Nat. Hist. Res., Vol. 7 No. 2: 167–180, March 2003

A New Species of the Genus *Odontozona* Holthuis, 1946 (Crustacea: Decapoda: Stenopodidae) from Submarine Caves in Southern Japan

Junji Okuno

Coastal Branch of Natural History Museum and Institute, Chiba
123 Yoshio, Katsuura, Chiba 299–5242, Japan
E-mail: okuno@chiba-muse.or.jp

Abstract A new species of the stenopodid shrimp genus *Odontozona* Holthuis, 1946, *O. fasciata*, is described and illustrated on the basis of four specimens from submarine caves of the Izu Islands and Ryukyu Islands, southern Japan. It closely resembles *O. striata* Goy, 1981 from the Gulf of Mexico, but the armature of the anteroventral margin of the carapace and abdominal somites distinguishes the new species from the later. Reexamination of the holotype of *O. striata* revealed that Goy's (1981) original description contained misinterpretations on the sculpture of the abdominal somites, armature of the antennal scaphocerite, and articulation of the merus of the fourth pereiopod, which are corrected in this paper. The generic diagnosis of *Odontozona* is briefly discussed. A key to the known species of *Odontozona* is provided.

Key words: Crustacea, Decapoda, Stenopodidae, new species, *Odontozona fasciata*, submarine caves, Japan.

In 1993, during a survey of the decapod crustacean fauna of Hachijo-jima Island, Izu Islands, southern Japan, a specimen of an unusual species of a pinkish-white stenopodid shrimp bearing red transverse bands on the abdominal somites was collected. Subsequently, three additional specimens from Hachijo-jima Island and the Ryukyu Islands were made available for study. All specimens were collected from submarine caves at depths of 15–45 m. Detailed examination has revealed that the specimens represent an undescribed species of the genus *Odontozona* Holthuis, 1946, which is described here as a new species, *O. fasciata*. The new species is compared with *O. striata* Goy, 1981 from the Gulf of Mexico.

Materials and Methods

The specimens of the new species were captured with SCUBA equipment. The illustrations were made with the aid of a drawing tube mounted on a LEICA MZ12 stereomicroscope. The postorbital carapace length is abbreviated as CL in the text. The specimens examined in this study are deposited in the Coastal Branch of Natural History Museum and Institute, Chiba (CMNH) and the National Museum of Natural History, Washington, D. C (USNM).

For comparative purpose, the following specimen was examined,

Odontozona striata Goy, 1981. RV *Albatross*, station 2353, West of San Antonio, Cuba, Gulf of Mexico, 20°59.0′ N, 86°23.0′ W, 238–730 m, 22 Jan. 1885, ovig. ♀(holotype, USNM 34924, 6.1 mm CL).

Taxonomy

Family Stenopodidae
Genus *Odontozona* Holthuis, 1946
Odontozona fasciata sp. nov.
(Figs. 1–6)

Periclimenes cf. *grandis*—Debelius, 1999: 188, unnumbered fig. (right). Not *Periclimenes grandis* (Stimpson, 1860) (see 'Discussion').

Material examined. Holotype. 'Maou-no-kyuden', Shimoji-shima Island, Miyako Group, Ryukyu Islands, 24°49.6′ N, 125°08.2′ E, 25 m, 28 Nov. 1995, coll. H. Senou: ♂(CMNH-ZC 00777, 7.5 mm CL).

Paratypes. Occho-ga-hama, Hachijo-jima Island, Izu Islands, 33°03.5′ N, 139°47.9′ E, 15

m, 28 Sep. 1993, coll. J. Okuno and S. Kato: 1 ♂(CMNH-ZC 01000, 5.9 mm CL). Off Kanagusuku Harbor, Kume-jima Island, Ryukyu Islands, 26°20.1′ N, 126°44.3′ E, 35 m, 6 Nov. 2001, coll. T. Kawamoto: 1♂(CMNH-ZC 01030, 7.4 mm CL).

Other material. Off Nazumado, Hachijo-jima Island, 33°08.5′ N, 139°44.4′ E, 45 m, 26 Oct. 1999, coll. S. Kato and J. Okuno: 1 juv. (CMNH-ZC 01014, 2.6 mm CL).

Diagnosis. A medium-sized stenopodid shrimp with subcylindrical body form. Rostral dorsal margin armed with widely spaced 6 teeth including 1 or 2 on carapace proper. Carapace armed with cinctures of spines; cervical and postcervical grooves present; spines on cervical groove shorter than corneal diameter. Abdominal somites not sculptured dorsally. Pleura of fourth to sixth abdominal somites each armed with anterolateral spines. Cornea darkly pigmented. Antennal scaphocerite bearing 9–13 teeth on lateral margin, terminal tooth simple. Third maxilliped with ischium bearing dorsolateral spines. Third pereiopod with palm unarmed, merus marginally spinulate. Dactyli of fourth and fifth pereiopods biunguiculate; propodi distinctly multi-articulated.

Description. Rostrum (Fig. 1A) slender, falling short of distal margin of scaphocerite, 0.99–1.35 times as long as carapace, directed forward but slightly curved dorsally; dorsal margin armed with 6 widely spaced teeth (distance between teeth decreasing proximally), including 1 or 2 on carapace posterior to orbital margin, subdistal tooth much smaller than others; ventral margin armed with 4–12 small teeth on distal two thirds.

Carapace (Fig. 1A) with distinct cervical groove bearing cincture of 10–12 small, forwardly directed spines. Postcervical groove present, but dorsally faint, dorsal faint part armed with 4 small spines, lateral distinct part with row of 4–7 spines on either side. Gastric region with 2 pairs of submedian spines and postorbital longitudinal row of 4 spines. Cardiac to branchial regions with numerous spinules directed forward or slightly ventrad; posterodorsal margin with row of 14–16 small spines. Orbital margin concave; inferior orbital angle produced in rounded lobe. Antennal spine large, marginal, exceeding beyond inferior orbital angle, followed by row of 12–13 spines (anterior 2 spines much larger than others) passing obliquely ventrad. Branchiostegal spine submarginal, smaller than antennal spine, followed by 1 spine or short row of 2–3 spines. Pterygostomian spines moderately large.

Fourth to sixth thoracic sternites (Fig. 1C) armed each with paired long spines anteromesially. Seventh sternite (Fig. 1C) with broad plate terminating anterolaterally in small spine, ventrolateral margin of sternal plate with 3 spines. Eighth sternite (Fig. 1C) composed of 2 separated anterolateral plates each bearing laterally directed anterolateral spine and broadly triangular median plate.

