

A New Species of the Genus *Odontozona* (Decapoda: Stenopodidea: Stenopodidae) Associated with a Comatulid Crinoid from the Ryukyu Islands

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Abstract *Odontozona crinoidicola*, a new species of stenopodid shrimp associated with the comatulid crinoid *Phanogenia gracilis*, is described and illustrated on the basis of two specimens (male and female) from the Ryukyu Islands, southern Japan, and one ovigerous female from the Solomon Islands. It is the first species of the genus for which the association with crinoids is confirmed, although several unnamed or wrongly identified species have been reported. This is the 14th species of the genus and the sixth known from the Indo-West Pacific. The new species appears most similar to *O. libertae* in having two rows of spines on the dorsolateral margin of the palm of the third pereopod, but it is unique in the body form and the number of rostral lateral teeth.

Key words: Decapoda, Stenopodidea, Stenopodidae, *Odontozona*, new species, crinoid associate, Ryukyu Islands, Japan

The stenopodid genus *Odontozona* Holthuis, 1946, contains 13 described species distributed from shallow to deep waters worldwide (Table 1). The following five species occur in the Indo-West Pacific region: *O. ensifera* (Dana, 1852); *O. fasciata* Okuno, 2003; *O. sculpticaudata* Holthuis, 1946; *O. spinosissima* Kensley, 1981 and *O. spongicola* (Alcock and Anderson, 1899). Most species are small-sized, living latently in coral or rocky reefs or sometimes in submarine caves, but a few are reported to be associated with other invertebrates (Alcock and Anderson, 1899; Gore, 1981). Association with crinoids in the genus is rather well known (Debelius, 1999; Bruce, 1982, 1986; Hayashi, 1986), but the taxonomic identities of shrimps in those reports remain uncertain.

Recently, two specimens of an unfamiliar reddish transparent stenopodidean species, associated with the shallow water comatulid crinoid, *Phanogenia gracilis* (Hartlaub, 1893) (Crinoidea: Comatulida: Comasteridae), were collected by the second author (YF) during a survey of the

crinoid-decapod relationships in the Ryukyu Islands. At a glance the specimens look like a species of the spongicolid genus *Microprosthemata* Stimpson, 1860. However, close examination of these specimens revealed that most morphological characters conform to the diagnosis of the genus *Odontozona* Holthuis, 1946, and that they represented an undescribed species. Furthermore, reexamination of the specimen from the Solomon Islands, referred to *O. ensifera* by Hayashi (1986), has shown that the specimen actually represents the same undescribed species. In this paper, we describe a new species, *O. crinoidicola*, on the basis of these three specimens.

The two type specimens were captured with SCUBA equipment at night. The postorbital carapace length is abbreviated as cl in the text. Counts of teeth on the lateral margins of the antennal scale and the uropods include the terminal tooth. The material examined in this study is deposited in the National Museum of Nature and

Table 1. Geographical ranges of the known species of *Odontozona* Holthuis, 1946.

Name	Geographical Range	Reference
<i>Odontozona addaia</i> Pretus, 1990	Western Mediterranean (cave-dwelling)	Pretus (1990)
<i>Odontozona anaphorae</i> Manning and Chace, 1990	Ascension Island	Manning & Chace (1990)
<i>Odontozona crinoidicola</i> sp. nov.	Japan; Solomon Islands (crinoid-associated)	This study
<i>Odontozona edwardsi</i> (Bouvier, 1908)	Northwestern African Coast; Sudan (deepwater)	Bouvier (1908); García Raso (1996)
<i>Odontozona ensifera</i> (Dana, 1852)	Japan; Indonesia; Fiji Islands	Dana (1852); Holthuis (1946); Goy (1981); Kawamoto and Okuno (2003)
<i>Odontozona fasciata</i> Okuno, 2003	Japan (cave-dwelling)	Okuno (2003)
<i>Odontozona foresti</i> Hendrickx, 2002	Gulf of California (deepwater)	Hendrickx (2002)
<i>Odontozona libertae</i> Gore, 1981	Caribbean	Gore (1981); Criales (1997)
<i>Odontozona minoica</i> Dounas and Koukouras, 1989	Eastern Mediterranean	Dounas and Koukouras (1989)
<i>Odontozona rubra</i> Wicksten, 1982	Gulf of California	Wicksten (1982)
<i>Odontozona sculpticaudata</i> Holthuis, 1946	Indonesia; Northeast Australia	Holthuis (1946); Goy (1981)
<i>Odontozona spinosissima</i> Kensley, 1981	South Africa	Kensley (1981)
<i>Odontozona spongicola</i> (Alcock and Anderson, 1899)	India; Andaman Sea; Caribbean? (deepwater; sponge-associated)	Alcock and Anderson (1899); Alcock (1901); Wicksten (1982); Goy (1981)
<i>Odontozona striata</i> Goy, 1981	Gulf of Mexico	Goy (1981)

Science, Tokyo (NSMT).

The following specimens were examined for comparison.

Odontozona libertae Gore, 1981: holotype, male (cl 2.6 mm), National Museum of Natural History, Smithsonian Institution, USNM 181242, Elbow reef, Key Largo, Florida, 25°07.79'N, 80°14.32'W, 56.4 m depth; allotype, female (cl 2.7 mm), USNM 181243, same data as holotype; paratype, male (cl 2.1 mm), USNM 181244, same data as holotype.

Taxonomy

Odontozona crinoidicola sp. nov.

[New Japanese Name: Komachi-subesube-otohime-ebi]

(Figs. 1–7)

Odontozona ensifera – Hayashi, 1986: 24.

? *Odontozona* sp. – Debelius, 1999: 120, unnumbered fig. (middle, left).

