

A New and Some Rare Crabs of the Families Trapeziidae, Oziidae and Xanthidae (Crustacea: Decapoda: Brachyura) from the Ogasawara Islands, Japan

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Abstract Two species of the family Trapeziidae, one species of the family Oziidae, and 15 species of the family Xanthidae are recorded from the Ogasawara Islands. Among them, one new species of the Xanthidae is described and named *Actaeodes ogasawaraensis*. Otherwise, *Paractaea retusa* (Nobili, 1905) (Xanthidae) is new to Japanese waters, and *Eupilumnus globosus* (Dana, 1852) (Oziidae), *Liocarpilodes harmsi* (Balss, 1934) and *Pseudoliomera variolosa* (Borradaile, 1902) (Xanthidae), are new to the Ogasawara Islands. *Pseudoliomera paraspeciosa* (Ward, 1941), which has been recorded from the Ogasawara Islands based on the wrong identification, is correctly identified in this paper based on the new specimens as the first not only for the Ogasawara Islands, but also for Japanese waters. *Carpilodes albolineatus* Serène and Nguyen, 1961, is synonymized with *Liomera rubra* (A. Milne-Edwards, 1865).

Key words: Trapeziid crabs, oziid crabs, xanthid crabs, Bonin Islands, northwest Pacific, new record for Japanese waters, new record for Ogasawara Islands.

Introduction

Takeda and Komatsu (2023) published an updated list of the crabs from the sea around the Ogasawara Islands, with 314 species from three island groups, Muko-jima (Keeta I.), Chichi-jima (Peel I.) and Haha-jima (Coffin I.), 35 species from Iwo-jima (Sulfur I.), Nishino-shima (Rosario I.) and Okino-Torishima (Parece Veta I.), and 10 species from three seamounts off the Ogasawara Islands. As a result, a total of 326 species were known from the Ogasawara Islands to the date. Recently, Takeda and Komatsu (2024) added 17 species of three families (1 species of Tetraliidae, 2 species of Trapeziidae and 14 species of Xanthi-

dae) to the crab fauna of the Ogasawara Islands.

Of 15 species of the family Xanthidae recorded in this paper, *Actaeodes ogasawaraensis* is described as new to science, and *Eupilumnus globosus* (Dana, 1852), *Liocarpilodes harmsi* (Balss, 1934), *Paractaea retusa* (Nobili, 1905) and *Pseudoliomera variolosa* (Borradaile, 1902) are recorded as new to the Ogasawara Islands. It is noted that one of the later three species, *Paractaea retusa*, is new to Japanese waters. Otherwise, *Pseudoliomera paraspeciosa* (Ward, 1941) included in the crab fauna of the Ogasawara Islands by Ooishi (1970) was correctly identified based on the new specimens as the first record since the original description.

All the specimens dealt herewith are preserved in the collections of the Tsukuba Research

Departments, National Museum of Nature and Science, Tokyo, with the register number under NSMT-Cr. The carapace size is shown in millimeters by cb (breadth) $\times$ cl (length), and the collection date is represented such a format of 18-IV-1975.

The maps of the Ogasawara Islands are referred to Takeda and Komatsu (2023), and the exact places of the diving sites in Haha-jima Island are shown by Takeda and Komatsu (2024, fig. 1B). The abbreviations to indicate the carapace areolation and anterolateral teeth in some species follow Dana (1852a).

Records of the Species

Family TRAPEZIIDAE Miers, 1886

Trapezia flavopunctata Eydoux and Souleyet, 1842
[Jn: Arame-sangogani]
(Fig. 1A)

Trapezia flavo-punctata Eydoux & Souleyet, 1842, p. 230, pl. 2 fig. 3.

Trapezia latifrons A. Milne-Edwards, 1867, p. 281; 1873, p. 259, pl. 10 fig. 7.

Trapezia flavopunctata: Forest & Guinot, 1961, p. 136, fig. 138. —Edmondson, 1962, p. 300, figs. 31d, 32a. —Ooishi, 1970, p. 94, pl. 15 fig. 10. —Sakai, 1976, pp. 507 (in key) & 510 (in English), p. 315 (in Japanese), pl. 182 fig. 4. —Chen & Lan, 1978, p. 281, fig. 12. —Serène, 1984, pp. 270 & 271 (in keys), 276, fig. 183, pl. 42 fig. A. —Galil & Lewinsohn, 1985, p. 210. —Dai & Yang, 1991, pp. 380 (in key), 384, pl. 51 fig. 8. —Castro, 1997a, pp. 81, 96 (in key); 1997b, p. 121; 1999, p. 109; 2011, p. 80. —Muraoka, 1998, p. 46. —Higashiji *et al.*, 2013, p. 87, fig. 2G.

Material examined. Chichi-jima Is. —Ototojima I., 1 juv. ♂ (NSMT-Cr 31645; cb 10.1 $\times$ cl 7.3 mm), 18-IV-1975, Kuwabara leg.

Haha-jima Is. —Diving site *Blue Ribbon* (26°34'03"N, 142°12'48"E), Imoto-jima I., 15–17 m, 1 juv. (NSMT-Cr 31646; cb 6.0 $\times$ cl 4.5 mm), 1 juv. (NSMT-Cr 31647; cb 7.5 $\times$ cl 5.8 mm), 11-VII-2016, H. Komatsu leg.; Dividing site *Hirane* (26°34'08"N, 142°12'49"E), Imoto-jima I., 20–25 m, 1 juv. (NSMT-Cr 31649; cb 7.0 $\times$ cl 5.5 mm), 14-VII-2016, H. Komatsu leg.

Remarks. The carapace shape and spotted pattern of two juvenile specimens at hand (Fig.

1A) are quite different from the colored original figure (Eydoux and Souleyet, 1842, pl. 2 fig. 3) which was reproduced by Castro *et al.* (2004, pl. 3 fig. C), and completely agreeable with the monochrome figure of the juvenile specimen of *T. latifrons* described by A. Milne-Edwards (1867), which is synonymous with this species. The difference of the carapace shape may be referred to the juvenile stage generally known in the *Trapezia* species; in the smaller individuals, the carapace is wider anteriorly to show reverse triangular appearance. The fewer, only some white spots may be also due to the juvenile stage. The fine color photograph with many white spots on the carapace of the larger specimen is seen in Higashiji *et al.* (2013, fig. 2G), and also the similar color photographs were published in some guide books published in Japan, e.g., Takeda (1975, 1 unnumbered fig.), Nagai and Nomura (1988, unnumbered fig.), and Minemizu (2000, 1 unnumbered fig.). The monochrome photograph of a specimen from the Ogasawara Islands (Ooishi, 1970, pl. 15 fig. 10) shows, without doubt, the same pattern having many spots on the carapace, chelipeds and ambulatory legs.

Distribution. Indo-West Pacific except for the Red Sea; the western Indian Ocean eastwards to French Polynesia, the Hawaiian Islands and Japan in the Pacific Ocean.

Trapezia tigrina Eydoux and Souleyet, 1842
[Jn: Akahoshi-sangogani]
(Fig. 1B)

Trapezia tigrina Eydoux and Souleyet, 1842, p. 232, pl. 2 fig. 2. —Ward, 1939, p. 13, figs. 15–16. —Galil & Lewinsohn, 1984, p. 166, fig. 1. —Serène, 1984, pp. 270 & 272 (in keys), 275, fig. 182, pl. 39 figs. C–D. —Castro, 1997b, p. 130; 1999, p. 55; 2009, p. 276, fig. 2B. —Castro *et al.*, 2004, pp. 45 (in key), 54. —Naderloo, 2017, pp. 283 (in key), 287, figs. 22.3b, 24.5.

Trapezia punctata Coulon, 1864, p. 569.

Trapezia ferruginea var. *rufopunctata* (Herbst, 1799): Paulson, 1961 [1875], p. 54, pl. 7 fig. 3.

Trapezia rufopunctata (Herbst, 1799): Klunzinger, 1913, p. 309, pl. 11 fig. 13.

Trapezia cymodoce maculata (MacLeay, 1838): Rathbun, 1930, p. 558, pl. 228 figs. 3–4. —Edmondson, 1962, p.

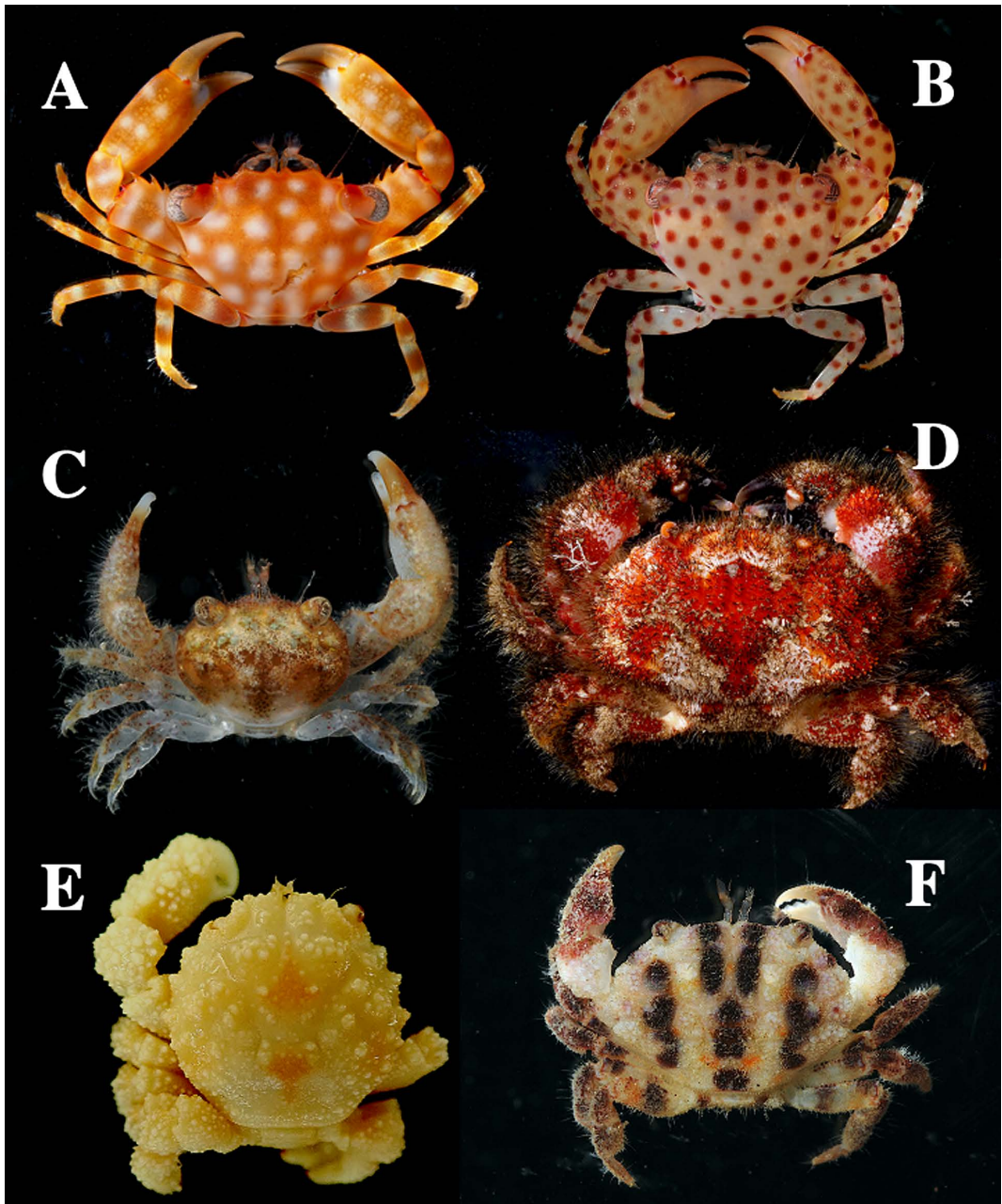


Fig. 1. A: *Trapezia flavopunctata* Eydoux and Souleyet, juv. (NSMT-Cr 31647; cb 7.5 × cl 5.8 mm) from Imoto-jima. B: *Trapezia tigrina* Eydoux and Souleyet, young ♀ (NSMT-Cr 31649; cb 7.3 × cl 6.4 mm) from Haha-jima. C: *Liocarpilodes integerrimus* (Dana), ♀ (NSMT-Cr 31689; cb 3.5 × cl 2.9 mm) from Ani-jima. D: *Gailardiellus rueppelli* (Krauss), ♂ (NSMT-Cr 31670; cb 23.4 × cl 17.7 mm) from Imoto-jima. E: *Cymo quadrilobatus* Miers, ♀ (NSMT-Cr 32150; cb 17.3 × cl 16.5 mm) from Nishi-jima, preserved in 70% ethyl alcohol. F: *Actaeodes consobrinus* (A. Milne-Edwards), ♂ (NSMT-Cr 31661; cb 8.2 × cl 5.4 mm) from Haha-jima.

