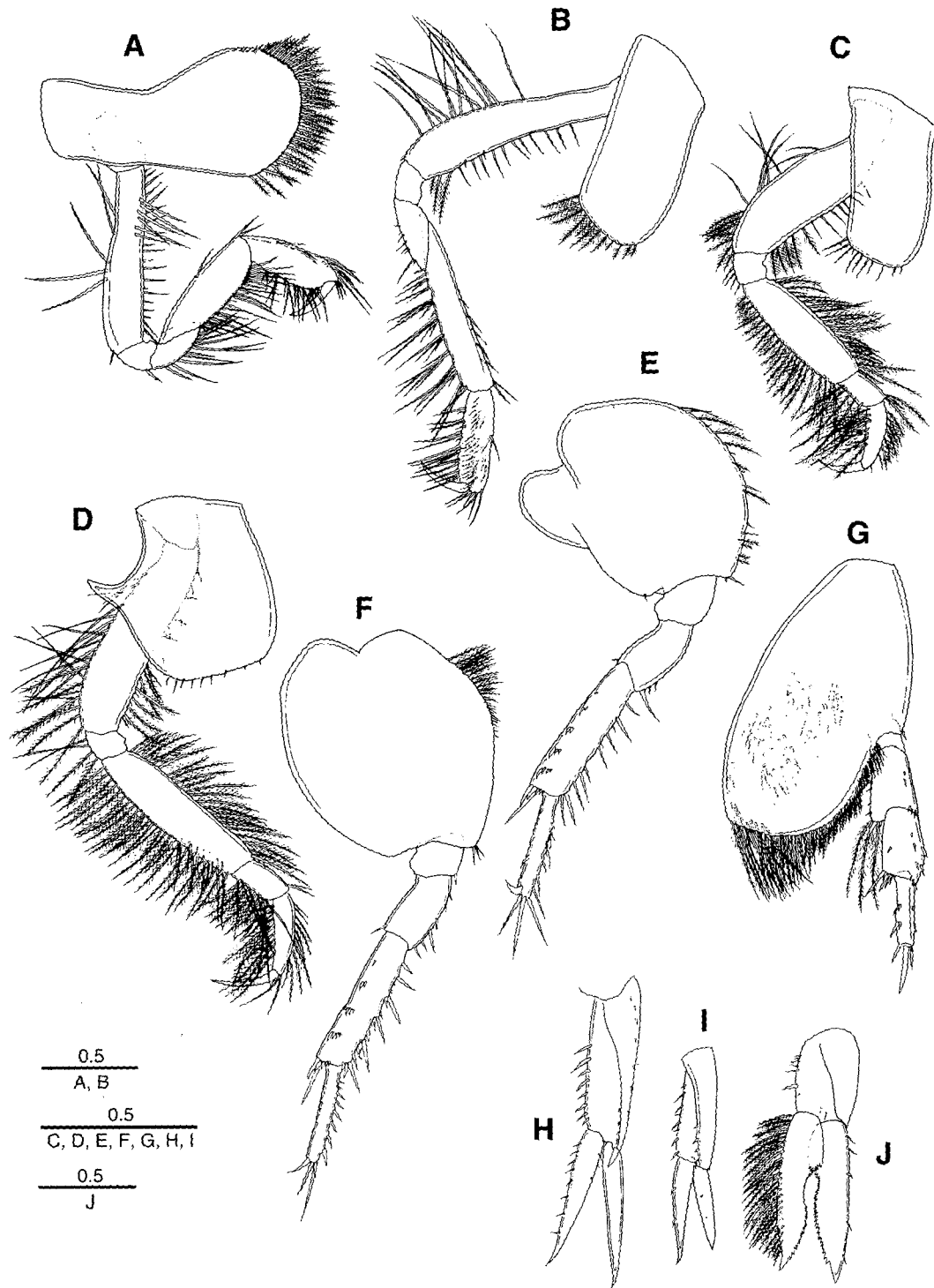


Fig. 2. *Byblis japonicus*, male, 9.0 mm. A, gnathopod 1; B, gnathopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, pereopod 6; G, pereopod 7; H, uropod 1; I, uropod 2; J, uropod 3. Unit of scales in mm.

article 2 about 1.3 times as long as article 3.

