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Further notes on some subtidal crabs (Crustacea: Decapoda: Brachyura) from Suruga Bay, the Pacific coast of central Japan

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Abstract

Twelve crab species are recorded for the first time from subtidal waters of Suruga Bay, Shizuoka Prefecture, Pacific coast of central Japan. They are *Urnalana elata* (A. Milne-Edwards, 1874) (Leucosiidae); *Aethra edentata* Edmondson, 1951 (Aethridae); *Calappa gallus* (Herbst, 1803), *C. liaoi* Ng, 2002, and *C. pokipoki* Ng, 2000 (Calappidae); *Aulacolambrus hoplonotus* (Adams and White, 1849), and *Daldorfia rathbunae* (De Man, 1902) (Parthenopidae); *Liomera cinctimana* (White, 1847), *L. margaritata* (A. Milne-Edwards, 1873), *Pilodius areolatus* (H. Milne Edwards, 1834), and *Pseudactaea corallina* (Alcock, 1898) (Xanthidae); and *Pseudolitochira taiwang* (Ng and Lin, 2023) (Pilumnidae). Of these species, *Calappa liaoi* hitherto known only from the Philippines and *C. pokipoki* originally described from the Hawaiian Islands are new to Japanese waters.

Key words: shallow water crabs; crabs new to Japan; *Urnalana*; *Aethra*; *Calappa*; *Aulacolambrus*; *Daldorfia*; *Liomera*; *Pilodius*; *Pseudactaea*; *Pseulolithochira*; northwestern Pacific

Introduction

Takeda and Takakura (2025) recorded 14 species of crabs from the subtidal waters around Ose-zaki, a sand spit jutting out at the innermost place of Suruga Bay, Pacific coast of central Japan, and explained seven rare species of them based on the taxonomic and biogeographical point of view. More recent collections made in Suruga Bay show the occurrence of the species known from southern Japan. The aim of this paper is to record 12 subtidal species, some of which are rare, or known only from southern Japan, or new to Japanese waters. The records of the species correctly identified are important to elucidate the carcinological fauna of Suruga Bay comparable to that of its adjacent Sagami Bay.

Material and Methods

All the specimens examined in this study were collected by the second author during scuba-diving in subtidal water of Suruga Bay. The collecting sites are around Ose-zaki, sand spit jutted out at the innermost place of Suruga Bay, where was briefly noted by Takeda and Takakura (2025). The specimens are registered and deposited in the Tsukuba Research Departments, National Museum of Nature and Science, Tokyo (NSMT).

To get the reliable information about the species identification and distribution, the synonymies of the species reported in this paper are restricted largely to the papers dealing actually with the specimens.

The size of the specimen is measured for the maximum breadth and length of the carapace in mm, and the date collected is shown with the form of date-month-year as for example, “20-VII-2024”. The other abbreviations used are cb and cl (carapace breadth and length), fig. and figs. (figure and figures), G1 and G2 (male first and second gonopods), coll. (collected by), pl. (plate), vol. (volume), and ♂ and ♀ (male and female). The Japanese name of each species is written in bracket.

Results

Family AETHRIDAE Dana, 1851

Genus *Aethra* Latreille in Cuvier, 1816

Aethra edentata Edmondson, 1951

[Japanese name: Hime-menko-hishigani]

(Fig. 1A, B)

Aethra edentata Edmondson, 1951, p. 214, figs. 19, 20. —Ng and Takeda 1998, p. 8, fig. 1. —Ng 1999, p. 114, figs. 3–5. —Poupin et al. 2018, p. 10, fig. 6D.

Material examined

Ose-zaki, Suruga Bay, distal place of sand spit, under rock, 9.6 m depth; 1♀ (cb 48.9 mm, cl 30.7 mm), NSMT-Cr 32722; 27-VII-2024; coll. H. Takakura.

Remarks

The records of occurrence of this characteristic species having the thin, plate-like carapace (Fig. 1A) are rather few, but Ng and Takeda (1998), who examined the specimens preserved in the Bernice P. Bishop Museum, mentioned that this species is not as

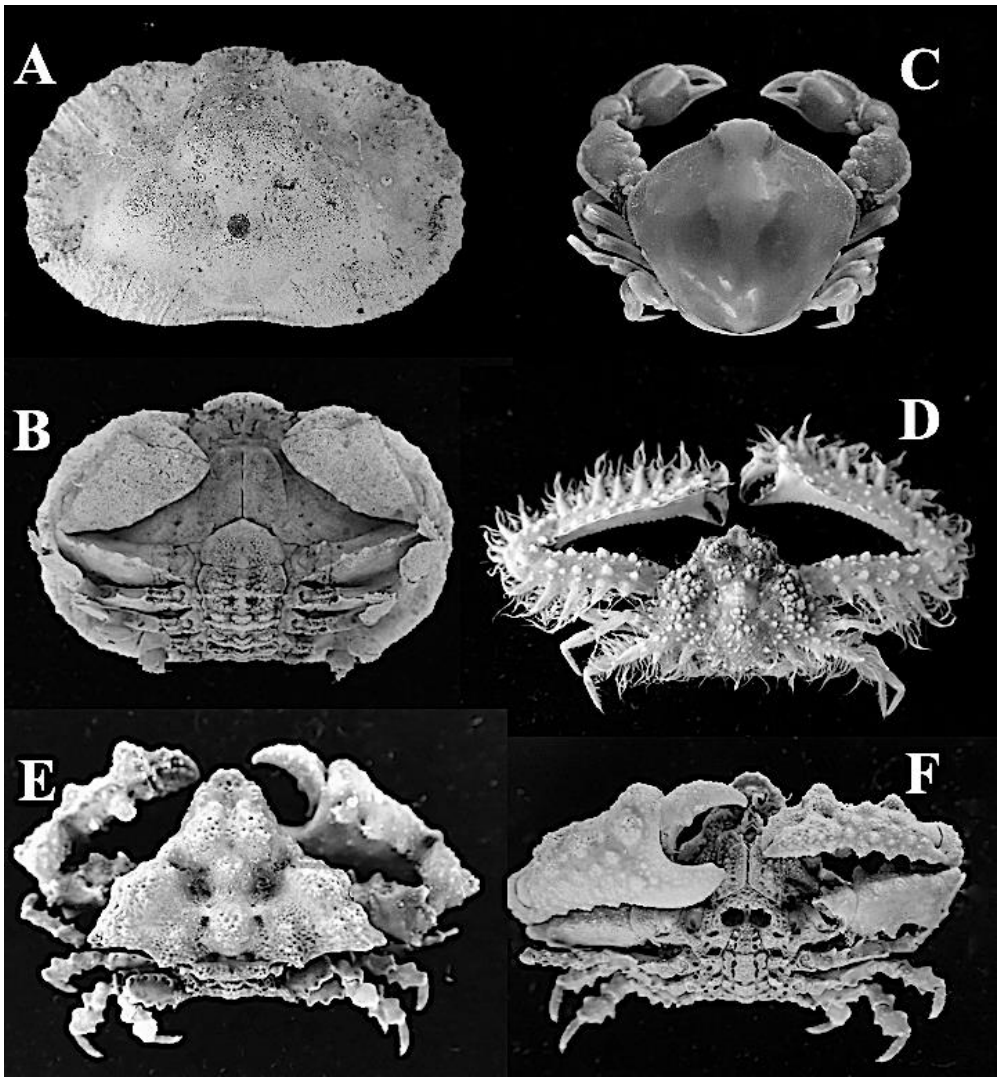

Fig. 1. A, B: *Aethra edentata* Edmondson [Hime-menko-hishigani]. Female (NSMT-Cr 32722; cb 48.9 mm, cl 30.7 mm), dorsal (A) and ventral (B) views. C: *Urnalana elata* (A. Milne-Edwards) [Sagami-kobushigani]. Female (NSMT-Cr 32721; cb 12.4 mm, cl 11.3 mm), dorsal view. D: *Aulacolambrus hoplonotus* (Adams and White) [Okina-hishigani]. Male (NSMT-Cr 32723; cb 18.0 mm excluding posterolateral tubercles of both sides, cl 15.0 mm), dorsal view. E, F: *Daldorfia rathbunae* (De Man) [Rasuban-karuishigani]. Male (NSMT-Cr 32725; cb 21.0 mm, cl 16.5 mm), dorsal (E) and ventral (F) views.

rare as the literature would suggest.

Ng (1999) elaborately reviewed the genus *Aethra* and recognized four species, *A. edentata*, *A. scruposa* (Linnaeus, 1764), *A. scutata* Smith, 1869, and *A. seychellensis* Takeda, 1975, with a key to distinguish all the species. Three species other than East Pacific *A. scutata* are distributed in the Indo-West Pacific.