300, fig. 31b.

Trapezia danae Ward, 1939, p. 13, figs. 17–18. —Ooishi, 1970, p. 94, pl. 15 fig. 11.

Trapezia wardi Serène, 1971a (1970), p. 914, pl. 4 fig. C; 1971b (1969), p. 140, figs. 7–8, 11–12, 17–20, 23, 25. —Sakai, 1976, pp. 506 (in key) & 509 (in English), p. 314 (in Japanese), pl. 181 figs. 3–4.

Material examined. Haha-jima Is. —Diving site *Shihon-iwa South* (26°38'49"N, 142°08'36"E), Haha-jima I., 1 young ♀ (NSMT-Cr 31649; cb 7.3 × cl 6.4 mm), 6-VII-2015, H. Komatsu leg.

Remarks. Galil and Lewinsohn (1984) deeply discussed the synonymy of this species based on numerous specimens preserved in many museums, and made clear the confusion with some similarly spotted species, especially *Trapezia rufopunctata* (Herbst, 1799). Later, due to the extended works by Castro (1997a, b, 1999, 2009) and Castro *et al.* (2004), *T. punctata* Coulon, 1864, *T. danae* Ward, 1939, and *T. wardi* Serène, 1971, were reduced to synonyms of *T. tigrina*.

The size and number of the reddish spots are rather similar in *T. tigrina* and *T. rufopunctata*, and considerably variable in the developmental stages in both species. However, the carapace shape is different in both species. The carapace of *T. tigrina* is not widened anteriorly, with the subparallel anterolateral margins of both sides (Fig. 1B), while in *T. rufopunctata*, the carapace seems to be wider anteriorly, viz. each anterolateral margin of the carapace weakly directed obliquely outward to the external orbital tooth and each posterolateral margin behind the epibranchial tooth strongly convergent to the carapace posterior margin. The color photographs of both species were finely indicated by Maenosono (2021b, fig. 2A–B for *T. tigrina*; fig. 2F for *T. rufopunctata*). As also indicated in the present paper (Fig. 1B), the spots are generally larger and fewer than *T. rufopunctata*, in which the outline of each spot is clear-cut. In life, the spots of *T. rufopunctata* are deep-red much more than those of *T. tigrina*.

Distribution. Widely distributed in the Indo-West Pacific, from the Red Sea and the western Indian Ocean to the southern and western Pacific northwards to Japan.

Family OZIIDAE Dana, 1851

Eupilumnus globosus (Dana, 1852)

[Jn: Marumi-kebukagani]

(Fig. 6E–F)

Pilumnus globosus Dana, 1852a, p. 81; 1852b, p. 236; 1855, pl. 13 fig. 10. —Miers, 1886, p. 155. —De Man, 1890, p. 59, pl. 3 fig. 3. —Rathbun, 1907, p. 56.

Pilumnus ovalis A. Milne-Edwards, 1867, p. 280.

Pilumnus margaritatus Ortmann, 1893, p. 436.

Actumnus globosus: Borradaile, 1902, p. 248.

Globopilumnus globosus: Balss, 1933, p. 7, pl. 1 figs. 1–2. —Sakai, 1939, p. 514, pl. 98 fig. 3; 1976, pp. 470 (in English), 287 (in Japanese), pl. 171 fig. 3. —Holthuis, 1953, p. 21. —Forest & Guinot, 1961, p. 121. —Guinot-Dumortier, 1961, p. 99, figs. 1–2, 5–6. —Edmondson, 1962, p. 285, figs. 24d–e, 25d. —Takeda & Nagai, 1983, p. 48 (in key). —Dai *et al.*, 1986, p. 324, fig. 171B, pl. 46 fig. 6. —Dai & Yang, 1991, p. 348, fig. 171B, pl. 46 fig. 6.

Globopilumnus globosus spinosus Balss, 1933, p. 7.

Eupilumnus globosus: Ng *et al.*, 2001, p. 24 (in list). —Ng *et al.*, 2008, p. 65 (in list).

Material examined. Chichi-jima Is. —Ototojima I., 1 ♂ (NSMT-Cr 31650; cb 8.9 × cl 7.6 mm), 1 ovig. ♀ (NSMT-Cr 31651; cb 13.6 × cl 11.9 mm), 1 ♀ (NSMT-Cr 31652; cb 10.4 × cl 7.6 mm), 10-VII-1969, M. Imajima leg.

Remarks. Guinot-Dumortier (1961) reviewed the genus *Globopilumnus* Balss, 1933, and established two West African and three Indo-West Pacific species. Since this contribution, *Globopilumnus* is widely used for the Indo-West Pacific species, but Rathbun (1930) has already made *Pilumnus* (*Eupilumnus*) Kossmann, 1877, as a senior synonym of *Globopilumnus*. The name of the genus *Globopilumnus* is nomenclatorially invalid, being explained as such by Ng *et al.* (2001).

On describing a new species of the genus *Globopilumnus*, now *Eupilumnus*, Takeda and Nagai (1983) made a key to distinguish five known and one new species. Among them, *E. globosus* (Dana, 1852) and *E. actumnoides* (A. Milne-Edwards, 1873) are morphologically close to each other, and the other species may be easily separated from the congeners. In these two species, the carapace is thickly covered with stiff setae, with four or five anterolateral tubercles in

E. globosus (Fig. 6E) and six or seven tubercles in *E. actumnoides*. Otherwise, the ambulatory legs are unarmed in *E. globosus*, but armed with a distal spine on each propodus of first three pairs in *E. actumnoides*. It is said that the carapace posterolateral margins of both sides are subparallel in *E. globosus* and convergent toward the lateral ends of the carapace posterior margin in *E. actumnoides*. However, the difference of the carapace contour thus mentioned may be not always a reliable character to distinguish the two species in question.

Eupilumnus fragaria (Yang, Dai and Ng, 1998) was described from the Nansha Islands as a close relative of *E. globosus*. According to the description and the key prepared by the original authors (Yang *et al.*, 1998), the carapace anterolateral margin is armed with 3 small granules (vs. 4–5 granules), the carapace posterolateral margin is gently converging towards the carapace posterior margin (vs. distinctly converging), the granules on the palm outer surface are well spaced (vs. densely arranged), the G1 tip is not flared (vs. flared), and the G2 tip is about half length of the basal segment (vs. longer than half length of the basal segment). The additional specimens should be examined.

Distribution. Laccadive Islands and Mergui Archipelago in the central Indian Ocean; South China Sea, Micronesian islands, Philippines, Japan, Hawaii, Tahiti and Tuamotu Islands in the Pacific Ocean. New to the Ogasawara Islands.

Family XANTHIDAE MacLeay 1838

Actaeodes consobrinus (A. Milne-Edwards, 1873)

[Jn: Kobu-samehada-ougigani]

(Fig. 1E–F)

Actaea consobrina A. Milne-Edwards, 1873, p. 79. — Odhner, 1925, p. 67, pl. 4 fig. 14. — Sakai, 1939, p. 491, pl. 94 fig. 2. — Serène & Bui, 1959, p. 291, fig. 2A. — Ooishi, 1970, p. 92, pl. 14 fig. 7. — Deb, 1989, pp. 7 (in key), 12, pl. 3 fig. 7.

Actaeodes consobrinus: Guinot, 1976, p. 246, pl. 15 fig. 5. — Sakai, 1976, p. 448 (in English), p. 270 (in Japanese), pl. 158 fig. 3 — Serène, 1984, pp. 133 (in key), 134 (in key), 135, pl. 18 fig. C.

Actaea suffuscula Rathbun, 1911, p. 220, pl. 17 figs. 10–11.

Material examined. Chichi-jima Is. — Futami Bay, Chichi-jima I., on buoy, 2 ♂♂ (cb 7.9 × cl 5.6 mm; cb 8.5 × cl 5.9 mm), 1 ovig. ♀ (cb 8.0 × cl 5.4 mm), NSMT-Cr 6874, 17-V-1975, Y. Kurata leg.; Noyagi-zaki (27°04'30"N, 142°11'05"E), Chichi-jima I., 12 m, 1 ♂ (NSMT-Cr 31653; cb 6.5 × cl 4.4 mm), 10-XI-2013, H. Komatsu leg.; Hito-maru-jima I. (27°07'04"N, 142°11'27"E), 6–8 m, 2 ♂♂ (cb 6.3 × cl 4.3 mm; cb 8.4 × cl 5.9 mm), 2 ♀♀ (cb 8.4 × cl 6.1 mm; cb 8.4 × cl 6.0 mm), 1 ovig. ♀ (cb 6.5 × cl 4.4 mm), NSMT-Cr 31654, 29-VI-2014, H. Komatsu leg.

Haha-jima Is. — Diving site *Shihon-iwa North* (26°38'56"N, 142°08'37"E), Haha-jima I., 1 ♂ (NSMT-Cr 31655; cb 5.4 × cl 4.2 mm), 1 ♂ (cb 5.2 × cl 3.7 mm), 2 ovig. ♀♀ (cb 5.5 × cl 4.1 mm; cb 6.0 × cl 4.5 mm), NSMT-Cr 31656, 2-VII-2015, H. Komatsu leg.; Diving site *Big Beach* (26°36'01"N, 142°08'13"E), Mukou-jima I., 3 ♂♂ (cb 5.2 × cl 3.9 mm—cb 6.5 × cl 5.0 mm), 1 ovig. ♀ (cb 6.5 × cl 4.7 mm), 2 ♀♀ (cb 6.5 × cl 4.5 mm; cb 8.5 × cl 5.3 mm), NSMT-Cr 31657, 2-VII-2015, H. Komatsu leg.; Diving site *Shihon-iwa South* (26°38'49"N, 142°08'36"E), Haha-jima I., 1 ♀ (NSMT-Cr 31658; cb 7.6 × cl 5.2 mm), 3-VII-2015, H. Komatsu leg.; Diving site *Nishi-hana* (26°36'40"N, 142°07'40"E), Mukou-jima I., 2 ♂♂ (NSMT-Cr 31659; cb 5.3 × cl 3.5 mm; cb 5.7 × cl 4.5 mm), 4-VII-2015, H. Komatsu leg.; Diving site *Zakuzaku* (26°35'19"N, 142°08'41"E), Hira-shima I., 1 young ♂ (cb 3.7 × cl 2.7 mm), 1 young ♀ (cb 5.3 × cl 4.0 mm), NSMT-Cr 31660, 4-VII-2015, H. Komatsu leg.; Diving site *Shihon-iwa South* (26°38'49"N, 142°08'36"E), 1 ♂ (NSMT-Cr 31661; cb 8.2 × cl 5.4 mm), 1 ♀ (NSMT-Cr 31662; cb 6.4 × cl 4.8 mm), 6-VII-2015, H. Komatsu leg.; Diving site *Blue Ribbon* (26°34'03"N, 142°12'48"E), Imoto-jima I., 15–17 m, 3 ♂♂ (cb 5.9 × cl 4.6 mm—cb 9.0 × cl 6.3 mm), 1 ovig. ♀ (cb 7.2 × cl 5.4 mm), NSMT-Cr 31663, 11-VII-2016, H. Komatsu leg.; Diving site *Uentoro* (26°39'33"N, 142°10'14"E), Haha-jima I., 12–15 m, 2 young ♂♂ (cb 4.0 × cl 2.6 mm; cb 3.5 × cl 2.7 mm), 1 ♀ (cb 6.0 × cl 4.0 mm), NSMT-Cr 31664, 12-VII-2016, H. Komatsu leg.;