Material examined. Holotype: NSMT-Cr 18133, female (cl 3.6 mm), Mizugama, Okinawa Island, Ryukyu Islands, 3.2 m depth, night div-

ing, associated with *Phanogenia gracilis*, 3 June 2001, coll. Y. Fujita. The host crinoid was collected (NSMT E-5656).

Paratypes: NSMT-Cr 18134, 1 male (cl 2.2 mm), Mizugama, Okinawa Island, Ryukyu Islands, 5.6 m depth, night diving, associated with *Phanogenia gracilis*, 5 April 2002, coll. Y. Fujita, the host crinoid was collected (NSMT E-5657); NSMT-Cr 18135, 1 ovigerous female (cl 3.0 mm), Solomon Islands, Staghorn Point, Anuha Island, Florida Islands, 7.0 m depth, SCUBA diving, associated with a crinoid, 30 August 1984, coll. K.-I. Hayashi.

Diagnosis. Small-sized stenopodid shrimp with depressed body form and reddish transparent color in life. Rostrum armed with 9 or 10 dorsal teeth, 1 or 2 ventral teeth and several tiny lateral teeth. Carapace with cervical and postcervical grooves, both armed posteriorly with cinctures of spines. Pleonal tergites not sculptured; pleura of second to fifth somites each with anterolateral and posterolateral sulcus; pleuron of sixth somite armed with 1 or 2 strong lateral spines and short transverse row of 4–6 teeth. Cornea darkly pigmented. Antennal scale armed

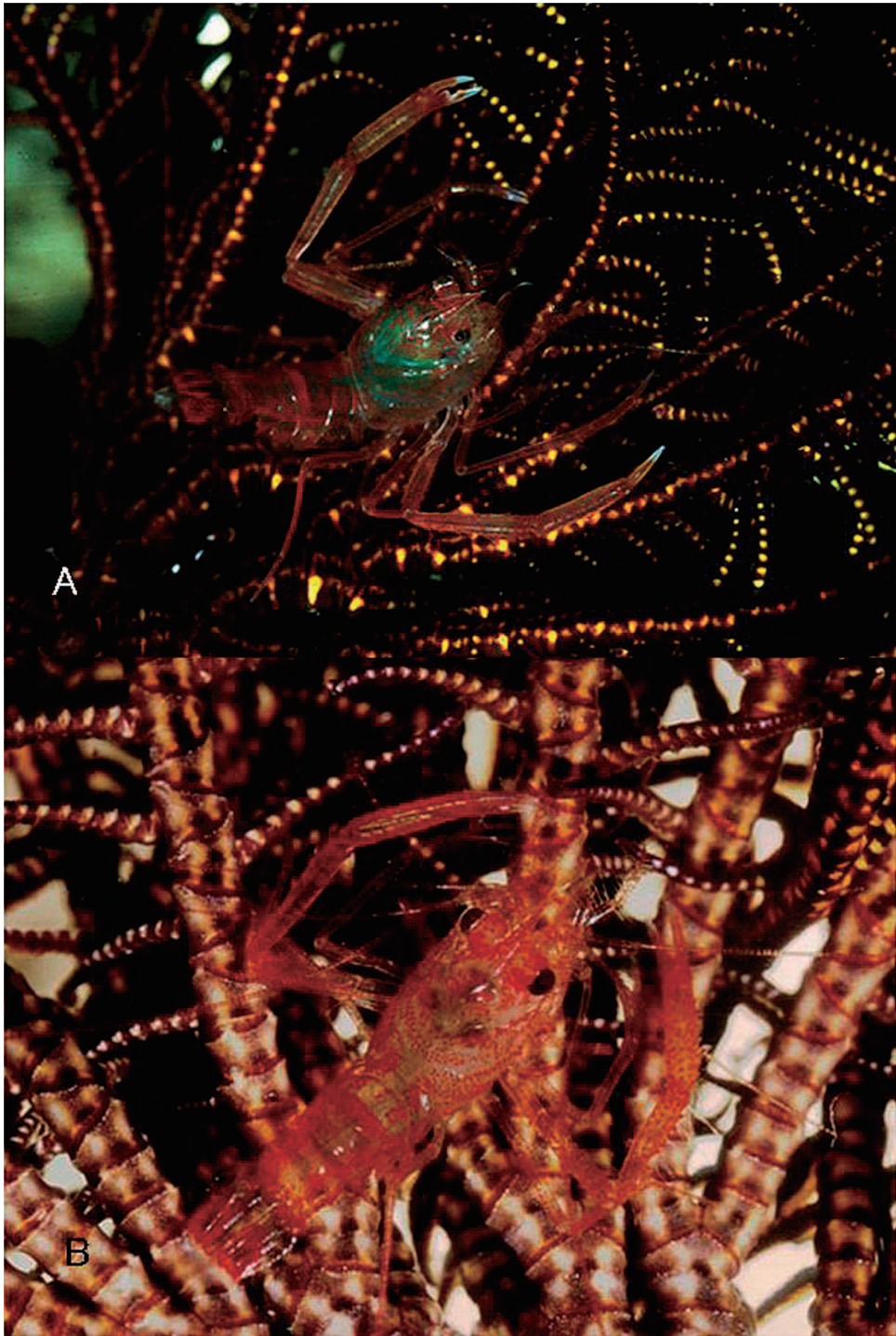


Fig. 1. *Odontozona crinoidicola* sp. nov. Underwater photographs showing live animals associated with the comatulid crinoid *Phanogenia gracilis*, Mizugama, Okinawa Islands, the Ryukyu Islands: A, NSMT-Cr 18133, holotype, female (cl 3.6 mm), B, NSMT-Cr 18134, paratype, male (cl 2.2 mm).

with 4–6 lateral teeth. Third maxilliped with ischium lacking dorsolateral row of spines. Third pereopod with palm bearing two rows of spines on dorsolateral surface. Fourth and fifth pereopods with dactyli biunguiculate; propodi and