Aethra edentata is readily distinguished from the other congeneric species by having the cheliped unarmed along the lower margin of the palm (Fig. 1B). The fine photographs of *A. edentata* in the field were presented by Kato and Okuno (2001), and Kawamoto and Okuno (2003).

Distribution

Mayotte Island in the western Indian Ocean, and the Pacific Ocean (French Polynesia, Hawaiian Islands, Mariana Islands, Ryukyu Islands, Hachijo-jima Island, and the Ogasawara Islands). Subtidal to the depth of 106 m.

Family LEUCOSIIDAE Samouelle 1819

Genus *Urnalana* Galil, 2005

Urnalana elata (A. Milne-Edwards, 1874)

[Japanese name: Sagami-kobushigani]

(Fig. 1C)

Selected synonymy

Leucosia elata A. Milne-Edwards, 1874, p. 41, pl. 2 fig. 2.

Leucosia sagamiensis Sakai, 1961, p. 132, fig. 1a–b, pl. 3 fig. 1; —1965, p. 47 (English part), p.21 (Japanese part), fig. 7, pl. 19 fig. 1; —1976, p. 121 (English vol.), p. 79 (Japanese vol.), fig. 69, pl. 35 fig. 1.

Leucosia bikiniensis Sakai, 1983, p. 627, fig. 3c–e.

Urnalana elata: Galil 2005, pp. 11 (in key), 16, figs. 1D, 5A.

Material examined

Ose-zaki, Suguga Bay, inside of sand spit, sandy bottom around bouldery rocks, 9 m depth; 1 ♀ (cb 12.4 mm, cl 11.3 mm), NSMT-Cr 32721; 20-VII-2024; coll. H. Takakura.

Remarks

This species had been known as *Leucosia sagamiensis* Sakai in Japan until Galil (2005) reduced it to a synonym of *L. elata* A. Milne-Edwards, and transferred to her new genus *Urnalana*. The known *Urnalana* species are 22 (Poore and Ahyong 2023), and most of them are characterized by having the typically urn-shaped carapace fringed with a tuft of pubescence along each lateral part.

This species is close to *U. elatula* Guinot, 2005, and *U. insularis* (Takeda and Kurata, 1976) in the general appearance of the carapace (Fig. 1C), but Galil (2005) mentioned that *U. insularis* has an ovate granule anteriorly in the thoracic sinus and the G1 is spoon-shaped instead of the club-shaped G1 in *U. elata* and the dagger-shaped G1 in *U. elatula*.

Distribution

Comoro Islands in the western Indian Ocean; Western Australia; New Caledonia; Samoa; Papua New Guinea; Marshall Islands; Japan. Intertidal to 50 m depth. The known localities in Japan are Sagami Bay, the Kii Peninsula and Nagasaki Prefecture.

Family PARTHENOPIDAE MacLeay, 1838

Genus *Aulacolambrus* Paulson, 1875

Aulacolambrus hoplonotus (Adams and White, 1849)

[Japanese name: Okina-hishigani]

(Fig. 1D)

Selected synonymy

Lambrus hoplonotus Adams and White, 1849, 35, pl. 7 fig. 3. —A. Milne-Edwards 1872, p. 258. —Haswell 1879, p. 450.

Lambrus (*Aulacolambrus*) *hoplonotus*: Miers 1886, p. 98. —Alcock 1895, p. 273. —Flipse 1930, p. 40 (in key), 44.

Parthenope (*Aulacolambrus) hoplonotus*: Rathbun 1910, p. 320; —1911, p. 257. —Sakai 1976, pp. 279 (in key) and 280 (English vol.), p. 168 (Japanese vol.), pl. 95 fig. 1.

Parthenope (*Aulacolambrus*) *hoplonotus hoplonotus*: Sakai 1972, p. 32.

Aulacolambrus hoplonotus: Tan et al. 1999, p. 198, fig. 4. —Tan and Ng 2003, p. 388, fig. 1a.

Material examined

Ose-zaki, Suruga Bay, inside of sand spit, sandy bottom around bouldery rocks, 5 m depth; 1 ♂ (cb 18.0 mm excluding posterolateral tubercles of both sides, cl 15.0 mm), NSMT-Cr 32723; 27-VII-2024; coll. H. Takakura.

Remarks

This species is most characterized by having the roughly triangular carapace armed with a remarkably long epibranchial projection at each side (Fig. 1D). Otherwise, it is remarkable that the gastric and branchial regions are raised and covered with relatively large granules of variable size, the cheliped palm is long and armed with a series of high blade-like teeth alternating small and large sizes on the entire outer margin, and the chelipeds and ambulatory legs are covered with long soft hairs mainly along the margins. It is briefly noted that in the specimen examined, the teeth along the palm outer margin seem to be stouter than the spiniform tubercles of a male from Guam shown by Tan and Ng (2003).

Distribution

This species is widely distributed in the whole Indo-West Pacific ranging from the Red Sea and the western Indian Ocean to Australia, the Ryukyu Islands and Hawaiian Islands. In Japanese waters, this species has been recorded from the Ryukyu Islands: Okinawa-jima Island (Tan et al. 1999); Ishigaki-jima Island (Sakai 1972, 1976). Subtidal to about 15 m depth.

Genus *Daldorfia* Rathbun, 1904

Daldorfia rathbunae (De Man, 1902)

[Japanese name: Rasuban-karuishigani]

(Fig. 1E, F)

Thyrolambrus rathbuni De Man, 1902, p. 677, pl. 22 fig. 35. —Sakai 1972: 33.

Daldorfia horrida (Linnaeus, 1758): Rathbun 1906, p. 886, pl. 15 fig. 6.

Daldorfia rathbuni: Sakai 1976, pp. 282 (in key) and 284 (English vol.), p. 170 (Japanese vol.), fig. 158. —Marumura and Kosaka 2003, p. 38.

Daldorfia rathbunae: Tan and Ng 2007, pp. 130 (in key), 148, figs. 20, 21.

Material examined

Ose-zaki, Suruga Bay, distal end of sand spit, under rock, 22 m depth; 1 ♂ (cb 21.0 mm, cl 16.5 mm), NSMT-Cr 32725; 07-IX-2024; coll. H. Takakura.

Remarks

The male examined in this study agrees well with the fine photographs of *Daldorfia rathbunae* given by Tan and Ng (2007) who recorded many specimens from the wide area in the Indo-West Pacific. The carapace is distinctly triangular in shape, with the advanced front-orbital region and the triangular posterolateral angle of the carapace (Fig. 1E). In the male examined, the gastric, cardiac and branchial regions are distinctly discriminated and convex dorsally as in the original figure (De Man 1902, pl. 22 fig. 35), but not so much roughened as in the large female given by Tan and Ng (2007) and the male given by Sakai (1976), in which the regions are extraordinary swollen and roughened with rounded tubercles. Both chelipeds (Fig. 1E, F) are strongly hetero-cheliferous in the size and dissimilar in the form, and in the male examined, the right cheliped is heavy, with the convex both fingers leaving a wide gap between them. It is characteristic that the upper margins of the ambulatory meri are armed with a fringe of the peculiarly shaped teeth explained as

"scythe-shaped" (Rathbun 1906, as *D. horrida*), "T-formed" (Sakai 1976), and "r-shaped" (Tan and Ng 2007). In the present paper, the peculiar armature of the last ambulatory leg is seen in Fig. 1E.

Distribution

Widely distributed in the Indo-West Pacific ranging from Madagascar and the Seychelles in the western Indian Ocean to Indonesian waters, the Ryukyu Islands and the Hawaiian Islands (Tan and Ng 2007). The records of occurrence in Japan include Yoron-jima Island (Tan and Ng 2007), Kii Nagashima, Kii Minabe and Kushimoto along the Kii Peninsula (Sakai 1976; Marumura and Kosaka 2003).

Family CALAPPIDAE De Haan,1833
Genus *Calappa* Weber, 1795
Calappa gallus (Herbst, 1803)
[Japanese name: Kobu-karappa]
(Figs. 2, 3)

Selected synonymy

Cancer gallus Herbst, 1803, pp. 18, 46, pl. 58 fig. 1.

