

Two New Records of Crangonid Shrimps (Crustacea: Decapoda: Caridea) in Korean Waters

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ABSTRACT

Two crangonid shrimps, *Paracrangon abei* Kubo, 1937 and *Pontocaris sibogae* (De Man, 1918), collected from the northeastern and southeastern waters of Jeju Island, are newly recorded into the Korean fauna. The former is the second species and the latter is the only species of each genus recorded in Korea. Morphological and distributional accounts of these two species are briefly discussed.

Key words: *Paracrangon abei*, *Pontocaris sibogae*, Crangonidae, Caridea, Decapoda, Crustacea, Korea, new record

INTRODUCTION

Fifteen crangonid species belonging to 8 genera have been reported in the Korean waters (Kim and Kim, 1997; Cha et al., 2001; Kim and Choi, 2006). From the northeastern and southeastern waters of Jeju Island, two crangonid species, *Paracrangon abei* Kubo, 1937 and *Pontocaris sibogae* (De Man, 1918), were newly collected by bottom otter trawls. It means that they extend their distributional ranges southward and northward, respectively. Morphological descriptions and illustrations with color photographs for each species are given. Specimens examined are deposited in the Fisheries Resource Research Division, National Fisheries Research and Development Institute (NFRDI). Postorbital carapace length (cl) is used as a standard length of the specimens. Terminology generally follows those of Chan (1996) and Komai and Kim (2004).

SYSTEMATIC ACCOUNTS

Family Crangonidae Haworth, 1825

¹**Paracrangon abei* Kubo, 1937 (Figs. 1, 3)

Paracrangon abei Kubo, 1937, p. 3, figs. 2, 3 [type locality: Kumanonada Sea off Nagashima, Mie Pref., Japan]; 1965, p. 623, fig. 1007; Ouchi, 1960, p. 180; Miyake et al., 1962, p. 124; Doi, 1989, pp. 54, 59, 60; Komai and Kim, 2004, p. 520, figs. 5, 6.

Material examined. 1 ♀ (cl 11.0 mm), NE of Jeju Island,

33°56.7'N 127°15.3'E, 17 Mar. 2007, by otter trawl at 80 m in depth, NFRDI.

Description. Rostrum (Fig. 1A) broken off and missing except of ventral tooth subproximally. Carapace (Fig. 1A) with 4 dorsomedian teeth; first tooth narrower but nearly as long as third tooth, distally with 2 small teeth; second tooth tiny; third tooth largest, acuminate; fourth tooth smaller than third one; antennal tooth short, falling short of distal margin of cornea; branchiostegal tooth strong; pterygostomian tooth larger than antennal tooth; hepatic tooth strong. Postorbital carina with 1 tooth at cross point with cervical carina; branchiocardiac carina with 1 small tooth; upper branch of branchial carina with 2 spinules, lower branch with 2 strong teeth. Antennal scale (Fig. 1B) 2.5 times as long as wide, with strongly produced blade far overreaching distolateral tooth; distolateral tooth (Fig. 1C) with minute tooth and 4 fine setae laterally. First pereopod (Fig. 1D) with palm 3.4 times as long as width across base of thumb; pollex basally articulated; cutting edge oblique, markedly convex. Fifth pereopod (Fig. 1E) with dactylus 0.4 times as long as propodus; propodus with 10 small spines on flexor margin. First pleopod (Fig. 1F) with endopod reaching 1/3 length of exopod. Second pleopod (Fig. 1G) with endopod broken distally and missing, without appendix masculine.

Coloration. Body (Fig. 3A) generally right brown; dorsal and ventral parts of carapace and abdominal somites large darker spots; appendages of body with scattered darker stains.

Distribution. Known from the Pacific coast of central Japan and, southern part of the East Sea, and South Sea of Korea; at depths of 50-311 m (Komai and Kim, 2004; this study).

Remarks. Komai and Kim (2004) examined the syntypes of *P. abei* and confirmed the taxonomic status of the species.

