

New Record of Hippolytid Shrimp *Lebbeus grandimana* (Crustacea: Decapoda: Caridea) from Korean Waters

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ABSTRACT

A hippolytid shrimp, *Lebbeus grandimana*, is described from the southern part of the East Sea and this is the first record of the species in Korea. The genus *Lebbeus* of the family Hippolytidae currently comprises four species in Korea. A key to identify the four species of the genus *Lebbeus* from Korean waters is provided.

Keywords: *Lebbeus grandimana*, Hippolytidae, Caridea, Decapoda, Crustacea, Korea, new record

INTRODUCTION

The hippolytid genus *Lebbeus* currently contains 52 species in the world (Ahyong, 2009, 2010; Komai and Collins, 2009; McCallum and Poore, 2010), of which only three species have been reported in Korean waters (Kim and Kim, 1997; Cha et al., 2001; Kim et al., 2007). During the taxonomic survey of the decapod crustaceans in the Korean waters, a hippolytid species, *Lebbeus grandimana* (Brashnikov, 1907), was newly collected from off Busan, East Sea by the bottom otter trawling. *L. grandimana* is distributed in the northern North Pacific from the coast of Canada, the Bering Sea, and the Sea of Okhotsk to the East Sea (Hayashi, 1992).

A morphological description and both illustrations and color photographs are provided. Postorbital carapace length (CL) is used as a standard length of the specimens. Terminology was mainly followed that of Hayashi (1992). Specimens examined have been deposited in the Fisheries Resource Research Department, National Fisheries Research and Development Institute (NFRDI).

SYSTEMATIC ACCOUNTS

Family Hippolytidae Bate, 1888

¹**Lebbeus grandimana* (Brashnikov, 1907)

(Figs. 1, 3A)

Hetairus grandimana Brashnikov, 1907, p. 152, fig. 18 [type

locality: Kamchatka, Okhotsk Sea, East Sea, 16-100 m]; Derjugin and Kobjakova, 1935, pp. 112, 142; Kobjakova, 1936, p. 222; 1937, p. 108; Makarov, 1941, p. 123, figs. 7, 8.

Lebbeus grandimana: Vinogradov, 1950, p. 205, pl. 13, fig. 48; Hayashi, 1992, p. 119.

Lebbeus grandimanus: Holthuis, 1947, p. 9; Butler, 1980, p. 178, 2 unnumbered figs.; Wicksten and Mendez, 1982, pp. 117, 118.

Material examined. 1 ♀ (CL 11.9 mm), 3 ovig. ♀♀ (CL 11.7-11.8 mm), off Busan (35°15.64'N 129°44.14'E) 24 Nov. 2009 (S.C. Yoon, NFRDI), by otter trawl at 142 m, in depth.

Description. Body of moderate size. Rostrum (Fig. 1A) straight, 0.6 times as long as carapace, falling short of distal margin of antennular peduncle, knifelike, with 5 teeth on dorsal margin, including 2 teeth on carapace, ventral margin with tooth distally. Carapace (Fig. 1A) not carinate on mid-dorsal line; supraorbital spine well developed without notch; antennal spine moderately developed; pterygostomial spine weak. Abdomen (Fig. 1B) smooth, pleura of first four somites rounded, those of fifth and sixth somites pointed posteriorly. Telson (Fig. 1C) with 3 pairs of dorsal spines, distal margin with 2 pairs of spines. Antennular peduncle (Fig. 1D) with marginal spine on each segment; stylocerite slightly falling short of distal margin of second segment of antennular peduncle. Third maxilliped (Fig. 1E) with 13 mesial and 3 apical spinules on distal segment. Third to fifth pereopods (Fig. 1F) with 2, 2 or 3, 3 or 4 spines on each merus, respectively. Epipods on first and second pereopods. Eyed eggs 1.14-1.36 × 1.57-1.79 mm in diameter.