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

Maxilla 2 (Fig. 1G). Inner distal and apical margins of inner plate and apical margin of outer plate with pinnate, feeble setae, outer plate a little broader than inner plate.

Maxilliped (Fig. 1H). Inner plate small, with 2 conical teeth and 7 pinnate setae, outer plate slightly extending beyond article 2 of palp, broad, inner margin with 9 spatulate teeth, apex with 5 slender teeth, these teeth becoming longer distally, palp four articulate, rather slender, article 2 as long as combined article 1 and 3, dactyl slightly shorter than article 4, falcate.

Gnathopod 1 (Fig. 2A). Coxa 1 gradually widening, lower margin roundish, with plumose setae; basis slightly longer than $1/3$ as long as gnathopod 1, anterior margin with long and short setae, posterior margin with 5 long setae; ischium shorter than merus, propodus slightly shorter than carpus; posterior margin of merus, carpus and propodus with long and short setae; dactyl distinctly longer than the palm.

Gnathopod 2 (Fig. 2B). Coxa 2 rectangular, lower margin with plumose setae; gnathopod 2 slender, similar to gnathopod 1; basis shorter than $1/2$ as long as gnathopod 2, anterodistal margin with 3 plumose setae and posterior margin with long setae; carpus 1.7 times as long as propodus.

Pereopod 3 (Fig. 2C). Coxa 3 similar to coxa 2; basis shorter than $1/2$ as long as pereopod 1, anterodistal and posterodistal margin with 5 and 7 plumose setae respectively; ischium short, posterior margin subequal to width in length; merus about 1.2 times as long as carpus and propodus combined, anterior and posterior margins with long plumose setae; carpus slightly longer than $1/2$ as long as propodus.

Pereopod 4 (Fig. 2D). Coxa 4, posterior tooth moderately attenuated and acute; basis $1/3$ as long as pereopod 2, anterodistal and posterodistal margin with 9 and 6 plumose setae respectively; merus about 1.3 times as long as carpus and propodus combined, anterior and posterior margins with densely plumose setae; carpus slightly shorter than $1/2$ as long as propodus; dactyl about 0.8 times as long as propodus.

Pereopod 5 (Fig. 2E). Basis slightly longer than about $1/3$ as long as pereopod 5, broadly expanded, especially posterior lobe prominently produced; carpus 1.2 times as long as ischium and merus combined, posterior margin with 1, 2, 2, 3, 4, 5 spines in formula.

Pereopod 6 (Fig. 2F). Pereopod 6 similar to pereopod 5 except for coxa and posterior lobe of basis; anteroproximal half of basis with plumose setae.

Pereopod 7 (Fig. 2G). Posteroventral lobe of basis expanding ventrally, posterior margin oblique, with densely plumose setae, extending somewhat posterodistal margin of merus; merus slightly longer than carpus, posterodistal margin with 3 plumose setae; dactylus spiniform.

Uropod 1 (Fig. 2H). Fully reaching beyond end of uropod 2; peduncle slightly longer than rami, outer ventral margin with one longitudinal row of 7 spines and dorsal margin with 8 spines.

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

Uropod 3 (Fig. 2J). Peduncle shorter than rami; inner ramus shorter than outer ramus, inner margin with 5 spines and densely plumose setae; medial margin of both rami serrated.

Telson (Fig. 1I). Broadly rounded, cleft not reaching to the middle, each lobe with two pairs of