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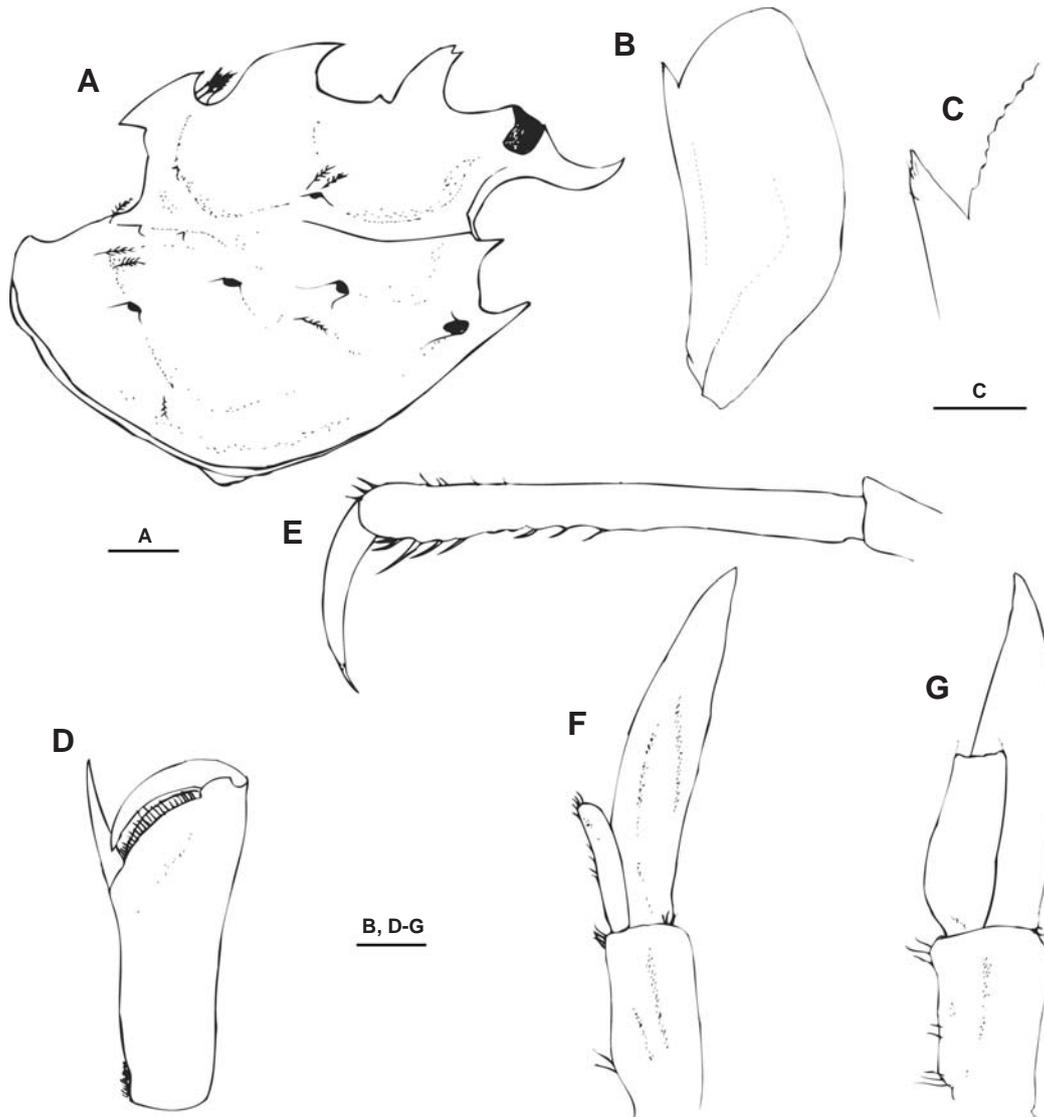


Fig. 1. *Paracrangon abei* all left appendages dissected. A, carapace, lateral; B, antennal scale, dorsal; C, same, distolateral spine; D, chela, ventral; E, fifth pereopod, lateral; F, first pleopod, ventral; G, second pleopod, ventral. Scale bars=2 mm (A), 1 mm (B, D-G), 0.5 mm (C).

The present specimen agrees well with Komai and Kim's (2004) description of *P. abei*, especially in that the first median tooth on the carapace extends dorsally as far as the third tooth and distally two-toothed, that the second median tooth on the carapace is absent or greatly reduced in minute tubercle, and the dactylus of the fifth pereopod is short, 0.38-0.43 times as long as the propodus. It is distinguished from *P. echinata* Dana, 1851 reported in Korea in the characters of the length and shape of the first median tooth on the carapace, the size of the second median tooth, and the length of the dactylus of the fifth pereopod. In *P. echinata*, the first median

tooth on the carapace is shorter than the third tooth and simply acute. The second median tooth of *P. echinata* is conspicuous, and acute. The dactylus of the fifth pereopod is longer and 0.50-0.55 times as long as the propodus in *P. echinata* than in *P. abei*. The present specimen found off Jeju Island extends its distributional range slightly southward and representing the first discovery of the species from the East China Sea.

