

Two Spiny Lobsters of the Genus *Panulirus* (Crustacea: Decapoda: Palinuridae) from Korean Waters

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Two spiny lobsters of the genus *Panulirus*, *P. stimpsoni* Holthuis, 1963 from Jeju Island and *P. versicolor* (Latreille, 1804) from Busan, are briefly described with colorations. These lobsters are new members of the Korean decapod crustacean fauna. Morphological and distributional accounts of these species are discussed.

Key words: *Panulirus stimpsoni*, *Panulirus versicolor*, Palinuridae, Decapoda, Korea, New record

Introduction

The spiny lobster genus *Panulirus* contains 19 species worldwide (Holthuis, 1991). To date, only two species, *Panulirus japonicus* (Von Siebold, 1824) and *P. penicillatus* (Olivier, 1791), have been reported from Korea, both from southern coastal waters (Kim and Kim, 1997). During the course of a taxonomic study of Korean decapod crustaceans, members of two additional species of *Panulirus* were collected: *P. stimpsoni* Holthuis, 1963 from the southern coast of Jeju Island and *P. versicolor* (Latreille, 1804) from the southern coast of Busan. Here we describe these two spiny lobsters, and for comparative reasons, briefly describe and discuss the other species of *Panulirus* known to be distributed in Korea.

Examined specimens are deposited in the Fisheries Resource Research Division, National Fisheries Research and Development Institute (NFRDI). Postorbital carapace length (CL) was used as the standard length of the specimens. Terminology mainly follows Holthuis (1991) and Chan and Yu (1993).

Systematic Accounts

Panulirus stimpsoni Holthuis, 1963
(New Korean name: *Ma-dak-saewoo*)
(Fig. 1A)

Panulirus ornatus: Stimpson, 1860: 24 (not *Palinurus ornatus* Fabricius, 1798).

Panulirus stimpsoni Holthuis, 1963: 54; George and Holthuis, 1965: 6, 7 ; Burukovsky, 1974: 101; Holthuis, 1978: 96, pl. 1; 1991: 155, fig. 291; Chan and Yu, 1993: 145, 2 unnumbered figs.

Panulirus japonicus: Cha et al., 2001: 164, 1 unnumbered fig. [not *Panulirus japonicus* (Von Siebold, 1824)].

Type locality

Hong Kong.

Material examined

From Jungmun, southern coast of Jeju Island, 15-25 m, gill net, October 27, 2002, 1 male (CL 82.1 mm), NFRDI.

Diagnosis

Carapace subcylindrical with branchiostegal areas slightly inflated, pubescent and having many well-developed spines; anterior margin with 4 regularly spaced large spines other than supraorbital horns. Supraorbital horns slightly less than or about two eyes high with spinules in-between. Abdominal tergites II to VI having broad sunken pubescent areas on each half, and with those at tergites II and III very conspicuous. Abdominal pleura with anterior margins smooth but posterobasal margins serrated in pleura II to V. Eyes large and kidney-shaped. Antennular plate armed with two pairs of well separated principal spines (anterior pair noticeably larger than posterior) as well as many spines and spinules. Antennular

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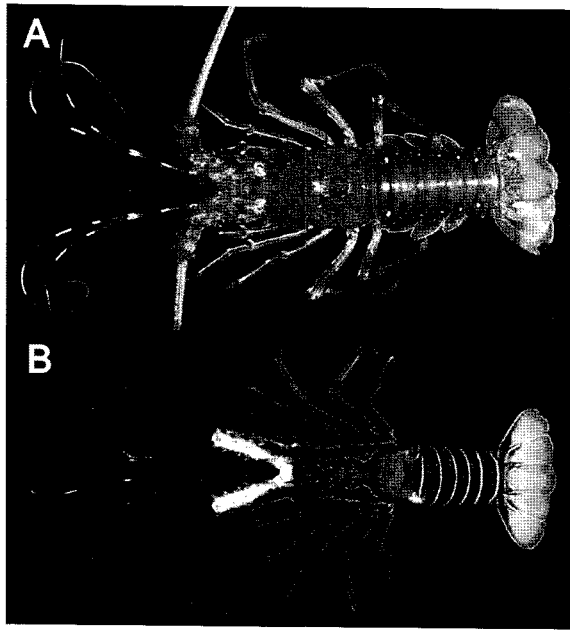


Fig. 1. A, *Panulirus stimpsoni* Holthuis, 1963, female (CL 82.1 mm) from southern coastal waters of Jeju Island; B, *Panulirus versicolor* (Latreille, 1804), juvenile (CL 20.2 mm) from southern coastal waters of Busan.

flagella roughly as long as body length. Third maxilliped lacks exopod.