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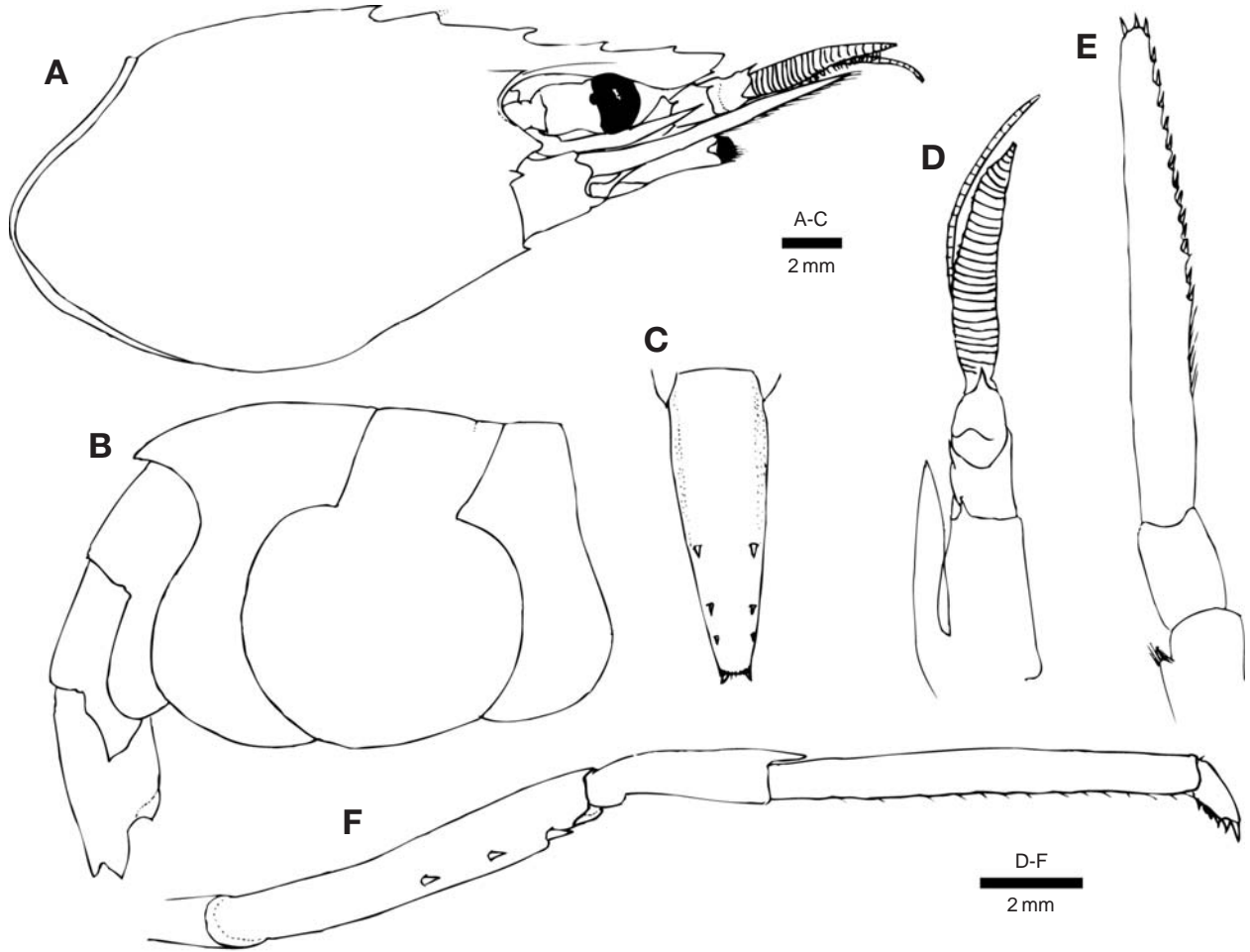


Fig. 1. *Lebbeus grandimana* (Brashnikov, 1907) from off Busan. A, B, D-F, ovigerous female (CL 11.8 mm); C, ovigerous female (CL 11.7 mm). A, carapace and cephalic appendages, lateral; B, abdomen, lateral; C, telson, dorsal; D, left antennule, dorsal; E, distal two segments of right third maxilliped, ventral; F, right fourth pereopod, lateral.

Coloration. Body pale milkish with 6 main bands which extending over dorsal and lateral surface as follows: 2 white and red on carapace, one just posterior to orbit and across anterior dorsal spine, other at about posterior one-sixth of carapace; one on each second, third, and fifth abdominal somites; one at joint of sixth somite and telson, that extends posteriorly along lateral margin of outer uropod; distal part of telson, distal margins of both uropods, eyestalk, and outer margin of scaphocerite also yellow and red. Four light blue solid or interrupted transverse lines present: one just ventral part of anterior dorsal spine on carapace; one on each of first, third, and fourth abdominal somites. Third maxilliped, pereopods, and flagella of antennule mainly yellow (Fig. 2).

Distribution. Northern North Pacific from the coast of Canada, Bering Sea, Okhotsk Sea to the East Sea and Pacific coast of northern Japan; 15-250 m deep (Hayashi, 1992).

Remarks. Komai et al. (2004) summarized a grouping of species within the genus *Lebbeus* based on the number of pereopodal epipods. *Lebbeus grandimana* belongs to the group of two Korean species, *L. polaris* (Sabine, 1824) and *L. unalaskensis* (Rathbun, 1902), characterized by epipods on the first two pereopods. The present species is distinguished from these two species by having the posteriorly rounded pleuron of the fourth abdominal somite and the distal segment of the third maxilliped with a series of spinules on the mesial margin. In *L. polaris* and *L. unalaskensis*, the pleuron of the fourth abdominal somite is pointed posteriorly and the distal segment of the third maxilliped is unarmed except for some apical spinules.