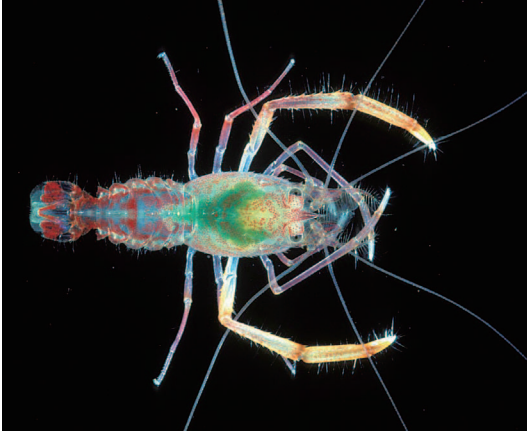


Fig. 2. *Odontozona crinoidicola* sp. nov. Holotype, female (cl 3.6 mm), NSMT-Cr 18133, Mizugama, Okinawa Island, the Ryukyu Islands. Whole animal in dorsal view.

carpi indistinctly subdivided into 2–5 articles.

Description. Females. Rostrum (Figs. 3, 4A, B) slender, directed downward, reaching midlength of antennal scale, 0.46 of CL, broadly triangular in dorsal view; dorsal margin armed with 9 or 10 teeth, proximal tooth posterior to postorbital margin; ventral margin with 1 or 2 small teeth on distal quarter; lateral margin with 6–8 tiny teeth.

Carapace (Figs. 3, 4A, B) with postrostral median ridge extending to epigastric region; postorbital region armed with 2 stout spines and many scattered smaller spines directed anteriorly; orbital margin concave, inferior orbital angle rounded with tiny spine; antennal spine large and acuminate, marginal; anterolateral margin rounded, with large and acuminate branchiostegal spine and several minute spines; gastric region with 2 pairs of small postrostral submedian spines; cervical groove distinct, posterior margin armed with cincture of many spines of various sizes, directed anteriorly, ending in large hepatic spine; postcervical groove dorsally indistinct, lat-

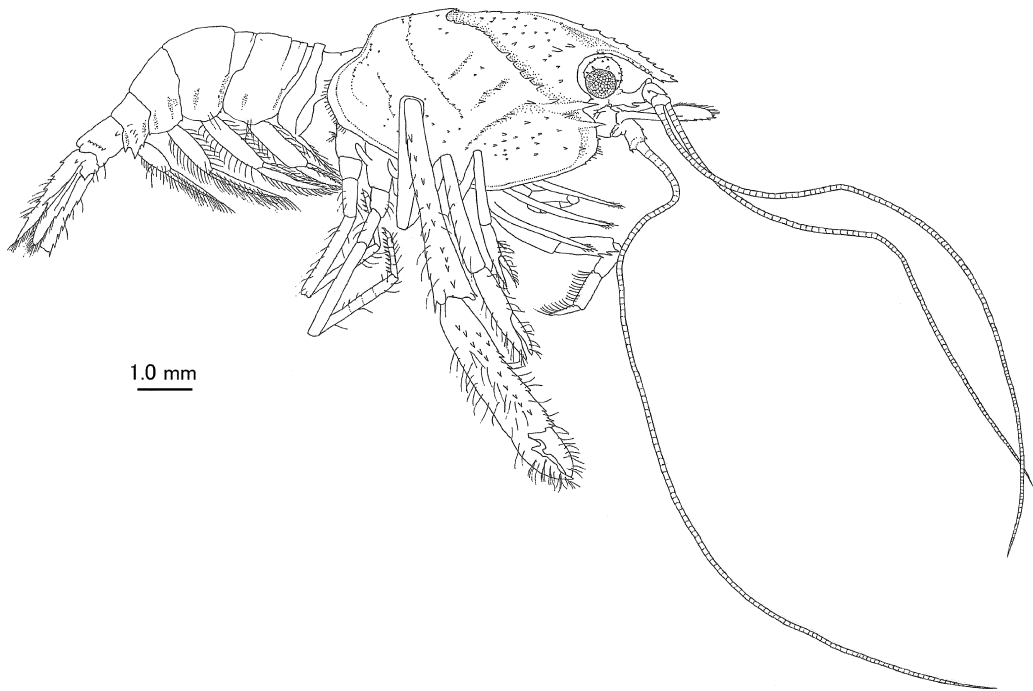


Fig. 3. *Odontozona crinoidicola* sp. nov. Holotype, female (cl 3.6 mm), NSMT-Cr 18133, Mizugama, Okinawa Island, the Ryukyu Islands. Whole animal in lateral view.