Abdominal somites (Fig. 2A) not strongly sculptured. First somite short, divided in 2 sections by distinct transverse carina; anterior section of pleuron without spine on lateral surface, ventral margin produced in subacute projection supported by short ridge; posterior section also unarmed on lateral surface, posteroventral margin with 1–3 small spines. Second somite anteriorly with 2 transverse carinae ending at base of pleuron, part between these carinae shallowly grooved; distinct middorsal carina anterior to groove (Fig. 2B); pleuron unarmed on lateral surface, but with shallow sulci anterolaterally and posterolaterally, ventral margin with 1 anterior spine and 2–3 posterior spines. Third somite longest, posterodorsal margin somewhat produced posteriorly; pleuron unarmed on lateral surface, but with shallow sulcus posterolaterally, ventral margin with 1–2 anterior spines and 2 posterior spines. Fourth somite with 1 spine on pleural surface anteriorly, ventral margin with 2 unequal spines posteriorly. Fifth somite similarly armed with 1 spine on pleural surface, posterior margin with 2 relatively large spines. Sixth somite with 1 spine on lateral surface anteroventrally and with short transverse row of 8 spinules near posterior margin on either side; ventrolateral margin armed with 1 large spine arising from mid-length; posteroventral corner with small spine; posterolateral process blunt. Telson (Fig. 2C) lanceolate, terminating in small spine; lateral margins somewhat expanded laterally at proximal one-fifth, armed with 1 small sub-

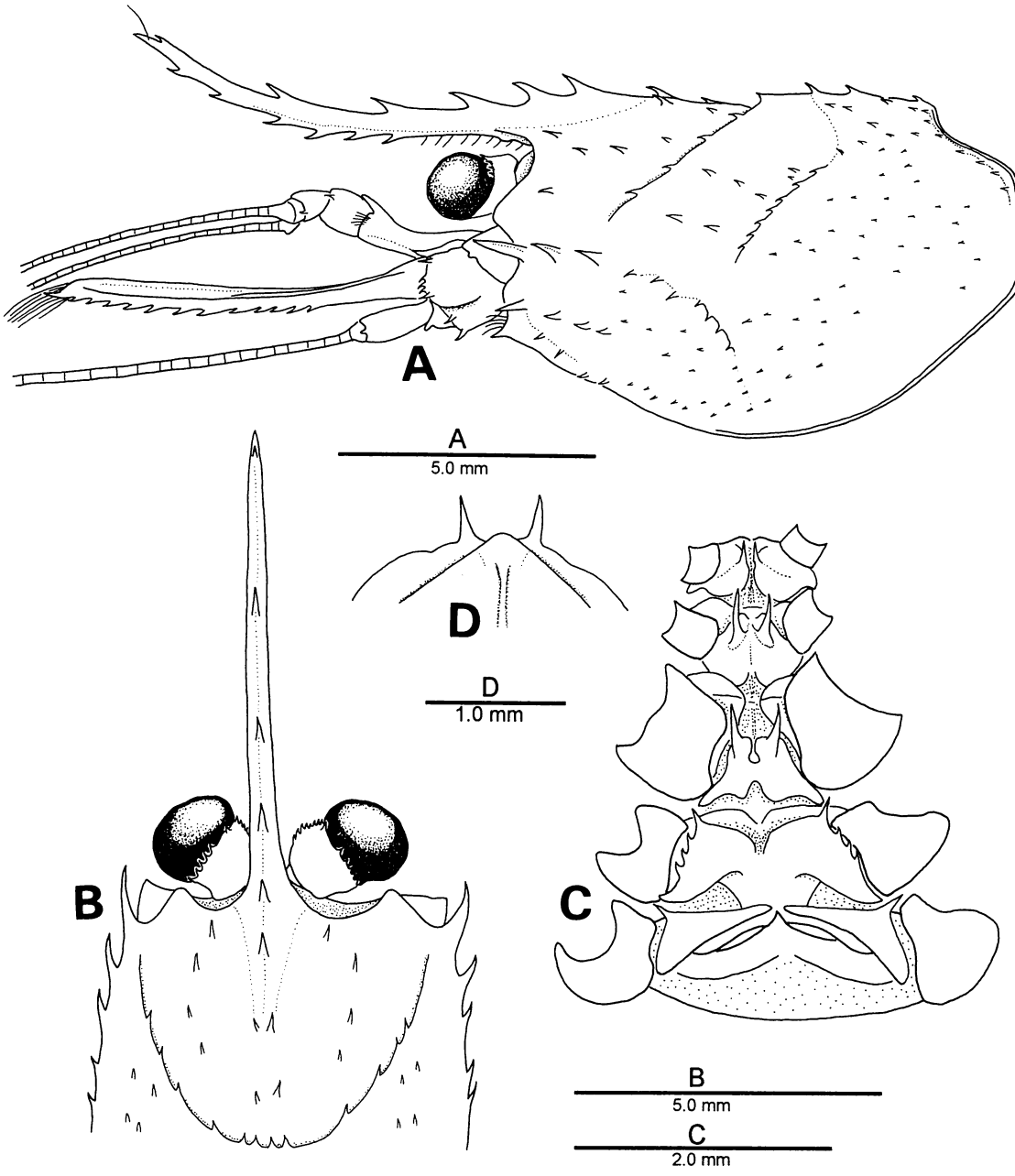

Fig. 1. *Odontozona fasciata* sp. nov. Holotype male (CMNH-ZC 00777). A, carapace and cephalic appendages, lateral; B, anterior part of carapace and eyes, dorsal; C, fourth to eighth thoracic sternites, ventral; D, epistome, ventral.

proximal spine and 1 prominent spine arising from level of proximal one-third; dorsal surface deeply grooved medially, with 2 pairs of mesial spines in proximal one-third; dorsolateral ridges conspicuous, each with 5–6 spines including terminal spine.

Abdominal sternites each with median spine like *Odontozona addaia* figured by Pretus (1990).

Eye (Fig. 1B) well developed, cornea hemispherical, darkly pigmented; eyestalk armed with 8 small spines on anteromesial face and with 6 spines slightly larger than anteromesial spines along base of cornea.