Calappa gallus: H. Milne-Edwards 1837, p. 105. —Alcock 1896, pp. 140 (in key), 146. —Klunzinger 1906, p. 61, pl. 2 fig. 14. —Sakai 1937, p. 94, pl. 17 fig. 2; 1965, p. 55 (English part), p. 24 (Japanese part), pl. 21 fig. 3; 1976, pp. 128 (in key) & 131 (English vol.), p. 84 (Japanese vol.), pl. 39 fig. 2. —Barnard 1950, pp. 348 (in key), 350, fig. 66e–i. —Dai et al. 1986, pp. 91 (in key), 94, fig. 51. —Tirmizi and Kazmi 1988, p. 54, fig. 17. —Takeda and Shikatani 1990, p. 478. —Dai and Yang 1991, pp. 101 (in key), 105, fig. 51. —Chen 1993, pp. 677 (in key), 683, fig. figs. 3b, 4b. —Ng et al. 2002, pp. 343 (in key), 347. —Takeda and Manuel-Santos 2006, p. 98, fig. 8F.

Material examined

Ose-zaki, Suguga Bay, inside of sand spit, sandy

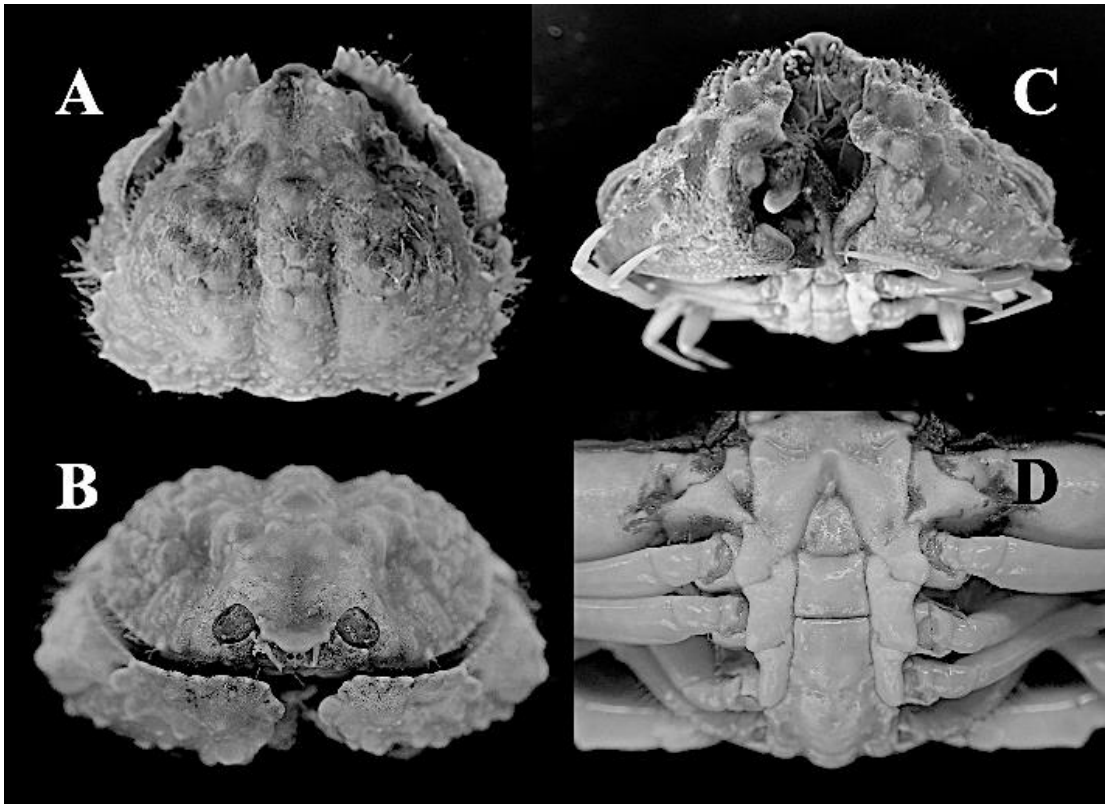

Fig. 2. *Calappa gallus* (Herbst) [Kobu-karappa]. Male (NSMT-Cr 32720; cb 42.2 mm, cl 32.4 mm), habitus in dorsal (A) and frontal (B) views, chelae (C), and pleon (D).

bottom around bouldery rocks, 9.4 m depth; 1 ♂ (cb 42.2 mm, cl 32.4 mm), NSMT-Cr 32720; 29-VI-2024; coll. H. Takakura.

Remarks

The biogeographic distribution of this species has been restricted to the Indo-West Pacific, and the amphi-Atlantic records of this species were referred to those of *Calappa galloides* Stimpson, 1859, by Manning and Chace (1990).

During the present field research by the second author, the remarkable scene (Fig. 3) was observed, that is, a male (NSMT-Cr 32720) of this species was sitting with a pre-copulatory posture behind a female (NSMT-Cr 32719) of *C. pokipoki* Ng, 2000. Both species belong to a same species group having the similar G1, but the size, color and carapace dorsal tuberculation are seemingly different from each other (*C. gallus* in Fig. 2 vs. *C. pokipoki* in Fig. 5). It is highly probable that such unusual behavior of the male has been caused instinctively during breading season.

Distribution

Whole Indo-West Pacific from Japan to the South Pacific, and to South Africa in the Indian Ocean and the Red Sea. In Japanese waters, it is not uncommon along the coasts from Sagami Bay to the Ryukyu Islands.

Fig. 3. *Calappa pokipoki* Ng (female, larger) [Futairo-kobu-karappa] and *C. gallus* (Herbst) (male, smaller) [Kobu-karappa] with pre-copulatory posture at sandy bottom of 9.4 m depth.

Calappa liaoi Ng, 2002

[New Japanese name: Nise-kobu-karappa]

(Fig. 4)

Calappa liaoi Ng, 2002, p. 50, figs. 7–11. —Takeda and Manuel-Santos 2006, p. 98, fig. 8D.

Material examined

Ose-zaki, Suguga Bay, inside of sand spit, sandy bottom around bouldery rocks, 8.5 m depth; 1 ♂ (cb 36.5 mm, cl 29.2 mm), NSMT-Cr 32716; 8-VI-2024; coll. H. Takakura.

Remarks

As Ng (2002) mentioned in the original description, *Calappa liaoi* belongs to the *C. gallus* group including *C. undulata* Dai and Yang, 1991, *C. matsuzawa* Galil,1997, *C. capellonis* Laurie, 1906, and *C.*