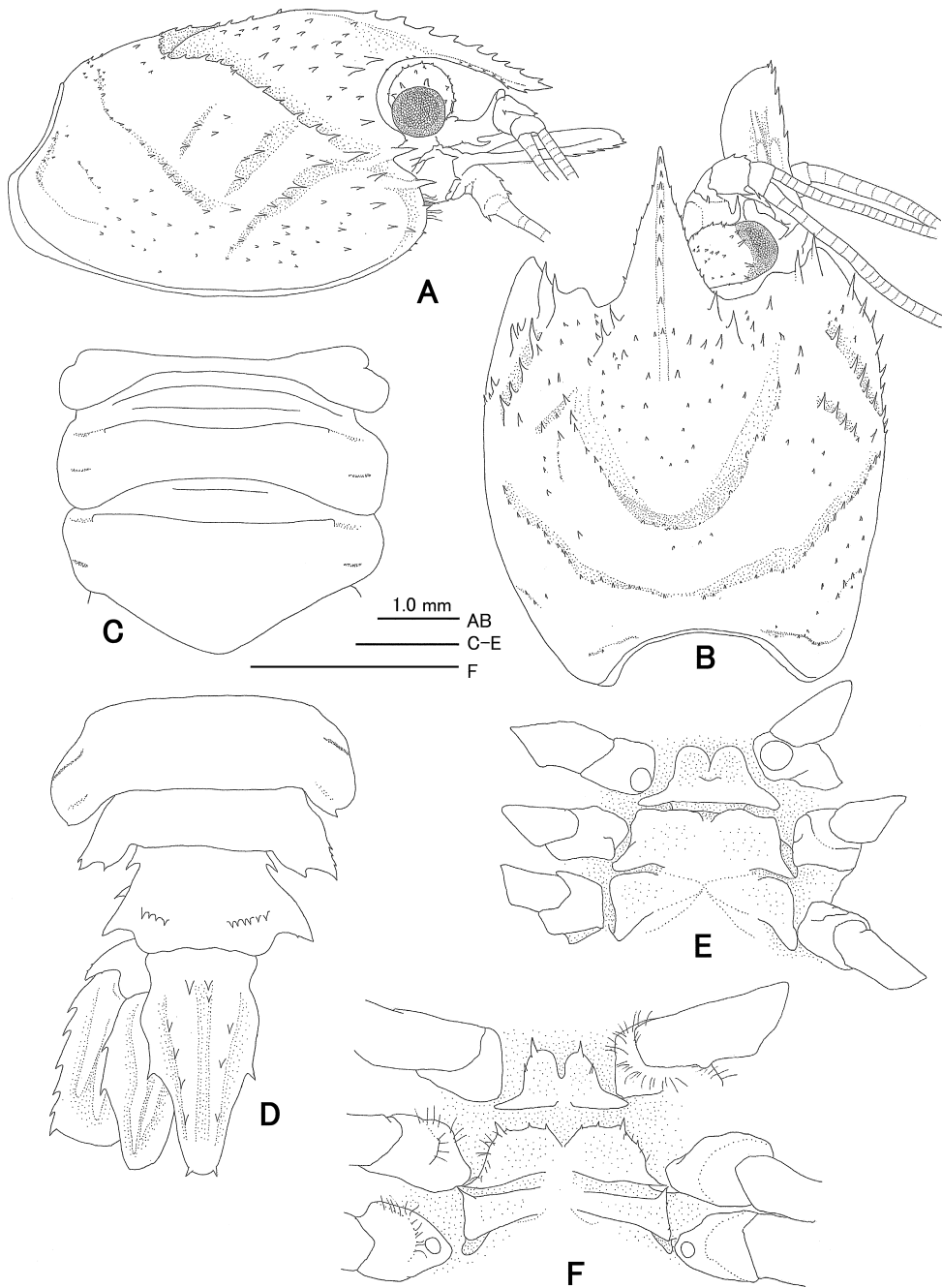


Fig. 4. *Odontozona crinoidicola* sp. nov. A–E, holotype, female (cl 3.6 mm), NSMT-Cr 18133, Mizugama, Okinawa Island, the Ryukyu Islands; F, paratype, male (cl 2.2 mm), NSMT-Cr 18134, same locality. A, carapace and right cephalic appendages, lateral; B, same, dorsal; C, first to third pleonal somites, dorsal; D, fourth to sixth pleonal somites, telson and left uropods, dorsal, setae omitted; E, F, sixth to eighth thoracic sternites.

erally distinct, posterior margin armed with many small spines; posterior to hepatic spine, oblique lateral groove distinct, armed with row of 5–9 spines, decreasing in size, sloping posteroventrally; two shorter grooves present on lateral part between cervical and postcervical grooves, armed with rows of 2–6 small spines, both sloping posteroventrally; posterior margin of carapace with shallow groove and posterior short transverse row of 5–8 tiny spines on either side; one more short shallow groove present on lateral part between postcervical and posterior marginal grooves, armed with 2–4 row of tiny spines sloping posterodorsally; remaining part of branchial region armed with scattered spines of various sizes.

Sixth thoracic sternite (Fig. 4E) with pair of circular lobes, each lateral margin unarmed, ventral surface concave. Seventh sternite with paired, broad trapezoid lobes, each distolateral angle weakly produced, ventral surface concave, unarmed. Eighth sternite with paired triangular plates, each distolateral angle rounded, ventral surface concave, unarmed.

Pleonal somites (Figs. 3, 4C, D) not sculptured. First pleonal somite short, divided in two sections by distinct transverse carina; anterior section with pleuron unarmed laterally, posteroventrally ending in acute process supported by short transverse carina, posterior section with pleuron unarmed laterally, posteroventral margin unarmed. Second to fifth pleura with shallow transverse sulci anterolaterally and posterolaterally. Second pleonal somite anteriorly with three transverse carinae, anteriormost distinct, ending at middle of pleuron, posterior two feeble (Fig. 3); pleuron unarmed laterally, ventral margin unarmed or armed with anterior tooth. Third somite longest, posterodorsal margin somewhat produced posteriorly, with two transverse carinae anteriorly, anterior one feeble, posterior one ending at middle of pleuron; each anterolateral and posterolateral sulcus armed with 1 tiny spine; ventral margin of pleuron armed with 1 or 2 anterior teeth. Fourth somite lacking transverse carina; pleuron unarmed laterally; ventral margin armed

with anterior tooth and posterior tooth. Fifth somite with pleuron unarmed laterally; ventral margin produced, terminating in large spine, armed with 1–3 small anterior teeth and rather stout posterior tooth. Sixth somite armed with 1 or 2 strong lateral spines and with short transverse row of 4 or 6 teeth posterolaterally on either side; distoventral angle terminating in large tooth. Telson (Fig. 4D) lanceolate, proximally narrowed between widest part and basal joint, tapering distally, 1.9 times longer than broad; dorsal surface with median groove flanked by two dorsolateral carinae provided each with row of 3 or 4 strong, rather symmetrically situated spines, inner margins with 1 or 2 spines subproximally; lateral margins distinctly convex subproximally, armed with strong spine at midlength; posterior margin convex, unarmed, posterolateral angle armed with posterolateral spine.