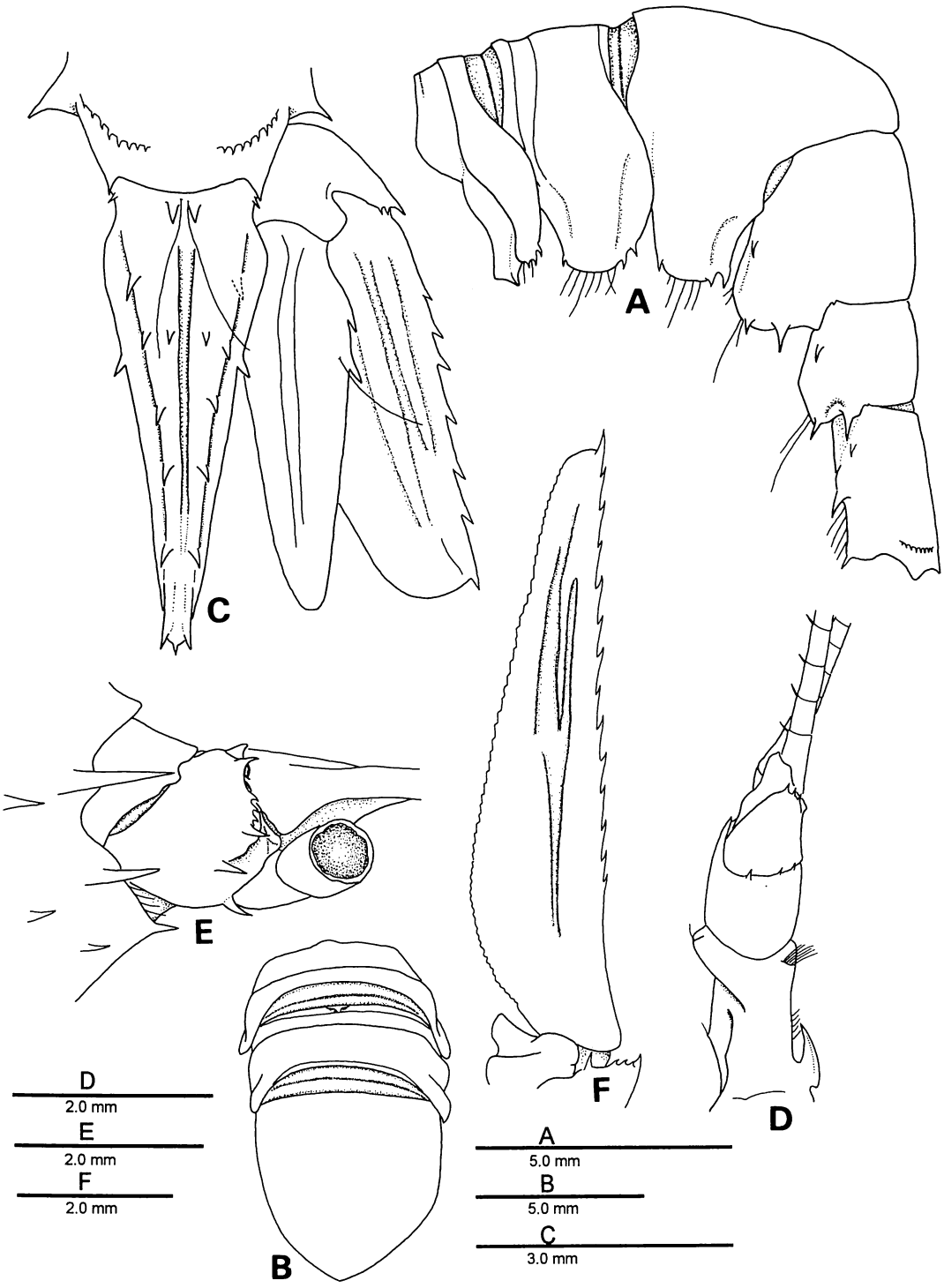

Fig. 2. *Odontozona fasciata* sp. nov. Holotype male (CMNH-ZC 00777). A, first to sixth abdominal somites, lateral; B, first to third abdominal somites, dorsal; C, telson and right uropod, dorsal; D, right antennular peduncle, dorsal; E, right antennal basicerite, lateral; F, right antennal scaphocerite, dorsal. C, F, marginal setae omitted.

Antennular peduncle (Fig. 2D) reaching proximal one-third of scaphocerite. Proximal segment subequal in length to distal 2 segments combined, with transverse row of setae distolaterally; stylocerite acute, reaching level of midlength of proximal segment. Intermediate segment with 3 small spines on dorsodistal margin. Distal segment with somewhat produced dorsodistal margin bearing 3 small spines. Flagella slender, about 25 times as long as antennular peduncle.

Antenna with stout basicerite (Fig. 2E) bearing row of spines on dorsal and lateral margins, and 1 spines on ventral margin. Scaphocerite (Fig. 2F) 3.89–4.80 times as long as maximum width, with lateral margin slightly concave in proximal one-third, nearly straight in distal two-thirds, with row of 9–13 on distal three-fourths, terminating in tooth overreaching obliquely truncate distal margin; dorsal surface with shallow median sulcus. Carpocerite moderately slender, reaching proximal one-fifth of scaphocerite.

Epistome (Fig. 1D) with pair of slender spines on anterior surface; lateral surface unarmed or armed with 2 small spines.

Mandible (Fig. 3A, B) robust; palp 3-segmented, distal segment oval, with sparse setae, intermediate segment subequal to distal segment in length, distally with tuft of setae; molar and incisor processes incompletely separated; molar surface oval, without distinct tooth; mesial margin of incisor process truncate, armed with small teeth on ventromesial margin. Maxillule (Fig. 3C) with simple palp bearing row of setae on ventral surface; distal endite broad, truncate distally, with row of about 8 spines and sparse, long spiniform setae; proximal endite oval, tapering distally, bearing numerous setae marginally and distally. Maxilla (Fig. 3 D) with palp slender, tapering distally; distal and proximal endites well developed, narrow, each deeply bilobed; distal endite with distal lobe about twice width of proximal lobe; proximal endite with proximal lobe about 3 times width of distal lobe; scaphognathite narrow, anterior lobe rounded distally, posterior lobe short, widened. First maxilliped (Fig. 3E) with 3-segmented palp, tapering distally; distal endite narrow, tapering distally; proximal endite with truncate mesial margin; exopod with well-developed flagellum; epipod large, feebly bilobed. Second maxilliped (Fig. 3F) with 7-segmented endopod; dactylus oval; propodus subquadrate; carpus slightly widened distally; merus about twice as long as carpus, oblong, mesial margin bearing dense setae; ischium, basis and coxa distinctly demarcated, basis and coxa each with mesial spines and subrectangular projections on external surfaces; small arthrobranch present; epipod oval, with well-developed podobranch; exopod well-developed, multiarticulated distally. Third maxilliped (Fig. 3G) with endopod slender, 7-segmented, overreaching tip of scaphocerite by length of dactylus and half of propodus; dactylus tapering distally; lateral margins of dactylus and propodus with long setae, distomesial surface of propodus with setiferous organ; carpus armed with distolateral spine; merus somewhat twisted, with 5–6 spines on dorsolateral margin (including distal spine), ventrolateral margin armed with 3–7 stout spines, interspaced with setae; ischium armed with 2–6 spines on dorsolateral surface, 8 spines on ventromesial margin interspaced with setae; basis short, with ventrodistal spine; exopod with well-developed, but not multiarticulated flagellum, distally with setae; coxa with small epipod, and with small ventral projection bearing few setae.

Gills trichobranchiate; gill formula shown in Table 1.

First pereiopod (Fig. 4A) shortest among five pereiopods, slender, overreaching tip of scaphocerite by length of dactylus. Chela with fingers (Fig. 4B) each terminating in hooked unguis, cutting edges each armed mesially with row of widely spaced, minute spinules and small, triangular subproximal teeth; dactylus 1.07–1.38 times as long as palm; palm subcylindrical, ventral surface with setiferous organ proximally. Carpus slender, 1.24–1.50 times as long as chela, 1.16–1.39 times as long as merus, distoventrally with setiferous organ. Merus unarmed.

Second pereiopod (Fig. 4C) overreaching tip of scaphocerite by lengths of chela and distal two-thirds of carpus. Chela with fingers (Fig. 4D) each terminating in hooked unguis, cutting edges each armed with small,