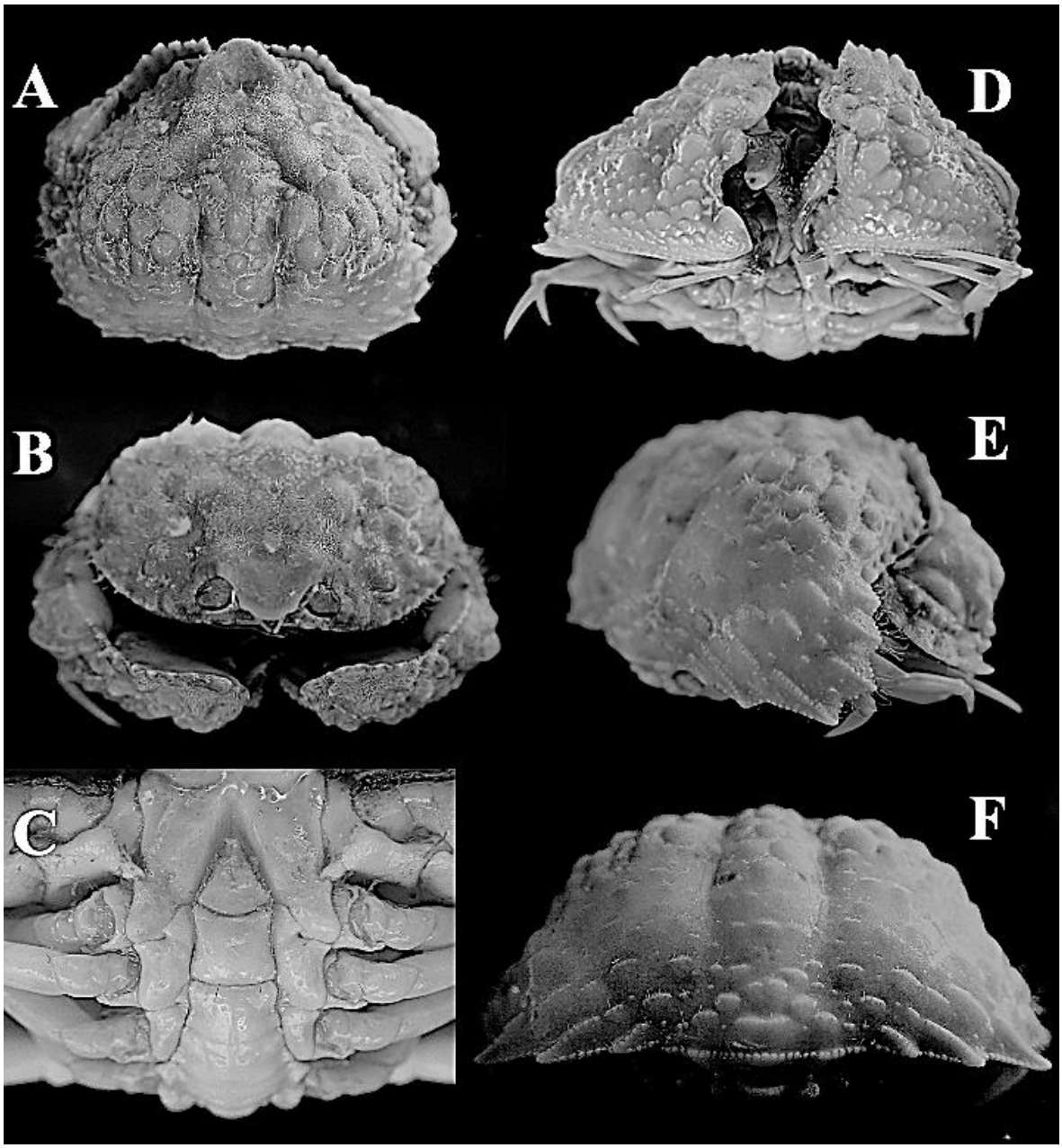

Fig. 4. *Calappa liaoi* Ng [Nise-kobu-karappa]. Male (NSMT-Cr 32716; cb 36.5 mm, cl 29.2 mm), habitus in dorsal (A) and frontal views (B), pleon (C), chelae (D), and carapace in posterolateral (E) and posterior views (F).

torulosa Galil, 1997, other than *C. gallus* (Herbst, 1803). In the remarks on *C. liaoi*, Ng (2002) mentioned that the granulations on the anterior part of the carapace dorsal surface are relatively large and mammilate, like those of *C. capellonis* and *C. torulosa*, but most of the granules are separated by distinct spaces, the teeth of the clypeiform process and carapace posterolateral margin are distinctly lower and less developed. In addition, the front is similarly truncated as in *C. torulosa*, but projects more anteriorly, the clypeiform process has only granulated striae, differing from the low granules in *C. torulosa*, the clypeiform process is somewhat similar to that of *C. undulata* in which the front is far less swollen and distinctly bidentate. It is sure, as mentioned by Ng (2002), that *C. liaoi* has the larger, more rounded granules on the carapace dorsal surface, the hepatic region is shallower than in *C. gallus*, and the more rounded carapace with less expanded clypeiform process (Fig. 4).

The G1 agrees well with the original figures; the shaft is moderately stout, gently curved outwards, with the distal and subdistal parts thickly covered with sharp, posteriorly directed spinules. The G2 distal segment is rounded at the tip and not tapering throughout the length, with the sharp flange at the articulation of the basal and distal segments.

Distribution

The holotype male was collected at Panglao Island, Bohol, Philippines, shallow waters less than 10 m depth, from among coral debri. Later, Takeda and Manuel-Santos (2006) recorded this species from Balicasag Island, Bohol, Philippines. New to Japan.

Calappa pokipoki Ng, 2000

[New Japanese name: Futairo-kobu-karappa]

(Figs. 3, 5)

Calappa pokipoki Ng, 2000, p. 945, figs. 1–2, 3a, 4a, 5a–g, 6.

Material examined

Ose-zaki, Suguga Bay, inside of sand spit, sandy bottom around bouldery rocks, 9.4 m depth; 1 ♀ (cb 61.0 mm, cl 49.5 mm), NSMT-Cr 32719; 29-VI-2024; coll. H. Takakura.

Remarks

In the original description (Ng 2000) of *Calappa pokipoki* from the Hawaiian Islands, the morphological and color differences from *C. gallus* (Herbst, 1803) and some related species were mentioned in detail. The color of *C. pokipoki* is characteristically bicolor as seen in the present paper (Fig. 5A), differing from the unattractive sandyish color of the related species. Among the related species, *Calappa pokipoki* and *C. gallus* are most close to each other in the appearance, but in *C. polopoki*, the front (Fig. 5) is narrower and more produced forwards, with median two of four lobes projecting anteriorly (wider and less pronounced, with subquadrate margin in *C. gallus*), the carapace dorsal surface is less swollen, especially each branchial region is lower and gradually slope towards the carapace lateral margin from the gastric region (strongly swollen dorsally, with gastric and branchial regions equally high in *C. gallus*). Ng (2000) enumerated some additional minor, but constant differences in the hairiness of the carapace margins and chelipeds, the length of the ambulatory meri, and the granulation of the male pleon, and further compared *C. pokipoki* with *C. bicornis* Miers, 1884, *C. yamashitae* Sakai, 1980, and *C. matsuzawa* Galil, 1997. These three species also known from Japan (Sakai 1937, 1976, 1980; Galil 1997) are differentiated from each other in the carapace color, contour and tuberculation.

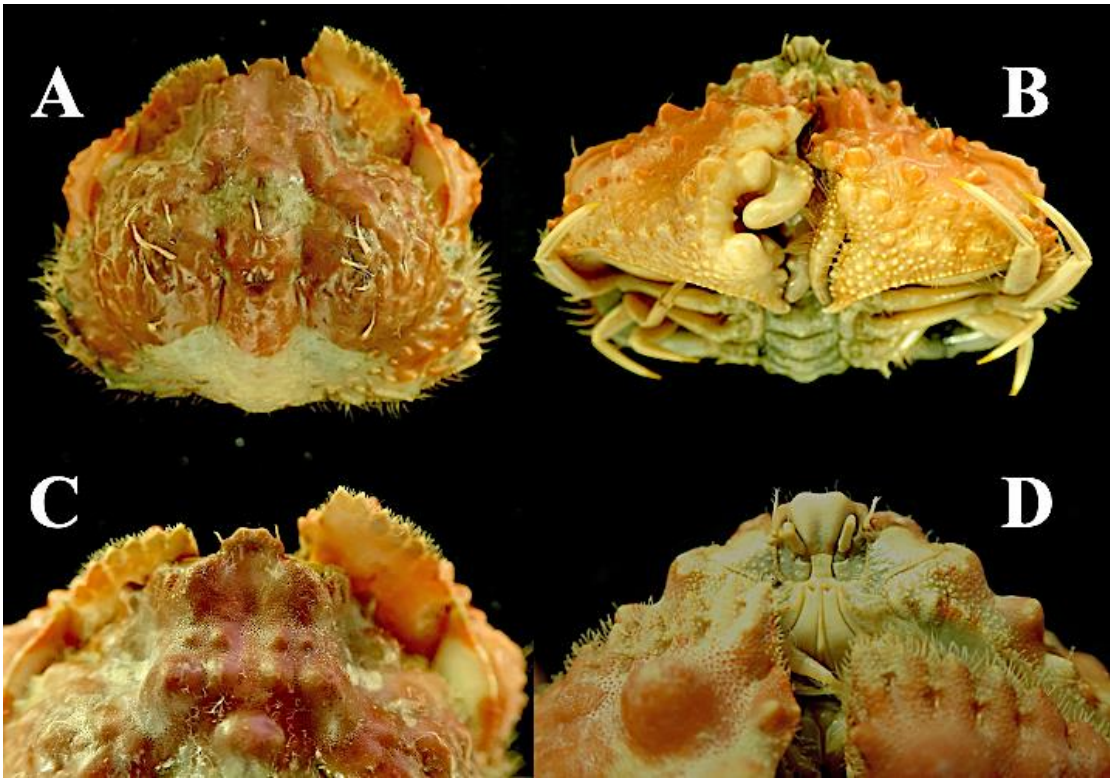

Fig. 5. *Calappa pokipoki* Ng [Futairo-kobu-karappa]. Female (NSMT-Cr 32719; cb 61.0 mm, cl 49.5 mm), dorsal view (A), chelae (B), and anterior part of carapace, in dorsal (C) and ventral views (D). (Specimen preserved in 70 % ethanol).

Distribution

Hitherto be known only by the original description based on the specimens from the Hawaiian Islands: Holotype female from Kona, Hawai‘i Island, and the paratype specimens from off Moloka‘i and O‘ahu Islands (30–182 m depth). New to Japan.

Family XANTHIDAE MacLeay, 1838

Genus *Pilodius* Dana, 1851

Pilodius areolatus (H. Milne Edwards, 1834)

[Japanese name: Tsubu-toge-ougigani]

(Fig. 6A)

Chlorodius areolatus H. Milne Edwards, 1834, p. 400.