Eye (Fig. 5A) well developed, cornea hemispherical, darkly pigmented; eyestalk armed with 3–5 spines along base of cornea, dorsally with several scattered spines of various sizes. Antennular peduncle (Fig. 5B) overreaching midlength of antennal scale; first segment subequal to distal two segments combined, with longitudinal, distolateral row of plumose setae; stylocerite acute, straight; posterodorsally with laminate process; second segment with two small mesial, strong dorsal and strong lateral spines; third segment with rounded distal margin; flagella slender, considerably long, about 7 times longer than antennular peduncle. Antenna (Fig. 5C, D) with stout basicerite armed with moderately large spine at distolateral angle, and with a few additional small spines on ventrolateral margin; antennal scale 2.4 times longer than broad, lateral margin nearly straight, armed with 6 or 7 teeth, dorsal surface with 2 distinct longitudinal carinae; carpopocerite short, reaching level of second segment of antennular peduncle, armed with 3 or 4 strong spines.

Mandible (Fig. 5E, F) robust, with palp consisting of 3 articles, distal article oval, furnished with dense setae, intermediate article longest, distally with tuft of setae; molar and incisor

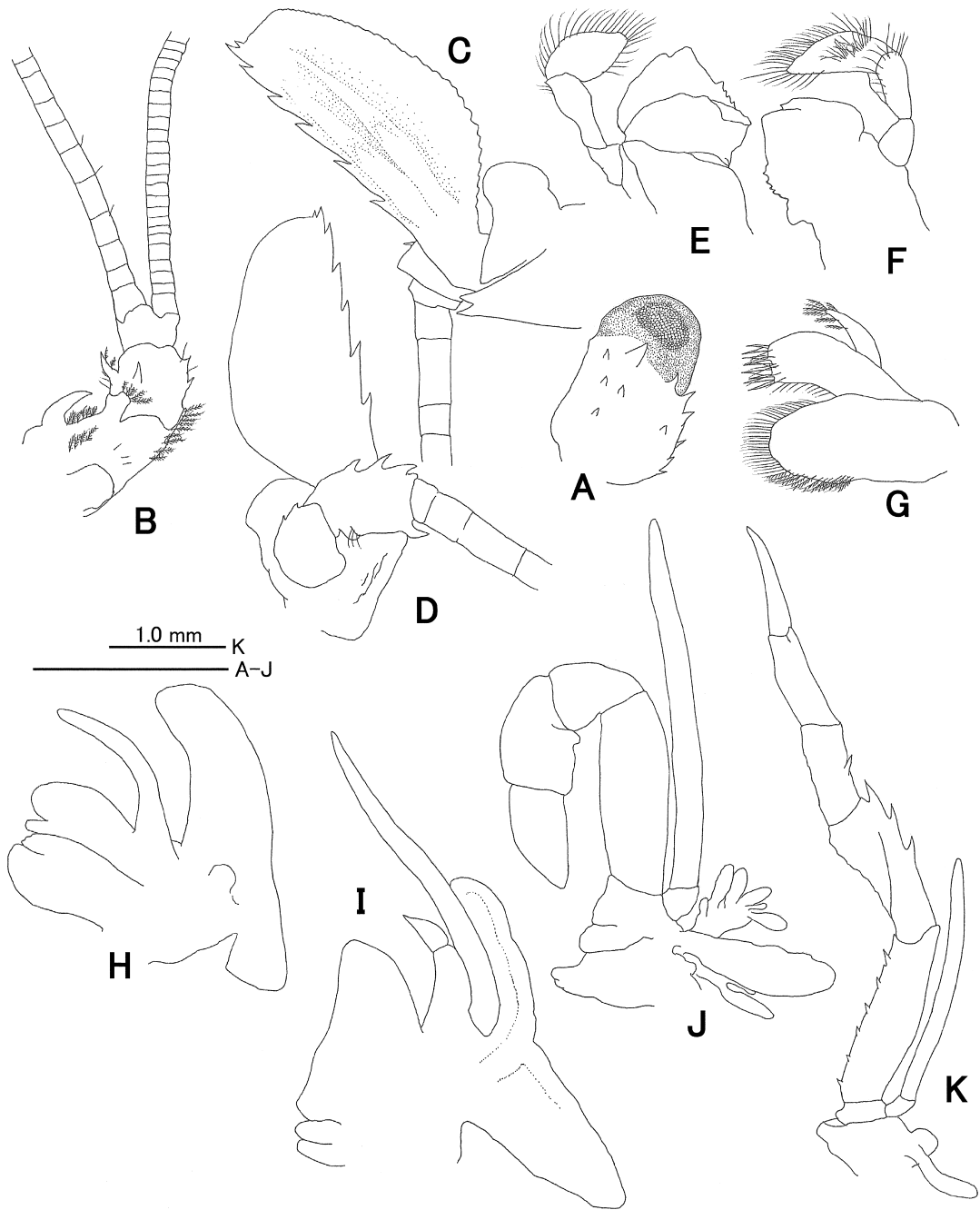


Fig. 5. *Odontozona crinoidicola* sp. nov. Holotype, female (cl 3.6 mm), NSMT-Cr 18133, Mizugama, Okinawa Island, the Ryukyu Islands. A, left eye, dorsal; B, left antennule, dorsal; C, left antenna, dorsal; D, same, ventral; E, left mandible, ventral; F, same, dorsal; G, maxillule, ventral; H, maxilla, ventral; I, first maxilliped, ventral; J, second maxilliped, ventral; K, third maxilliped, ventral. C, D, H–K, setae omitted.

