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First record of the family Sebidae (Crustacea: Malacostraca: Amphipoda) from Korean waters, with description of newly recorded species, *Seba chiltoni*

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This study aims to discover and document amphipods from Korea, contributing to the clarification of the taxonomy of Korean amphipod species. As part of this effort, a newly recorded species, *Seba chiltoni* Moore, 1987, belonging to the family Sebidae Walker, 1907, was collected from the southern subtidal area of Jeju-do, Korea and is reported herein. The family Sebidae is notable for comprising only a single genus, *Seba* Spence Bate, 1862. In this paper, the morphological characteristics of the genus *Seba* and the newly recorded species *Seba chiltoni* are provided. The species is described and fully illustrated in the present study. This is the first record of the family Sebidae from Korea.

Keywords: Amphilochidea, amphipod, Korea, sebid, taxonomy

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Introduction

The family Sebidae Walker, 1907 is a small family group containing a single genus, *Seba* Spence Bate, 1862. Spence Bate established the genus *Seba* under Amphipoda, designating *Seba innominata* as the type species. Later, in 1906, Walker proposed the family Sebidae and considered *S. innominata* a nomen dubium, designating *Seba saundersii* Stebbing, 1875 as the new type species. Currently, five previously established genera—*Caribseba* Shaw, 1989, *Grimaldia* Chevreux, 1889, *Paravalettia* K.H. Barnard, 1916, *Seba* Spence Bate, 1862, and *Teraticum* Chilton, 1884—have been synonymized with *Seba*, which now comprises 27 recognized species (Horton *et al*., 2025). The known species of *Seba* are predominantly found in shallow subtidal zones and are ecologically associated with benthic marine organisms such as sponges and macroalgae (Ariyama, 2009).

The family Sebidae and its sole genus *Seba* can be distinguished from related taxa by the following characteristics: antennae subequal in length; accessory flagellum present with two articles (except in *S. tropica* McKinney, 1980, where it is absent); eyes absent (except in *S. typica* (Chilton, 1884), where they are present); gnathopod 1 weakly chelate or subchelate; gnathopod 2 strongly chelate with elongate ischium; urosomites 2–3 coalesced (except in *S. aloe* Karaman, 1971, where segments are distinct); uropod 3 uniramus with a biarticulated ramus (Holman and Watling, 1983; Barnard and Karaman, 1991; Ariyama, 2009).

In this paper, we describe and illustrate a newly recorded species, *S. chiltoni*, in the Korean amphipod fauna. This is the first record of the family Sebidae from Korean waters.

Materials and Methods

Specimens were collected by SCUBA diving from the subtidal waters at Mun-island, Seogwipo-si, Jeju-do, Korea on 24 May 2018. For preservation, the specimens were

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fixed with 95% ethanol and later dissected in glycerol on Cobb's aluminum hollow slides. Permanent mounts were made using polyvinyl lactophenol with lignin pink as a staining agent. Pencil drawing and measuring were performed with the aid of a drawing tube, mounted on an SZX 12 stereomicroscope (Olympus) and BX 51 interference contrast compound microscope (Olympus). Line drawings were produced using the program Clip Studio Paint (Celsys, Japan). Body length was measured from the tip of the rostrum to the posterior end of the urosome, along the dorsal parabolic line of the body. Specimens are deposited at the National Institute of Biological Resources (NIBR), Incheon, Korea and the Department of Biological Science, Dankook University (DKU), Cheonan, Korea.

Systematic Accounts

Order Amphipoda Latreille, 1816 단각목
Family Sebidae Walker, 1907
작은집게손옆새우과 (신칭)
Genus *Seba* Spence Bate, 1862
작은집게손옆새우속 (신칭)

***Seba chiltoni* Moore, 1987 (Figs. 1–3)**
제주작은집게손옆새우 (신칭)

Seba chiltoni Moore, 1987: 258, figs. 14–15; Ariyama, 2009: 45, figs. 1–4.

Seba typica - Chilton, 1921: 56, fig. 6a–d; Chilton, 1924: 269; Ledoyer, 1978: 314, fig. 42; Ledoyer, 1986: 948, fig. 374.

Material examined. 2♂♂, Munseom island, Seogwipo-si, Jeju-do, Korea 33°13′38″N, 126°34′4″E, 24 May 2018. The specimens were collected by SCUBA diving, collected by Y.H. Kim.

Description. Male (cat no. NIBRIV0000837772): Body (Figs. 1, 2A) dorsally smooth, 2.4 mm long. Head subquadrate, longer than pereonite 1; cephalic lobe blunt; eye absent; rostrum not elongated; pereonite 2 longest, subequal in length with cephalon and pereonite 1 combined.