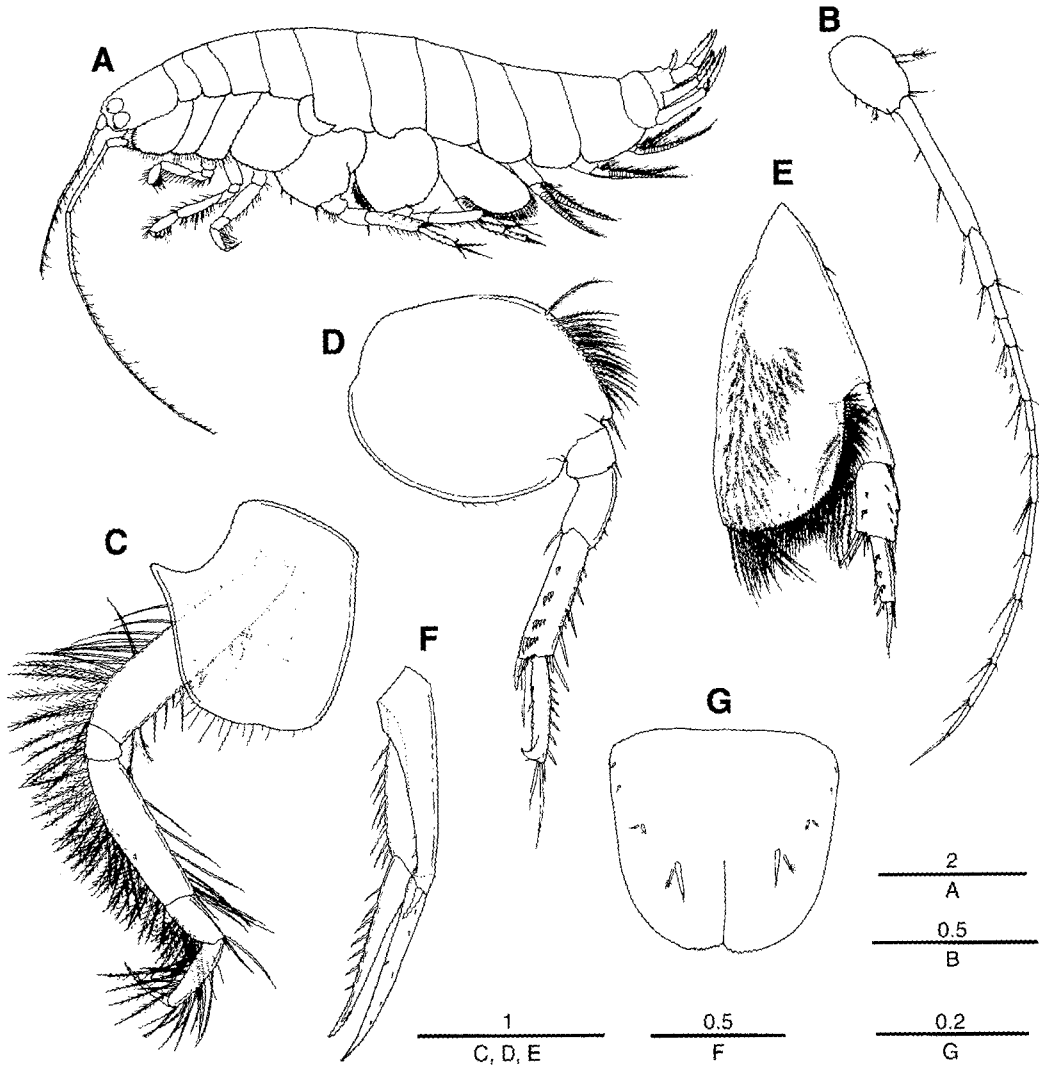


Fig. 3. *Byblis japonicus*, female, 8.2 mm. A, habitus, lateral; B, antenna 1; C, pereopod 4; D, pereopod 6; E, pereopod 7; F, uropod 1; G, telson 2. Unit of scales in mm.

pinnate setae and 4 setose on outer proximal margin, dorsal ornament pattern slightly variable according to observation of the other specimen.

Female. Body length from 4.0 mm to 8.2 mm (Fig. 3A), rather slender.

Antenna 1 (Figs. 3B, 4B). As long as from 1/4 (Fig. 3A) to 1/3 (Fig. 4B) of body length; a little shorter than 1/2 of antenna 2; peduncle a little shorter than head; length ratio of peduncular articles 1-3 = 1: 1.7: 0.7 and 1: 1.33: 0.72; its flagellum 5-12 segmented.

