

# First record of *Odontozona arbur* (Decapoda: Stenopodidae: *Odontozona*) from Korea

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Shrimp of the family Stenopodidae occur in tropical, subtropical and warm temperate parts of the world. Thirty-seven species of four genera (*Juxtastenopus*, *Odontozona*, *Richardina*, and *Stenopus*) of the family Stenopodidae have been reported in the world. Among them, only *Stenopus hispidus* of the family Stenopodidae has been recorded from Korean waters. The stenopodid shrimp, *Odontozona arbur* is reported for the first time from Korea. During a taxonomic survey of the decapod crustaceans in Korean waters, *O. arbur* was collected by scuba diving in approximately 14 m depth from the Munseom Islet, in Jeju Island on 28 Jun 2018. *Odontozona arbur* is the second species of the family Stenopodidae in Korea. It is easily distinguished from other species of this family in Korea by the entire dorsal surface of the abdominal somites. The morphology of this species is described and illustrated herein.

Keywords: Korea, *Odontozona*, *Odontozona arbur*, shrimp, Stenopodidae

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## INTRODUCTION

Stenopodid shrimps are commonly found in tropical, subtropical and warm temperate parts of the world (Saito *et al.*, 2017). Thirty-seven species of four genera (*Juxtastenopus* Goy, 2010, *Odontozona* Holthuis, 1946, *Richardina* A. Milne-Edwards, 1881 and *Stenopus* Latreille, 1819) of the family Stenopodidae have been described in the world (WoRMS, 2020). Among them, only *Stenopus hispidus* (Olivier, 1811) has been recorded from Korean waters (Lee *et al.*, 2015). The genus *Odontozona* Holthuis, 1946 is characterized by abdominal somites without spine dorsally, carapace with the cincture of spines along the posterior margin of the cervical groove and ischium of the third maxilliped without external spinule (Holthuis, 1955). Twenty one described species of this genus have been described worldwide, and most species are small-sized and living cryptically on shallow coral and rocky reefs (Saito *et al.*, 2017; Saito and Fujita, 2018).

During a taxonomic survey of the decapod crustaceans in the Korean waters, *Odontozona arbur* Saito, Okuno and Anker, 2017 was collected by scuba diving in approximately 14 m depth in Munseom Islet, Jeju Island. It is the first species of genus *Odontozona* in the Korean waters. Therefore its morphology is described

and illustrated herein.

The drawing was rendered using a dissecting microscope MZ8 (Leica, Wetzlar, Germany) equipped with a camera lucida. The following abbreviations are used in this study: “pocl” (postorbital carapace length) from the posterior margin of the orbit to the posterior mid-dorsal margin of the carapace. The material examined in this study was preserved in 95% ethyl alcohol and deposited at National Institute of Biological Resources (NIBR), Incheon (NIBRIV0000834769).

## SYSTEMATIC ACCOUNTS

Order Decapoda Latreille, 1802  
Infraorder Stenopodidea Bate, 1888  
Family Stenopodidae Claus, 1872  
Genus *Odontozona* Holthuis, 1946  
꼬마청소새우속 (신칭)

### *Odontozona arbur* Saito, Okuno and Anker, 2017

붉은꼬마청소새우 (신칭)

*Odontozona arbur* Saito, Okuno and Anker, 2017: 27, figs. 1–8A–C, 13A–D.

*Odontozona ensifera*: Minemizu, 2013: 19; Goy, 2015: 320, figs. 15–17 [not *O. ensifera* (Dana, 1852)].

*Odontozona sculpticaudata*: Goy, 2015: 329, fig. 22 (in part) [not *O. sculpticaudata* Holthuis, 1946].

*Odontozona* sp. 2: Okuno, 2007: 58.

*Odontozona* sp. 4: Minemizu, 2013: 21.

**Material examined.** 1 ovig. ♀ (pocl 3.8 mm), Munseom Is. in Seogwipo, Jeju Is., 28 Jun 2018, Lee SH, scuba in about 14 m depth.

**Description.** Rostrum (Fig. 1A) straight; dorsal margin with 7 teeth; ventral margin with 4 teeth; lateral margins with minute spine at about a third of proximal part.

Carapace (Fig. 1A) supraorbital region with various sized spines; orbital margin concaved, with orbital spine; antennal lobe rounded, with large, acuminate, submarginal antennal spine; pterygostomial margin produced anteriorly with large, sharp, submarginal branchiostegal spine and 3 spines; cervical groove distinct, posterior margin with cincture of large, slender spines; posterocervical groove indistinct dorsally, distinct laterally, posterior margin with spines.