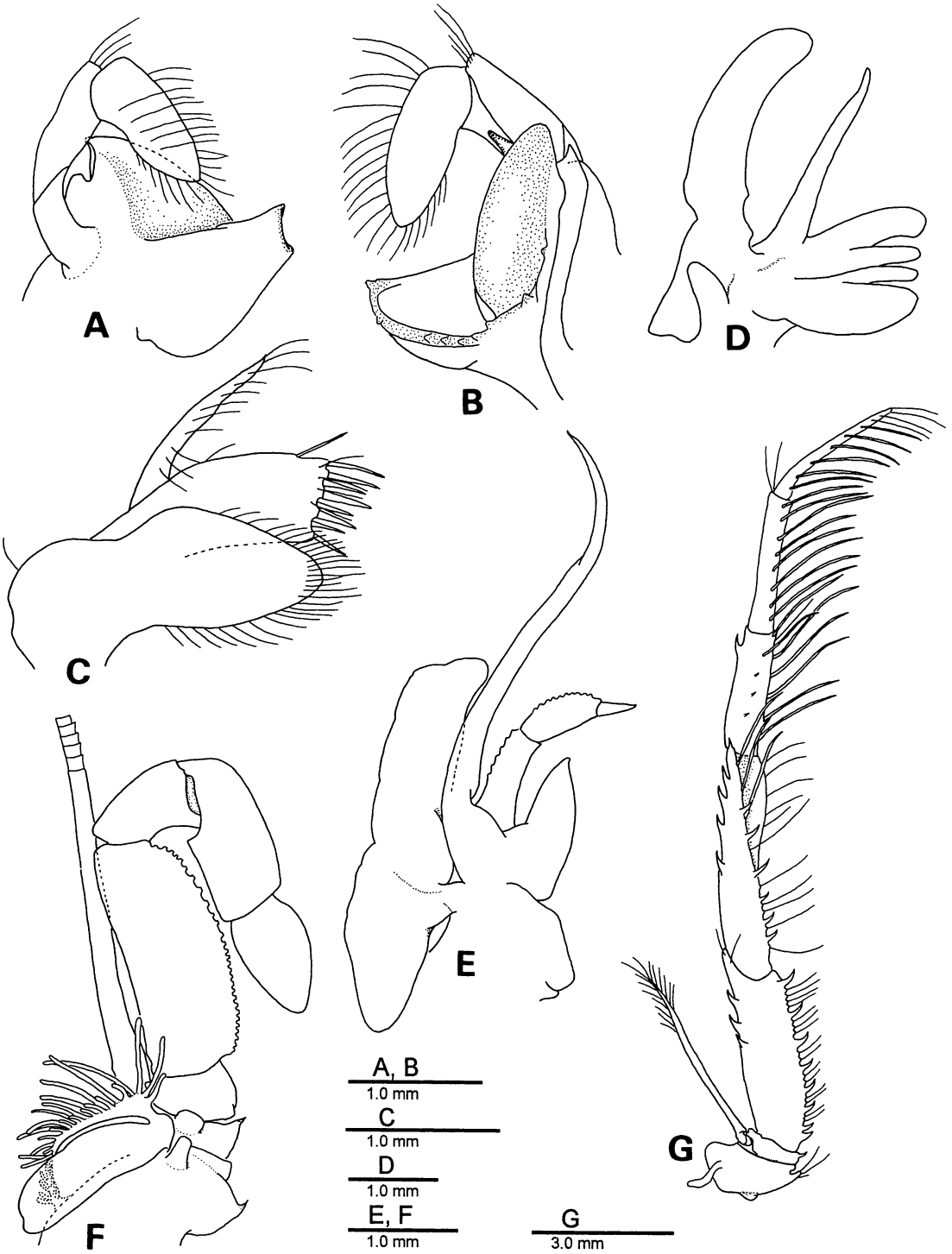

Fig. 3. *Odontozona fasciata* sp. nov. Holotype male (CMNH-ZC 00777). A, right mandible, dorsal; B, same, ventral; C, right maxillule, external; D, right maxilla, external; E, right first maxilliped, external; F, right second maxilliped, external; G, right third maxilliped, dorsolateral.

Table 1. *Odontozona fasciata* sp. nov. Branchial formula.

	Maxillipeds			Pereiopods				
	I	II	III	I	II	III	IV	V
Pleurobranchs	—	—	1	1	1	1	1	1
Arthrobranchs	1	1	2	2	2	2	2	—
Podobranchs	—	1	—	—	—	—	—	—
Epipods	1	1	1	1	1	1	1	—
Exopods	1	1	1	—	—	—	—	—

triangular teeth subproximally on mesial side and with row of minute setae; dactylus 1.00–1.13 times as long as palm; palm subcylindrical, unarmed. Carpus unarmed, 1.62–2.00 times as long as chela, 1.32–1.39 times as long as merus. Merus unarmed.

Third pereiopod (Fig. 4E) strongest among five pereiopods, overreaching tip of scaphocerite by lengths of chela, carpus and distal two-fifths of merus. Chela with dactylus terminating in hooked unguis, cutting edge armed subproximally with stout, triangular tooth, remaining part entire; fixed finger generally similar to dactylus, cutting edge armed subproximally with large blunt teeth opposed into depression on dactylus; palm subcylindrical, unarmed, 1.23–1.57 times as long as dactylus. Carpus slightly widened distally, 1.29–2.44 times as long as palm, 1.04–1.23 times as long as merus, dorsal surface armed with 2 rows of 7–9 spines, ventral surface armed with row of 6–8 spines. Merus with 2 rows of 6–8 spines on dorsal surface, ventral surface armed with row of 6 spines. Ischium short, unarmed.

Fourth and fifth pereiopods long, slender. Fourth pereiopod (Fig. 5A) overreaching tip of scaphocerite by combined lengths of dactylus, propodus, and carpus. Dactylus (Fig. 5C) compressed laterally, ventral margin with 1 subdistal accessory tooth, unguis clearly demarcated. Propodus (Fig. 5B) 5.78–8.71 times as long as dactylus, subdivided into 8–11 articles, armed with 22–32 movable spines on ventral margin. Carpus 2.66–3.04 times as long as propodus, 1.32–1.41 times as long as merus, subdivided into 15–17 articles, with 1 movable spine distoventrally. Merus entire, with 2 long setae dorsodistally.

Fifth pereiopod (Fig. 5D) overreaching tip of scaphocerite by combined lengths of dactylus, propodus, and carpus. Dactylus usually with 1 subdistal accessory tooth on ventral margin (2 teeth in right fifth pereiopod in holotype) (Fig. 5F). Propodus (Fig. 5E) 7.75–7.88 times as long as dactylus, subdivided into 7–12 articles, armed with 22–27 movable spines on ventral margin. Carpus 2.47–2.97 times as long as propodus, 1.45–1.53 times as long as merus, subdivided into 14–20 articles, with 1 movable spine distoventrally. Merus entire, with 2 long dorsodistal setae.

Pleopods without appendices internae and masculina. First pleopod (Fig. 5G) uniramous (endopod absent), shortest, exopod distinctly shorter than protopod in male, mesial margin with shallow notch medially. Second to fifth pleopods biramous, second pleopod (Fig. 5H) with protopod distinctly shorter than rami, mesial margin of protopod armed with acute tooth.

Uropod (Fig. 2C) with protopod stout, lateral margin terminating in spine, 2 small acute teeth just mesial to distolateral spine; exopod broad, falling slightly short of tip of telson, dorsal surface with 2 longitudinal carinae, lateral margin nearly straight, with row of 5–6 acute teeth, terminating in acute tooth; endopod tapering distally, reaching posterior margin of exopod, dorsal surface with unarmed carina, lateral margin armed with 1–2 acute teeth on proximal one-third.

Coloration (Fig. 6). Body and appendages generally pinkish white, semitransparent. First to sixth abdominal somites each with red transverse band posteriorly. Posterior part of telson red. Scaphocerite transparent. Third pereiopod with dactylus and fixed finger white; palm and carpus generally red, but carpal-palm junction white. Posterior part of uropod red.

