

The Shrimps (Crustacea: Decapoda) of Ulreung Island, Korea

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The three species, *Synalpheus tumidomanus*, *Spirontocaris arcuata*, *Heptacarpus futilirostris*, are added to the shrimp fauna of the Ulreung Island. *S. tumidomanus* was reported one time in Korean waters without redescription, and the present report is the second. *Heptacarpus futilirostris* is newly recorded from the East Sea in Korean waters. With the five previously known species, the total eight species are listed and *S. tumidomanus* is redescribed.

KEY WORDS: Shrimps, Decapoda, Ulreung Island

The shrimp (Crustacea: Decapoda) fauna of Ulreung Island has been poorly known and five species have been recorded from Ulreung Island (Kim, 1973; Kim, 1977; Kim and Choe, 1981; Kim and Kim, 1982). The present study was based on the materials collected during the periods from July 1989 to August 1993 in Ulreung Island. Specimens were obtained from fishing nets, and collected by hand and scuba diving. In the present study, seven species were examined. Of these, one species was identified as the species belonging to family Processidae which is the family never reported in Korean waters. However, the specific status of this species is waiting for the further study. The present study shows that three species are newly recorded from Ulreung Island. Of these, one species *Heptacarpus futilirostris* is newly recorded from the East Sea in Korean waters. The eight species are listed in this paper and *Synalpheus tumidomanus* is redescribed with illustration. The "Literatures" section in each species lists the references concerning the species reported from Ulreung Island.

The present study was supported by the Basic Science Research Institute Program, Ministry of Education, 1992.

Systematic Account

Order Decapoda Latreille, 1803 십각 목
Suborder Pleocyemata Burkenroad, 1963

포란 아목

Infraorder Caridea Dana, 1852 생이 하목

Family Alpheidae Rafinesque, 1815 딱총새우 과

1. *Synalpheus tumidomanus* (Paulson, 1875) 세이마뿔딱총새우 (신칭) **Fig. 1**

Synalpheus tumidomanus.—Miya, 1972: 63, pl. 12; Kim *et al.*, 1979: 109.

Material Examined: 2 inds., 1 ovig., Sömmok, July 16, 1989; 1 ind., Dodong, Nov 16, 1990; 1 ind., Gwanūmdo, Nov 16, 1990; 2 inds., 1 ovig., Gadubong (scuba) Nov 28, 1991.

Description: Rostrum (Figures 1a, b) long, exceeding lateral ocular teeth, arising from anterior slope slightly behind anterior margin of carapace, directed anteriorly little bit above level of ocular teeth; tip bearing few setae. Ocular hoods separated from rostrum by depressed anterior slope of carapace, with narrowly acute teeth at tips and falling just before tip of rostrum; ocular teeth bearing few setae at tips. Pterygostomial

margin produced as acute triangular lobe below basicerite.

Stylocerite narrowly elongate, reaching to 1/3 of second antennular segment; first antennular segment slightly shorter than sum of second and third segments; second segment almost 1.4 times as long as third segment.

Scaphocerite with lateral spine exceeding distal end of carpocerite; inner blade well developed, not extending to tip of lateral spine; cleft between inner blade and lateral spine deep, arising from proximal 1/3 of scaphocerite. Basicerite (Figures 1a, b) with spine dorsally; lateral spine reaching to proximal 1/3 of scaphocerite. Carpocerite overreaching distal end of antennular peduncle.

Third maxilliped reaching distal end of carpocerite by distal 2/3 of ultimate segment.

Major first pereopod (Figures 1c, d) overreaching distal end of carpocerite by almost entire length of chela. Major chela about 3.0 times as long as broad; palm about 2.6 times as long as fingers, terminating in small sharp downward-directed tooth on superior distal margin. Carpus short and broad. Merus about half as long as palm, with blunt minute tooth at distal end of superior margin.

Minor first pereopod (Figures 1e, f) overreaching distal end of carpocerite by entire length of chela. Palm of chela about 1.4 times as long as fingers. Merus about 2.5 times as long as broad, armed with almost invisible minute tooth (visible under high magnification) at distal end of superior margin.

Second pereopod (Figure 1g) overreaching distal end of carpocerite by length of entire chela and 1/3 of carpus. Fingers of chela longer than palm. Carpus slightly more than 2.0 times as long as chela and composed of five segments; first segment slightly shorter than sum of distal four segments; second slightly shorter than third; third and fourth subequal; fifth almost same length as sum of third and fourth segments. Merus shorter than carpus. Ischium shorter than merus.

Third, fourth, and fifth pereopods with dactyli biunguiculate (Figures 1h, i); upper process longer than lower one, and base of lower process almost as broad as base of upper one.

Propodus of third pereopod (Figure 1h) about 4.