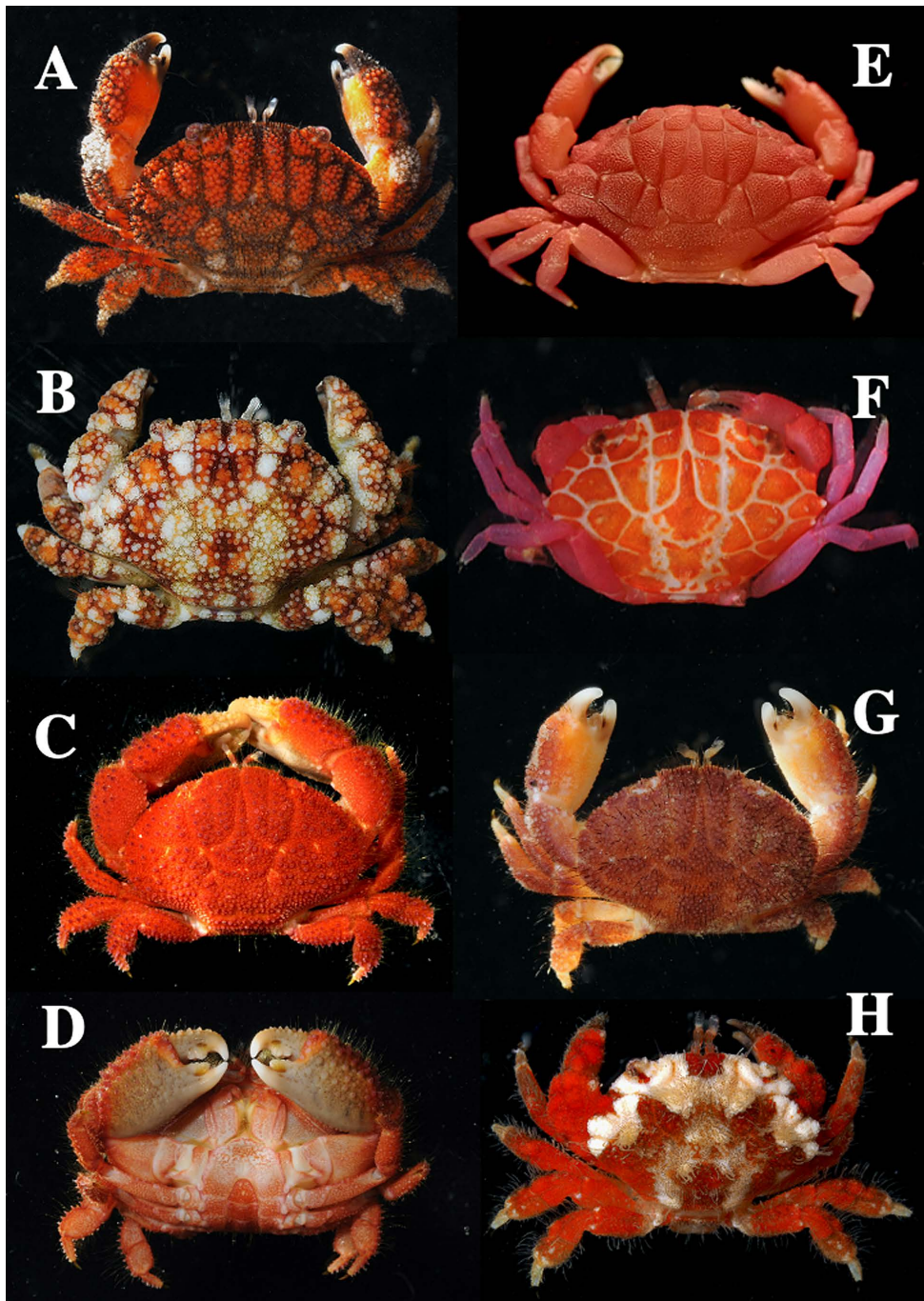


Fig. 2. A: *Pseudoliomera lata* (Borradaile), young ♂ (NSMT-Cr 31695; cb $10.4 \times$ cl 7.1 mm) from Imoto-jima. B: *Pseudoliomera speciosa* (Dana), ♂ (NSMT-Cr 31697; cb $7.2 \times$ cl 5.5 mm) from Chichi-jima. C–D: *Pseudoliomera hellerii* (A. Milne-Edwards), ♂ (NSMT-Cr 31688; cb $19.5 \times$ cl 13.5 mm) from Hira-shima, dorsal (C) and ventral (D) views. E–F: *Liomera rubra* (A. Milne-Edwards), ♂ (NSMT-Cr 31681; cb $18.2 \times$ cl 10.8 mm) from Haha-jima (E), and juv. (photograph only), from Haha-jima (F). G: *Pseudoliomera variolosa* (Borradaile), ♀ (NSMT-Cr 31698; cb $7.6 \times$ cl 5.7 mm) from Mukou-jima. H: *Pseudoliomera paraspeciosa* (Ward), ♂ (NSMT-Cr 31696; cb $7.0 \times$ cl 4.8 mm) from Imoto-jima.

Diving site *Uentoro* (26°39'28"N, 142°10'35"E), 14–20 m, 2 ♂♂ (cb 7.1 × cl 4.8 mm; cb 8.1 × cl 5.6 mm), 1 ovig. ♀ (cb 5.7 × cl 4.2 mm), NSMT-Cr 31665, 12–VII-2016, H. Komatsu leg.; Diving site *Blue Ribbon*, Imoto-jima I., 12–14 m, 5 ♂♂ (cb 5.2 × cl 3.6 mm—cb 10.1 × cl 6.6 mm), 2 ovig. ♀♀ (cb 5.8 × cl 3.6 mm; cb 5.1 × cl 3.1 mm), NSMT-Cr 31666, 14–VII-2016, H. Komatsu leg.; Diving site *Hirane* (26°34'08"N, 142°12'49"E), Hira-shima I., 20–25 m, 1 young ♂ (NSMT-Cr 31667; cb 4.3 × cl 2.7 mm), 14–VII-2016, H. Komatsu leg.

Remarks. As recorded above, the biggest specimen, male, is 10.1 mm in carapace breadth (cb), and six ovigerous females are within the range of cb 5.1–7.2 mm. In this small species, the carapace dorsal surface is distinctly separated into raised regions by the wide and deep furrows, with rough appearance as a whole. Most remarkable characteristic for this species is, as mentioned by Serène (1984) and seen in Nagai and Nomura (1988) and also in this paper (Fig. 1F), the presence of several blackish spots arranged longitudinally on the carapace median and lateral parts. The blackish color is more or less spotted, but the spots are sometimes variable in the size and shape, being confluent longitudinally with each other to form some longitudinal lines (Fig. 1F). The detailed pattern and size of blackish color are variable as such, and followed usually with some yellowish, irregular blotches along dark spots.

There is no doubt for the species identification, but with slight hesitation for its generic status because of different carapace ornamentation and hairiness from most of the *Actaeodes* species except for *A. quinquelobatus* Garth and Kim, 1983, from the Philippines. *Actaeodes quinquelobatus* was described as a close congener of *A. consobrinus*, differentiating in having five anterolateral teeth instead of four.

Distribution. Western Pacific from Japan to Australia through the Micronesian islands, and the western Indian Ocean. In Japan, this species is rather rarely found in the Ryukyu Islands, but seems to be not uncommon in the Ogasawara

Islands based on the previous records and the specimens examined during the present study.

Actaeodes ogasawaraensis sp. nov.

[New Jn: Ogasawara-awatsubu-ougigani]

(Figs. 3–4)

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? *Actaeodes quadriareolata* Takeda and Miyake, 1968: Takeda & Kurata, 1977a, p. 108.

? *Paractaea quadriareolata* (Takeda and Miyake, 1968): Takeda & Kurata, 1977b, p. 143.

Material examined. Haha-jima Is. —Diving site *Blue Ribbon* (26°34'03"N, 142°12'48"E), Imoto-jima I., 12–14 m, 1 ♂ (Holotype, NSMT-Cr 31668; cb 7.3 × cl 4.7 mm), 14–VII-2016, H. Komatsu leg.; Diving site *Shihon-iwa South* (26°38'49"N, 142°08'36"E), Haha-jima I., 1 ♂ (Paratype, NSMT-Cr 31669; cb 4.9 × cl 3.8 mm), 6–VII-2015, H. Komatsu leg.

Diagnosis. Small species, generally close to *Actaeodes consobrinus* (A. Milne-Edwards, 1873). Carapace evenly convex, with deeply sculptured dorsal surface; each protogastric region (2M) subdivided into four subequal parts; each anterolateral margin with four subequal, obtuse, equidistant teeth behind small external orbital angle; posterior three teeth arranged almost longitudinally; carapace posterolateral margin shorter than anterolateral margin, strongly convergent toward lateral end of carapace posterior margin. Chelipeds short, with chelae and carpi provided with some nodules; dark color of fingers extended back onto most part of outer surface of palm except for place close to basal part of movable finger. Ambulatory legs short; anterior margins of meri and carpi narrowly ridged throughout lengths, regularly serrated with minute sharp granules; each carpus and propodus inflated dorsally, dorsal surface roughly sculptured with longitudinal furrows and depressions.

Description of holotype male. Carapace (Fig. 3A–C) evenly convex in both directions, distinctly divided into regions by wide furrows,

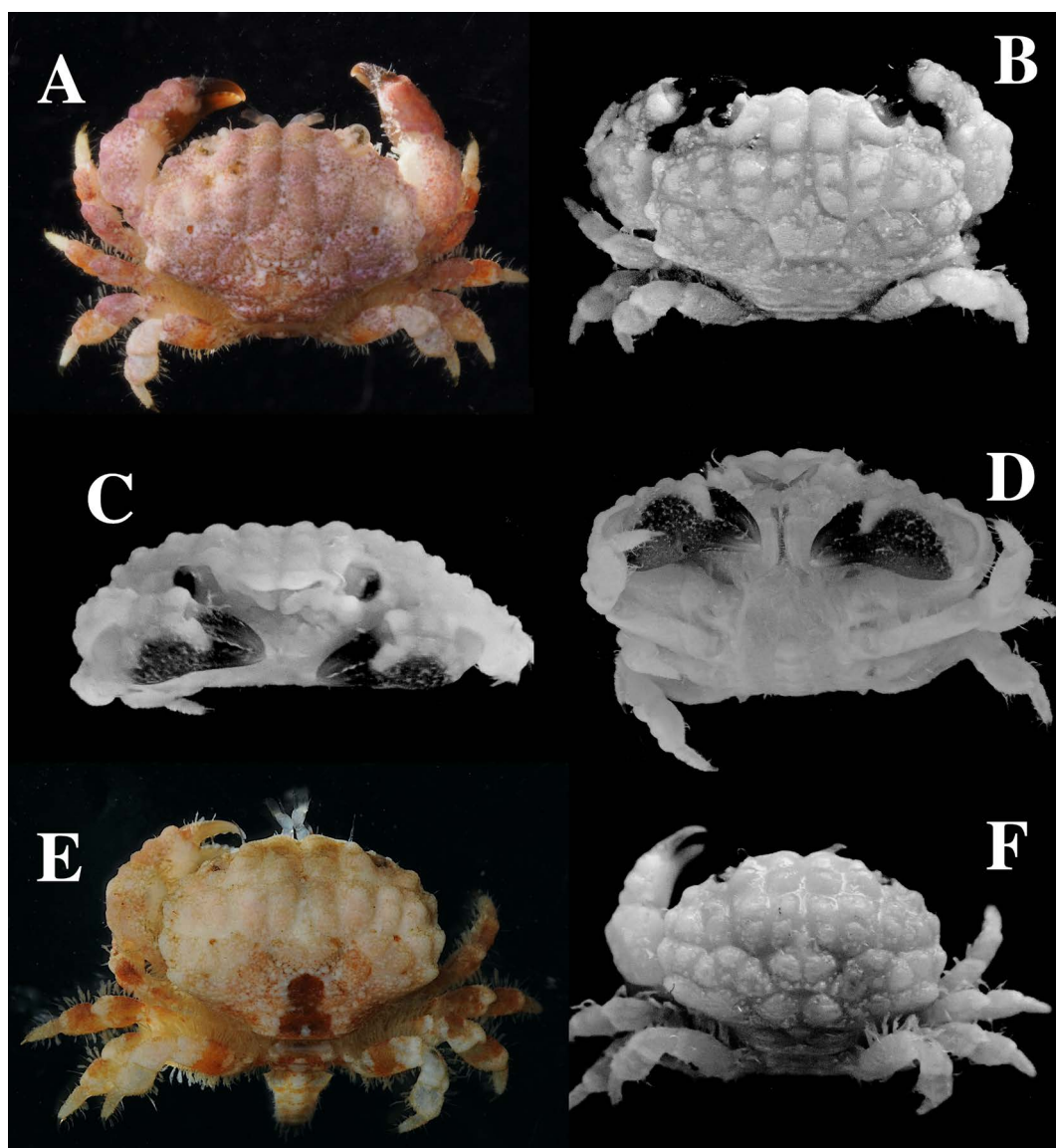


Fig. 3. *Actaeodes ogasawaraensis* sp. nov., holotype ♂ (A–D; NSMT-Cr 31668; cb $7.3 \times$ cl 4.7 mm) from diving site *Blue Ribbon*, Imoto-jima, 12–14 m, dorsal (A–B), frontal (C) and ventral (D) views; Paratype ♂ (E–F; NSMT-Cr 31669; cb $4.9 \times$ cl 3.8 mm) from diving site *Shihon-iwa South* ($26^{\circ}38'49''$ N, $142^{\circ}08'36''$ E), Haha-jima, dorsal views (E–F).

without hairs; regions raised, more or less nodular, thickly covered with small granules (Fig. 3B–C); interregional furrows with sparse indistinct granules of variable sizes; frontal regions (1F and 2F) fused, low, but distinct; epigastric region (1M) of good size, widely separated from 2F, protogastric region (2M) and supraorbital margin; each 2M subdivided into four nodular

subequal parts by longitudinal and transverse furrows; metagastric region (3M) indistinctly subdivided into three parts, with short median anterior extension attaining median part of 2M; main part of 3M as large as 2M, with a deep furrow as boundary from inner branchial region (6L); urogastric region (4M) not formed, with a deep transverse furrow between 3M and cardiac