Antenna 2 (Fig. 3A). As long as 3/5 of body length; peduncular articles 4 slightly longer than 5; its flagellum 1.39 times as long as peduncle, 12-26 segmented.

Lower lip (Fig. 4G). Outer and inner lobe with densely pubescent on inner margin.

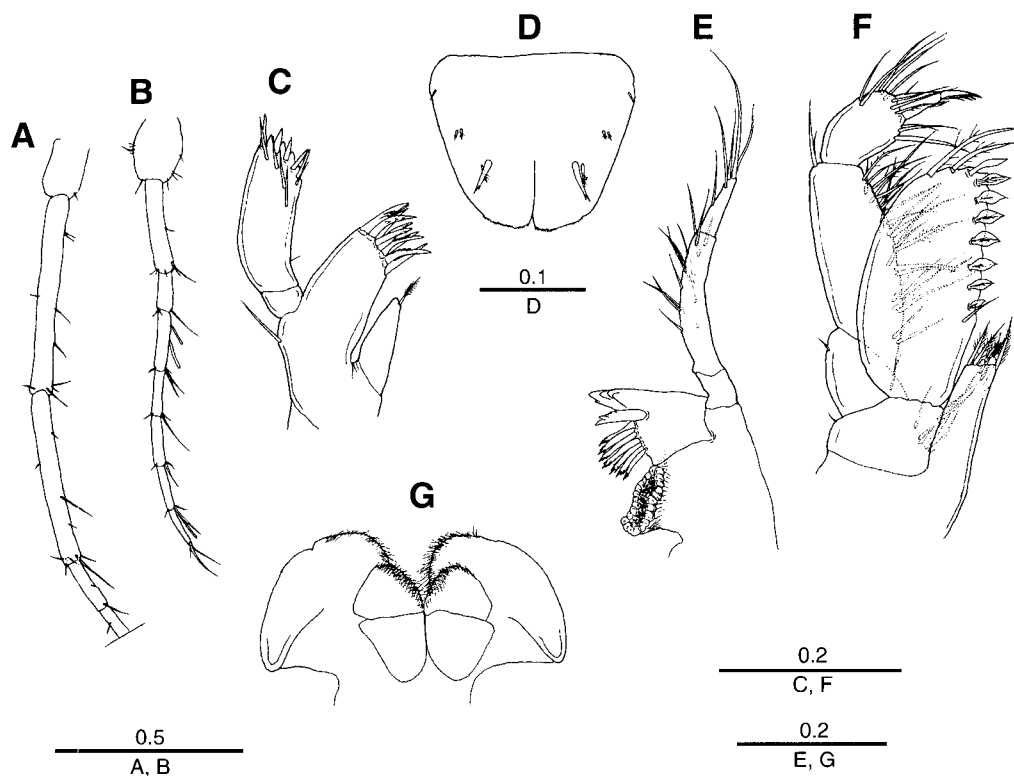


Fig. 4. *Byblis japonicus*, female, 4.0 mm. A, antenna 2; B, antenna 1; C, maxilla 1; D, telson; E, mandible; F, maxilliped; G, lower lip. Unit of scales in mm.

Mandible (Fig. 4E). Incisor produced inward, with 5 blunt teeth, lacinia mobilis with 6 teeth, accessory teeth 7, serrate; molar process truncate; palp triarticulate, article 2 about 2.2 times as long as article 3.

Maxilla 1 (Fig. 4C). Outer plate apically with 10 serrate teeth, palp article 2 with 5 conical teeth and 5 setae apically.

Maxilliped (Fig. 4F). Inner plate small, outer plate reaching article 2 of palp, broad, inner margin with 8 spatulate teeth, apex with 2 slender teeth, palp four articulate, dactyl slightly shorter than article 4, falcate.

Gnathopod 1 (Fig. 5A). Coxa 1 gradually widening, lower margin roundish, with plumose setae; anterior margin of basis with long and short setae, posterior margin with 2 long setae.

Gnathopod 2 (Fig. 5B). Coxa 2 rectangular, lower margin with 3 long setae and short 5 setae; anterodistal margin of basis with 1 plumose setae and posterior margin with 3 long setae; carpus 1.7 times as long as propodus.