Abdominal somite (Fig. 1D, E) sculptured; second somite divided into 2 parts by transverse carina approached to about mid height of lateral surface of pleuron; third somite largest, distinct transverse carina on tergum, anterior part divided into 2 parts by transverse carina approached to about one third height of pleuron; fourth and fifth somites with short transverse depressions, lateral surface with small spines, ventral margins with spines; sixth somite with central transverse grooves on medial part, rows of transverse spines on posterolateral part of dorsal surface, lateral surface with 3 spines, posterior margin with long, sharp spines.

Telson (Fig. 1E) elongated, lance-formed, gradually tapering distally; dorsal surface with shallow depression, with 5 pairs of mediolateral spines, 1 pair of proximal spines, 7 submedial spines; lateral margins with 1 pair of proximal and medial spines; subposterior margin with 2 spines.

Eye (Fig. 1A) well developed; eyestalk with 6 spines.

Antennular peduncle (Fig. 1B) stylocerite omitted; with proximal and distal spines on first segment, 5 spines on second segment.

Antennal scale (Fig. 1C) setae omitted; approximately 3.5 time longer than broad; lateral margin concaved, with 9 spines.

Third maxilliped (Fig. 1F) moderately slender, setae omitted; dactylus setose, tapering distally; propodus subrectangular with long setae on lateral margins; carpus subrectangular, unarmed; merus with 5 spines on dorso-lateral margin and 10 spines on ventral margin; ischium subrectangular, with 7 spines on ventromesial margin; exopod with long flagellum, approaching middle part of merus.

Pereopods (Fig. 1G–K) with first pereopod (Fig. 1G)

shortest, subcylindrical; fingers as long as palm, with setae distally, cutting edges unarmed; palm subcylindrical slightly swollen; carpus slightly longer than chela; ventral margin with spine and setae on subdistal part. Second pereopod (Fig. 1H) longer than first pereopod, slender, all segments unarmed; finger slightly shorter than palm; palm subcylindrical slightly swollen; carpus subrectangular, 14 times longer than maximal width. Third pereopod (Fig. 1I) longest, robust; fingers 14 times longer than maximal width, movable finger with 2 spines on dorsal surface, fixed finger with 2 teeth on proximal cutting edge; palm subcylindrical, with 11 spines on dorsal margin, ventral margin with spinules; carpus subcylindrical, widening distally, slightly shorter than chela, dorsal margin with 2 rows of 11 spines, ventral margins with 7 spines; merus subrectangular, about 6 times longer than broad, dorsal margin with 9 spines on a row, ventral margin with 2 spines on medial and distal part. Fourth and fifth pereopods (Fig. 1J, K) long, slender, similar in shaped; each dactyli short, compressed, biunguiculate; propodi subrectangular, segmented, ventral margins with movable spines; carpi longest, subrectangular, segmented, ventral margins with movable spines; meri subrectangular, unsegmented, unarmed.