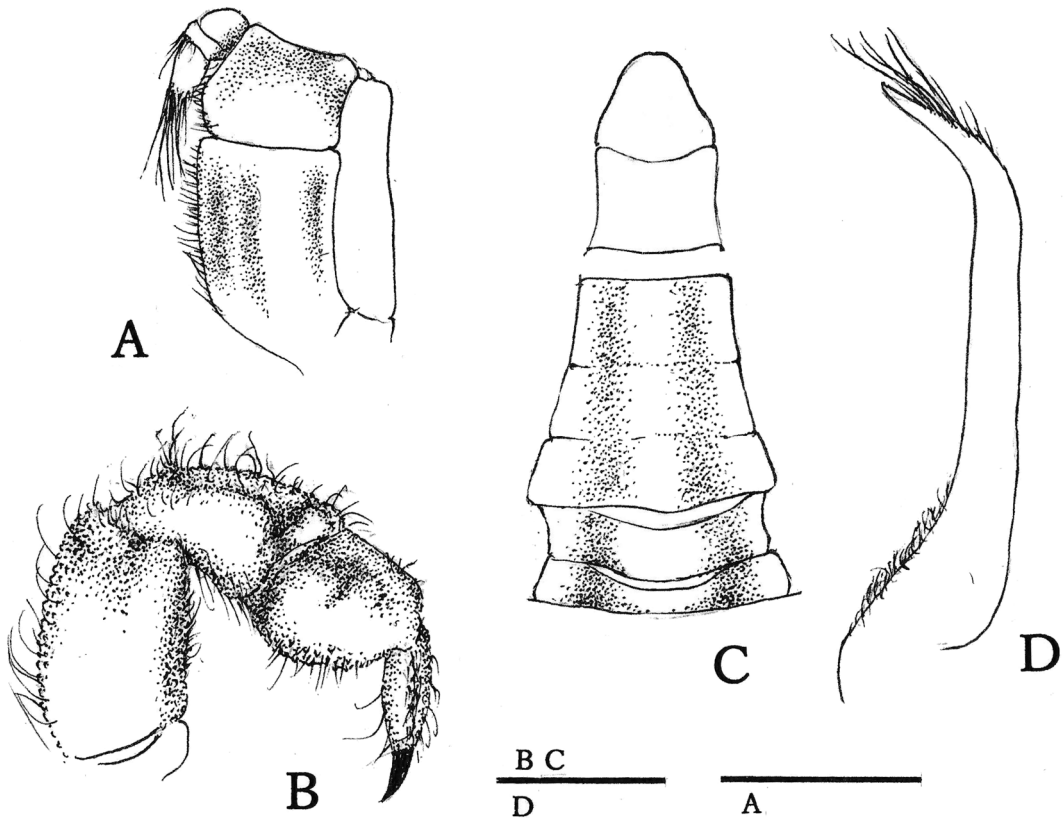


Fig. 4. *Actaeodes ogasawaraensis* sp. nov., holotype ♂ (A–D; NSMT-Cr 31668; cb 7.3 × cl 4.7 mm) from diving site *Blue Ribbon*, Imoto-jima, 12–14 m. A: Left third maxilliped. B: Right fourth ambulatory leg. C: Pleon. D: Left G1, sternal view. Scales: A = 1 mm, BC = 1 mm, D = 2 mm.

region (1P); 1P prominent, with anterior margin rather raised, ridged; intestinal region (2P) marked with a pair of weak ridges along carapace posterior margin; hepatic region (1L) flattened, without granules or nodules; branchial regions (2–4L) nodular, subequal to 2M nodules; 4L subequal to 3L; 5L prominent, as wide as 3M, with two small nodules along furrow between 5L and 4L, shallowly separated from 6L.

Front (Fig. 3B–C) about one third as wide as carapace, divided into two by a median distinct notch; each lobe strongly convex along inner half, deeply concave along outer half both in dorsal and frontal views; lateral end of each lobe directed downward, not directly continuous with supraorbital angle. Orbit (Fig. 3B–C) orbicular, deep, supraorbital margin weakly raised, with shallow marginal depression; two small interrup-

tions at median part, external orbital tooth not prominent, forming only a part of supraorbital margin; infraorbital margin concave for most of length, with both ends obtusely angulated.

Anterolateral margin (Fig. 3A–B) 1.5 times as long as posterolateral margin, prominent in dorsal view, but not strongly arched as a whole, being cut into four stout, subequal, equidistant teeth; first tooth obtuse at tip, nodular, distinctly isolated from external orbital angle; posterior three teeth more or less nodular dorsally, obtusely angulated at tip, isolated from carapace dorsal regions by submarginal furrow, being arranged almost longitudinally. Posterolateral margin (Fig. 3B) nearly straight, with posterior dorsal surface shallowly concave.

Third maxilliped (Fig. 4A) smooth, wide, with breadth of exopod about half of ischium; merus

weakly angulated at antero-external angle.

Both chelipeds (Fig. 3A–D) equal in size and shape, comparatively short; merus short, small, almost disguised under carapace; carpus prominent, with several obtuse tubercles, but carpus margin not developed outward; inner angle not formed. Palm (Fig. 3D) with three large, obtuse nodules on upper surface, with small granules on outer lower surface; small granules roughly arranged in some longitudinal rows extending onto immovable finger; dark color of movable finger extended onto more than half of outer surface of palm, except for base of movable finger; both fingers obtusely toothed throughout lengths on cutting edges, leaving no space between them.

Ambulatory legs (Figs. 3A–B, 4B) short, stout, meri of second and third pairs in situ attaining just at level of last tooth of carapace anterolateral margin; anterior margins of meri and carpi narrowly ridged throughout lengths, regularly serrated with minute sharp granules; anterior margins of propodi and dactyli not distinctly ridged, but similarly serrated; carpi and propodi weakly inflated dorsally, dorsal surface roughly sculptured with longitudinal furrows and depressions; dorsal surfaces of carpus and propodus of first pair with longitudinal thick ridges and nodules.

Pleon (Fig. 4C) seven-segmented, not markedly narrow, with a longitudinal shallow furrow along each lateral margin; surfaces weakly roughened, but not granulated; third to fifth somites fused, with traces of sutures. G1 (Fig. 4D) curved at subdistal part, with a bundle of several long hairs, similar to those of most of actaeinae relatives.

Notes on paratype male. The paratype (cb 4.9 mm) (Fig. 3E–F) is smaller than the holotype (cb 7.3 mm), and the right cheliped is missing. However, the outline of the carapace, the sculpture of the carapace dorsal surface, the development of the frontal margin, four anterolateral teeth of the carapace, and the pleon are close to those of the holotype. The tubercles of the carpus and palm of the left cheliped are similar to those of the holotype, but not so prominent as in the holotype.

The pterygostomial regions and thoracic sternum are provided with longish club-shaped hairs. The G1 is not so strongly curved at the subterminal part probably due to the smaller size of the specimen, though it seems to be fully developed.

Remarks. The new species is most characteristic in the subfamily Actaeinae in having each protogastric region (2M) subdivided into four; this character is only known in *Paractaeopsis quadriareolatus* (Takeda and Miyake, 1968), the type species of the genus *Paractaeopsis* established by Serène (1984) together with *Actaea tumulosa* Odhner, 1925. In *P. quadriareolatus*, the carapace seems to be narrowly elliptical in outline, with the regularly convex anterolateral margins, the carapace dorsal surface is strongly convex in both directions, and all of the regions including the subdivided 2M are distinctly nodular, as seen in the photographs (Takeda and Miyake, 1968a, pl. 8 fig. A; Peyrot-Clausade and Serène, 1976, pl. 3 fig. B; Serène, 1984, pl. 17 fig. E).

The carapace, chelipeds and ambulatory legs of the new species are generally similar to *Actaeodes consobrinus* (A. Milne-Edwards, 1873), which is somewhat doubtful in its affiliation to the genus *Actaeodes*, but in addition to the difference in the contour of the carapace and the shape of 2M mentioned above, the other differences between *A. consobrinus* and new species are remarked in the following lines (cf. Fig. 1F for *A. consobrinus*, and Fig. 3 for the new species).

1) In the new species, the carapace anterolateral margin is strongly developed, but not regularly convex, and longer than the posterolateral margin, with its posterior two-thirds from the first to fourth teeth being almost longitudinal as a whole.

2) In the new species, the carapace posterolateral margin is nearly straight, but weakly concave dorsally, and shorter than the anterolateral margin.

3) In the new species, the inner half of each frontal lobe is developed and strongly convex forward in dorsal view.

4) In the new species, the first anterolateral lobe is similar to the following three teeth, with

its anterior margin deeply isolated from the external orbital angle. In *A. consobrinus*, the first lobe is almost obsolete, and the carapace antero-lateral margin is weakly directed toward the infraorbital margin.

5) The color in life is distinctly different from each other (Fig. 3A, E in the new species vs. Fig. 1F in *A. consobrinus*). It may be remarkable that in both of the color photographs of the holotype and paratype of the new species (Fig. 3A, E), each 2M is seen to be longitudinally subdivided into two, not four, but in the same specimens preserved in 70 % ethyl alcohol, the 2M is shown to be clearly subdivided into four, not two. This difference may be the results of lighting to take the photographs of the fresh specimens in water.

The carapace contour of the new species, with strongly arched and long anterolateral margin armed with four teeth, is somewhat similar to some *Euxanthus* species such as *E. herdmani* Laurie, 1906 (Laurie, 1906, pl. 1 fig. 9; Serène, 1984, pl. 11 fig. A; Mendoza and Ng, 2010, fig. 1D; Maenosono, 2021c, figs. 1D, 2C) and *Euxanthus* sp. (Iwasa-Arai *et al.*, 2015, figs. 1C, 2A), but the small size, the chelipeds without outward projection of the carpus, the short and stout ambulatory legs and the G1 having a tuft of sub-terminal long hairs show the systematic position in the subfamily Actaeinae rather than the Euxanthinae.

Takeda and Kurata (1977a) recorded *Actaeodes quadriareolata* from the vicinity of new volcanic island, Nishino-shima-shinto, based on the anterior half of the carapace, both chelipeds and two ambulatory legs found in stomach of the slender emperor [Jn: Hoso-fuefuki], *Lethrinus variegatus* Valenciennes, and also Takeda and Kurata (1977b) recorded *Paractaea quadriareolata* from Minami-fukurozawa, Chichi-jima Island, with the carapace found in stomach of the striped large-eye bream [Jn: Nokogiridai], *Gnathodentex aureolineatus* (Lacépède). However, unfortunately, it is impossible, at present, to confirm the identification with *Paractaeopsis quadriareolatus*, as the voucher specimens obtained from stomach contents of fishes were

not kept in the laboratory.

Cymo quadrilobatus Miers, 1884

[Jp name: Awahada-saimogani]

(Fig. 1E)

Cymo andreossii var. *quadrilobatus* Miers, 1884, p. 533.

Cymo quadrilobatus: Alcock & Anderson, 1894, p. 200. — Alcock, 1898, p. 175. — Borradaile, 1902, p. 251. — Nobili, 1906a, p. 272. — Rathbun, 1907, p. 53, pl. 1 fig. 7; 1911, p. 227. — Bouvier, 1915, p. 281. — Ward, 1942, p. 100. — Tweedie, 1950, p. 123. — Holthuis, 1953, p. 19. — Guinot, 1958, p. 183, fig. 27; 1962, p. 239. — Sankarankutty, 1961, p. 129, fig. 1G. — Takeda, 1975, pp. 141, 196, 1 unnumbered fig.; 1983, pp. 141, 195, 1 unnumbered fig. — Dai & Lan, 1981, p. 125, figs. 5–6, pl. 1 fig. 6. — Serène, 1984, pp. 32 (in keys), 34, fig. 9, pl. 2 figs. E–F. — Dai *et al.*, 1986, pp. 320 (in key), 322, pls. 46 fig. 5. — Nagai & Nomura, 1988, p. 208, 1 unnumbered fig. — Dai & Yang, 1991, pp. 344 (in key), 346, pl. 46 fig. 5. — Poupin, 1996, p. 38. — Kawamoto & Okuno, 2003, p. 134, 1 unnumbered fig. — Marumura & Kosaka, 2003, p. 55. — Poupin *et al.*, 2013, p. 10. — Brösing *et al.*, 2014, p. 207, figs. 11–12. — Mendoza *et al.*, 2014, p. 278, fig. 2B. — Poupin *et al.*, 2018, p. 46, fig. 14B.

Material examined. Chichi-jima Is. — Nishi-jima I., 1 ♀ (NSMT-Cr 32150; cb 17.3 × cl 16.5 mm), 29-VI-1976, M. Takeda leg.