Chlorodopsis areolata: Alcock 1898, p. 166. —Nobili 1907, p. 396, pl. 2 fig. 3. —Sakai 1939, p. 502, pl. 97 fig. 3. —Barnard 1950, p. 214, fig. 39d–e. —Guinot 1958, p. 176, fig. 21. —Serène and Nguyen 1958, p. 96, fig. 2, pl. 1 fig. A, pl. 4 fig. A.

Pilodius areolatus: Forest and Guinot 1961, p. 90. —Sakai 1976, p. 460 (English vol.), p. 280 (Japanese vol.), pl. 164 fig. 1. —Chen and Lan 1978, p. 267, fig. 8-2, pl. 8 fig. 30. —Dai and Yang 1991, pp. 327 (in key), 328, fig. 165B (1), pl. 43 fig. 2.

Material examined

Ose-zaki, Suruga Bay, distal end of sand spit, under rock, 5.5 m depth; 1 ♂ (cb 21.8 mm, cl 15.2 mm), NSMT-Cr 32718; 22-VI-2024; coll. H. Takakura.

Remarks

The genus *Pilodius* was morphologically revised by Clark and Galil (1993), which is thorough, with many photographs and detailed line drawings of the distinguishing characters, and made clear the synonymy of 12 known species with the descriptions of three new species. However, Lasley et al. (2015) concluded on the basis of analyses of mitochondrial and nuclear gene sequences that the genus *Pilodius* is

restricted to ten species and that the others are transferred to the genera *Cyclodius* Dana, 1851, and two new genera *Soliella* and *Luniella* established by them. *Pilodius areolatus* is one of 10 constituent species of the genus *Pilodius*, with simple dark brown color not noticeable in the field (Fig. 6A).

Distribution

This species is commonly found in the interstices of basal parts of living corals and also among dead corals and stones in the whole Indo-West Pacific, with many records in the literature. In Japan, this species is known from the Ryukyu Islands north to Amami-Oshima Island and the Ogasawara Islands (Sakai 1939, 1976; Ooishi 1970; Miyake 1983). The record of occurrence was extended further north to Suruga Bay, as the first record from the Japanese mainland.

Genus *Pseudactaea* Sèrene, 1962

Pseudactaea corallina (Alcock, 1898)

[Japanese name: Shikaku-awatsubugani]

(Fig. 6B, C)

Lophactaea corallina Alcock, 1898, p. 102; —1899, pl. 36 fig. 6.

Platypodia corallina: Buitendijk 1941, p. 300, fig. 2a.

Pseudactea corallina: Serène 1962, pp. 679 (in key), 689. —Takeda and Koyama 1974: 113, pl. 11 figs. A, B.

Pseudactaea corallina: Sakai 1976, p. 454 (English vol.), p. 275 (Japanese vol.), pl. 160 fig. 4. —Serène 1984: 131, fig. 77, pl. 19 fig. B. —Takeda and Marumura 2002, p. 102, fig. 1A, B. —Takeda and Komatsu 2018, p. 170, fig. 5E.

Material examined

Ose-zaki, Suruga Bay, distal end of sand spit, under rock, 24.4 m depth; 1♂ (cb 11.0 mm, cl 8.2 mm), NSMT-Cr 32724; 12-VIII-2024; coll. H. Takakura.

Remarks

The genus *Pseudactaea* is revised by Takeda and Marumura (2002) who described the third species, *P. multiareolata*, in addition to *P. corallina* (Alcock, 1898) and *P. multicristata* (Zehntner, 1894). The present specimen is without doubt identified as *P. corallina* which is characteristic in having the peculiar contour of the carapace (Fig. 6B); and the anterolateral margins of the carapace are long, strongly arched, and crested with angulated four teeth, while the posterolateral margins are much shorter, concave, and strongly convergent toward the lateral corner of the carapace posterior margin, with a series of obtuse tubercles of good size. The cheliped merus, carpus and palm are finely sculptured with petal-like crest and tubercles (Fig. 6C).

Distribution

Indo-West Pacific from Madagascar through Sri Lanka in Indian Ocean, and Indonesian waters and the Philippines northwards to Japan in the West Pacific, 26–150 m depth. In Japan, this species has been recorded from some localities around the Kii Peninsula and the Ogasawara Islands.

Genus *Liomera* Dana, 1851

Liomera cinctimana (White, 1847)

[Japanese name: Oo-beni-ougigani]

(Fig. 6D)

Selected synonymy

Carpilius cinctimanus White, 1847, p. 336, pl. 2 fig. 3. —Adams and White 1848, p. 37, pl. 7 fig. 4.

Liomera cinctimana: Dana 1851, p. 124; —1852b, p. 161. —A. Milne-Edwards 1873, p. 176, pl. 5 fig. 4. —Ortmann 1893, p 450, pl. 17 fig. 8. —Alcock 1898, p. 88. —Forest and Guinot 1961, p. 39, fig. 27. —Sakai 1976, pp. 390 (in key) and 392 (English vol.), p. 231 (Japanese vol.), pl. 138 figs. 1–4. —Dai et al. 1986, pp. 248 (in key), 249, fig. 144 (1), pl. 35 fig. 5. —Dai and Yang 1991, p. 268, fig. 144 (1), pl. 33 fig.5. —Takeda 1976, p. 79.

Liomera lata Dana, 1852a, p. 73; —1855, pl. 7 fig. 6.

Carpilodes cinctimanus: Miers 1880, p. 234. —Rathbun 1930, p. 242, pl. 100. —Sakai 1939, pp. 471 (in key), 474, pl. 92 fig. 2. —Garth 1946, p. 426, pl. 74 figs. 1–4. —Buitendijk 1960, p. 256, fig. 2a. —Serène and Nguyen 1960, p. 176 (in key), fig. 1B.

Liomera (*Liomera*) *cinctimana*: Serène 1984, pp. 49 (in key), 53 (in key), 57, fig. 17, pl. 5 fig. A.

Material examined

Ose-zaki, Suruga Bay, distal end of sand spit, under rock, 5.7 m depth; 1 ♂ (cb 22.0 mm, cl 11.8 mm), NSMT-Cr 32726; 28-IX-2024; coll. H. Takakura.

Remarks

This species is the most well known in the genus *Liomera* with beautiful color changing from white to orange and brick red according to the developmental stages. In most of the matured specimens, only the lateral parts of the carapace are white, but the larger specimens exceeding cb 5 cm, the white color is faded out, and the carapace is entirely reddish brick red. In the male examined, only the marginal parts of the third and fourth anterolateral lobes of the carapace are white (Fig. 6D). In the matured male, each cheliped palm is furnished with dark colored cross-band for its most parts of the outer and inner surfaces, as mentioned by Takeda (1976).

Distribution

Widely distributed in the Indo-West Pacific, from Japan to Australia and the east coast of Africa, and also from the west coast of North America from Lower California to the Galapagos Islands. Sublittoral waters to 35 m depth. The biogeographical range in Japan is from the Ryukyu Islands northwards to the Kii Peninsula (Sakai 1976).

Liomera margaritata (A. Milne-Edwards, 1873)
[Japanese name: Tsubu-beni-ougigani]
(Fig. 6E)

Selected synonymy

Carpilodes margaritatus A. Milne-Edwards, 1873, p. 182, pl. 5 fig. 2. —Alcock 1898, p. 85. —Odhner 1925, p. 24, pl. 2 fig. 4. —Gravely 1927, p. 146, pl 21 fig. 26. —Chopra and Das 1937, p. 395, fig. 5. —Sakai 1939, pp. 472 (in key), 476, fig. 36. —Serène and Nguyen 1960, pp. 178, 185, fig. 2F, pl. 2 fig. D. —Buitendijk 1960, p. 261, fig. 3b.

Chlorodius exiguus Targioni Tozzetti, 1877, p. 48, pl. 4 figs. 1–5, 9a.

Carpilodes striatus De Man, 1888, p. 232, pl. 8 fig. 1.

Carpilodes diodereus Nobili, 1906a, p. 403 ; —1906b, p. 216, pl. 10 fig. 9.

Liomera margaritata: Sakai 1965, pp. 144 (English part), 61 (Japanese part), pl. 72 fig. 3; —1976, pp. 391 (in key) and 396 (English vol.), p. 233 (Japanese vol.), fig. 211. —Dai et al. 1986, pp. 249 (in key), 251, fig. 145 (2), pl. 34 fig. 2. —Dai and Yang 1991, pp. 268 (in key), 271, fig. 145 (2), pl. 34 fig. 2. —Lee and Ko 2011, p. 185, figs. 1, 2.