Pereopod 3 (Fig. 5C). Coxa 3 similar to coxa 2; merus a little longer than carpus and propodus combined; posterior margin of carpus and propodus have 2 and 3 onesidely barbed hair, respectively.

Pereopod 4 (Figs. 3C, 5D). In larger specimens, anterodistal and posterodistal margin of basis

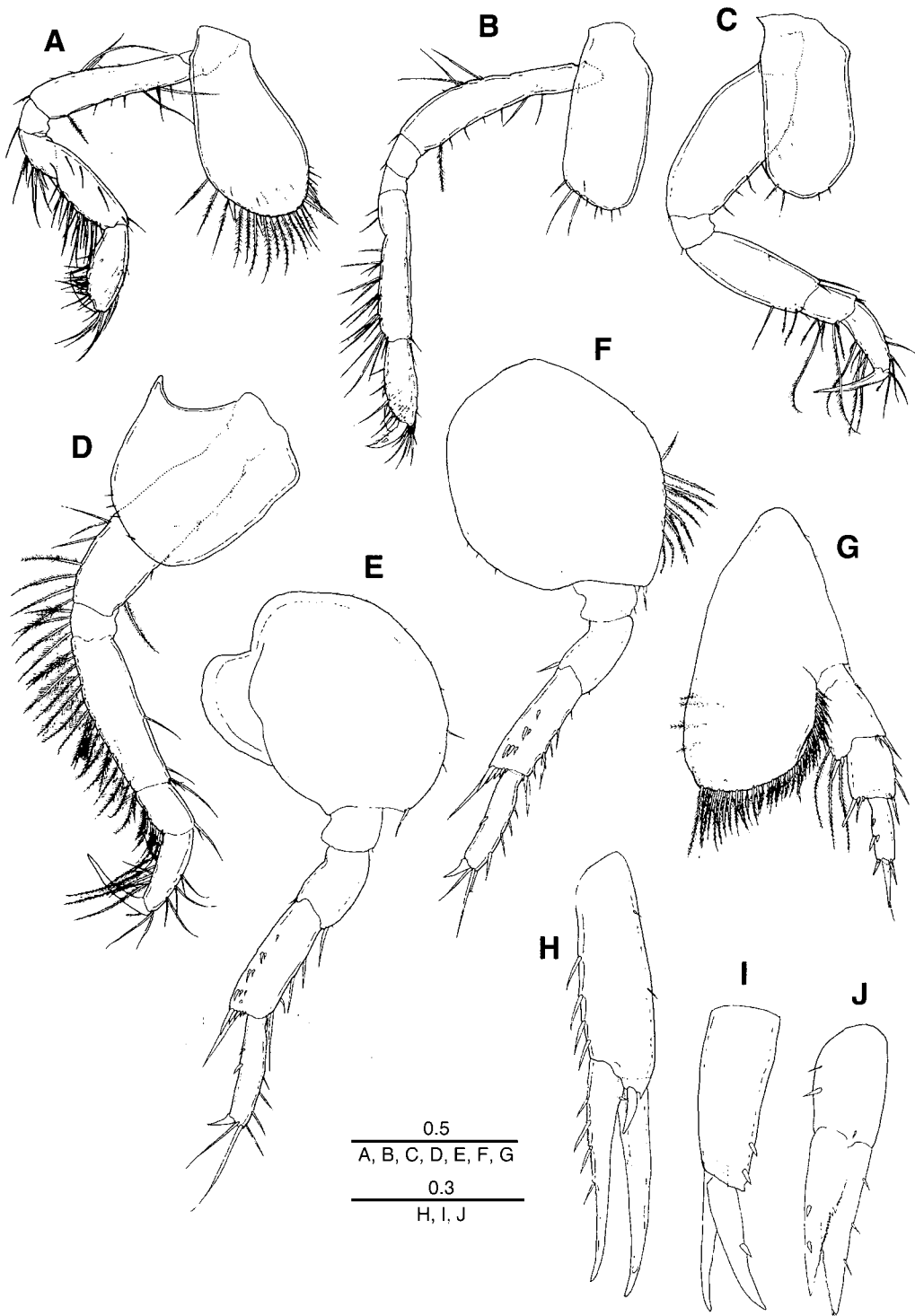


Fig. 5. *Byblis japonicus*, female, 4.0 mm. A, gnathopod 1; B, gnathopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, pereopod 6; G, pereopod 7; H, uropod 1; I, uropod 2; J, uropod 3. Unit of scales in mm.