Table 2. Gill formula of *Odontozona crinoidicola* sp. nov.

	Maxillipeds			Pereopods				
	1	2	3	1	2	3	4	5
Pleurobranchs	—	—	1	1	1	1	1	1
Arthrobranchs	1	1	2	2	2	2	2	—
Podobranch	—	1	—	—	—	—	—	—
Epipods	1	1	1	1	1	1	1	—
Exopods	1	1	1	—	—	—	—	—

processes clearly separated; molar surface oval, without distinct tooth, distal margin of incisor process truncated, armed with short, stout teeth. Maxillule (Fig. 5G) robust, with simple, slender endopod tapering distally; coxal endite suboval, with submarginal row of stiff setae on outer surface; basal endite moderately broad, truncated distally, with several slender spines and sparse, long spiniform setae. Maxilla (Fig. 5H) with curved, slender endopod; coxal and basal endites both bilobed; scaphognathite well developed, anterior lobe rounded distally, posterior lobe short, widened posteriorly. First maxilliped (Fig. 5I) with broad endopod consisting of 2 articles, distal article narrow, tapering distally; proximal article subquadrate, distal margin slightly concave; coxal endite bilobed; basal endite large, subtriangular, with concave mesial margin; exopod with well-developed flagellum; epipod large, feebly bilobed. Second maxilliped (Fig. 5J) with endopod composed of 7 segments; dactylus tapering distally; propodus anteromesially truncated, subequal in length to dactylus; carpus cup-shaped; merus about twice as long as carpus, oblong, mesial margin pectinate; ischium, basis and coxa incompletely fused with one another, trace of articulation still discernible; basal plate subquadrate, submarginal; coxal plate narrower than basal plate, submarginal, arthrobranch small; epipod oval, with well-developed, distinctly lamellate podobranch; exopod with well-developed flagellum. Third maxilliped (Fig. 5K) with endopod slender, composed of 7 segments, reaching tip of antennal scale by lengths of dactylus and propodus; dactylus tapering distally, lateral margins of dactylus and propodus fur-

nished with long setae, distomesial surface with shallow depression fringed with dense grooming setae; carpus armed with lateral spine; merus with distolateral row of three strong spines; ischium compressed, armed with ventral row of 6 spines, interspersed by smaller spines; basis very short; coxa with slender epipod; exopod with well developed, unsegmented flagellum, distally with dense setae.

Gill formula shown in Table 2.

First pereopod (Fig. 6A) small, slender, unarmed, reaching tip of antennal scale by lengths of chela and half of carpus, with well developed grooming apparatus; dactylus half of chela length; palm subcylindrical; carpus slender, 1.4 chela length; merus 0.7 carpal length; ischium 0.9 meral length. Second pereopod (Fig. 6B) longer than first pereopod, unarmed, reaching tip of antennal scale by lengths of chela and carpus; dactylus 0.4 chela length; palm subcylindrical; carpus 1.7 times as long as chela; merus 0.7 carpal length; ischium 0.7 meral length. Third pereopod (Fig. 6C, D) strongest of pereopods, reaching tip of antennal scale by lengths of chela and carpus; dactylus 0.6 palm length, terminating in hooked unguis, unarmed on dorsal and lateral margins, cutting edge armed proximally with stout, triangular tooth, remaining parts entire; fixed finger generally similar to dactylus, cutting edge armed proximally with large blunt teeth opposed into depression on dactylus; palm subcylindrical, 3.7 times longer than wide, dorsolateral margin armed with two rows of 8–12 spines, ventromesial margin unarmed or armed with row of 6 spines, lateral surface with a few tiny spines; carpus slightly widened distally, about 5.8 times