Liomera (*Liomera*) *margaritata*: Serène 1984, pp. 51 (in key), 55 (in key), 63, fig. 23, pl. 7 fig. A.

Material examined

Ose-zaki, Suruga Bay, inside of sand spit, among oyster bed, 3.6 m depth; 1 ♂ (cb 15.3 mm, cl 9.2 mm), NSMT-Cr 32715; 18-VI-2024; coll. H. Takakura.

Remarks

The male examined agrees well with the fine photographs of *Liomera margaritata* presented by many authors, in having the carapace dorsal surface covered with minute pearly granules all over the regions which are evenly convex and clearly separated from each other by the narrow interregional furrows.

The carapace anterolateral margin is divided into four regularly convex lobes along the general contour of the carapace. The protogastric region is completely divided into two longitudinal subregions, the outer subregion of which is slightly wider and longer than

the inner.

The color in life is reddish brick red as shown in the present paper (Fig. 6E) and the photograph in the field given (Kato and Okuno 2001).

Distribution

Widely distributed in the Indo-West Pacific from Madagascar and the Red Sea eastwards to New Caledonia in the South Pacific and northwards to Sagami Bay in Japan through Indonesian waters. In Japanese waters, this species is known from Sagami Bay, the Kii Peninsula, and Yoron-jima Island in the Ryukyu Islands, and usually found at the depth of 10 to 20 m, with a deeper water record of 85 m in Sagami Bay (Sakai 1976).

Family PILUMNIDAE Samouelle, 1819

Genus *Pseudolitochira* Ward, 1942

Pseudolitochira taiwang Ng and Lin, 2023

[Japanese name: Oo-okinagani]

(Fig. 6F)

Heteropilumnus longipes (Stimpson, 1858): Sakai 1939, p. 540, fig. 55; ―1976, pp. 492 (in key), 493 (English vol.), p. 304 (Japanese vol.), pl. 176 fig. 4. ―Takeda 1989, p. 167.

Pseudolitochira longisetum (Davie and Humpherys, 1997): Maenosono 2023, p. 166, figs. 1–2.

Pseudolitochira taiwang Ng and Lin, 2023, p. 105, figs. 1D, 6, 7.

Material examined

Ose-zaki, Suruga Bay, distal end of sand spit, under rock, 12 m depth; 1♀ (cb 9.7mm, cl 7.1 mm), NSMT-Cr 32727; 6-X-2024; coll. H. Takakura.

Comparative material examined

Off Miura, Oshima Passage between Amami-Oshima I. and Kakeroma-jima I., Kagoshima Pref., 1♀ (cb 10.4 mm), NSMT-Cr 9753, 16-VII-1988; coll. M. Takeda. This specimen was recorded by Takeda (1989) as *Heteropilumnus longipes* (Stimpson, 1858), and reidentified (unpublished) as *Pseudolitochira taiwang* Ng and Lin, 2023, by Dr. P. K. L. Ng.

Suzaki, Shimoda Bay, Izu Penin., Shizuoka Pref., oyster bed, 21.5 m depth, 1 ♀ (cb 11.4 mm, cl 8.0 mm), NSMT-R4152, 25-III-1976, identified by Dr. T. Sakai as *H. longipes*, and reidentified (unpublished) by Dr. P. K. L. Ng as *P. taiwang*.

Remarks

The genus *Pseudolitochira* was systematically clarified for its generic validity and distinguished from the genus *Heteropilumnus* De Man, 1895, by Ng et al. (2021) and Ng and Clark (2022a, b). According to them, *Pseudolithchira* is differentiated from *Heteropilumnus* in 1) the relatively more subovate carapace with the dorsal surface almost devoid of regions, 2) the proportionately wider front, 3) the shorter anterolateral margins of the carapace with the low, poorly defined teeth, sometimes appearing entire, 4) the large vulvae occupying more than half the length of the sixth sternite, and 5) the entire posterior margin of the epistome without trace of fissures or clefts on the lateral parts. The last character of them was said to be the most diagnostic. The following nine species are referred to *Pseudolitochira* up to the present: *P. crinita* Ng and Clark 2002, *P. integra* (Miers, 1884) (type species), *P. lanuginosa* (Klunzinger, 1913), *P. longisetum* (Davie and Humpherys, 1997), *P. maenosonoi* Ng and Clark, 2022, *P. pacifica* Ng and Clark, 2022, *P. setosa* (A. Milne-Edwards, 1873), *P. spinosa* Ng, 2024, and *P. taiwang* Ng and Lin, 2023.

The specimen examined (Fig. 6F) is close to some *Pseudolitochira* species in which the carapace, chelipeds and ambulatory legs are wholly covered with long silky hairs. In the original description of *P. taiwang*, Ng and Lin (2023) enumerated the differences from *P. lanuginosa* from the Red Sea, *P. crinita* from Papua New Guinea, and *P. setosa* from New Caledonia. They are close to each other, but the

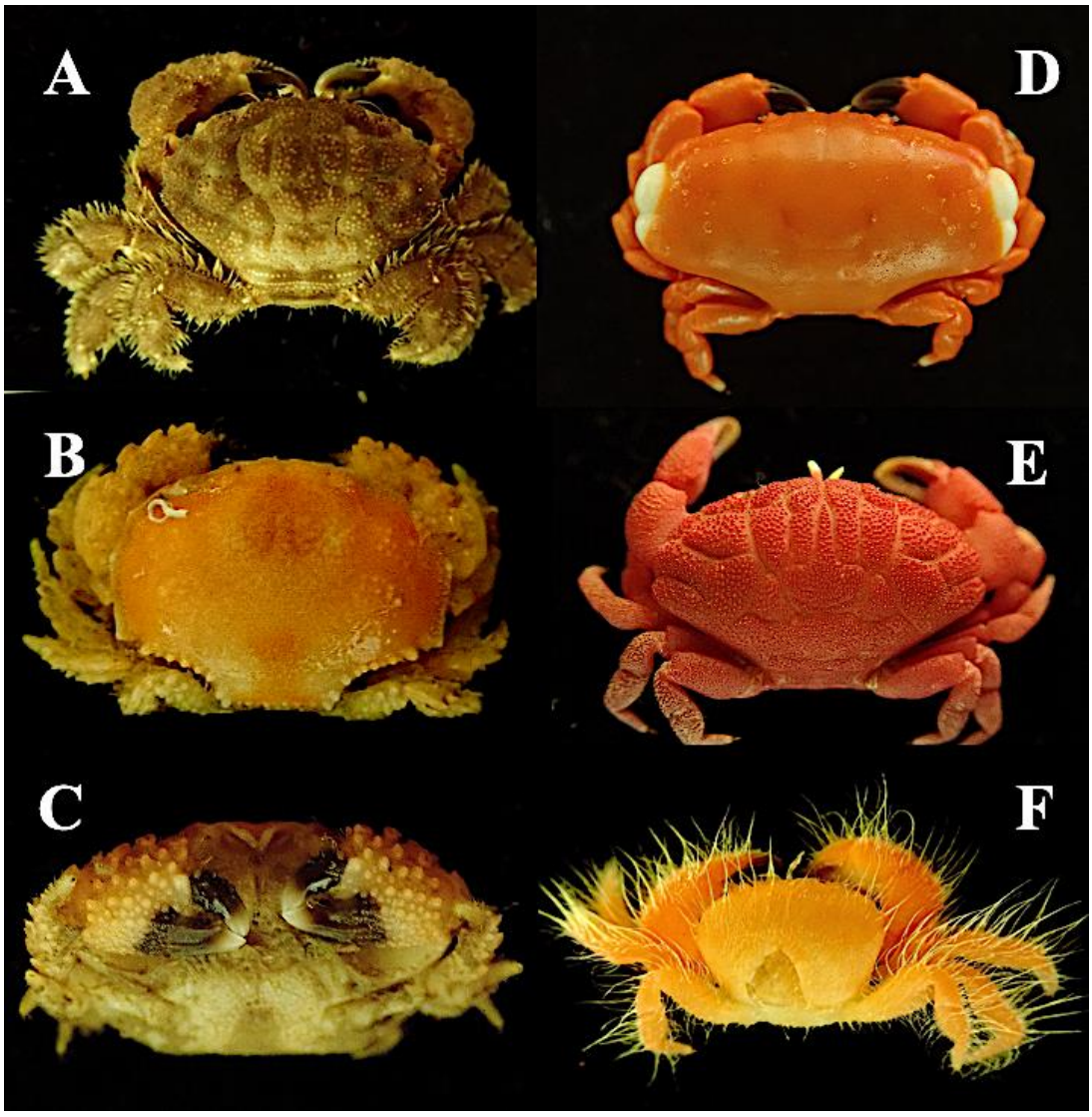

Fig. 6. A: *Pilodius areolatus* (H. Milne Edwards) [Tsubu-toge-ougigani]. Male (NSMT-Cr 32718; cb 21.8 mm, cl 15.2 mm), dorsal view. B, C: *Pseudactaea corallina* (Alcock) [Shikaku-awatsubugani]. Male (NSMT-Cr 32724; cb 11.0 mm, cl 8.2 mm), dorsal (B) and ventral (C) views. D: *Liomera cinctimana* (White) [Oo-beni-ougigani]. Male (NSMT-Cr 32726; cb 22.0 mm, cl 11.8 mm), dorsal view. E: *Liomera margaritata* (A. Milne-Edwards) [Tsubu-beni-ougigani]. Male (NSMT-Cr 32715; cb 15.3 mm, cl 9.2 mm), dorsal view. F: *Pseudolitochira taiwang* (Ng and Lin) [Oo-okinagani]. Female (NSMT-Cr 32727; cb 9.7mm, cl 7.1 mm), dorsal view.

