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Note

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Stylocheiron abbreviatum (Euphausiacea, Crustacea): A New Record from the Korean Waters

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Abstract

The euphausiid crustacean *Stylocheiron abbreviatum* G. O. Sars, 1883 has been found in the southern waters of Jeju Island, Korea. This species is the third member of the genus *Stylocheiron* and the twelfth of the family Euphausiidae identified in Korean waters. Using descriptions of this species, a key to Korean euphausiids is presented.

Key words: *Stylocheiron abbreviatum*, Euphausiacea, Crustacea, Korean waters, New record

Introduction

Eupahusiid crustaceans are of major importance in temperate and polar oceans, where they support the food web of phytoplankton, fishes, birds, and marine mammals (Mauchline 1980). The order Euphausiacea comprises two families: Bentheuphausiidae and Euphausiidae. The family Bentheuphausiidae has only one species, *Bentheuphausia amblyops*. The more abundant family Euphausiidae contains 10 genera with a total of 85 species (Siegel 2011). In the Korean waters, 4 genera with 11 species of euphausiids have been reported (Hong 1969; Suh 1990): *Euphausia mutica*, *E. nana*, *E. pacifica*, *E. recurva*, *E. similis*, *E. tenera*, *Pseudeuphausia latifrons*, *P. sinica*, *Thysanoessa longipes*, *Stylocheiron affine*, and *S. carinatum*. No euphausiid species has been added to the fauna list of Korea in the last two decades.

During the course of a zooplankton survey in the southern waters of Korea, a male *Stylocheiron abbreviatum* was collected. This species has not previously been reported in the Korean fauna.

Materials and Methods

Zooplankton samples, from which a male specimen of *Stylocheiron abbreviatum* was identified, were collected from the southern waters of Jeju Island, Korea (33°N, 126°15′E) on the morning of August 29, 1997. Samples were obtained by a MOCNESS net with a mesh size of 300 μm towed obliquely through a layer between 80 and 60 m depth. The collected samples were preserved in 5% neutralized formalin/seawater solution. Body length was measured from the anterior margin of the carapace to the posterior margin of the telson. Drawings were made with the aid of a drawing tube equipped on a microscope.

Results

Descriptions

Stylocheiron abbreviatum G. O. Sars, 1883 (Fig. 1)

S. abbreviatum G. O. Sars, 1883: 33; 1885: 147-149, pl. 27, figs. 11-13; Hansen, 1910: 121-123; 1912: 280-283, pl. 11, fig. 5a-f; Boden et al., 1955: 390-391, fig. 54; Brinton, 1975:

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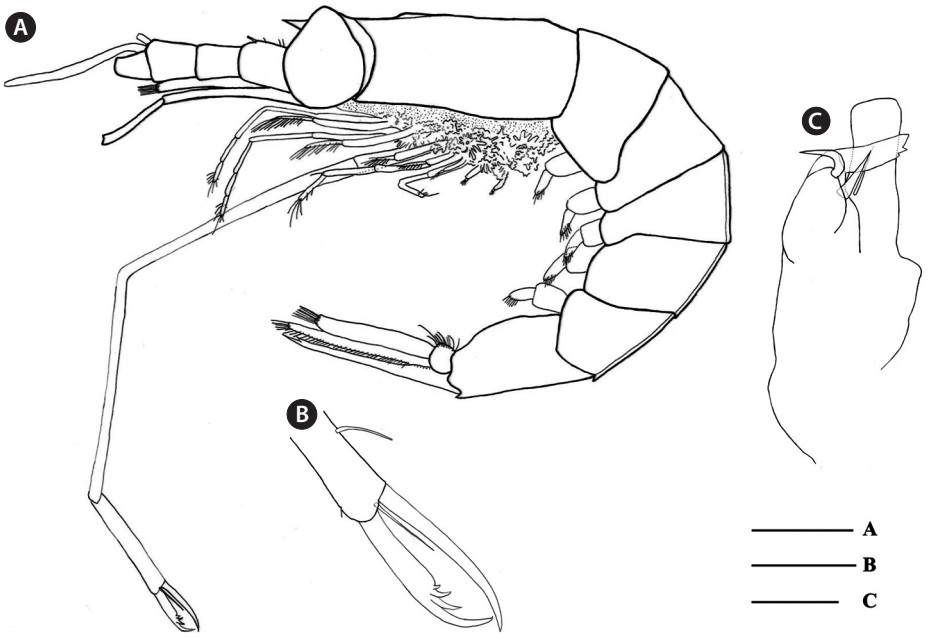

Fig. 1. *Stylocheiron abbreviatum*, male: (A) habitus, lateral view; (B) enlargement of chela; (C) petasma. Scale bars: A = 2 mm, B = 0.5 mm, C = 0.1 mm.

