Occurrence of Pontoniine Shrimp, *Periclimenes brevicarpalis* (Decapoda: Caridea: Palaemonidae) in Korean Waters

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ABSTRACT

Two specimens of pontoniine shrimp, *Periclimenes brevicarpalis* (Schenkel, 1902), having a symbiotic relationship with sea anemones are reported for the first time in Korea. The specimens were collected by SCUBA diving in Jejudo Island. It has a transparent body with a few large white spots on the carapace, abdomen, telson and uropods. Blue bands are on the cheliped and pereiopods. Five brown eyespots with orange centers are on the telson and uropods. The morphology is described and illustrated with a color image of the living specimens. Two species of Korean *Periclimenes*, *P. ornatus*, and *P. brevicarpalis*, can be distinguished by the position of the anterior dorsolateral spine of the telson. This study extends its previously known range from Japan to Korea. Korean pontoniine now includes six species belonging to five genera of *Conchodytes, Cuapetes, Onycocaris, Periclimenaeus*, and *Periclimenes*.

Keywords: Pontoniine, shrimp, symbiotic relationship, *Periclimenes brevicarpalis*, Korea

INTRODUCTION

Pontoniine shrimps are almost exclusively tropical and subtropical marine commensals. They are rarely found in temperate or fresh waters (Bruce, 1983). At present, five species belonging to five genera of pontoniine shrimps have been recorded in Korea (Lee and Ko, 2011, 2013): *Periclimenaeus gorgonidarum* (Balss, 1913), *Onycocaris callyspongiae* Fujino and Miyake, 1969, *Cuapetes grandis* (Stimpson, 1860), *Periclimenes ornatus* Bruce, 1969, and *Conchodytes nipponensis* (De Haan, 1844). Among them, only one species of *P. ornatus* is attributed to the genus *Periclimenes*. Two pontoniine specimens were collected in Seongsanpo, Jejudo Island, and identified as *Periclimenes brevicarpalis* (Schenkel, 1902). This species is new to the shrimp fauna of Korea. Therefore, its morphology is described and illustrated with color image of the living specimens.

Postorbital carapace length is abbreviated as “CL” measured from the posterior margin of the orbit to the posterior middorsal margin of the carapace. Specimens were preserved in 95% ethanol. All materials examined in this study were deposited at the corresponding author’s collection at Silla University, Busan.

SYSTEMATIC ACCOUNTS

Order Decapoda Latreille, 1803
Family Palaemonidae Rafinesque, 1815
Subfamily Pontoniinae Kingsley, 1879

Genus *Periclimenes* O.G. Costa, 1844

1º *Periclimenes brevicarpalis* (Schenkel, 1902) (Figs. 1, 2)

Ancylocaris brevicarpalis Schenkel, 1902: 563, Pl. 13, fig. 21 (type locality: Makassar, Celebes, Indonesia).

Harpilius latirostris Lenz, 1905: 380, Pl. 47, fig. 14.

Periclimenes ornatus Bruce, 1969, and Conchodytes nipponensis (De Haan, 1844). Among them, only one species of *P. ornatus* is attributed to the genus *Periclimenes*. Two pontoniine specimens were collected in Seongsanpo, Jejudo Island, and identified as *Periclimenes brevicarpalis* (Schenkel, 1902). This species is new to the shrimp fauna of Korea. Therefore, its morphology is described and illustrated with color image of the living specimens.

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Korean name: 1º꼬리점유령새우
Material examined. 1♂ (CL 4.73 mm), 1♀ (CL 5.25 mm), Seongsanpo (Jejudo Island), 31 Mar 2011, Kim WK, by SCUBA diving in approximately 15 m depth.

Description. Body (Figs. 1, 2A) small size, integument smooth. Rostrum (Fig. 2A, B) nearly straight, not overreaching antennal scale; dorsal margin armed with 6 teeth, ventral margin armed with 1 tooth. Carapace (Fig. 2A, B) with well developed hepatic and antennal spines. Abdomen (Fig. 2A) without compressed dorsal prominence on third somite; sixth somite more than 1.5 times of length of fifth somite. Telson (Fig. 2A, L) with 2 pairs of small dorsolateral spines, posterior margin with 3 pairs of small spines. Eye (Fig. 2A) with cornea hemispherical. Antennular peduncle (Fig. 2C) with 1 distolateral spine on basal segment; upper flagellum biretus. Antennal scale (Fig. 2D) approximately 2.1 times longer than broad; lateral margin slightly convex; distolateral tooth falling short of level of distal margin of blade. Third maxilliped (Fig. 2E) short, slender, with long setae on inner margin; exopod not reaching middle of penultimate segment of endopod, with long distal setae. First pereiopod (Fig. 2A, F) overreaching antennal scale; merus slightly longer than carpus; carpus distinctly longer than chela; fingers shorter than palm, with setae laterally. Second pereiopod (Fig. 2A, G) long, stout, subequal; merus unarmed; carpus approximately 0.3 times as long as palm; palm slightly swollen, approximately 5 times as long as broad; fingers slightly shorter than palm. Third to fifth pereiopods (Fig. 2A, H–J) relatively slender, simple, not reaching distal end of antennal scale; each merus and carpus unarmed; each propodus with few setae on distal margin; each dactylus slightly curved, with pointed tip. First and second pleopods of female (Fig. 2K) with appendix interna.

Color. Transparent body with large white spots on carapace, abdomen, telson, and uropods. Blue bands on chelipeds and pereiopods. Five brown eyespots with orange centers on telson and uropods (Fig. 1).

Distribution. Indo-West Pacific region from the Red Sea and Mozambique to Palau, Santa Cruz, the Great Barrier Reef of Australia (Bruce, 1971), Japan (Suzuki and Hayashi, 1977; Minemizu, 2000), and now Korea.

Remark. This species has a symbiotic relationship with sea anemones (Entacmaea actinostoloides) like Periclimenes ornatus. In living shrimps these two species can be easily distinguished by the color pattern. In case of the preserved specimens without the color pattern, they are very similar to each other, therefore, can be separated by the position of the anterior dorsolateral spine of the telson, which is on the proximal half of the telson length in P. brevicarpalis (vs. on the one-third of the telson length in P. ornatus). Korean pontoniinae now consists of six species belonging to five genera. Periclimenaeus gorgonidarum, Onycocaris calysspongiae, Cuapecetes grandis, Conchodytes nipponensis, Periclimenes ornatus, and P. brevicarpalis.
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*Fig. 2. Periclimenes brevicarpalis* (Schenkel, 1902), female (postorbital carapace length 5.25 mm). A, Habitus, lateral; B, Carapace, lateral; C, Left antennule, dorsal; D, Left antennal scale, dorsal; E, Right third maxilliped, lateral; F, Right first pereiopod, lateral; G, Right second pereiopod, lateral; H, Right third pereiopod, lateral; I, Right fourth pereiopod, lateral; J, Right fifth pereiopod, lateral; K, Right first pleopod, dorsal; L, Telson and uropod, dorsal. Scale bars: A–C = 2 mm, D–L = 1 mm.
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REFERENCES