proportion and convexity of the carapace, the anterolateral carapace armature and some other characters as for the third maxilliped and ambulatory legs. In *P. taiwang*, to which the present specimen was referred, the external orbital angle is indistinct and not distinctly isolated from the lobate first anterolateral tooth, the second tooth is lobate and longer than the first tooth, with some small granules on the margin, the third and fourth teeth are much smaller, not lobate, but each tipped with a small sharp granule. According to Ng and Lin (2023), *P. longisetum* recorded by Maenosono (2023) from the Ryukyu Islands should be referred to this species. The present specimen agrees well also with the detailed notes and description of *P. longisetum* by Maenosono (2023).

Distribution

Keelung County, Taiwan (Ng and Lin, 2023); Sesoko-jima Island (Maenosono 2023, as *P. longisetum*; Ng and Lin 2023), Kudaka-jima Island (Ng and Lin

2023), Kakeroma-jima Island (Takeda 1989, as *Heteropilumnus longipes*), and Yoron-jima I. (Sakai 1976, as *H. longipes*), Ryukyu Islands; Nagasaki and Kii Peninsula (Sakai 1976, as *H. longipes*), Japanese mainland.

Biogeographic notes

Takeda and Takakura (2025) fully studied seven rare species of crabs among 14 identified species from Suruga Bay: *Notonyx sagittifer* Ng and Clark, 2010 (Gonelacidae) new to Japan, and *Thranita cerasma* (Wee and Ng, 1995) and *Trionectes mariei* (Guinot, 1957) (Portunidae), *Pilodius miersi* (Ward, 1936) (Xanthidae), *Actumnus elegans* (De Man, 1887), and *Zehntneriana amakusae* (Takeda and Miyake, 1969) (Pilumnidae). They were new to Suruga Bay.

Recent collections made at the same place in Suruga Bay revealed the further additions of crabs recorded in this paper, viz. two species new to Japan and ten species new to Suruga Bay. Two species new to Japan are *Calappa liaoi* Ng, 2002 and *C pokipoki* Ng, 2000 (Calappidae), and 10 species new to Suruga Bay are *Urnalana elata* (A. Milne-Edwards, 1874) (Leucosiidae), *Aethra edentata* Edmondson, 1951 (Aethridae), *Calappa gallus* (Herbst, 1803) (Calappidae), *Aulacolambrus hoplonotus* (Adams and White, 1849) and *Daldorfia rathbunae* (De Man, 1902) (Parthenopidae), *Liomera cinctimana* (White, 1847), *L. margaritata* (A. Milne-Edwards, 1873), *Pilodius areolatus* (H. Milne Edwards, 1834) and *Pseudactaea corallina* (Alcock, 1898) (Xanthidae), and *Pseudolitochira taiwang* Ng and Lin, 2023 (Pilumnidae).

Although it is not sure whether the northern extensions of their distribution were caused by the strong Kuroshio warm current off the Pacific coast of Japanese mainland or due to the poor knowledge of the Suruga Bay carcinological fauna, all of the recorded species new to Suruga Bay are known with the tropical or subtropical distribution. The species recorded in our papers are all subtidal in habitat and probably not thorough, and therefore the further researches and collections in the field by using SCUBA or some other means will yield the extended results of the varied carcinological fauna of Suruga Bay.

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References

Adams, A., White, A. (1848–1849). Crustacea In: Adams, A. (ed.) The Zoology of the Voyage of the H. M. S. Samarang; under the Command of Captain Sir Edward Belcher, C. B., F. R. A. S., F. G. S. during the Years 1843–1846, by John Edwards Gray, F. R. S.; Sir John Richardson, M. D., F. R. S. ; Arthur Adams, F. L. S.; Lovell Reeve, F. L. S.; and Adam White, F. L. S. Reeve and Benham, London, viii+66 pp., 13 pls. [pp. 1–32 and pls. 1–6 were published in 1848 (July); pp. i–viii, 33–66 and pls. 7–13 in 1849 (April)].

Alcock, A. (1895). Materials for a carcinological fauna of India. No. 1. The Brachyura Oxyrhyncha. J. Asiatic Soc. Bengal (II) 64: 157–291, pls. 3–5.

Alcock, A. (1896). Materials for a carcinological fauna of India. No. 2. The Brachyura Oxystomata. J. Asiatic Soc. Bengal (II) 65: 134–296, pls. 6–8.

Alcock, A. (1898). Materials for a carcinological fauna of India. No. 3. The Brachyura Cyclometopa. Part I. The family Xanthidae. J. Asiatic Soc. Bengal (II) 67: 6–233.

Alcock, A. (1899). Illustrations of the Zoology of the Royal Indian Marine Survey Ship Investigator, under the Command of Commander T. H. Heming, R. N. Crustacea, Part VII, pls. 36–45. Office of the Superintendent of Government Printing, India.

Barnard, K. H. (1950). Descriptive catalogue of South African decapod Crustacea (crabs and shrimps). Ann. S. Afr. Mus. 38: 1–837.

Buitendijk, A. M. (1941). Biological results of the

Snellius Expedition. XIII. On some Xanthidae, chiefly of the genus *Platypodia* Bell. Temminckia 6: 295–312.

Buitendijk, A. M. (1960). Biological results of the Snellius Expedition. XXI. Brachyura or the Families Atelecyclidae and Xanthidae (Part I). Temminckia 10: 252–338.

Chen, H., Lan, J. (1978). Preliminary studies on the Xanthidae (Brachyura, Crustacea) of the Xisha Islands, Guandong Province, China. In: Report on the Scientific Results of Marine Biology of the Xisha Islands and Zhongsha Islands (South China Sea), pp. 261–286, pls. 1–8.

Chen, H.-L. (1993). The Calappidae (Crustacea: Brachyura) of Chinese waters. In: Morton, B. (Ed.), Marine Biology of the South China Sea. Proceedings of the First International Conference on Marine Biology, Hong Kong, South China Sea. Hong Kong University Press, pp. 675–704.

Chopra, B., Das, K. N. (1937). Further notes on Crustacea Decapoda in the Indian Museum. IX. On three collections of crabs from Tavoy and Mergui Archipelago. Rec. Ind. Mus. 39: 377–434, pl. 6.

Clark, P. F., Galil, B. S. (1993). A revision of the xanthid genus *Pilodius* Dana, 1851 (Crustacea: Brachyura: Xanthidae). J. Nat. Hist. 27: 1119–1206.

Dai, A.-y., Yang, S.-l., Song, Y.-z, Chen, G-x. (1986). [Crabs of the China Seas] China Ocean Press, Beijing, 17 + 642 pp. (In Chinese).

Dai, A.-y., Yang, S.-l. (1991). Crabs of the China Seas. Springer-Verlag, Berlin Heidelberg, 682 pp.

Dana, J. D. (1851). On the classification of the Cancroidea. Amer. J. Sci. Arts (2)12: 121-131.

Dana, J. D. (1852a). Conspectus of the Crustacea of the Exploring Expedition under Capt. Wilkes, U.S.N., including the Crustacea Cancroiodea Corystoidea. Proc. Acad. Nat. Sci. Philadelphia 6: 73–86.

Dana, J. D. (1852b). Crustacea. United States Exploring Expedition. During the years 1838, 1839, 1840, 1841, 1842. Under the command of Charles Wilkes, U.S.N. 13: i–viii, 1-1393.