Etymology. The specific name is derived from the Latin, *fascia*, meaning band, in reference to the characteristic coloration in life

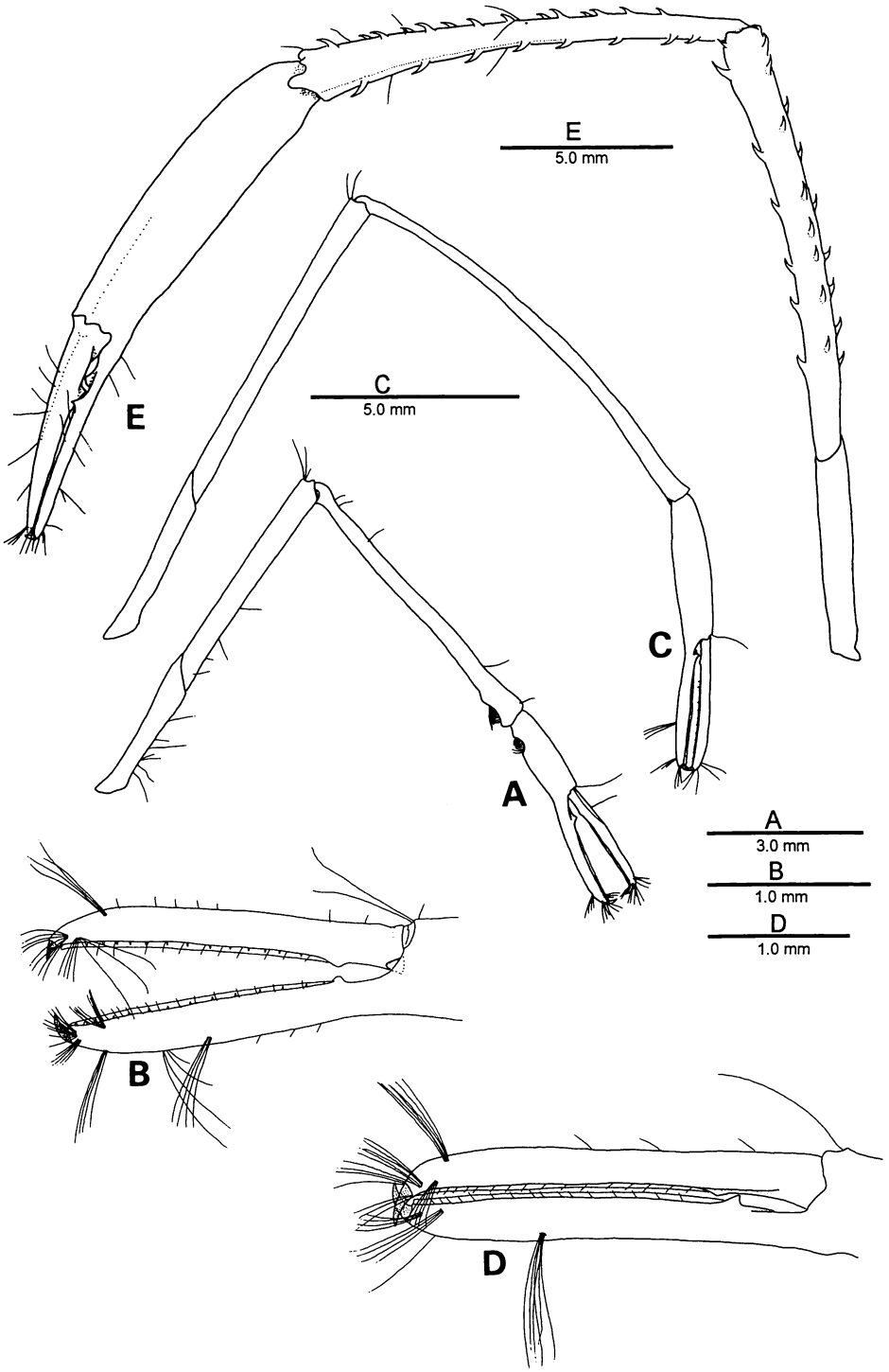

Fig. 4. *Odontozona fasciata* sp. nov. Holotype male (CMNH-ZC 00777). A, right first pereiopod, lateral; B, same, fingers, mesial; C, right second pereiopod, lateral; D, same, fingers, mesial; E, right third pereiopod, mesial.

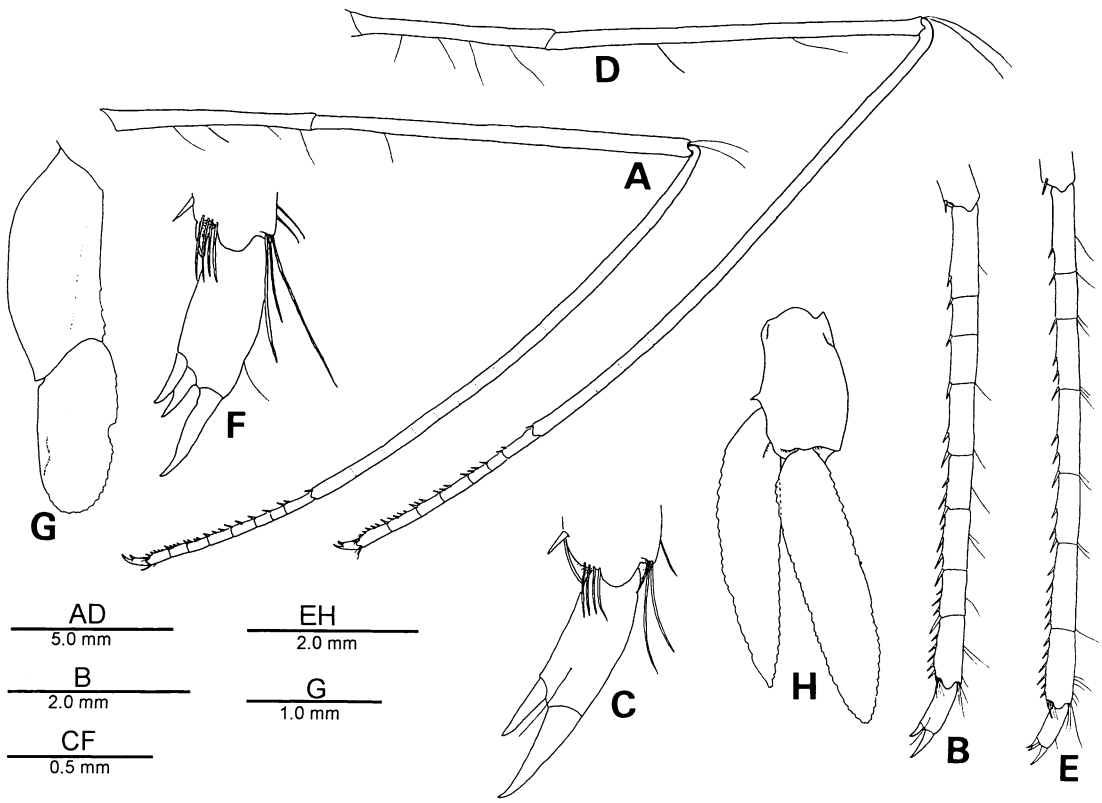

Fig. 5. *Odontozona fasciata* sp. nov. Holotype male (CMNH-ZC 00777). A, right fourth pereiopod, lateral; B, same, propodus and dactylus; C, dactylus of right fourth pereiopod, lateral; D, right fifth pereiopod, lateral; E, same, propodus and dactylus; F, dactylus of right fifth pereiopod, lateral; G, right first pleopod, dorsal; H, left second pleopod, dorsal. G, H, marginal setae omitted.

of the new species.