220-221, figs. 118, 124f.

Male: Body length 13 mm. Eye with upper lobe somewhat pyriform in appearance, much smaller than lower lobe; facets of upper lobe larger than those of lower, but crystalline cones not conspicuously enlarged. Frontal plate produced as slender rostrum reaching barely beyond the anterior limit of eyes. Gastric region of carapace domed, with a small median keel (Fig. 1A). Third thoracic leg elongated with a true chela. The distal 1/3 of dactylus modified into three teeth or pectinate indentations (Fig. 1B). Third to fifth segments of the abdomen with low mid-dorsal keels. Sixth segment length/depth ratio 1.9. Petasma with strong terminal process, somewhat hollowed distally; proximal process shorter, more slender and tapering throughout its length; lateral process curved, slender, nearly equal in length to proximal process (Fig. 1C).

Female: Not found in this study.

Remarks

This species is an offshore warm-water species, and is usually found at latitudes between 40°N and 40°S in the Pacific Ocean (Brinton 1962). This species also occurs in the tropical and subtropical waters of the Indian Ocean and the Atlantic (Boden et al. 1955). In the Korean waters, Hong (1969) recorded two species of *Stylocheiron*: *S. affine* and *S. carinatum*. *S. abbreviatum* is clearly distinguished from both species by the presence of a true chela at the penultimate segment of the elongated third pair of thoracic legs. In the genus *Stylocheiron*, moreover, there are only three species with a true chela at the penultimate segment of the third thoracic legs: *S. maximum, S. robustum*, and *S. abbreviatum*. The narrow pyriform shape of the upper lobe of the eye and the presence of keels on the third to fifth abdominal segments distinguish *S. abbreviatum* from the others.

Key to Euphausiidae species from Korean waters

1. Thoracic legs nearly uniform in structure. ·····2
   Thoracic legs unequally developed, one or two of the anterior pairs of legs being greatly elongated. ····· 9
2. Distal three segments of sixth thoracic legs greatly reduced. ····· 3 (*Pseudeuphausia*)
   Sixth thoracic leg similar in appearance to fifth. ····· 4 (*Euphausia*)
3. Mandibular palp present. ····· *P. latifrons*
   Mandibular palp absent. ····· *P. sinica*
4. Species with two pairs of lateral denticles on the carapace. ·· 5
   Species with one pair (rarely none) of lateral denticles on the carapace. ····· 6
5. No process on second antennular segment. ····· *E. mutica*
   Second antennular segment with a spine and tubercles. ····· *E. recurva*
6. Hind margins of first and second abdominal segments straight dorsally. ····· 7
   Hind margins of first and second abdominal segments dorsally with a produced rounded part. ····· *E. similis*
7. Antennular lappet developed in both male and female. ···· 8
   Antennular lappet absent in male, present as a very small triangular process in female. ····· *E. tenera*
8. Body length 7 to 8 mm. Primary setal distance on ischium

of fifth thoracic leg 29 μm. ····· *E. nana*
Body length 13 to 24 mm. Primary setal distance on ischium of fifth thoracic leg 20 μm. ····· *E. pacifica*

9. Second pair of thoracic legs greatly elongated. ····· ····· *Thysanoessa longipes*
Third pair of thoracic legs greatly elongated. ····· ····· 10 (*Stylocheiron*)

10. Penultimate segment of the elongated third pair of thoracic legs with lateral setae only. ····· *S. carinatum*
Penultimate segment of the elongated third pair of thoracic legs terminates in a false chela. ····· *S. affine*
Penultimate segment of the elongated third pair of thoracic legs terminates in a true chela. ·····*S. abbreviatum*

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