4 times as long as dactylus; inferior margin armed with 9 movable spines throughout length in addition to distal one. Carpus slightly shorter than half of propodus with one movable spine at distal end of inferior margin. Merus of third pereopod about 4.8 times as long as broad.

Carpus of fourth pereopod with one movable spine at distal end of inferior margin.

Carpus of fifth pereopod with no movable spine.

Pleuron (Figure 1j) of first abdominal somite of male with sharp tooth on ventral margin posteriorly; pleuron of fifth broadly triangular posteriorly.

Telson (Figure 1k) subtriangular, with middle of lateral margins slightly convex and with posterior margin convex; dorsal surface with slight longitudinal median depression, armed typically with two pairs of prominent spines; anterior pair situated at slightly more than 1/3 length of telson; posterior pair located at about 2/3 length of telson; posterior margin with two pairs of strong outer spines; inner pair slightly less than twice as long as outer pair.

Uropodal exopod with lateral margin convex anteriorly; diaeresis with two immovable spines laterally; outer spine larger; one movable spine present between these two immovable spines.

Variations: This species shows sexual dimorphism in the form of the pleura of the abdominal somites. The pleuron of the first abdominal somite of male (Figure 1j) has a sharp tooth on the ventral margin posteriorly.

Remarks: This species is widely distributed in the Indo-West Pacific region. In Korea, Kim *et al.* (1979) first reported one female from Hong Island, southern part of Kōje Island without redescription. The present specimens were collected mainly among bryozoans, corals and sea weeds in the present study.

Family Hippolytidae 꼬마새우 과

2. *Spirontocaris arcuata* Rathbun, 1902 툼등큰꼬마새우

Material Examined: 1 ind., Gwanūmdo, Nov 29, 1991; 4 inds., Dodong (Scuba), Nov 27, 1991.

Literatures: Kim, 1977: 255, pl. 25, fig. 46, pl.