Distribution. So far known from the Izu Islands and Ryukyu Islands, southern Japan, and the Maldive Islands (see 'Discussion').

Ecological notes. The present specimens were collected from submarine caves, which are located at depths of 15–45 m. Together with one of the present specimens from Hachijo-jima Island (CMNH-ZC 01014), one female of *Palaemonella hachijo* Okuno, 1999 (Palaemonidae) (see Okuno, 2000) and one male and two females of *Cinetorhynchus reticulatus* Okuno, 1997 (Rhynchocinetidae) were collected.

Discussion

The present new species is assigned to the genus *Odontozona* on account of the biunguiculate dactyli of the fourth and fifth pereiopods and the lack of spines on the abdominal tergites. The absence of 'external' spines on the ischium of the third maxilliped has been considered to provide a generic feature in discriminating *Odontozona* from *Stenopus* Latreille, 1819, another genus in the Stenopodidae (Holthuis, 1946, 1955, 1993). In the new species, however, the ischium of the third maxilliped possesses a lateral row of spines. Further, according to Goy (1981), *O. striata* Goy, 1981, known only by the ovigerous female holotype from Cuba, the Gulf of Mexico, also has dorsolateral spines on the ischium of the third maxilliped. Therefore, it is reasonable to consider that the armature of the third maxilliped ischium is variable interspecifically in *Odontozona*, and is not of generic significance.

Up to now, *Odontozona* contains 12 species from all over the world, four species of which occur in the Indo-West Pacific: *O. ensifera* (Dana, 1852); *O. spongicola* (Alcock and Anderson, 1899); *O. sculpticaudata* Holthuis, 1946;

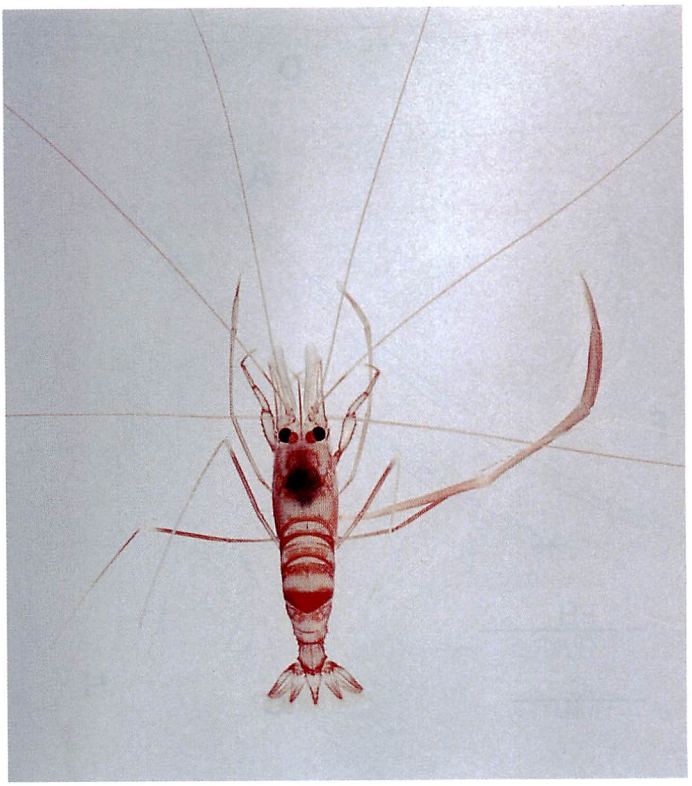

Fig. 6. *Odontozona fasciata* sp. nov. Male paratype from Hachijo-jima Island (CMNH-ZC 01000) in dorsal view, fresh condition.

and *O. spinosissima* Kensley, 1981 (Dounas and Koukouras, 1989; Pretus, 1990; Manning and Chace, 1990; Hendrickx, 2002). *Odontozona fasciata* is the first Indo-West Pacific species possessing the dorsolateral spines on the ischium of third maxilliped.

Odontozona fasciata appears most similar to *O. striata* in the presence of the dorsolateral spines on the ischium of the third maxilliped and the absence of a row of spines on the palm of the third pereiopod. Initial comparison with the original description of *O. striata* suggested that the development of the sculpture on the abdomen, armature of the antennal scaphocerite and the articulation of the merus of the fourth pereiopod distinguish *O. fasciata* from *O. striata*. However, reexamination of the holotype of *O. striata* has revealed that Goy (1981) misinterpreted these characters in the original description. Goy (1981) noted that the transverse and longitudinal grooves ornamented the abdominal somites in *O. striata* like *O. sculpticaudata* Holthuis, 1946. In fact, however, the abdominal terga are not sculptured (Fig. 7A); the 'grooves' mentioned by Goy (1981) seem to correspond to shrunk muscle tissues visible throughout the transparent body integument. He mentioned that the antennal scaphocerite bears two spinules on the dorsal surface and one accessory tooth proximomesial to the terminal tooth. In the holotype, however, such spinules are absent on the dorsal surface of the scaphocerite (Fig. 7B); the accessory tooth is situated on the terminal tooth proper giving an impression that the terminal tooth is bifid (Fig. 7B). The merus of the fourth pereiopod is actually entire contrary to be three-segmented in the original description (Fig. 7C). Therefore, these characters do not provide any significance in distinguishing *O. fasciata* from *O. striata*. Nevertheless, the new species is easily separated from *O. striata* by the following characters.

1) The distal part of the rostrum is slightly sinuous dorsally in *O. fasciata* (Fig. 1A), while