¹**Pontocaris sibogae* (De Man, 1918) (Figs. 2, 3)
Restricted synonymy

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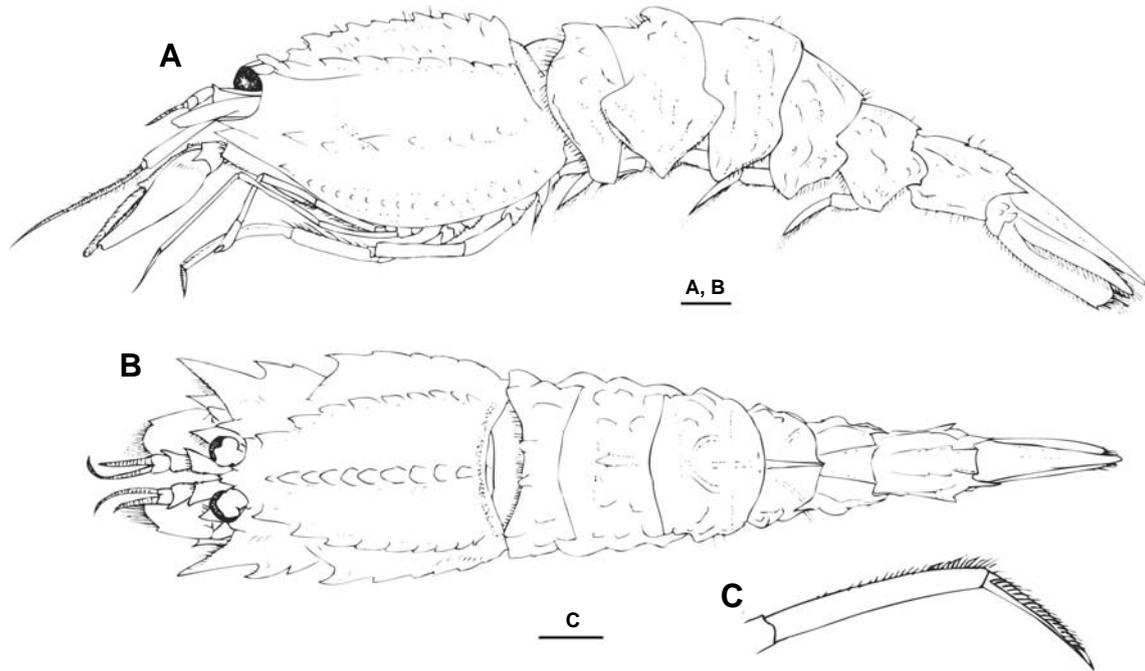


Fig. 2. *Pontocaris sibogae*. A, entire animal, lateral; B, same, dorsal; C, right fifth pereopod, lateral. Scale bars=2 mm (A, B), 1 mm (C).



Fig. 3. A, *Paracrangon abei*; B, *Pontocaris sibogae*.

Aegeon sibogae de Man, 1918, p. 302 [type locality: Bali Sea, Indonesia]; 1920, p. 298, pl. 24, fig. 72, 72a-f.

Pontocaris sibogae: Fujino and Miyake, 1970, p. 301; Chace, 1984, p. 44 (in part); Chan, 1996, p. 309, fig. 15.

Material examined. 1 ♀ (cl 10.0 mm), SE of Jeju Island, 32° 43.6'N 127°08.9'E, 15 Mar. 2005, by otter trawl at 117 m in depth, NFRDI.

Description. Rostrum (Fig. 2B) short, tip cleft. Carapace

(Fig. 2A, B) 1.1 times as long as width; dorsomedian carina bearing 10 teeth; first lateral carina with 9 teeth; second lateral carina with 2 teeth at anterior part and 6 teeth or tubercles at posterior part; third lateral carina bearing 16 teeth or tubercles; branchiostegal tooth large and wing-like; pterygostomial tooth larger than antennal tooth, nearly reaching tip of branchiostegal tooth. Abdominal sculpturing (Fig. 2A, B) complicated and subdivided, with ridges and lobes irregularly arranged; first somite with 2 distinct submedian carinae; second to fourth somites each with dorsomedian carina, that of second somite with anteriorly 1 tooth, that of fourth somite posteriorly pointed; fifth somite with posteriorly divergent submedian carinae, these carinae unarmed; sixth somite with pair of submedian carinae dorsally bearing 2 pairs of tooth.; pleura of first to fifth somites triangular and ventrally pointed in various degree, that of fifth somite with 1 posterior tooth. Antennal scale (Fig. 2B) stout, 0.3 times as long as carapace, 1.6 times as long as width. Palm of first pereopod relatively slender, 2.9 times as long as width; distomesial spine ("thumb") strong, lamelliform, pointed distally. Carpus of second pereopod (Fig. 2A) 1.4 times as long as chela. Dactylus of fifth pereopod (Fig. 2C) simple, 0.6 times as long as propodus.