Remarks. The present specimen (Fig. 1E) identified with *Cymo quadrilobatus* seems to be distinct from the typical specimens having the subcircular carapace contour appeared in some papers (e.g., Serène, 1984, pl., 2 figs. E–F; Mendoza *et al.*, 2014, fig. 2B; Poupin *et al.*, 2018, fig. 14B), having the narrower, barrel-shaped carapace. However, considering the photographs given by Brösing *et al.* (2014, fig. 11), the carapaces of the young and female specimens are apparently narrower than the subcircular carapaces of the adult males, with morphological variation according to the developmental stages and sexes.

This species is the most characteristic among five congeneric species, but one of them, *C. tuberculatus* Ortmann, 1893, was poorly known only with the records by Ortmann (1893) and Serène (1984). The original description based on

a male from the Maldive Archipelago is short and almost applicable also to *C. andreossyi* (Audouin, 1826) mentioned for comparison. Alcock (1898) mentioned, without specimens, that it may perhaps be identical with *C. quadrilobatus*. Only the reliable literature may be Serène (1984), in which each frontal lobe is marginally concave and gives the front a quadrilobed aspect in *C. quadrilobatus*, and the frontal lobes are almost straight and gives the front a bilobed aspect in *C. tuberculatus*. This character may be also exposed to variations similar to the carapace proportion, but in this female each frontal lobe is armed with a tubercle at each end and supplemented with a small tubercle in the middle. The G1 of *C. tuberculatus* illustrated by Serène (1984, fig. 10) has no distal beak and quite different from the figures of *C. quadrilobatus* illustrated by Guinot (1958) and reproduced by Serène (1984), in which the curved beak is strongly developed. In the G1 figure of *C. tuberculatus* illustrated by Serène (1984, fig. 10), the distal part is concealed and rather obscure with hairs and seems to be somewhat damaged, so that the reconfirmation is necessary whether the distal beak is normal and figured accurately or not.

In the present specimen preserved so long in ethyl alcohol, four spots on the mesogastric, cardiac and each posterior branchial region are still remained as pale brick red (Fig. 1E).

Distribution. Widely distributed in the Indo-West Pacific from the Red Sea and the western Indian Ocean to the South and West Pacific. In Japanese waters, it is found in the Ryukyu Islands as associates of scleractinian corals.

It is noted that Takeda and Komatsu (2023) so carelessly overlooked the record of this species from Futami Bay, Chichi-jima Island, by Marumura and Kosaka (2003).

***Gaillardiiellus rueppelli* (Krauss, 1843)**

[Jn: Awatsubu-ougigani]

(Figs. 1D, 6C–D)

Cancer (Aegle) rueppelli Krauss, 1843, p. 28, pl. 1 fig. 1.

Actaea ruppellii: A. Milne-Edwards, 1865, p. 270. — Odhner, 1925, p. 45, pl. 4 fig. 6 [text-fig. 4 = *Gaillardiiellus alphonsi* (Nobili, 1905)].

Actaea rüppellii: Barnard, 1950, pp. 228 (in key), 235, figs. 37d, 43i–j.

Gaillardiiellus rueppelli: Guinot, 1976, p. 254, figs. 42A, 43a, 44B, pl. 126 fig. 1a. — Serène, 1984, p. 118, fig. 71, pl. 15 fig. F. — Lee *et al.*, 2012, p. 117, figs. 1–2. — Mendoza *et al.*, 2014, p. 275, fig. 1A. — Marumura & Takeda, 2015, p. 5, fig. 5E–F. — Naderloo, 2017, p. 251, figs. 21.20c, 21.24. — Takeda & Komatsu, 2018, p. 160, fig. 1B. — Poupin *et al.*, 2018, p. 50, fig. 14J. — Maenosono, 2021a, p. 26, figs. 1E–F, 4E–I, 5.

Gaillardiiellus rüppelli: Muraoka, 1998, p. 42. — Neumann & Spiridonov, 1999, p. 32.

Material examined. Haha-jima Is. — Diving site *Hirane* (26°34'08"N, 142°12'49"E), Imoto-jima I., 20–25 m, 1 ♂ (NSMT-Cr 31670; cb 23.4 × cl 17.7 mm), 14–VII-2016, H. Komatsu leg.

Remarks. Guinot (1976) accommodated three species and one subspecies, *Cancer (Aegle) rüppellii* Krauss, 1843, *Actaea alphonsi* Nobili, 1905, *A. ruppelli orientalis* Odhner, 1925, and *A. superciliaris* Odhner, 1925, to the new genus *Gaillardiiellus*. In the paper, *G. alphonsi* and *G. superciliaris* were dealt as distinct two species, but suggested to be possibly synonymous with each other. Serène (1984) and Maenosono (2021a) followed Guinot (1976) and treated *G. superciliaris* as synonymous with *G. alphonsi*. Among all the known *Gaillardiiellus* species including *G. bathus* Davie, 1997, later described, the carapace anterolateral teeth and the external orbital tooth are united to be four in *G. alphonsi* and *G. superciliaris* instead of five in other species. In these two species, the other features seem to be mostly common following the literature concerned, and therefore the synonymization is reasonable.

The present specimen is characteristic in having the carapace, chelipeds and ambulatory legs heavily covered with longish stiff hairs, most of which arise as tufts of some hairs around the granules (Figs. 1D, 6C). The carapace anterolateral margin is divided into five teeth including the external orbital tooth, all of which are formed with clusters of several pearly granules (Fig.

6D). Marumura and Takeda (2015) recorded the specimens from off Pacific coast of Honshu and the northern Ryukyu Islands, Japan, and the Seychelles in the western Indian Ocean, with the photographs of the male specimen in dorsal and ventral views. The present specimen agrees well with these photographs.

Distribution. Widely distributed in the Indo-West Pacific, from the western Indian Ocean to the Tuamotu Islands, the Micronesian islands, Hawaii and the Ryukyu Islands in the Pacific Ocean. The known locality in Japanese waters is Iheya Island, north of Okinawa-jima Island in the Ryukyu Islands (Maenosono, 2021a).

***Liocarpilodes harmsi* (Balss, 1934)**

[Jn: Yaeyama-toge-ougigani]

(Fig. 5D)

Pilodius harmsi Balss, 1934, p.228, fig. 2. —Forest & Guinot, 1961, p.93, fig. 85. —Takeda & Miyake, 1968b, p.6, pl. 1 fig. E.

Chlorodopsis natalensis Ward, 1935 (1934), p.21, pl. 1 fig. 6.

Liocarpilodes harmsi: Serène, 1971a, p. 914; 1984, pp. 261 (in key), 263 (in key), 264, fig. 175, pl. 37 fig. B. —Takeda & Nunomura, 1976, p.72. —Hsueh *et al.*, 2009, p. 1026.

Material examined. Chichi-jima Is. —Miyano-hama, Chichi-jima I., 1♂ (NSMT-Cr 31671; cb 5.2 × cl 3.6 mm), 12-VII-2009, H. Komatsu leg.; Futami Bay, Chichi-jima I., on rope at fishing port, 1♀ (NSMT-Cr 31672; cb 5.0 × cl 3.6 mm), 17-XI-2009, H. Komatsu leg.

Remarks. This small species was finely figured by the original author (Balss, 1934, fig. 2, as *Pilodius*), Forest and Guinot (1961, fig. 85, as *Pilodius*), Takeda and Miyake (1968b, pl. 1 fig. E, as *Pilodius*), Ward (1935, pl. 1 fig. 6, as *Chlorodopsis natalensis* sp. nov.), and Serène (1984, fig. 175, pl. 37 fig. B). Serène (1971a) transferred this species from the originally referred genus *Pilodius* to the genus *Liocarpilodes* Klunzinger, 1913, and Serène (1984) prepared the key for five known species including this species. The carapace dorsal surface (Fig. 5D) is rather flattened and sparsely hairy, with the four lobed

anterolateral margin, and each ambulatory dactylus is biunguiculate, with the supplementary upper horny claw.

Distribution. Widely distributed in the Indo-West Pacific; Aldabra and Christmas Island in the Indian Ocean, New Caledonia and Moorea in the South Pacific, and Indonesia, Taiwan and the Ryukyu Islands in the West Pacific (cf. Takeda and Nunomura, 1976; Serène, 1984; Hsueh *et al.*, 2009). Takeda and Miyake (1968b) mentioned that this species is common in the coral reefs of the Ryukyu Islands. New to the Ogasawara Islands.

***Liocarpilodes integerrimus* (Dana, 1852)**

[New Jn: Marumi-toge-ougigani]

(Fig. 1C)

Actaeodes ? integerrimus Dana, 1852b, p.201; 1855, pl. 11 fig. 7.

Pseudozius coralliophilus Borradaile, 1902, p. 241, fig. 43.

Actumnus integerrimus: Rathbun, 1907, p.56, pl. 1 fig. 12, pl. 8 fig. 3.

Liocarpilodes integerrimus: Klunzinger, 1913, p.142, pl. 5 fig. 6. —Edmondson, 1962, p.282, figs. 22a, 23f. —Guinot, 1964, p.63, fig. 36. —Takeda, 1972, p.18, pl. 1 fig. C. —Serène, 1984, pp.261 (in key), 263, fig. 174, pl. 37 fig. D. —Dai *et al.*, 1994, p.11, fig. 8. —Poupin *et al.*, 2018, fig. 15E.

Chlorodiella asper Edmondson, 1925, p.44, fig. 7f-i, pl. 3 fig. C.

Material examined. Chichi-jima Is.—Nishi-jima I., 4♀♀ (cb 5.1 × cl 3.6 mm—cb 5.8 × cl 4.2 mm), 1 ovig.♀ (cb 5.3 × cl 4.2 mm), NSMT-Cr 31673, 29-VI-1976, M. Takeda leg.; Miyano-hama, Chichi-jima I., 2♂♂ (cb 3.5 × cl 2.8 mm; cb 3.5 × cl 2.7 mm), 1 ovig.♀ (cb 3.7 × cl 3.3 mm), NSMT-Cr 6520, 26-VI—8-VII-1976, M. Takeda leg.; Kominato (27°03'41"N, 142°11'18"E), Chichi-jima I., 11m, 5♂♂ (cb 2.6 × cl 2.0 mm—cb 3.6 × cl 2.8 mm), 2♀♀ (cb 2.6 × cl 1.9 mm; cb 2.8 × 2.1 mm), NSMT-Cr 31674, 10-XI-2013, H. Komatsu leg.; North of Nishi-jima I. (27°07'14"N, 142°10'15"E), 6–15m, 2♂♂ (cb 2.8 × 2.4 mm; cb 3.0 × cl 2.4 mm), 2♀♀ (cb 3.2 × cl 2.5 mm; cb 3.4 × cl 2.7 mm), NSMT-Cr 31675, 29-IV-2014, H. Komatsu leg.; Diving site *Dobu-iso* (27°05'24"N, 142°15'08"E), Chichi-jima I., 6–20m, 1♀