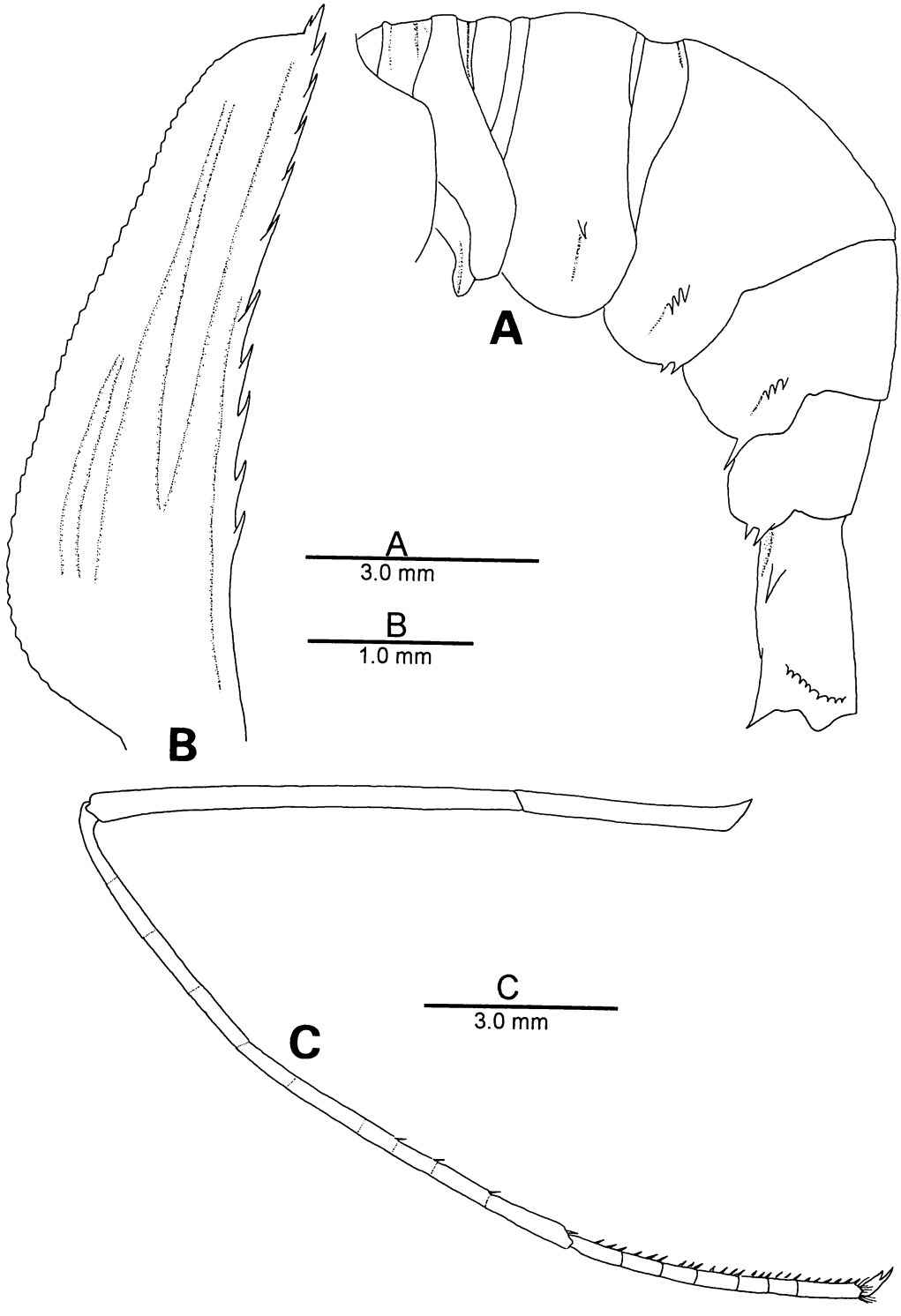

Fig. 7. *Odontozona striata* Goy, 1981. Ovigerous female holotype (USNM 34924). A, first to sixth abdominal somites, lateral; B, right antennal scaphocerite, dorsal (setae omitted); C, left fourth pereiopod, lateral.

the rostrum is straight in *O. striata*.

2) The anteroventral margin of the carapace is unarmed in *O. fasciata* (Fig. 1A), whereas it is armed with three spines just posterior to the pterygostomian spine in *O. striata*.

3) The pleuron of the first abdominal somite is armed posteroventrally with one to three spines in *O. fasciata* (Fig. 2A), rather than unarmed in *O. striata* (Fig. 7A).

4) The second and third abdominal pleura are laterally unarmed in *O. fasciata* (Fig. 2A), instead of possessing one or three lateral spines in *O. striata* (Fig. 7A).

5) The fourth abdominal somite has a pleural spine on the anterior part in *O. fasciata* (Fig. 2A), versus three pleural spines on the posterior part in *O. striata* (Fig. 7A).

6) In *O. fasciata*, the pleuron of fifth abdominal somite is armed with a spine on the pleural surface anteriorly (Fig. 2A), but unarmed in *O. striata* (Fig. 7A).

7) The terminal tooth of the antennal scaphocerite is simple in *O. fasciata* (Fig. 2F), but is bifid in *O striata* as mentioned above (Fig. 7B).

Debelius (1999) provided an underwater photograph of a stenopodid shrimp under the name of *Periclimenes* cf. *grandis*. It was taken at 25 m depth in a cave of the Maldive Islands. Judging from the color pattern in life and habitat, there is little doubt that the individual represents the present new species.

Since Goy (1981) published a key to aid in the identification of the known species of *Odontozona*, seven new species have been described (Gore, 1981; Kensley, 1981; Wicksten, 1982; Dounas and Koukouras, 1989; Manning and Chace, 1990; Pretus, 1990; Hendrickx, 2002). The poorly known species, *O. edwardsi* (Bouvier, 1908), was recently reported based upon newly collected specimens from off Morocco by García Raso (1996). Therefore, an attempt has been made to draft a key to all of the presently known species of the genus.

Key to the known species of *Odontozona* Holthuis, 1946

1. Telson without dorsolateral spines; lateral spines on cervical groove longer than corneal diameter···*O. foresti* Hendrickx, 2002
   (Gulf of California, eastern Pacific, 1240–1270 m)
— Telson armed with dorsolateral spines; spines on cervical groove shorter than corneal diameter ·····2
2. Abdominal somites sculptured dorsally ·····3
— Abdominal somites not sculptured dorsally ·····5
3. Lateral surface of rostrum armed with spines; dorsal surface of uropods with scattered spines
   ·····*O. spinosissima* Kensley, 1981
   (South Africa, western Indian Ocean, 200 m)
— Lateral surface of rostrum and dorsal surface of uropods unarmed ·····4
4. Abdominal pleura without lateral spines; dorsal surface of antennal scaphocerite unarmed ·····*O. rubra* Wicksten, 1982
   (Gulf of California, eastern Pacific, 5–10 m)
— Abdominal pleura armed with lateral spines; dorsal surface of antennal scaphocerite armed with row of small spines
   ·····*O. sculpticaudata* Holthuis, 1946
   (western Pacific, 5–70 m)
5. Palm of third pereiopod unarmed ·····6
— Palm of third pereiopod armed with row of spines ·····10
6. Posterolateral margin of fifth abdominal somite unarmed; merus of third pereiopod without marginal spines
   ·····*O. spongicola* (Alcock and Anderson, 1899)
   (Andaman Sea, eastern Indian Ocean, Santa Catalina Island, eastern Pacific, 609–900 m)
— Posterolateral margin of fifth abdominal somite armed with spines; merus of third pereiopod with marginal spines ·····7
7. Rostrum armed with closely spaced teeth on dorsal margin; cornea not pigmented ·····*O. edwardsi* (Bouvier, 1908)
   (northwest coast of Africa, eastern Atlantic, 1163 m)
— Rostrum armed with widely spaced teeth on dorsal margin; cornea darkly pigmented ·····8
8. Ischium of third maxilliped without dorsolateral spines; scaphocerite armed with

5–6 teeth on lateral margin
…*O. anaphorae* Manning and Chace, 1990
(Ascension Island, South Atlantic, 10 m)

— Ischium of third maxilliped with dorsolateral spines; scaphocerite armed with 9–13 teeth on lateral margin……9

9. Anteroventral margin of carapace unarmed; third abdominal somite unarmed on lateral surface……*O. fasciata* sp. nov.

— Anteroventral margin of carapace with 3 spines; third abdominal somite armed with 3 lateral spines
……*O. striata* Goy, 1981
(Gulf of Mexico, western Atlantic, 238–730 m)

10. Lateral surface of second abdominal pleuron armed with spines
……*O. addaia* Pretus, 1990
(Minorca Island, western Mediterranean, 5–30 m)

— Lateral surface of second abdominal pleuron unarmed ……11

11. Lateral surface of sixth abdominal pleuron armed with 2 spines; uropodal endopod armed laterally with 4 spines
……*O. minoica* Dounas and Koukouras, 1989
(Crete Island, eastern Mediterranean, 330 m)