Key to the four species of the genus *Lebbeus* in the Korean waters

1. Epipod present on first three pereopods

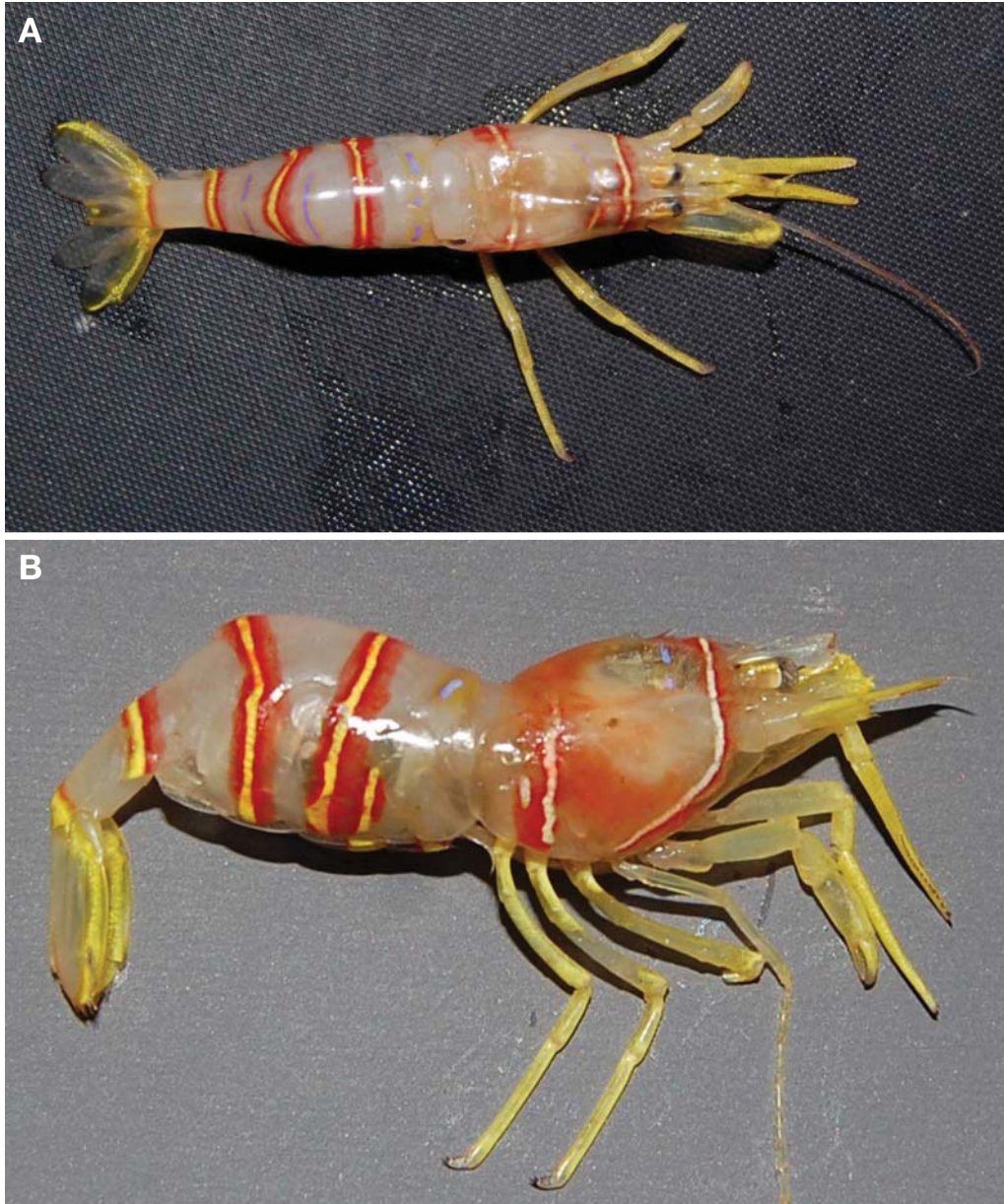


Fig. 2. *Lebbeus grandimana* (Brashnikov, 1907) from off Busan. A, ovigerous female (CL 11.8 mm), dorsal; B, female (CL 11.9 mm), lateral.

- *L. groenlandicus*
- Epipod on first two pereopods only 2
- 2. Pleuron of fourth abdominal somite rounded posteriorly. Distal segment of third maxilliped with a series of spinules on mesial margin *L. grandimana*
- Pleuron of fourth somite pointed posteriorly. Distal segment of third maxilliped unarmed except for some apical spinules 3
- 3. Rostrum longer than carapace, reaching beyond antennal

- scale *L. unalaskensis*
- Rostrum as long as carapace, extending to distal margin of antennal scale *L. polaris*

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