Coloration. Body brownish pink, mid-carapace with broad transverse whitish brown band; tip or basal parts of carapacial teeth brownish red; ridges and lobes of abdominal somites whitish; pleura of third to fifth abdominal somites with scattered pink spots; tail fan whitish brown, outer border of exopod of uropod, and distal parts of endopod of uropod and telson brownish red (Fig. 3B).

Distribution. Along the western periphery of the Pacific Ocean from Japan to Philippines, Indonesia, Loyalty Islands and New Caledonia, at depths of 70-812 m, mostly less than 335 m (Chan, 1996). East Asian waters from East China Sea and Pacific coast of southern Japan, at depths of 100-115 m.

Remarks. The present species is the only species of the genus recorded in Korea. The distribution of *P. sibogae* is now extended to the northern part of the East China Sea.

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REFERENCES

Cha, H.K., J.U. Lee, C.S. Park, C.I. Baik, S.Y. Hong, J.H. Park,

- D.W. Lee, Y.M. Choi, K. Hwang, Z.G. Kim, K.H. Choi, H. Sohn, M.H. Sohn, D.H. Kim and J.H. Choi, 2001. Shrimps of the Korean Waters. National Fisheries Research and Development Institute, Pusan, pp. 1-188.
- Chace, F.A., Jr., 1984. The caridean shrimps (Crustacea: Decapoda) of the Albatross Philippine Expedition, 1907-1910, Part 2: Families Glyphocrangonidae and Crangonidae. *Smithson. Contrib. Zool.*, 397: 1-63.
- Chan, T.Y., 1996. Crustacea Decapoda Crangonidae: Revision of the three closely related genera *Aegaeon* Agassiz, 1846, *Pontocaris* Bate, 1888 and *Parapontocaris* Alcock, 1901. In Crosnier, A., ed., *Résultats des Campagnes MUSORSTOM*, Vol. 15, *Mém. Mus. natn. Hist. Nat.*, 168: 269-336.
- Doi, S., 1989. Vertical distribution of benthic shrimps collected by basket trap fishing in Toyama Bay. *Bull. Toyama Pref. Fish. Exp. St.*, (1): 51-63 (in Japanese).
- Fujino, T. and S. Miyake, 1970. Caridean and stenopodidean shrimps from the East China and the Yellow Seas (Crustacea, Decapoda, Natantia). *J. Fac. Agr. Kyushu Univ.*, 16: 237-312.
- Kim, J.N. and J.H. Choi, 2006. Two new records of caridean shrimps (Crustacea: Decapoda) from the Korean continental slope of the East Sea. *Korean J. Syst. Zool.*, 22: 51-55.
- Kim, H.S. and W. Kim, 1997. Order Decapoda. In *The Korean Society of Systematic Zoology, ed., List of Animals in Korea (excluding insects)*, Academy Publ. Co., Seoul, pp. 212-223.
- Komai, T. and J.N. Kim, 2004. Shrimps of the crangonid genus *Paracrangon* Dana (Crustacea: Decapoda: Caridea) from the northwestern Pacific: taxonomic review and description of a new species from Japan. *Sci. Mar.*, 68: 511-536.
- Kubo, I., 1937. A review of crangonid shrimps of the genus *Paracrangon* found in Japan. *J. Imp. Fish. Inst.*, 32: 1-11.
- Kubo, I., 1965. *Macrura*. In Okada, Y.K., S. Uchida, T. Uchida and others, *New Illustrated Encyclopedia of the Fauna of Japan*. Part 2. Hokuryukan, Publ. Co. Ltd., Tokyo, pp. 592-629, figs. 891-1031 (in Japanese).
- Man, J.G. de., 1918. Diagnosis of new species of macrurous decapod Crustacea from the Siboga-Expedition. *Tijdschr. Nederl. Dierk. Vereen.*, Ser. 2, 16: 293-306.
- Man, J.G. de., 1920. Decapoda of the Siboga Expedition. IV. Families Pasiphaeidae, Stylodactylidae, Hoplophoridae, Nematocarcinidae, Thalassocaridae, Pandalidae, Psalidopodidae, Gnathophyllidae, Processidae, Glyphocrangonidae and Crangonidae. *Siboga Exped.*, 39a3: 1-318.
- Miyake, S., K. Sakai and S. Nishikawa, 1962. A fauna-list of the decapod Crustacea from the coasts washed by the Tsushima warm current. *Rec. Oceanogr. Works Japan*, 6: 121-131.
- Ouchi, A., 1960. Studies on the animal distribution in the ab-stained areas for trawl-fishery of the northern Japan Sea. *Ann. Rep. Japan Sea Reg. Fish. Res. Lab.*, (6): 173-182 (in Japanese).

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