Epimera (Fig. 2B), epimeron 1 rounded posteroventrally, with one robust seta; epimeron 2 subquadrate, weakly produced posteroventrally; epimeron 3 produced posteroventrally with small cusp, four robust setae ventrally.

Antenna 1 (Fig. 2C) short, about quarter of body length; peduncular article 1 subrectangular, with ventrodistal robust seta, peduncular article 2 slender, rectangular, peduncular article 3 short, callynophorate ventrodistally; length ratio of peduncular articles 1–3 = 1.00 : 1.02 : 0.28; flagellum 4-articulate, articles 1, 2 callynophorate ventrodistally; accessory flagellum present, slender, 2-articulate.

Antenna 2 (Fig. 2D) slender, shorter than antenna 1; peduncular articles 1, 2 short; peduncular article 4 slender, rectangular; length ratio of peduncular articles 3–5 = 1.00 : 3.61 : 2.52; flagellum short, 3-articulate.



Fig. 1. *Seba chiltoni* Moore, 1987. Adult male, 2.6 mm (DKU202505), habitus. Scale bar = 1.0 mm

Gnathopod 1 (Fig. 2E) subchelate; coxa subquadrate, widening ventrally, posteroventral corner slightly notched, each corner with setule; basis elongate, narrowing proximally, ischium and merus pubescent posteriorly; carpus subtriangular, with ventrodistal setae; propodus widening distally, hind margin pubescent, palm steeply angled, middle portion with 2 large blunt processes, palmar corner distinctly produced, with two stout robust setae; dactylus falcate, fitting palm.

Gnathopod 2 (Fig. 2F) slender, chelate; coxa subquadrate, wider, about 0.95× as wide as long, posteroventral corner slightly notched, each corner with setule; basis slightly curved anteriorly, 0.84 times as long as that of gnathopod 1; ischium elongate, subrectangular, 0.59 times as long as basis; carpus subequal in length to ischium; propodus elongate, forming a chela with fitted dactylus, each margin straight, distal tip slightly curved anteriorly; dactylus falcate, fitting palm.

Pereopod 3 (Fig. 2G), coxa subovate; basis subrectangular, slightly curved posteriorly; merus produced anterodistally; carpus and propodus subrectangular, with posterior robust setae; dactylus falcate; length ratio of articles 2–7 = 1.00 : 0.33 : 0.89 : 0.62 : 0.60 : 0.31.

Pereopod 4 (Fig. 2H) similar to pereopod 3; length ratio of articles 2–7 = 1.00 : 0.28 : 0.82 : 0.56 : 0.58 : 0.30.

Pereopod 5 (Fig. 3A), coxa wider than long, bilobate; basis subovate, anterior margin with two robust setae, posterior margin weakly crenulate; merus broad, produced posterodistally; carpus and propodus subrectangular; dactylus falcate; length ratio of articles 2–7 = 1.00 : 0.25 : 0.71 : 0.50 : 0.52 : 0.22.

Pereopod 6 (Fig. 3B) similar to pereopod 5, except basis much larger, anterior margin with six robust setae, poster-