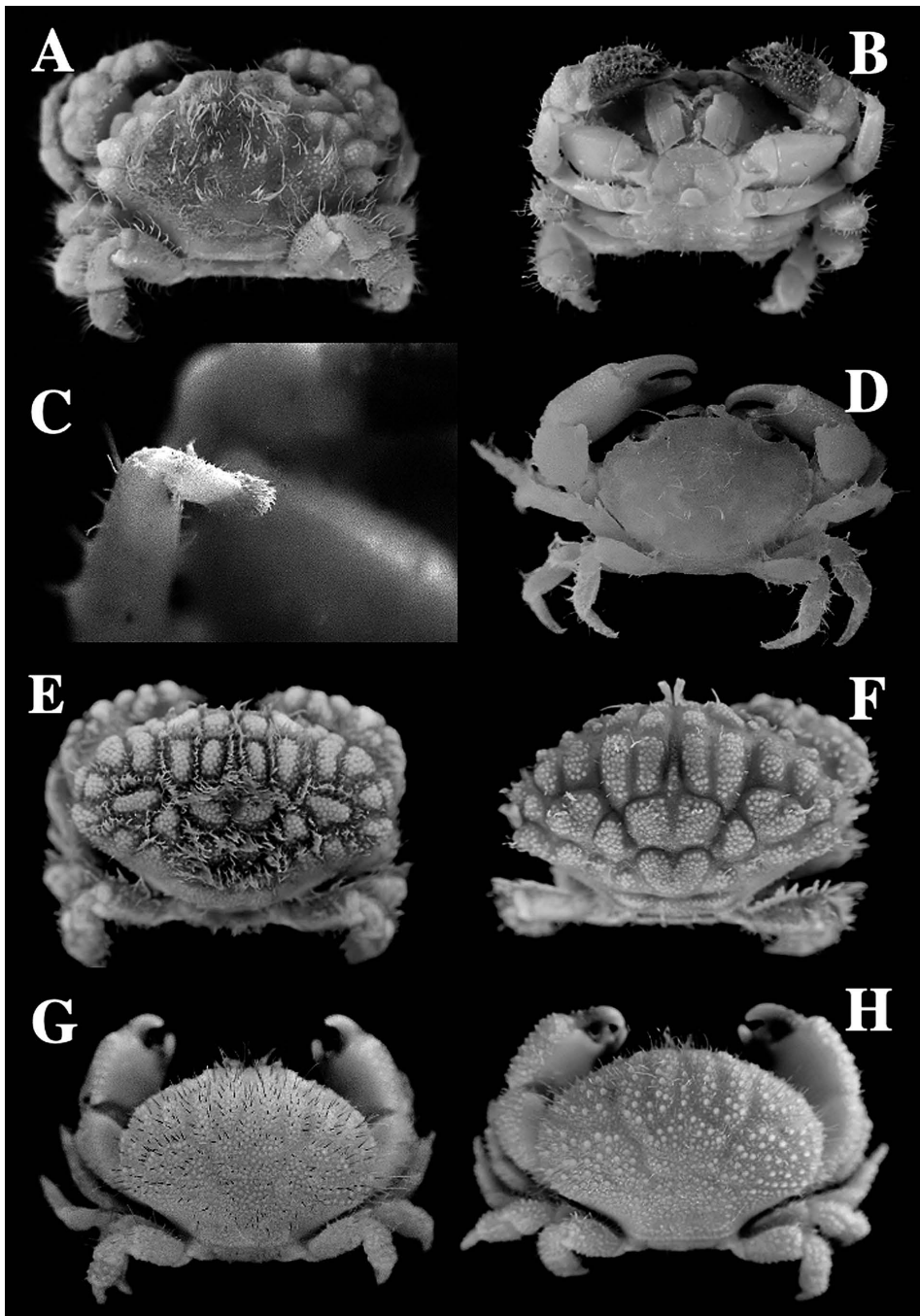


Fig. 5. A–C: *Pseudoliomera paraspeciosa* (Ward), ♂ (NSMT-Cr 31696; cb $7.0 \times$ cl 4.8 mm) from Imoto-jima, dorsal (A) and ventral views (B), and dactylus of right first ambulatory leg, showing tuft of setae (C). D: *Liocarpilodes harmsi* (Balss), ♂ (NSMT-Cr 31671; cb $5.2 \times$ cl 3.6 mm) from Miyano-hama, Chichi-jima. E: *Paractaea retusa* (Nobili), ovig. ♀ (NSMT-Cr 6877; cb $17.0 \times$ cl 10.7 mm) from Futami Bay, Chichi-jima. F: *Paractaea rufopunctata* (H. Milne-Edwards), ovig. ♀ (NSMT-Cr 6551; cb $28.2 \times$ cl 19.2 mm) from Miyano-hama, Chichi-jima. G: *Pseudoliomera variolosa* (Borradaile), ♀ (NSMT-Cr 31698; cb $7.6 \times$ cl 5.7 mm) from Mukou-jima. H: *Pseudoliomera helleri* (A. Milne-Edwards), ♂ (NSMT-Cr 31688; cb $19.5 \times$ cl 13.5 mm) from Haha-jima.

(NSMT-Cr 31676; cb $3.8 \times$ cl 3.2 mm), 2 ♂♂ (cb $2.7 \times$ cl 2.1 mm; cb $3.0 \times$ cl 2.6 mm), 1 ♀ (cb $3.4 \times$ cl 2.7 mm), 3 ovig. ♀♀ (cb $2.9 \times$ cl 2.3 mm—cb $3.6 \times$ cl 2.9 mm), NSMT-Cr 31677, 1-VII-2014, H. Komatsu leg.; Diving site *Mansakuno-hana* ($27^{\circ}06'32''$ N, $142^{\circ}13'54''$ E), Ani-jima I., 12–24 m, 1 ♂ (NSMT-Cr 31678; cb $3.3 \times$ cl 2.5 mm), 1 ♀ (NSMT-Cr 31679; cb $3.5 \times$ cl 2.9 mm), 2-VII-2014, H. Komatsu leg.

Remarks. In spite of its small size, this species has been recorded many times, with figures, in the papers concerning the coral reefs. The carapace dorsal surface (Fig. 1C) is ill-defined, and the anterolateral margin is regularly convex without indentation, differing from the close relative, *L. harmsi* (Balss, 1934), in which each carapace anterolateral margin is divided into four lobes (Fig. 4D). Guinot (1964: fig. 36) finely represented the G1 with some long hairs at the terminal part, and the same figure was reproduced by Serène (1984, fig. 174). Fine figures were given by Dana (1855, as *Actaeodes* ?), Rathbun (1907, as *Actumnus*), Klunzinger (1913), Edmondson (1962) and Takeda (1972). *Pseudozoeus coralliphilus* Borradaile, 1902, and *Chlorodiella asper* Edmondson, 1925, are known to be synonymous with this species.

Distribution. Whole Indo-West Pacific waters, from the Red Sea and the western Indian Ocean to the Tuamotu Islands, the Hawaiian Islands and Japan in the Pacific Ocean. In the Ogasawara Islands, this species is previously recorded from Kita Harbor, Haha-jima I. (cf. Takeda and Komatsu, 2023, in list).

***Liomera rubra* (A. Milne-Edwards, 1865)**

[Jn: Shirosuji-beni-ougigani]
(Fig. 2E–F)

Carpilodes ruber A. Milne-Edwards, 1865, p. 228, pl. 11 fig. 4. —Odhnér, 1925, p. 23, pl. 2 fig. 2. —Edmondson, 1962, p. 247, fig. 8c. —Serène & Nguyen, 1961 (1960), pp. 174 (in list), 178 (in key), fig. 2E, pl. 2 fig. B.

Carpilodes coccineus Rathbun, 1906, p. 843, pl. 8 fig. 4.

Carpilodes rugipes (Heller, 1861): Klunzinger, 1913, p. 137, pl. 5 fig. 4.

Carpilodes albolineatus Serène & Nguyen, 1961 (1960),

pp. 174 (in list), 178 (in key), 183, pl. 2 fig. A. (**Syn. nov.**)

Liomera rubra: Guinot, 1967, p. 266. —Sakai, 1976, pp. 391 (in key) & 395 (in English), p. 233 (in Japanese), pl. 140 fig. 2; Poupin *et al.*, 2018, p. 56, fig. 15L. —Poupin *et al.*, 2022, p. 282, fig. 9B.

Liomera (Liomera) rubra: Serène, 1984, pp. 53 & 55 (in keys), 65, fig. 26, pl. 6 figs. E–F, pl. 9 fig. F.

Material examined. Chichi-jima Is. —Diving site *Mansakuno-hana* ($26^{\circ}06'32''$ N, $142^{\circ}13'54''$ E), Ani-jima I., 2.3–10 m, 1 carapace, partly damaged (NSMT-Cr 31680; cb ca. $9.5 \times$ cl ca. 5.9 mm), 2-VII-2014, H. Komatsu leg.

Haha-jima Is. —Diving site *Shihon-iwa North* ($26^{\circ}38'56''$ N, $142^{\circ}08'37''$ E), Haha-jima I., 1 juv., photograph only, 2-VII-2015, H. Komatsu leg.; Diving site *Shihon-iwa South* ($26^{\circ}38'49''$ N, $142^{\circ}08'36''$ E), Haha-jima I., 1 ♂ (cb $18.2 \times$ cl 10.8 mm), NSMT-Cr 31681, 3-VII-2015, H. Komatsu leg.; Diving site *Uentro* ($26^{\circ}39'28''$ N, $142^{\circ}10'35''$ E), Haha-jima I., 14–20 m, 1 juv. (cb $8.9 \times$ cl 5.4 mm), NSMT-Cr 31682, 12-VII-2016, H. Komatsu leg.

Remarks. As briefly noted by Serène (1984), the carapace shape and areolation of this species are generally similar to those of *L. pediger* (Alcock, 1898) and *L. virgata* (Rathbun, 1906), but the areolae 2L and 3L are united to be one in this species, partially divided into two in *L. virgata*, and entirely separated into two in *P. pediger*. On three specimens examined, the male specimen is represented in Fig. 2E, with the typical carapace areolation, especially 2L and 3L, and with acute, posterior two anterolateral teeth.

Three of four specimens examined are uniform reddish brick red similar to the juvenile female from Léunion Island (Poupin *et al.*, 2022, fig. 9B), having no whitish color along the carapace interregional furrows illustrated by Sakai (1976). Rathbun (1906) explained the color of *Carpilodes coccineus* sp. nov. from the Hawaiian Islands, which is synonymous with this species, as “Deep dull crimson lake all over except the fingers.” However, the interregional furrows in the monochrome photograph (Rathbun, 1906, pl. 8 fig. 4) seem to be of similar image with the

color illustration by Sakai (1976, pl. 140 fig. 2).

Liomera albolineata (Serène and Nguyen, 1961) from Viet Nam was described as a close relative of *L. rubra* from which it differentiated in having the white interregional furrows. The sole specimen is a young male (cb $5.7 \times$ cb 3.7 mm), as stated in the original description, and the G1 is still not fully developed. One of four specimens examined in the present study, a juvenile (Fig. 2F) has the similar color pattern to *L. albolineata*. Based on the original description of *L. albolineata*, it is impossible to distinguish *L. albolineata* from *L. rubra* based on the morphological characters other than the white interregional furrows. *Liomera albolineata* is thus considered to be synonymous with *L. rubra*.

Distribution. Widely distributed in the whole Indo-West Pacific, from the Red Sea and east Africa in the Indian Ocean to French Polynesia, Hawaii and Japan in the Pacific Ocean.

***Paractaea retusa* (Nobili, 1906)**

[New Jn: Marumi-kebuka-awatsubu-modoki]

(Figs. 5E, 6A–B)

Actaea rufopunctata var. *retusa* Nobili, 1906a, p. 404; 1906b, p. 253.

Actaea retusa: Guinot, 1964, p. 37.

Paractaea retusa retusa: Guinot, 1969, p. 254, fig. 27. — Serène, 1984, pp. 121 (in key), 122 (in key), 125, fig. 73, pl. 17 figs. A–C.

Paractaea retusa: Poupin *et al.*, 2018, p. 60, fig. 16L.

Material examined. Chichi-jima Is. —Futami Bay, Chichi-jima I., on buoy, 1 ovig. ♀ (NSMT-Cr 6877; cb $17.0 \times$ cl 10.7 mm), date unknown, Y. Kurata leg.

Remarks. The ovigerous female at hand (Fig. 5E) is characteristic in having the transversely oval carapace, the dorsal surface of which is distinctly divided into regions by wide and deep furrows; all of the interregional furrows are filled with longish, messy hairs; all the regions are thickly covered with pearly granules and clearly standing out in sharp relief from the carapace surface (Figs. 5E, 6A–B). The mesogastric region (3M) is divided into three; the median

anterior extension is narrow and exceeding the distal end of the inner subdivision of the proto-grastic region (2M), but its distal part is disguised by the interregional hairs; posterior two subdivisions of 3M are side by side, elongated laterally, each with transverse, straight anterior margin. The supraorbital margin is prominently raised and covered with pearly granules like the carapace dorsal regions, being divided into three, the curved inner, nodular median and external orbital parts; the external orbital part (D) (Fig. 6A) is close to the first anterolateral tooth (E) of the carapace, leaving a shallow depression; 1L+2L is elongated, weakly curved towards E, distinctly divided from E and 3L; 4L is narrowly separated from S and widely from 3L; 5L is narrow, weakly oblique in position towards its outer end, without incision at the anterior margin; 1R is separated from S, and the posterior parts of 1–3R are united with each other on the carapace posterolateral surface, but there are a wide and deep depression between 1R and 2R, and a deep V-shaped notch between 2R and 3R.

The cheliped carpus (Fig. 6B) is sculpted with two deep, transverse furrows on the median surface and a longitudinal furrow along the upper margin, and also with a furrow separating imperfectly the areolae at the basal part of the upper surface; the palm is distinctly nodular with some clusters of pearly granules on the upper part, but the lower part is covered with much smaller, depressed cluster of granules interspaced with short setae. The ambulatory legs are short, stout and densely covered with pearly granules; each carpus is provided with a deep longitudinal furrow on the upper anterior surface and a short, deep furrow angled to the longitudinal furrow at the median part; two parts formed on the anterior margin are thickened, and the distal one overhangs the anterior margin of the propodus.