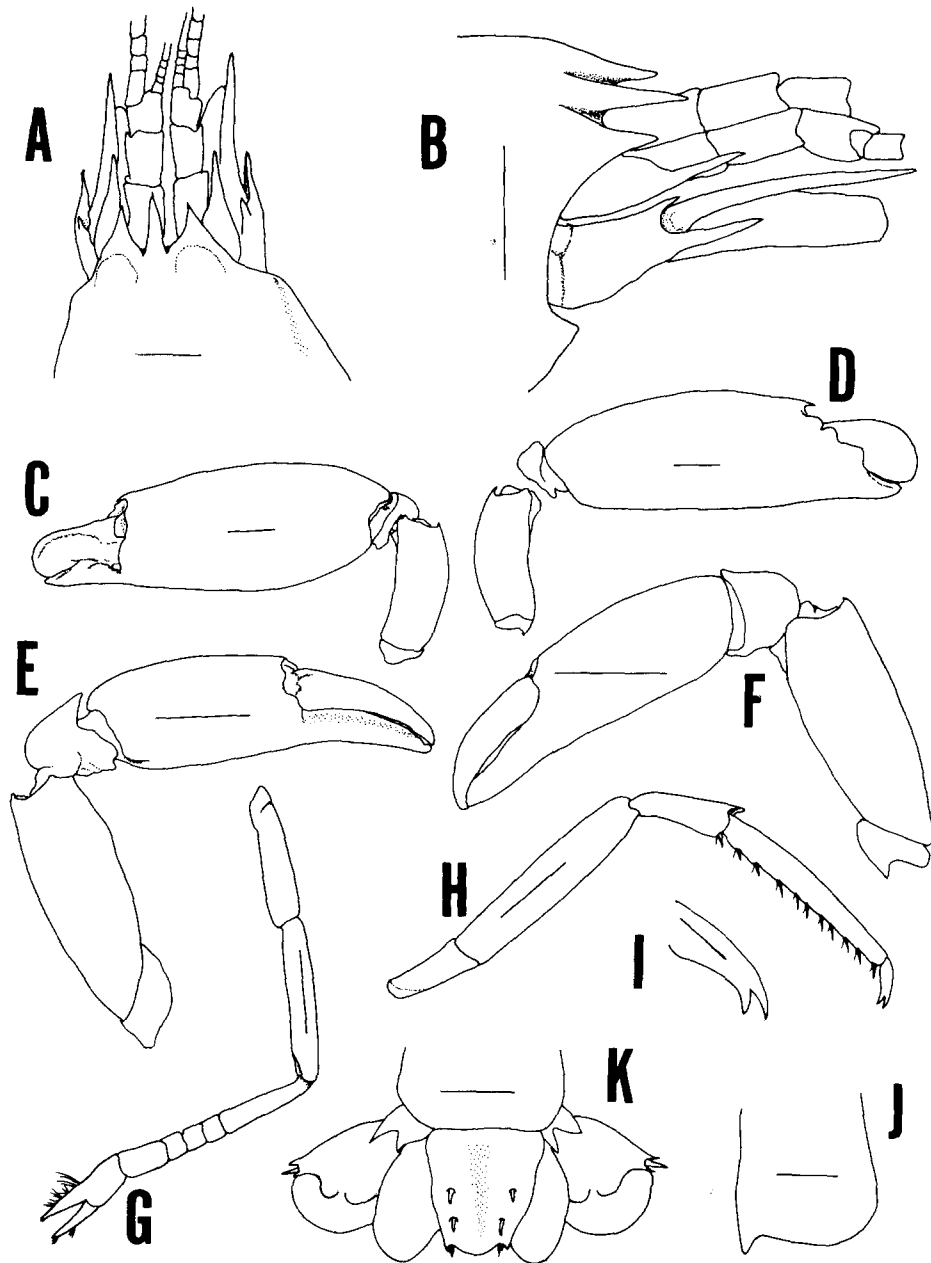


Fig. 1. *Synalpheus tumidomanus* (Paulson, 1875): a, anterior margin of carapace, dorsal view; b, same, lateral view; c, left (major) first pereopod, dorsal outer view; d, same, ventral inner view; e, right (minor) first pereopod, outer view; f, same, inner view; g, right second pereopod; h, right third pereopod; i, same, dactylus; j, right first abdominal pleuron; k, telson and uropods (a-k, male, carapace length 5mm, scale a-h, k, 1 mm; i, 0.25 mm; j, 0.5 mm).

50, fig. 46, textfig. 104; Kim, 1985: 66.

Remarks: This species is newly reported from Ulreung Island.

3. *Heptacarpus futillirostris* (Bate, 1888)

절좁은뿔꼬마새우

Material Examined: 1 female, Sömmok, July 16, 1989; 1 ind., Gwanūmdo (among coral), Nov. 29, 1991.

Literatures: Kim, 1977: pl. 51, fig. 48, textfigs. 106, 107; Kim, 1985: 66; Kim and Kim, 1986: 324; Kim and Song, 1987: 43; Kim and Chang, 1988: 169; Kim and Lee, 1992: 220.

Remarks: This species is newly reported from the East Sea of Korean waters. Previous collecting areas were Gunsan in the Yellow Sea and Chejudo in the South Sea.

4. *Lebbeus groenlandicus* (Fabricius, 1775) 가시배새우

Material Examined: Many specimens, Dodong, Nov 27, 1991.

Literatures: Kim, 1977: pl. 25, fig. 53a, pl. 26, figs. 53b,c, textfig. 116; Kim, 1985: 67; Kim and Yoon, 1985: 39.

Remarks: This species lives in the East Sea in Korean waters. In Ulreung Island, this is a very important commercial species.

Family Pandalidae 도화새우 과

5. *Pandalus hynotus* Brandt, 1851 도화새우

Material Examined: Many specimens, Dodong, Nov 27, 1991.

Literatures: Kim, 1977: pl. 27, fig. 55, textfigs. 119, 120; Kim *et al.*, 1983: 105.

Remarks: This species lives in the East Sea in Korean waters. In Ulreung Island, this is a very important commercial species.

6. *Pandalus borealis* Kröyer, 1838 북쪽분홍새우

Material Examined: Many specimens, Dodong, Nov 27, 1991.

Literatures: Kim, 1977: 285, pl. 28, fig. 57, textfigs. 121, 122; Kim, 1985: 67.

Remarks: This species lives in the East Sea in Korean waters. In Ulreung Island, this is a very

important commercial species.

7. *Pandalopsis japonica* Balss, 1914 물렁가시붉은새우

Literatures: Kim, 1977: 288, pl. 29, figs. 58a, b, pl. 30, fig. 58c, textfig. 124.

Remarks: This species lives in the East Sea in Korean waters.

Family Crangonidae 자주새우 과

8. *Crangon communis* Rathbun, 1899 두가시자주새우

Literatures: Kim, 1977: 303, pl. 31, fig. 64, textfigs. 133, 134; Kim, 1985: 68.

Remarks: This species lives in the East Sea in Korean waters.

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(Accepted February 27, 1994)

울릉도 해역의 새우류(갑각 상강: 십각 목)
김원 · 문승여(서울대학교 자연과학대학 분자생물학과)

울릉도에 서식하는 새우류의 종류상에 3종, *Synalpheus tumidomanus*,
Spirontocaris arcuata, *Heptacarpus futihirostris*가 새로이 추가된다. 이 중 한종,
*S. tumidomanus*는 과거에 한국해역에서는 재기재 없이 한차례 보고된 종이다.
*Heptacarpus futihirostris*는 한국해역의 동해에서는 처음 보고된다. 과거 울릉도 지역
에서 알려진 5종의 새우류를 포함한 총 8종에 대한 분류 목록을 작성하였으며, *S.*
*tumidomanus*는 재기재하였다.