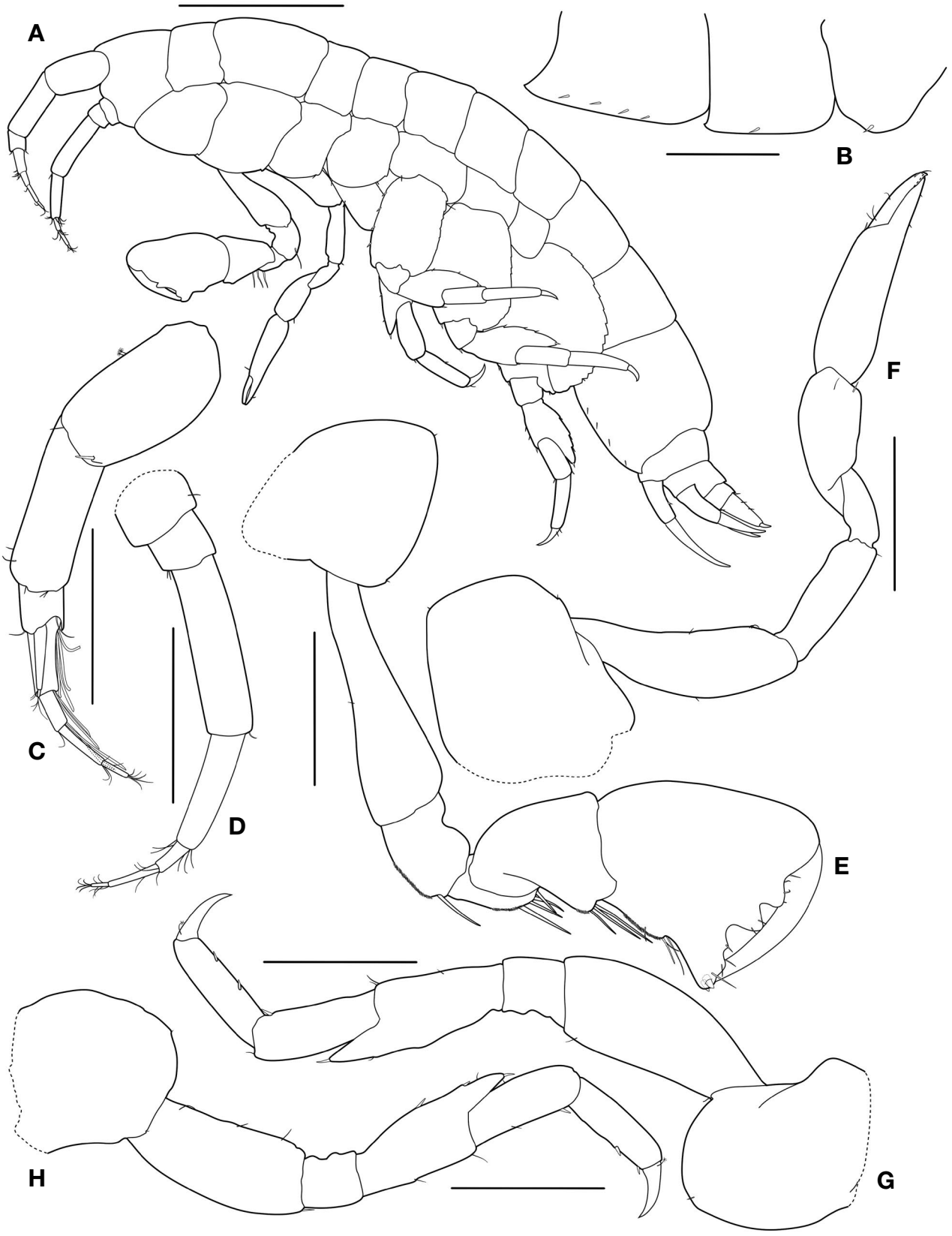

Fig. 2. *Seba chiltoni* Moore, 1987. Adult male, 2.4 mm (NIBRIV0000837772): A, habitus; B, epimera; C, antenna 1 (medial view); D, antenna 2; E, gnathopod 1; F, gnathopod 2; G, pereopod 3; H, pereopod 4. Scale bars: A = 0.5 mm, B–H = 0.2 mm.