This species is similar to *Paractaea plumosa* (Guinot, in Sakai, 1976), **stat. nov.**, in having longish hairs in the carapace interregional furrows. However, the details of the carapace regions are close to those of *P. retusa* (Nobili, 1906), especially in the shape of 5L. Among

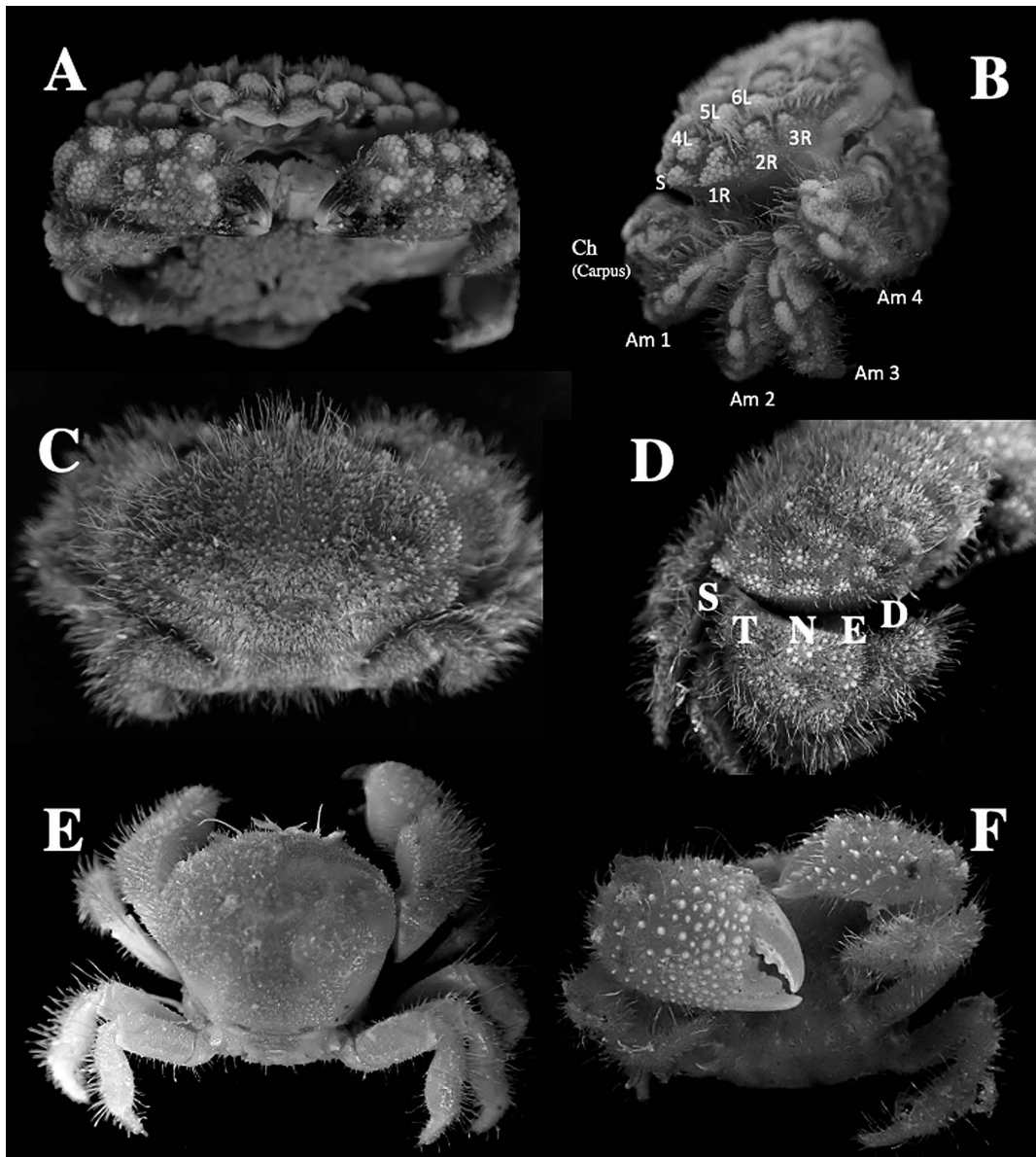


Fig. 6. A–B: *Paractaea retusa* (Nobili), ovig. ♀ (NSMT-Cr 6877; cb 17.0 × cl 10.7 mm) from Futami Bay, Chichi-jima, frontal view (A), and lateral view (B) indicating the carapace posterolateral areolation and the ambulatory legs. Abbreviations. S=Last anterolateral tooth; 4L–6L=Mesobranchial regions; 1R–3R=Metabranial regions; Ch (Carpus)=Cheliped carpus; Am1–Am4=First to fourth ambulatory legs. C–D: *Gaillardiiellus rueppelli* (Krauss), ♂ (NSMT-Cr 31670; cb 23.4 × cl 17.7 mm) from Imoto-jima, dorsal view (C), and lateral view (D) indicating the external orbital tooth (D) and first to fourth anterolateral teeth (E, N, T, S). E–F: *Eupilumnus globosus* (Dana) from Ototo-jima, ovig. ♀ (NSMT-Cr 31651; cb 13.6 × cl 11.9 mm), habitus, dorsal view (E), and ♀ (NSMT-Cr 31652; cb 10.4 × cl 7.6 mm), chelae, outer view (F). In Fig. E, hairs of right half of carapace dorsal surface were removed to show armature of anterolateral margin.

many formas distinguished by Guinot (1969) and Serène (1984), most of which are, as Ng *et al.* (2008) mentioned, cannot be accepted nomenclaturally, but it is noted that the presence or absence of a notch at the anterior margin of 5L is an important criterion in addition to the main carapace regions. In *P. plumosa*, there is a distinct notch at the anterior margin of 5L (Guinot, 1969, fig. 21, as *P. rufopunctata* forme *plumosa*), Serène (1984, pl. 16 fig. C, as *P. rufopunctata* f. *plumosa*), Sakai (1976, fig. 240b, pl. 159 fig. 1, as *P. rufopunctata plumosa*), and Iwasa-Arai *et al.* (2015, fig. 1B, as *P. rufopunctata plumosa*). As regards *P. retusa*, the present specimen agrees well with the “plumeux” type represented by Serène (1984, pl. 17 fig. C, as *P. retusa retusa*).

Distribution. Widely distributed in the whole Indo-West Pacific, from the Red Sea and the western Indian Ocean to the southern Pacific Ocean, and then northwards to the Ogasawara Islands in the northwestern Pacific Ocean recorded in this paper.

***Paractaea rufopunctata* (H. Milne Edwards, 1834)**

[Jn: Shin-kebuka-awatsubu-modoki]

(Fig. 5F)

Xantho rufopunctatus H. Milne Edwards, 1834, p. 389.

Actaea rufopunctata: A. Milne-Edwards, 1865, p. 268, pl. 18 fig. 1. —Heller, 1863, p. 70. —Alcock, 1898, p. 142. —Serène & Bui, 1959, p. 291, fig. 1F. —Guinot, 1964, p. 36.

Actaea rufopunctata rufopunctata: Holthuis & Gottlieb, 1956, p. 287, pl. 4 fig. 1.

Paractaea rufopunctata rufopunctata: Guinot, 1969, p. 246, figs. 19–20. —Sakai, 1976, p. 449 (in English), p. 272 (in Japanese), fig. 240a. —Miyake, 1983, pp. 119, 229 (in list), pl. 40 fig. 1. —Serène, 1984, pp. 119 (in key), 121 (in key), 122, fig. 72, pl. 16 fig. A.

Paractaea rufopunctata: Poupin *et al.*, 2018, p. 60, fig. 16M.

Material examined. Chichi-jima Is. —Miyano-hama, Chichi-jima I., 1 ovig.♀ (NSMT-Cr 6551; cb 28.2 × cl 19.2 mm), 1-VII-1976, M. Takeda leg.

Remarks. Guinot (1969) established a new genus *Paractaea* with the type species, *Xantho*

rufopunctatus H. Milne Edwards, 1834, and *Actaea retusa* Nobili, 1906, *A. garretti* Rathbun, 1906, *A. sulcata* Stimpson, 1860, and *A. nodosa* Stimpson, 1860, and described four new species, *P. excentrica* from the Tuamotu Islands, *P. secundarathbunae* from Hawaii, *P. monodi* from the Atlantic and the Mediterranean, and *P. rebierei* from Mauritius. In the paper, *Paractaea rufopunctata* was treated as a nominate subspecies, and seven formas were distinguished in *P. rufopunctata*, viz. *illusoria* nov., *plumosa* nov., *primarathbunae* nov., *tertiarathbunae* nov., *intermedia* nov., *africana* nov. and *nodosa* (Stimpson, 1860). Later, Serène (1984) also established three additional formas, viz. *frontalis* nov., *waltersi* nov. and *sanctaeluciaae* nov. Most of these names established as infrasubspecific taxa are, as mentioned by Ng *et al.* (2008), invalid nomenclaturally. Of them, only *plumosa* was validated by Sakai (1976) at the subspecies rank as *P. rufopunctata plumosa*.

The specimen at hand (Fig. 5F) is typical in the general carapace shape and sculpture as the *Paractaea* species. The carapace is transverse and convex, with the dorsal surface deeply sculptured into areolae. The following carapace areolation is characteristic for *P. rufopunctata*: 2M is distinctly subdivided into two, the outer lobule of which is apparently longer than the inner lobule and reaches posteriorly to the anterolateral corner of 3M; the anterior extension of 3M is short and narrow, attaining the half of the inner lobule of 2M; the main part of 3M is prominent and imperfectly subdivided into two by a longitudinal furrow behind the anterior extension of 3M; the anterolateral corner of 3M is obtusely angulated; 1P is heart-shaped; 5L is notched at the median part of the anterior margin.

Distribution. Widely distributed in the whole Indo-West Pacific, from the Red Sea and South Africa, western Indian Ocean, to French Polynesia, Hawaii and Japan in the South, Central and West Pacific.

Pseudoliomera hellerii (A. Milne-Edwards, 1865)
[Jn: Marumi-awatsubugani]
(Figs. 2C–D, 5H)

Actaea hellerii A. Milne-Edwards, 1865, p. 270, pl. 17 fig. 3. —Rathbun, 1911, p. 221, pl. 18 fig. 2. —Deb, 1989, pp. 7 (in key), 22, fig. 28, pl. 3 fig. 10.
Actaea helleri: Odhner, 1925, p. 77, fig. 7. —Sakai, 1939, pp. 481 (in key), 485. —Ooishi, 1970, p. 93, pl. 14 fig. 8.
Pseudoliomera helleri: Guinot, 1969, p. 228, fig. 7. —Sakai, 1976, p. 452 (in English), fig. 243, p. 274 (in Japanese). —Serène, 1984, pp. 99 (in keys), 100, fig. 57, pl. 13 fig. B. —Dai *et al.*, 1986, p. 295, fig. 163, pl. 41 fig. 3. —Dai & Yang, 1991, p. 318, fig. 163, pl. 41 fig. 3. —Takeda & Webber, 2006, p. 212, fig. 9C–D.
Pseudoliomera hellerii: Takeda & Kurata, 1976, p. 131, fig. 2j. —Maenosono, 2018, pp. 18, 29 (in key), figs. 1B, 3.

Material examined. Chichi-jima Is. —Diving site *Dobu-iso* (27°05'24"N, 142°15'08"E), Chichi-jima I., 6–20 m, 1 ♀ (NSMT-Cr 31683; cb 18.3 × cl 12.3 mm), 1-VII-2014, H. Komatsu leg.

Haha-jima Is. —Diving site *Shihon-iwa North* (26°38'56"N, 142°08'37"E), Haha-jima I., 1 ♂ (NSMT-Cr 31684; cb 12.3 × cl 8.0 mm), 2-VII-2015, H. Komatsu leg.; Diving site *Shihon-iwa South* (26°38'49"N, 142°08'36"E), Haha-jima I., 1 ♂ (cb 9.0 × cl 5.8 mm), 2 juvs (cb 3.5 × cl 3.1 mm; cb 4.2 × cl 3.3 mm), NSMT-Cr 31685, 3-VII-2015, H. Komatsu leg.; Same place, 1 ♀, shell after ecdysis (NSMT-Cr 31686; cb 11.5 × cl 7.5 mm), 6-VII-2015, H. Komatsu leg.; Diving site *Sasao-ne* (26°35'07"N, 142°09'45"E), Hira-shima I., 1 ♂ (NSMT-Cr 31687; cb 16.1 × cl 10.8 mm), 1 ♂ (NSMT-Cr 31688; cb 19.5 × cl 13.5 mm), 3-VII-2015, H. Komatsu leg.; West coast of Mei-jima I. (26°34'08"N, 142°13'40"E), 10 m, 1 juv. (NSMT-Cr 31689; cb 4.3 × cl 3.3 mm), 11-VII-2016, H. Komatsu leg.; Diving site *Blue ribbon* (26°34'03"N, 142°12'48"E), Imoto-jima I., 15–17 m, 1 ♂ (NSMT-Cr 31690; cb 5.3 × cl 3.6 mm), 11-VII-2016, H. Komatsu leg.; Diving site *Uentoro* (26°39'28"N, 142°10'35"E), Haha-jima I., 14–20 m, 4 juvs (cb 4.2 × cl 3.2 mm—cb 5.7 × cl 4.2 mm), NSMT-Cr 31691, 12-VII-2016, H. Komatsu leg.; Diving site *Blue ribbon*, Imoto-jima I., 12–14 m, 1 juv. (NSMT-Cr 31692; cb 6.6 × cl 4.5 mm), 14-VII-2016, H. Komatsu leg.; Diving site *Hirane* (26°34'08"N,

142°12'49"E), Imoto-jima I., 20–25 m, 1 juv. (NSMT-Cr 31693; cb 4.2 × cl 3.4 mm), 14-VII-2016, H. Komatsu leg.