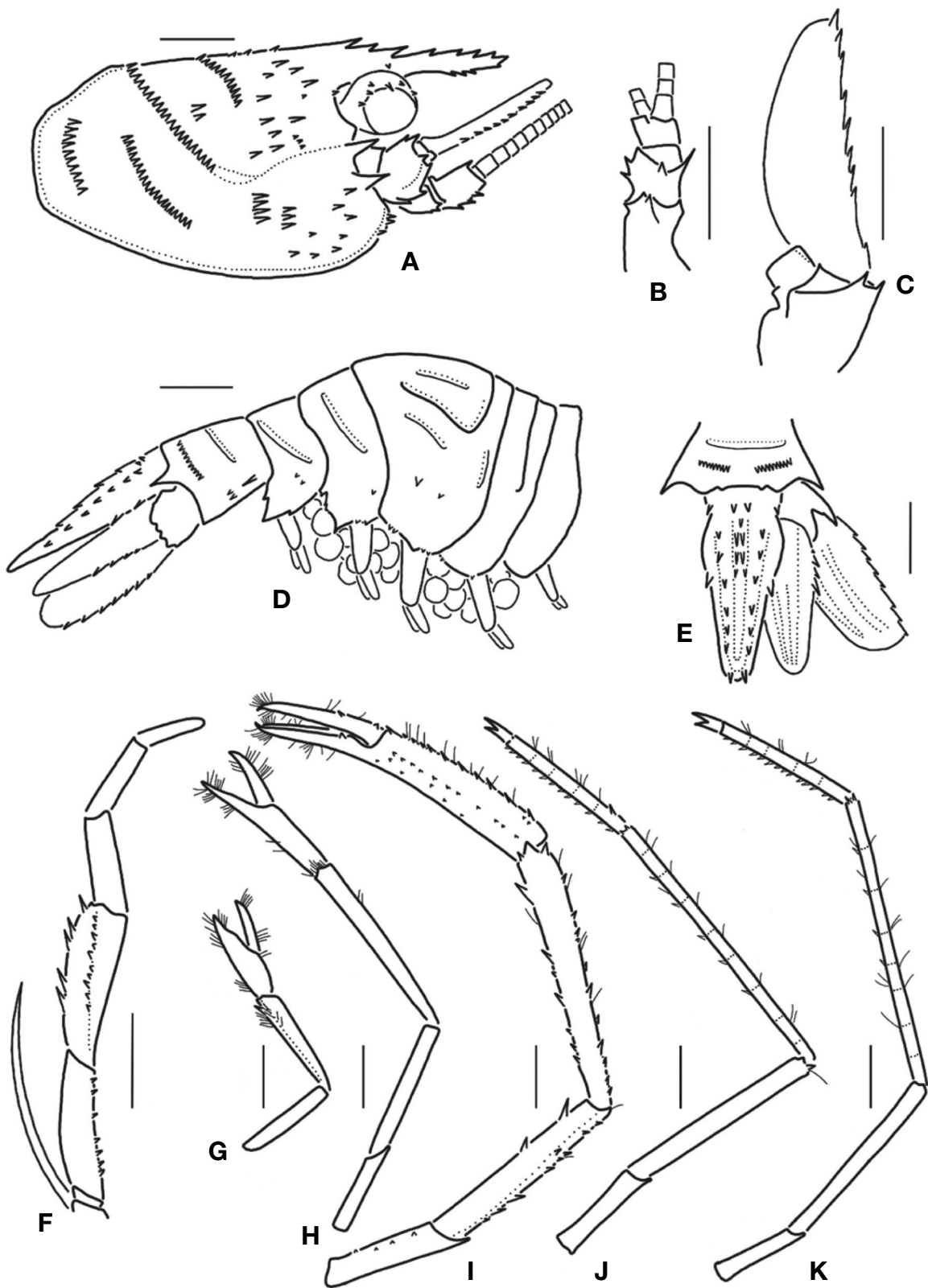
Uropod (Fig. 1E) with exopod, with 8 spines on lateral margin; endopod with 4 spines on proximal to medial part of lateral margin.

**Color in life.** Body and appendages generally reddish white, semitransparent and scattered reddish chromatophores. Dactylus of first to third pereopods white. Lateral and posterior margins of abdominal somites and posterior margins of telson and uropod with reddish chromatophores.

**Habitat.** The present specimen of *O. arbur* was collected from under rocks at about depth 14 m.

**Distribution.** From Australia to Japan (Saito *et al.*, 2017) and now to Korea.

**Remarks.** Heretofore, *Stenopus hispidus* (Oliver, 1811) was the only reported stenopodid species in Korea (Lee *et al.*, 2015), thus, *Odontozona arbur* Saito, Okuno and Anker, 2017 could be the second species in the family. They are similar to each other by having spinulated carapace and short and biunguiculated dactyli of the fourth and fifth pereopods. However, they are easily distinguishable by the dorsal surface of abdominal somites in *O. arbur* without spines. The present specimen of *O. arbur* is almost identical to the original description by Saito *et al.* (2017). However, it is slightly different from the carapace, telson, and carpus of the first pereopod. According to the original description and figures, telson with 6 spines on the medial part, and the carpus of the first pereopod unarmed, whereas, the present specimen has less spines of the carapace than the original description, 7 spines of the medial part of the telson and a spine on the distolateral margin in the carpus of the first pereopod.



**Fig. 1.** *Odontozona arbur* Saito, Okuno and Anker, 2017, female (pocl 3.8 mm). A, Carapace, lateral view; B, Antennule, ventral view; C, Antennal scale, ventral view; D, Abdomianl somites, lateral view; E, Telson and right uropod, dorsal view; F, Left third maxilliped, lateral view; G, Right first pereopod, lateral view; H, Right second pereopod, lateral view; I, Right third pereopod, lateral view; J, Right fourth pereopod, lateral view; K, Right fifth pereopod, lateral view. Scale bars: 1 mm.

pod. These differences seem to be attributable to the intraspecific variation, however, additional morphological researches is needed.

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