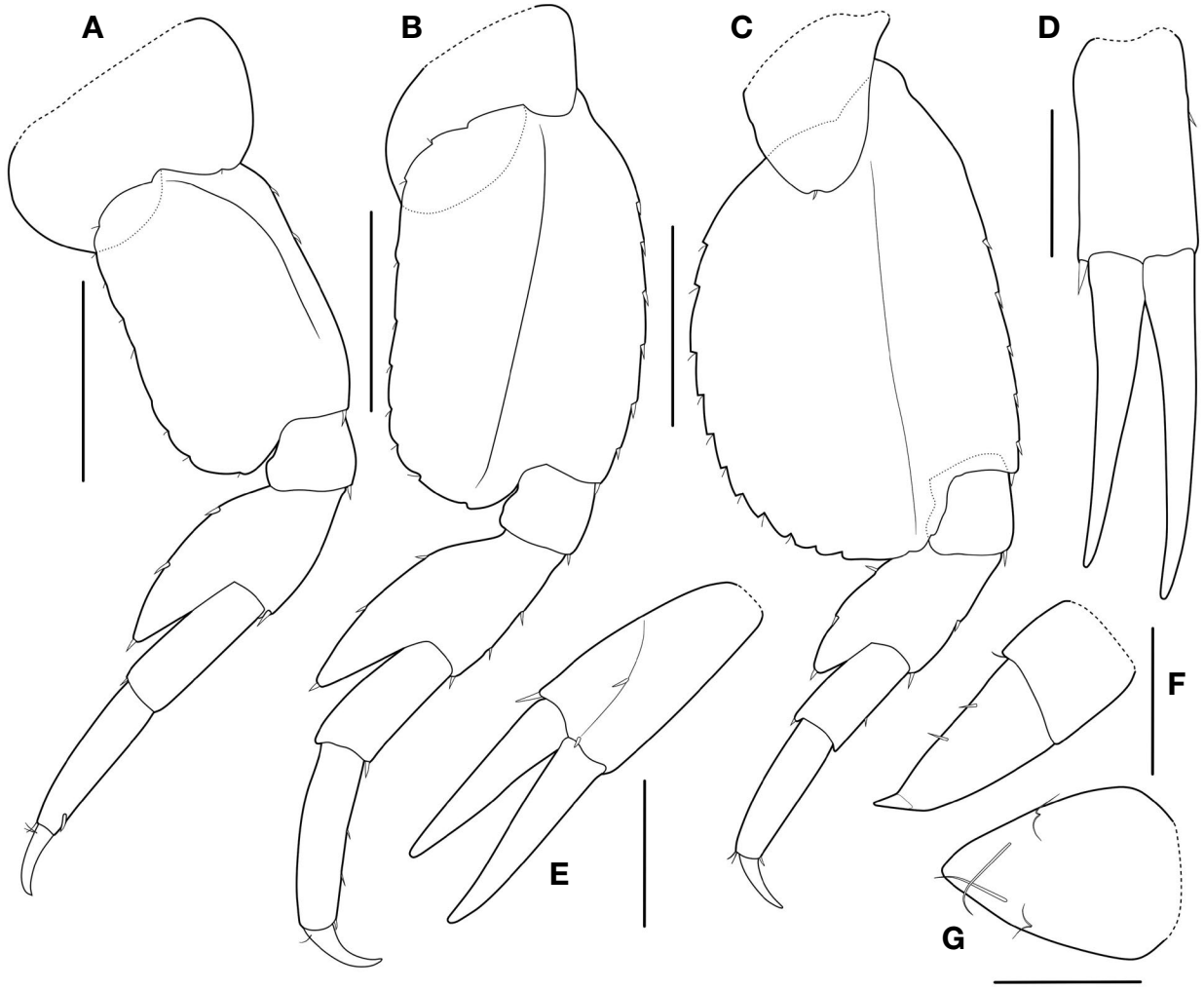

Fig. 3. *Seba chiltoni* Moore, 1987. Adult male (NIBRIV0000837772), 2.4 mm. A, pereopod 5; B, pereopod 6; C, pereopod 7; D, uropod 1; E, uropod 2; F, uropod 3; G, telson. Scale bars: A–C = 0.2 mm, D–G = 0.1 mm.

ior margin weakly crenulate; length ratio of articles 2–7 = 1.00 : 0.19 : 0.64 : 0.38 : 0.46 : 0.21.

Pereopod 7 (Fig. 3C) coxa small, unilobate, subtriangular; basis broad, semicircular, expanded posteriorly, anterior margin with five robust setae, posterior margin serrulate; length ratio of articles 2–7 = 1.00 : 0.22 : 0.41 : 0.23 : 0.34 : 0.17.

Uropod 1 (Fig. 3D), peduncle subrectangular, with mediodistal robust seta; rami slender, longer than peduncle, unarmed, outer ramus slightly longer than inner one.

Uropod 2 (Fig. 3E) subsimilar to uropod 1, peduncle subrectangular, subequal in length to outer ramus, with distolateral and distomedial robust setae; rami unarmed, outer ramus slightly longer than inner one.

Uropod 3 (Fig. 3F) uniramus, peduncle short, subquadrate; ramus triangular, biarticulate, article 2 short, upturned distally.

Telson (Fig. 3G) subtriangular, entire, bearing two setules on each side and two dorsal setae.

Remarks. *Seba chiltoni* Moore, 1987 shows considerable variation in the morphology of the gnathopod 1 and pereopods across different studies (Chilton, 1921; Ledoyer, 1978; 1986; Ariyama, 2009). These variations are primarily attributed to age-related changes. Since members of the genus *Seba* are small-sized species, even minor differences in body size may lead to notable morphological discrepancies. *Seba chiltoni* is characterized by expanded pereonite 2, subequal in length with head-pereonite 1 combined. The male gnathopod 1 large, subchelate, propodus palm angled, being slanted with age, palmar margin with two blunt and one minute processes, palm corner defined by a blunt process with two stout robust setae. Pereopod 7, merus posterodistally expanded in adult male, reaching the distal end of the carpus in specimens measuring 3.1 mm (Ariyama, 2009). However, in smaller specimens, the degree of merus expansion varies depending on the level of

development (Chilton, 1921; Ledoyer, 1978; 1986). Our specimens align well with previous studies in the morphology of gnathopod 1 but differ in the degree of merus expansion, likely due to their smaller size and the resulting developmental variation.

Distribution. Australia (Tasmania), Japan (Shirahama), Korea (Jeju-do island), New Zealand.

Conflicts of Interest

The authors of this paper have no affiliation with any interests and is solely responsible for the paper.

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