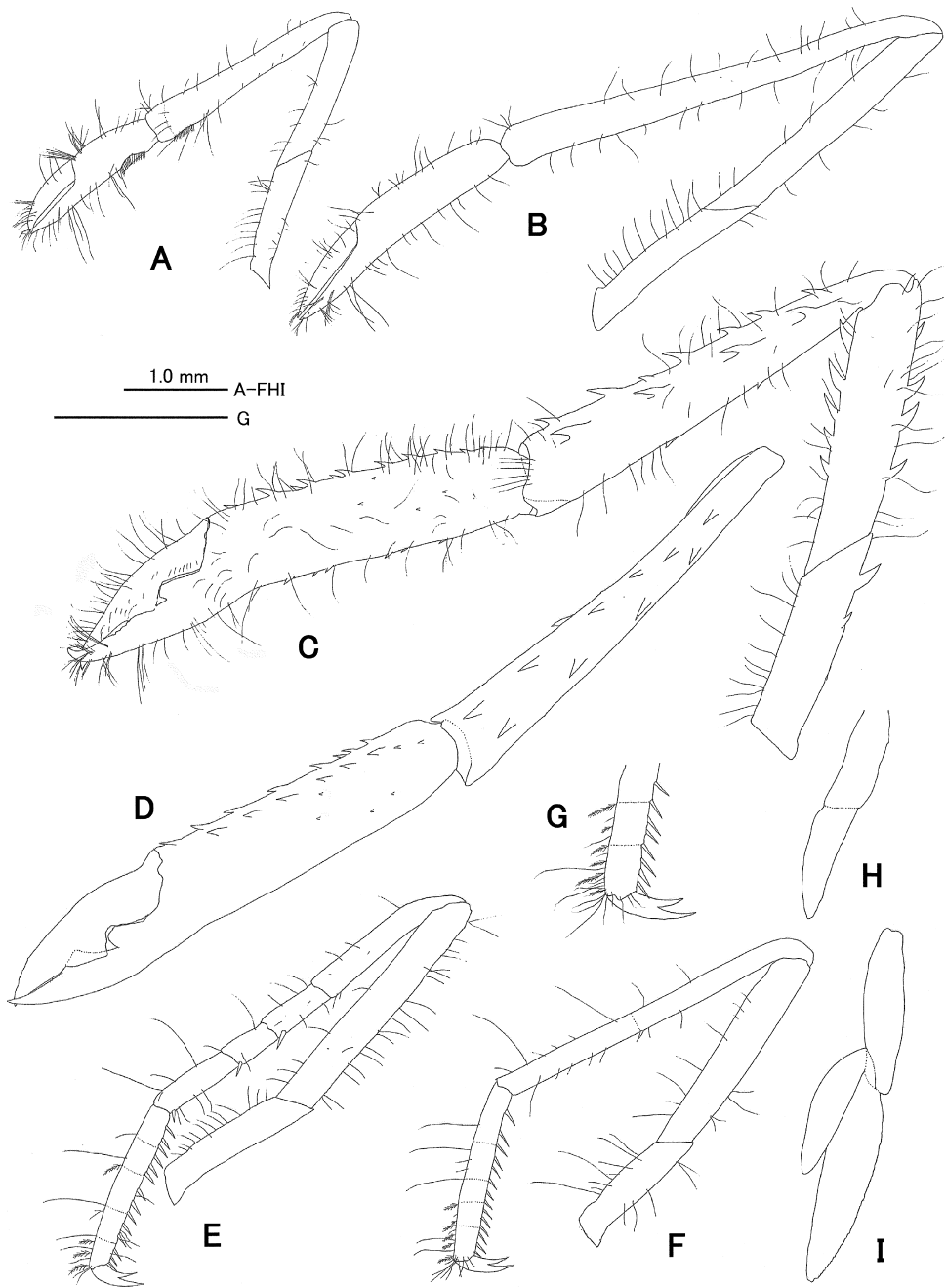


Fig. 6. *Odontozona crinoidicola* sp. nov. Holotype, female (cl 3.6 mm), NSMT-Cr 18133, Mizugama, Okinawa Island, the Ryukyu Islands. A, left first pereopod; B, left second pereopod; C, left third pereopod, lateral; D, same, chela and carpus, dorsolateral; E, left fourth pereopod; F, left fifth pereopod; G, same, dactylus; H, left first pleopod; I, left second pleopod. D, H, I, setae omitted.

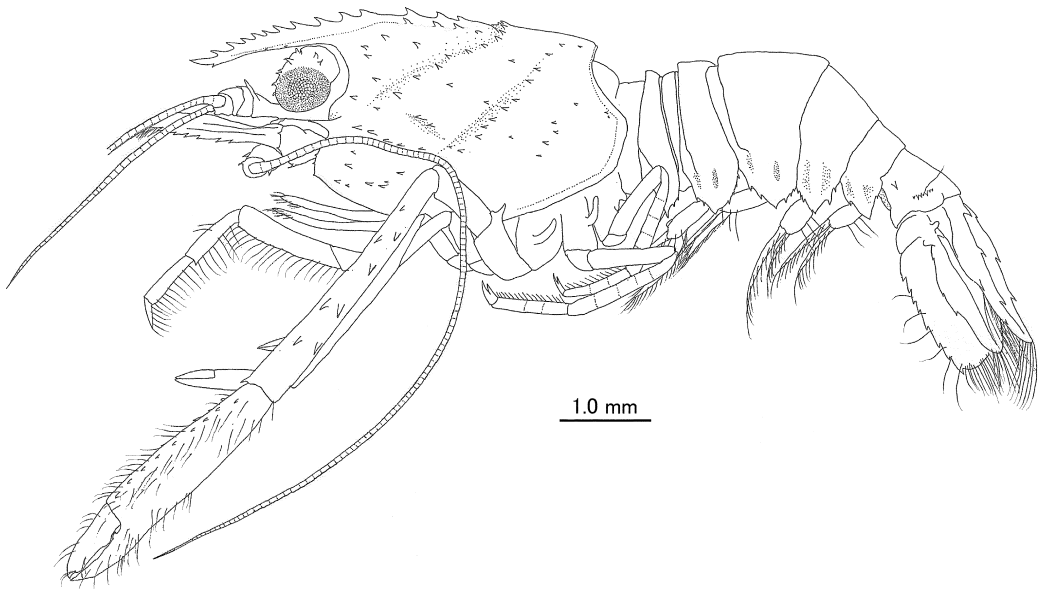


Fig. 7. *Odontozona crinoidicola* sp. nov. Paratype, male (cl 2.2 mm), NSMT-Cr 18134, Mizugama, Okinawa Island, the Ryukyu Islands. Whole animal in lateral view.

longer than wide, subequal to chela length, lateral surface armed with two rows of 4–8 spines, ventral margin armed with 2–6 smaller spines; merus 0.7 carpal length, dorsal margin armed with row of 4 or 5 spines, ventral margin armed with row of 5 spines; ischium 0.8 meral length, dorsal margin armed with 2 or 3 spines, anterior-most largest.

Fourth and fifth pereopods (Fig. 6E–G) similar, long, slender; dactyli compressed laterally, 4.2 times longer than wide, biunguiculate; propodi about twice as long as dactyli, subdivided into 3–5 articles, ventral surfaces armed with 14 movable spines; carpi twice as long as propodi, subdivided into 2–4 articles, with stout spine on ventrodistal angle of each article; meri entire, 0.7 carpal length; ischia entire, 0.7 meral length.

Pleopods without any appendices. First pleopod (Fig. 6H) uniramous, shortest. Second to fifth pleopods biramous. Second pleopod (Fig. 6I) with basipodite shorter than exopodite, but longer than endopodite, mesial margin unarmed. Third to fifth pleopods generally similar, decreasing in size posteriorly.