Coloration

Body generally greenish dark brown. Carapace without peculiar marbling near base of frontal horns. Supraorbital horns banded with brownish yellow markings. Eyes brown. Abdomen with sunken areas somewhat brownish; normal eyespot in anterior half above base of each pleura. Antennular flagella alternated with brown and yellowish white bands. Pereopods striped with yellowish white lines. Pleopods reddish brown.

Distribution

Indo-West Pacific region: coast of southern China between Shanghai and Shantou, Taiwan, Hong Kong, Gulf of Thailand; at less than 40 m in reef areas (Chan and Yu, 1993). Off southern coast of Jeju Island at 15-25 m in this study.

Size

Maximum male CL 130 mm, commonly 65-105 mm (Chan and Yu, 1993).

Remarks

Panulirus stimpsoni is easily distinguished from the two previously known Korean *Panulirus*, *P.*

japonicus (Von Siebold, 1824) and *P. penicillatus* (Olivier, 1791) due to its smooth abdominal somites without transverse grooves and its third maxilliped lacking an exopod. The color photograph of "*Panulirus japonicus*" by Cha et al. (2001: 164), which shows the entire animal in dorsal view, matches well with the present species in having abdominal somites with a large pubescent area on each half of the dorsal surface (Fig. 1A). Therefore, little doubt exists that the photograph by Cha et al. (2001) was of *P. stimpsoni*, and not *P. japonicus*, although the descriptions were based on *P. japonicus*. This species occurs in the coastal waters of southern China, Taiwan and the Gulf of Thailand, and extends its ranges northward to Korean waters.

Panulirus versicolor (Latreille, 1804)
(New Korean name: *Huin-jul-dak-saewoo*)
(Fig. 1B)

Palinurus versicolor Latreille, 1804: 394.

Palinurus taeniatus Lamarck, 1818: 211.

Panulirus versicolor: Holthuis, 1991: 156, fig. 293; Chan and Yu, 1993: 151, 2 unnumbered figs.; Miyake, 1998: 83, pl. 28, fig. 2; Chan, 1998: 1021, 1 unnumbered fig.

Type locality

Mauritius, eastern Africa

Material examined

From Namuseom Island, southern coast of Busan, 7 m, SCUBA diving, November 8, 2001, 1 juvenile (CL 20.2 mm), NFRDI.

Diagnosis

Carapace subcylindrical with surface almost naked and having many strong spines; anterior margin with 4 large and regularly spaced spines other than supraorbital horns. Supraorbital horns more than three eyes high and without spinules in between. Abdomen more or less smooth with only broad but shallow sunken pubescent areas at each half of tergites II and III, more distinct at tergite II. Abdominal pleura with anterior margins smooth but posterobasal margins serrated in pleura II to V. Eyes large and kidney-shaped. Antennular plate armed with two pairs of well separated principal spines only, anterior pair larger than posterior. Antennular flagella almost as long as body length. Third maxilliped lacks exopod.

Coloration

In juvenile, body generally dark blue and brown. Carapace brownish in central region; whitish spots

and longitudinal lines on both lateral sides. Eye black brown. Abdomen dark brownish blue, with white line along posterior margin of each somite. Antennular peduncle inner whitish pink. Pereopods blue and distinctly striped with white lines. Pleopods dark blue. Non-calcified part of tail-fan brownish blue.

Distribution

Indo-West Pacific region: entire Red Sea and east coast of Africa (south to Natal), to southern Japan, Micronesia, Melanesia, northern Australia and Polynesia; at less than 16 m (mostly 4-12 m) in reef areas, nocturnal and not gregarious, in daytime, hides in crevices and cavities of the rocks (Holthuis, 1991; Chan and Yu, 1993). Off southern coast of Busan at 7 m in this study.

Size

Maximum CL 150 mm, commonly 75-112.5 mm (Chan and Yu, 1993)

Remarks

Panulirus versicolor is similar to *P. stimpsoni* in having smooth abdominal somites without transverse grooves and the third maxilliped lacking an exopod. However, it is easily distinguishable from *P. stimpsoni* by having first to sixth abdominal somites with a distinct uninterrupted white transverse band along the posterior margin (Fig. 1B). Although the present species is widely found in the Indo-West Pacific region, it has never previously been recorded from Korean waters. The present record extends the northern range of this species from southern Japan to the southern coast of Busan.

Acknowledgements

This work was funded by the National Fisheries Research and Development Institute (RP-2009-FR-047).

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(Received 8 October 2009; Revised 3 November 2009; Accepted 5 December 2009)