Remarks. This species is characteristic in 1) the carapace covered with many short setae and small pearly granules (Figs. 2C, 5H), 2) the shallow interregional furrows, with the imperfectly subdivided 2M, and the undivided 1–3L (Fig. 5H), and 3) the heavy chelipeds (Fig. 2D).

Distribution. Red Sea, Indian Ocean, and western Pacific Ocean (cf. Odhner, 1925).

Pseudoliomera lata (Borradaile, 1902)
[Jn: Sango-awatsubu-modoki]
(Fig. 2A)

Actaea lata Borradaile, 1902, p. 254, fig. 53. —Odhner, 1925, p. 62, pl. 4 fig. 7. —Sakai, 1939, pp. 482 (in key), 489, pl. 93 fig. 7. —Guinot, 1962, p. 236, figs. 3, 6, 9. —Deb, 1989, pp. 7 (in key), 24, fig. 27, pl. 5 fig. 1.
Pseudoliomera lata: Guinot, 1967, p. 561 (in discussion); 1969, p. 228 (in discussion), fig. 13. —Sakai, 1976, p. 453 (in English), p. 274 (in Japanese), pl. 160 fig. 1. —Serène, 1984, pp. 99 (in key), 100 (in key), 102, fig. 61, pl. 13 fig. E. —Muraoka, 1998, p. 42. —Maenosono, 2018, pp. 21, 29 (in key), figs. 1C–D, 4.

Material examined. Chichi-jima Is. —Diving site *Dobu-iso* (27°05'24"N, 142°15'08"E), Chichi-jima I., 6–20 m, 1 young ♀ (NSMT-Cr 31694; cb 6.9 × cl 5.1 mm), 1-VII-2014, H. Komatsu leg.

Haha-jima Is. —Diving site *Blue ribbon* (26°34'03"N, 142°12'48"E), Imoto-jima I., 12–14 m, 1 young ♂ (NSMT-Cr 31695; cb 10.4 × cl 7.1 mm), 14-VII-2016, H. Komatsu leg.

Remarks. This species was described and recorded as *Actaea lata* by Borradaile (1902), Odhner (1925), Sakai (1939), Guinot (1962) and Deb (1989), and is known as *Pseudoliomera lata* by Sakai (1976), Serène (1984) and Maenosono (2018) after the suggestion of its close affinity to *Pseudoliomera* by Guinot (1967; 1969).

The male at hand is safely identified as this species due to having the carapace dorsal surface with distinctly isolated regions covered with pearly granules of good size and blackish setae.

This specimen is uniformly dark brick red (Fig. 2A), differing from the photographs given by Maenosono (2018, fig. 1C–D), in which the carapace seems to be grayish and symmetrically mottled with brick red in both of the male and female specimens.

Distribution. *Pseudoliomera lata* has already been recorded from the Ogasawara Islands by Odhner (1925), and also the right cheliped obtained from stomach contents of slender emperor, *Lethrinus variegatus* Valenciennes, from the Ogasawara Islands was identified as that of *P. lata* by Takeda and Kurata (1977b). The type locality is Fadifolu Atoll in the Maldive Islands, with geographical distribution from Sri Lanka eastwards to the Tuamotu Islands and northward to the Mariana Islands and central Japan (cf. Holthuis, 1953; Guinot, 1962; Deb, 1989; Maenosono, 2018).

***Pseudoliomera paraspeciosa* (Ward, 1941),
comb. nov.**

[New Jn: Hanayaka-awatsubugani]
(Figs. 2H, 5A–C)

Actaea paraspeciosa Ward, 1941, p. 9, figs. 11–12.

Nec *Actaea paraspeciosa*: Ooishi, 1970, p. 92, pl. 14 fig. 6. [= *Pseudoliomera speciosa* (Dana, 1852)]

Material examined. Chichi-jima Is. —Futami Bay, Chichi-jima I., on buoy, 1 ♂ (cb 9.7 × cl 7.0 mm), 1 ♀ (cb 8.7 × cl 6.2 mm), NSMT-Cr 6878, 17-V-1975, Y. Kurata leg.

Haha-jima Is. —Diving site Hirane (26°34'08"N, 142°12'49"E), Imoto-jima I., 20–25 m, 1 ♂ (NSMT-Cr 31696; cb 7.0 × cl 4.8 mm), 14-VII-2016, H. Komatsu leg.

Remarks. This species originally described as *Actaea* is insufficiently known as yet, and was omitted from the monograph by Serène (1984), in which Dr. A. Crosnier recorded the brief comment that Takeda and Miyake (1976) considered the species as valid. Ward (1941) described *Actaea paraspeciosa* which was considered to be close to, but distinct from *A. speciosa* Dana, 1851. Later, Guinot (1969) mentioned on the assumption that *Actaea paraspeciosa* is valid,

and both species belong to the same genus, and that should be transferred to the genus *Pseudoliomera* Odhner, 1925.

The present specimens identified as *Pseudoliomera paraspeciosa* are quite distinct from *P. speciosa* not only in the color in life, but also in the carapace dorsal areolation. In this species (Figs. 2H, 5A), the carapace dorsal surface is rather obscurely divided into regions by wide and shallow furrows, and covered with long hairs except for marginal regions, but in *P. speciosa* (Fig. 2B), the carapace is devoid of long hairs and the interregional furrows are narrow and sharply divide the regions. Otherwise, the dense setae surrounding the horny tip of the first ambulatory dactylus are unique to the two species in question, but the details are somewhat different in the two species. In *P. speciosa*, the setae at the distal part of the dactylus are cylindrically surrounding the horny tip, as finely illustrated by Guinot (1969, fig. 12), but in *P. paraspeciosa*, as seen in Fig. 5C, the bundle of setae appears to be rather depressed and flattened, not the form of round brush in *P. speciosa*.

Ward (1941) described this species as *Actaea paraspeciosa* based on five males and nine females from Mindanao, the Philippines, that were collected from the branches of living *Acropora* corals, sharing habitat with the *Trapezia* and *Cymo* crab species. Ooishi (1970) recorded this species from Hatsune-ura, Chichi-jima Island, with a photograph (pl. 14 fig. 6), and this record was adopted by Takeda and Komatsu (2023) in the checklist of the crabs from the Ogasawara Islands. However, at present, it is noted on close observation of the photograph given by Ooishi (1970), it should be referred to *P. speciosa*, not to *P. paraspeciosa*.

Distribution. Hitherto known only from the type locality, Mindanao, the Philippines.

***Pseudoliomera speciosa* (Dana, 1852)**

[Jn: Sango-awatsubugani]
(Fig. 2B)

Actaeodes speciosus Dana, 1852b, p. 198; 1855, pl. 11 fig. 4.

Actaea speciosa: A. Milne-Edwards, 1865, p. 274. — Alcock, 1898, p. 143. — Borradaile, 1902, p. 254, fig. 42C. — Klunzinger, 1913, p. 179, pl. 1 fig. 3, pl. 6 fig. 1. — Gravely, 1927, p. 146 (in key), pl. 23 fig. 32. — Sakai, 1939, pp. 482 (in key), 489, pl. 93 fig. 3. — Barnard, 1950, pp. 228 (in key), 232, fig. 43d. — Edmondson, 1962, pp. 256 (in key), 261, fig. 13a. — Serène & Bui, 1959, p. 293, fig. 2c. — Sankarankutty, 1962, p. 132, figs. 26–27.

Actaeodes nodipes Heller, 1861, p. 329 pl. 2 fig. 19.

Psaumis glabra Kossmann, 1877, p. 27, pl. 1 fig. 4, pl. 3 fig. 11.

Pseudoliomera speciosa: Guinot, 1969, p. 230, fig. 12. — Sakai, 1976, p. 453 (in English), p. 275 (in Japanese), pl. 160 fig. 2. — Chen & Lan, 1978, p. 264, pl. 5 fig. 18. — Serène, 1984, pp. 99 (in keys), 101, fig. 59, pl. 13 fig. F. — Dai *et al.*, 1986, pp. 295 (in key), 297, fig. 164A-2, pl. 41 fig. 5. — Galil & Vannini, 1990, p. 33, fig. 7F. — Dai & Yang, 1991, pp. 318 (in key), 319, fig. 164A-2, pl. 41 fig. 5. — Muraoka, 1998, p. 42. — Poupin *et al.*, 2018, p. 62, fig. 17K. — Maenosono, 2018, pp. 25, 29 (in key), figs. 1G–H, 6.

Paractaea speciosa: Deb, 1989, pp. 47 (in key), 53, fig. 19, pl. 9 fig. 4.

Actaea paraspeciosa Ward, 1941: Ooishi, 1970, p. 92, pl. 14 fig. 6.

Material examined. Chichi-jima Is. —Diving site *Dobu-iso* (27°05'24"N, 142°15'08"E), Chichi-jima I., 6–20 m, 1 ♂ (NSMT-Cr 31697; cb 7.2 × cl 5.5 mm), 1-VII-2014, H. Komatsu leg.

Remarks. This species originally described as *Actaeodes speciosus* and then long known as *Actaea speciosa*, was finally transferred to the genus *Pseudoliomera* by Guinot (1969). The fine figures were given by Sakai (1939, pl. 93 fig. 3, as *Actaea*; 1976, pl. 160 fig. 2), Edmondson (1962, fig. 13a), Serène (1984, pl. 13 fig. F), and Nagai and Nomura (1988, 1 unnumbered fig.), and the photograph in the field was presented by Kawamoto and Okuno (2003, 1 unnumbered fig.). The carapace dorsal surface (Fig. 2B) is distinctly separated into regions covered with pearly granules of good size, with the interregional furrows filled with thick short, dark-colored setae. The most remarkable character is the presence of setae surrounding the horny claw of the first ambulatory dactylus. It was first noticed and figured by Borradaile (1902), and later finely illustrated by Guinot (1969, fig. 12).

Distribution. Widely distributed in the whole Indo-West Pacific from the Red Sea and South Africa to the southern Pacific islands, Hawaii and Japan. Previously recorded from the Ogasawara Islands by Yoshiwara (1901).

Pseudoliomera variolosa (Borradaile, 1902)

[Jn: Daizu-awatsubugani]

(Figs. 2G, 5G)

Actaea variolosa Borradaile, 1902, p. 256, fig. 54. — Serène & Bui, 1959, p. 294, figs. 3A, 4B. — Edmondson, 1962, pp. 256 (in key), 256, fig. 11d. — Guinot, 1962, p. 236, figs. 4–5. — Kensley, 1981, p. 43. — Deb, 1989, pp. 7 (in key), 38, fig. 20, pl. 3 fig. 6.

Pseudoliomera variolosa: Guinot, 1967, p. 561 (in discussion). — Chen & Lan, 1978, p. 265, pl. 5 fig. 19. — Serène, 1984, pp. 99 (in key), 100 (in key), 102, fig. 60, pl. 13 fig. C. — Dai *et al.*, 1986, pp. 295 (in key), 296, fig. 164A-1, pl. 41 fig. 4. — Dai & Yang, 1991, pp. 317 (in key), 319, fig. 164A-1, pl. 41 fig. 4. — Poupin *et al.*, 2013, fig. 10G. — Poupin *et al.*, 2018, p. 64, fig. 17L. — Maenosono, 2018, pp. 27, 29 (in key), figs. 1I, 7.

Material examined. Haha-jima Is. —Diving site *Maguro-ana* (26°36'37"N, 142°07'46"E), Mukou-jima I., 1 ♀ (NSMT-Cr 31698; cb 7.6 × cl 5.7 mm), 5-VII-2015, H. Komatsu leg.

Remarks. The female specimen examined is generally close to *Pseudoliomera hellerii* (A. Milne-Edwards, 1865) in the carapace shape, dorsal areolation and setation, but the almost subdivided 2M and the stiff brackish setae are characteristic for *P. variolosa* (Borradaile, 1902) (Fig. 5G). In another close relative, *P. lata* (Borradaile, 1902), the carapace dorsal surface is separated into the convex regions by deep furrows and covered with longer, stiff brackish setae (Fig. 2A).

Distribution. Widely distributed in the Indo-West Pacific, from the western Indian Ocean to Hawaii and Japan. New to the Ogasawara Islands.

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