— Lateral surface of sixth abdominal pleuron armed with 0–1 spine; uropodal endopod armed laterally with 2 spines
……12

12. Rostrum overreaching midlength of antennal scaphocerite, armed with 8–9 closely spaced teeth on dorsal margin
……*O. ensifera* (Dana, 1852)
(western and central Pacific, 3–83 m)

— Rostrum reaching midlength of antennal scaphocerite, armed with 4–5 widely spaced teeth on dorsal margin
……*O. libertae* Gore, 1981
(Florida and Colombia, western Atlantic, 23–56.4 m)

Acknowledgments

I am grateful to Shoichi Kato of the 'Regulus Diving' of Hachijo-jima Island for his kind help to collect the specimens. My thanks go to Hiroshi Senou of the Kanagawa Prefectural Museum of Natural History and Tsuyoshi Kawamoto of the 'Dive Estivent' of Kumejima Island for kindly providing the specimens. I thank Tomomi Saito of the Port of Nagoya Public Aquarium for kindly allowing me to examine the holotype of *O. striata*, borrowed by him for his Ph. D. study, and reviewing the manuscript. Thanks are extended to Tomoyuki Komai of the Natural History Museum and Institute, Chiba, for providing information on the gill structure of stenopodidean shrimps and elaborately reviewing the manuscript, and to Masayuki Osawa of the National Science Museum, Tokyo, for his cordial help in literature survey.

References

Alcock, A. and A. R. Anderson. 1899. Natural history notes from H. M. Royal Indian Marine Survey Ship 'Investigator', commander T. H. Heming, R. N., commanding. Series III., No. 2. An account of the deep-sea Crustacea dredged during the surveying-season of 1897–98. Ann. Mag. Nat. Hist. (7) 3: 1–27, 278–292.

Bouvier, E. L. 1908. Sur les relations zoologiques des Crevettes de la tribu des Sténopidés. C. R. Acad. Sci. 146: 887–891.

Dana, J. D. 1852. Conspectus Crustaceorum. Conspectus of the Crustacea of the Exploring Expedition under Capt. C. Wilkes, U. S. N. Proc. Acad. Nat. Sci. Philad. 1852: 10–28.

Debelius, H. 1999. Crustacea Guide of the World. 321 pp. Ikan-Unterwasserarchiv, Frankfurt.

Dounas, C. and A. Koukouras. 1989. *Odontozona minoica*, new species, from the Eastern Mediterranean Sea (Decapoda: Stenopodidea). J. Crust. Biol. 9: 341–348.

García Raso, J. E. 1996. Crustacea Decapoda (excl. Sergestidae) from Ibero-Moroccan waters. Results of Balgim-84 Expedition. Bull. Mar. Sci. 58: 730–752.

Gore, R. H. 1981. Three new shrimps, and some interesting new records of decapod Crustacea from a deep-water coral reef in the Florida Keys. Proc. Biol. Soc. Wash. 94: 135–162.

Goy, J. 1981. Studies on West Indian Stenopodidae: 1. *Odontozona striata* new species from off the western coast of Cuba (Crustacea: Decapoda: Stenopodidea). Bull. Mar. Sci. 31: 843–852.

Hendrickx, M. E. 2002. A new deep water species of *Odontozona* Holthuis (Decapoda, Stenopodidae) from the southern Gulf of California, Mexico. Crustaceana 75: 405–412.

Holthuis, L. B. 1946. Biological results of the Snell-

ius Expedition. XIV. The Decapoda Macrura of the Snellius Expedition. I. The Stenopodidae, Nephropsidae, Scyllaridae and Palinuridae. Temminckia 7: 1–178.

Holthuis, L. B. 1955. The recent genera of the caridean and stenopodidean shrimps (Class Crustacea, Order Decapoda, Supersection Natantia) with keys for their determination. Zool. Verh. 26: 1–157.

Holthuis, L. B. 1993. The Recent Genera of the Caridean and Stenopodidean Shrimps (Crustacea, Decapoda): with an Appendix of the Order Amphionidacea. 328 pp. Nationaal Natuurhistorisch Museum, Leiden.

Kensley, B. 1981. The South African Museum's Meiring Naude Cruises. Part 12. Crustacea Decapoda of the 1977, 1978, 1979 Cruises. Ann. S. Afr. Mus. 83: 49–78.

Latreille, P. A. 1819. Salicoques, Carides, Latr. Nouv. Dict. Hist. Nat. 30: 68–73. (not seen)

Manning, R. B. and F. A. Chace, Jr. 1990. Decapod and Stomatopod Crustacea from Ascension Island, South Atlantic Ocean. Smiths. Contr. Zool. 503: i-v+ 1–91.

Okuno, J. 2000. Additional specimens of *Palaemonella hachijo* Okuno, 1999 (Decapoda, Caridea, Palaemonidae). Crustaceana 73: 1297–1299.

Pretus, J. Ll. 1990. Description of *Odontozona addaia* spec. nov. (Crustacea: Decapoda: Stenopodidae) from a marine cave in the Island of Minorca, Western Mediterranean. Zool. Meded. 63 (26): 343–357.

Stimpson, W. 1860. Prodromus descriptionis animalium evertebratorum, quae in Expeditione ad Oceanum Pacificum Septentrionalem, a Republica Federata missa, Cadwaladaro Ringgold et Johanne Rodgers Ducibus, observavit et descripsit. Proc. Acad. Nat. Sci. Philad. 1860: 22–47.

Wicksten, M. K. 1982. Two species of *Odontozona* (Decapoda: Stenopodidea) from the eastern Pacific. J. Crust. Biol. 2: 130–135.

(Accepted 4 March 2003)

南日本の海底洞窟より採集されたオトヒメエビ科の1新種（甲殻上綱：十脚目：オトヒメエビ科）

奥野淳兒

千葉県立中央博物館 分館海の博物館
〒299-5242 千葉県勝浦市吉尾 123
E-mail: okuno@chiba-muse.or.jp

伊豆諸島の八丈島および琉球列島の久米島，下地島の海底洞窟からスキューバ潜水によって採集された4個体の標本に基づき，オトヒメエビ科スベスベオトヒメエビ属（新称）*Odontozona* Holthuis, 1946 の1新種，アカオビスベスベオトヒメエビ（新称）*O. fasciata* sp. nov. を記載する．本属には世界で12種（そのうちの4種がインド・西太平洋産）が知られており，本新種は第3顎脚の座節側面に棘を備えることによってメキシコ湾産の *O. striata* Goy, 1981 と類似する．本新種との比較のために *O. striata* のホロタイプを再調査したところ，標徴となるいくつかの形質において，Goy (1981) による原記載に誤りがあることが明らかになったので，修正した．本新種は頭胸甲腹縁や腹節に備わる棘の配列パターン，および第2触角の触角鱗末端の歯の形態によって *O. striata* から識別される．本種の生時の色彩は特徴的であり，腹節に幅広い赤色横帯を有することで他のオトヒメエビ科エビ類から容易に識別される．また，第3顎脚の座節の側面の棘を欠くことは，近縁のオトヒメエビ属 *Stenopus* Latreille, 1819 から本属を識別する形質のひとつとして用いられてきたが，本新種および *O. striata* ではこの部位に棘を有するため，属を識別するための形質として有効でないことを指摘した．さらに，本新種を含め，本属の種の検索表を提唱した．