with several plumose setae and simple setae, while in smaller specimens (Fig. 5D) with a few plumose setae; merus about 3 times as long as carpus, posterior margin with densely plumose setae.

Pereopod 5 (Fig. 5E). Basis slightly longer than about 1/3 as long as pereopod 5, broadly expanded, especially posterior lobe prominently produced; carpus 1.1 times as long as ischium and merus combined, posterior margin with 1, 2, 2, 4, 5 spines in formula.

Pereopod 6 (Figs. 3D, 5F). Anterodistal margin of basis with from 10 (Fig. 5F) to 16 (Fig. 3D) plumose setae, respectively; tip of lowest margin naked; posterior margin of carpus with 2, 3, 4, 5, 6 (Fig. 3D) and 1, 2, 3, 5 (Fig. 5F) spines in formula.

Pereopod 7 (Figs. 3E, 5G). Posteroventral lobe of basis expanding ventrally, posterior margin oblique, with densely plumose setae, extending somewhat posterodistal margin of merus; merus slightly longer than carpus, posterodistal margin with from 6 (Fig. 5G) to 8 (Fig. 3E) plumose setae.

Uropod 1 (Figs. 3F, 4H). Fully reaching beyond end of uropod 2; dorsal margin of peduncle with from 4 (Fig. 5H) to 8 (Fig. 3F) spines and inner ramus with from 4 to 7 spines respectively; outer ramus slightly longer than inner ramus.

Uropod 2 (Fig. 5I). Slightly longer than uropod 3; peduncle longer than rami, both rami subequal to each other in length, attenuate.

Uropod 3 (Fig. 5J). Peduncle shorter than rami, outer ramus longer than inner ramus, with 3 spine; medial margin of both rami serrated.

Telson (Figs. 3G, 4D). Broadly rounded, cleft not reaching to the middle, each lobe with 1 spine, 3 pinnate setae and 2 (Fig. 3G) or 1 (Fig. 4D) setose on outer proximal margin, among them spines slightly separated apically; distal margin slightly serrated.

Remarks. In the male, basis of pereopod 6 (Fig. 2F) and inner ramus of uropod 3 (Fig. 2J) are quite different those from female (Figs. 3D, 5F, 5J). Dahl's figures accorded well with our female specimens. Therefore Dahl's specimen might be female. Our female specimens are well accorded with the original description (Dahl, 1945). However, a few differences are found between our female specimens and original description: (1) in the original description merus of pereopod 4 is very long, about 4 times as long as carpus, while it is about 3 times as long as carpus in our specimens; (2) pereopod 6, lower anterodistal margin of basis with 18 plumose setae in the original description, while anterodistal margin of basis with 10 and 16 plumose setae, but tip of lowest margin naked in our specimens; (3) pereopod 6, anterior margin of propodus with 10 spines, while it has 4 and 7 spines in our specimens, respectively. in case of female, the numbers of seta or spine on appendages is rather less in our female specimens than in the original description but these differences are possibly caused by age variation; and (4) in the original description, telson has two thin dorsal hairs, while our specimen, each lobe has 1 spine, 3 pinnate setae and 1 or 2 setose on outer proximal margin.

Distribution. Korea (Yellow Sea, South Sea), Japan, South China Sea.

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한국산 안경옆새우 (연갑아강: 단각목: 안경옆새우과)의 1미기록종

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요 약

1995년부터 1999년 사이에 채집된 한국산 단각류를 동정한 결과 Ampeliscidae (안경옆새우)과에 속하는 *Byblis japonicus*가 1한국미기록종으로 확인되어 보고한다.