Uropod (Fig. 4D) with protopodite stout, later-

al margin terminating in acute process, with a few acute teeth anteroventrally and posteroventrally; exopod broad, falling slightly short of posterior margin of telson, lateral margin nearly straight, terminating in acute tooth, with row of 6 acute teeth, dorsal surface with 2 smooth longitudinal carinae, unarmed; endopod tapering distally, overreaching posterior margin of exopod, proximal half of lateral margin armed with few acute teeth, distal part unarmed, dorsal surface with 2 longitudinal carinae, unarmed.

Male. Rostrum (Fig. 7) relatively longer than that of female, 0.65 of CL; dorsal margin with 10 teeth, proximal 2 teeth posterior to postorbital margin; ventral margin with 1 subterminal tooth; lateral margin with a few tiny teeth. Carapace (Fig. 7) armed with 1 or 2 tiny spines on posterior margin of either side. Sixth thoracic sternite (Fig. 4F) with pair of broad, circular lobes, each lateral margin armed with 2 spines; seventh sternite with pair of broad, trapezoid lobes, each distolateral angle produced with strong spine, lateral margin unarmed or armed with spine, anteromesial margin with a few small spines; eighth sternite with pair of triangular plates, each distolateral

angle produced anteriorly terminating in strong spine, each lateral margin unarmed or armed with 2 small spines. First pleonal somite with posterior section of pleura bearing 2 or 3 teeth ventrally; second to sixth somites (Fig. 7) armed with a few teeth anteroventrally and posteroventrally.

Coloration in life. Body and appendages (Figs. 1A, B, 2) generally reddish transparent. Rostrum red, dark on distal half. Carapace with cervical and postcervical grooves transparent. Pleon with dark red longitudinal stripe dorsolaterally; pleural margins dark red; third and sixth somites with dark red transverse bands posteriorly. Telson dark red on proximal part and distal half. Antennal scale and flagella red. Eye stalk red. First to third pereopods generally red; fingers white on distal halves; ischia transparent. Fourth and fifth pereopods and third maxillipeds generally red; ischia transparent. Uropods dark red on protopodite and distal halves of endopod and exopod.

Distribution. So far known only from the Ryukyu Islands, Japan, and Solomon Islands; at depths of 3.2–7.0 m.

Ecological notes. *Odontozona crinoidicola* sp. nov. is associated with the shallow water comatulid crinoid, *Phanogenia gracilis*, usually staying on the aboral side of the arm or the pinnule of the host with their third pereopods spread (Fig. 1A, B).

Fujita and Shokita (2003) reported the following five decapod species associated with *P. gracilis* in the Ryukyu Islands: *Palaemonella pottsi* (Borradaile, 1915), *Crinotonia attenuatus* (Bruce, 1971) (formerly known as *Periclimenes attenuatus*), *Synalpheus* sp., *Galathea amboinensis* De Man, 1888, and *Harrovia longipes* Lanchester, 1900. Recently, Baba and Fujita (2008) discovered an additional symbiotic species of the galatheid *G. leptochair* Baba and Fujita, 2008. It is interesting to note that *O. crinoidicola* has never occurred together with other decapods on the same host.

Remarks. At first impression, the present new species seems to be a member of the spongiocolid genus *Microprosthemis* because of the body form,

but the following characters clearly place the new species in *Odontozona*: (1) the carapace is armed with cinctures of spines posteriorly along the cervical and postcervical grooves; (2) the pleonal tergites are smooth, without dorsal spines; (3) the pleuron of the sixth pleonal somite is furnished with a short transverse row of teeth; and (4) the dactyli of the fourth and fifth pereopods are biunguiculate. *Odontozona crinoidicola* sp. nov. appears unique within the genus in having the rostrum directed downward and armed with 6–8 (females) or a few (male) tiny teeth on the lateral surface. The new species is most similar to the Atlantic species *O. libertae* Gore, 1981, in the non-sculptured pleonal tergites, the general armature of the carapace and pleonal somites, the absence of a dorsolateral row of spines on the ischium of the third maxilliped, and the presence of two rows of spines on the dorsolateral margin of the palm of the third pereopod. Comparison with the type material of *O. libertae* has revealed that the new species is easily distinguished from *O. libertae* by the following characters: (1) the numbers of the dorsal and ventral teeth on the rostrum are 9 or 10 in females and 1 or 2 in males in *O. crinoidicola*, rather than 4 or 5 in females and 3–5 in males in *O. libertae*; (2) the transverse sulci and lateral spines on the second to fifth pleura are distinct in *O. crinoidicola*, whereas they are entirely absent in *O. libertae*, (3) the carpi of the fourth and fifth pereopods are subdivided into 2–4 articles in *O. crinoidicola*, rather than 8 articles in *O. libertae* (cf. Gore, 1981; Criales, 1997).

Bruce (1982, 1986), who reviewed shrimp-echinoderm associations in the Indo-West Pacific, presented figures of species of a crinoid associated *Odontozona* from off Zanzibar and Ambon, Indonesia. The illustration of Bruce (1982) apparently agrees with *O. sculpticaudata* or a related species, because transverse and longitudinal sculptures on the pleonal somites are evident. Debelius (1999) also provided a photograph of a stenopodid shrimp under the name of '*Odontozona* sp., crinoid boxer shrimp', which was associated with a crinoid taken at Milne Bay,

Papua New Guinea. Positive identification is difficult, because no morphological details are available from the photograph.

Bruce (1982) reported that some crinoid-associated carideans have modified their appendages to a commensal life style. For instance, in some crinoid associates such as *Pontoniopsis comanthi* Borradaile, 1915, and *Crinotonia attenuatus*, the dactyli of the ambulatory pereopods have a few accessory teeth for clinging to the host's surface efficiently. But such modification of the fourth and fifth pereopods is not observed in the present new species.

Etymology. The specific name derives in reference to the association with crinoids.

Acknowledgments

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