Dana. J. D. (1855). Atlas, Crustacea., United States Exploring Expedition. During the years 1838, 1839, 1840, 1841, 1842. Under the command of Charles Wilkes, U.S.N., Philaderphia, 27 pp. + 96 pls.

Davie, P. J. F., Humpherys, A. (1997). New species of rhizopine crabs (Crustacea: Brachyura) from Northern Australia. Mem. Qd Mus. 42: 97–103.

Edmondson, C. H. (1951). Some central Pacific crustaceans. Occ. Pap. Bernice P. Bishop Mus. 20: 183–243.

Flipse, H. J. (1930). Die Decapoda Brachyura der Siboga-Expedition. VI. Oxyrhyncha: Partheno-pidae. Siboga-Exp., Monogr. 39c^2: 1–96.

Forest, J., Guinot, D. (1961). Crustacés Décapodes Brachyoures de Tahiti et des Tuamotu. Expédition française sur les recifs coralliens de Nouveles-Calédonie. Éditions de la Fondation Singer-Polignac, Paris, volume préliminaire, xi + 195 pp., 18 pls.

Galil, B. (1997). Crustacea Decapoda: A revision of the Indo-Pacific species of genus *Calappa* Weber, 1795 (Calappidae). Résultats des Campagnes MUSORSTOM. 18. In : Crosnier, A. (ed.), Mém. Mus. natn. Hist. nat., Paris 176: 271–335.

Galil, B. S. (2005). Contributions to the knowledge of Leucosiidae III. *Urnalana* gen. nov. (Crustacea: Brachyura). Zool. Meded., Leiden 79: 9–40.

Garth, J. S. (1946). Littoral brachyuran fauna of the Galapagos Archipelago. Reports on the collections obtained by Allan Hancock Pacific Expeditions of Velero III off the coast of Mexico, Central America, South America, and Galapagos Islands in 1932, in 1933, in 1934, in 1935, in 1936, in 1937, in 1938, in 1939, and in 1940. Allan Hancock Pacific Expeditions, 10: i–iv, 341–601.

Gravely, F. H. (1927). Orders Decapoda (except Paguridea) and Stomatopoda. In: The littoral fauna of Krusadai Island in the Gulf of Manaar with appendices on the vertebrates and plants. Bull. Madras Gov. Mus. New Series, Natural History Section 1: 135–155, pls. 19–26.

Guinot, D. (1958). Sur une collection de Décapodes Brachyoures (Portunidae et Xanthidae) de l'île Mayotte. II. Xanthidae. Bull. Mus. Natn. Hist. Nat., Paris (2) 30: 84–93, 175–183, 276–284.

Haswell, W. A. (1879). On the Australian Brachyura Oxyrhyncha. Proc. Linnean Soc. N. S. W. 4: 431–458, pls. 25–27.

Herbst, J. F. W. (1803). Versuch einer Natur-geschichte der Krabben und Krebse nebst einer Systematischen Beschreibung ihrer Verschie-denen Arten. 3 (3): 1–54, pls. 55–58. Gottlieb August Lange, Berlin & Stralsund.

Kato, S., Okuno, J. (2001). Shrimps and Crabs of Hachijo Island. The Britannica Co., Ltd., Tokyo, 158 pp. (In Japanese).

Kawamoto, T., Okuno, J. (2003). Shrimps and Crabs of Kume Island, Okinawa. Hankyu Communications Co., Ltd., Tokyo, 174 pp. (In Japanese).

Klunzinger, C. B. (1906). Die Spirtz- und Spitzmundkrabben (Oxyrhyncha und Oxystomata) des Roten Meeres. Verlag von Ferdinand Enke, Stuttgart, vii + 91 pp., 2 pls.

Lasley, R. M., Jr., Klaus, S., Ng, P. K. L. (2015). Phylogenetic relationships of the ubiquitous coral reef crab subfamily Chlorodiellinae (Decapoda, Brachyura, Xanthidae). Zool. Scrip. 44: 165–178.

Lee, S. H., Ko, H. S. (2011). New records of three xanthid crabs (Decapoda: Brachyura: Xanthidae) from Jejudo Island in Korea. Korean J. Syst. Zool.

27: 183–190.
Maenosono, T. (2023). Note on *Heteropilumnus longipes* sensu Sakai (1976) (Pilumnidae) from Okinawa Group, Ryukyu Islands, Japan. Nature of Kagoshima 49: 165–169. (In Japanese with English abstract).
Man, J. G. De (1887–1888). Bericht über die von Herrn Dr. J. Brock im indischen Archipel gesammelten Decapoden und Stomatopoden. Arch. Naturg. 53: 215–600, pls. 7–22a.
Man, J. G. De (1902). Die von Herrn Professor Kükenthal im Indischen Archipel gesammelten Dekapoden und Stomatopoden. In: W. Kükenthal, Ergebnisse einer zoologischen Forschungsreise in den Molukken und Borneo. Abh. Senckenb. Nat. Ges. 25: 467–929, pls. 19–27.
Manning, R. B., Chace, F. A., Jr. (1990). Decapod and stomatopod Crustacea from Ascension Island, South Atlantic Ocean. Smiths. Contr. Zool. 503: 1–91.
Marumura, M., Kosaka, A. (2003). Catalogue of Brachyuran and Anomuran Crabs Collection Donated by the Late Ma. Seiji Nagai to the Wakayama Prefectural Museum of Natural History. Wakayama Prefectural Museum of Natural History, Konan, Wakayama, 74 pp. (In Japanese).
Miers, E. J. (1880) On a collection of Crustacea from the Malaysian region. Part I. Crustacea Oxyrhyncha and Cyclometopa, except Telphusidea. Ann. Mag. Nat. Hist., Zoology, Botany and Geology (5) 5: 226–239, pl. 13.
Miers, E. J. (1886). Report on the Brachyura collected by H. M. S. Challenger the years 1873–76. In: Report on the Scientific Results of the Voyage of H.M.S. Challenger during the Years 1873–1876 under the Command of Captain George S. Nares, N. R., F. R. S. and the late Captain Frank Tourle Thomson, R. N. prepared under the Superintendence of the late Sir C. Wyville Thomson, Knt., F. R. S. &c. Regius Professor of Natural History in the University of Edinburgh of the Civilian Scientific Staff on Board and now of John Murray one of the Naturalists of the Expedition. Zoology, published by Order of Her Majesty' Government. London, Edinburgh and Dublin, HMSO 17: i–L, 1–362, pls. 1–29.
Milne-Edwards, A. (1872). Recherches sur la faune carcinologique de la Nouvelle-Calédonie. Nouv. Arch. Mus. Hist. Nat., Paris 5: 229–267, pls. 10–14.
Milne-Edwards, A. (1873). Recherches sur la faune carcinologique de la Nouvelle-Calédonie, Deuxième partie. Nouv. Arch. Mus. Hist. Nat., Paris 9: 155–332, pls. 4–18.
Milne-Edwards, A. (1874). Recherches sur la faune carcinologique de la Nouvelle-Calédonie. Troisième partie. Nouvelles Archives du Muséum d'Histoire naturelle de Paris 10: 39–58, pls. 2–3.
Milne Edwards, H. (1834, 1837). Histoire Naturelle des Crustacés, comprenant I'Anatomie, la Physiologie et la Classification de ces Animaux. Librairie Encyclopédique de Roret, Paris, 1: xxxv + 468 pp., 2: 532 pp.
Miyake, S. (1983). Japanese Crustacean Decapods and Stomatopods in Color. II. Brachyura (Crabs). Hoikusha Publishing Co., Ltd., Osaka, Japan, viii + 277 pp. (In Japanese).
Ng, P. K. L., Takeda, M. (1998). *Aethra edentata* Edmondson, 1951 (Crustacea, Decapoda, Brachyura, Parthenopidae), new records for the Izu-Mariana Arch. Bull. Natn. Sci. Mus., Tokyo (A) 24: 7–10.
Ng, P. K. L. (1999). A synopsis of the genus *Aethra* Latreille, 1816 (Decapoda, Brachyura, Parthenopidae). Crustaceana 72: 109–121.
Ng, P. K. L. (2000). *Calappa pokipoki*, a new species of box crab (Crustacea: Decapoda: Brachyura: Calappidae) from Hawaii. Proc. Biol. Soc. Washington 113: 945–955.
Ng, P. K. L. (2002) New species and new records of box crabs (*Calappa*) (Crustacea: Decapoda: Brachyura: Calappidae) from the Philippines. J. Natn. Taiwan Mus. 55: 41–60.
Ng, P. K. L., Lai, J. C. Y., Aungtonya, C. (2002). The box and moon crabs of Thailand, with description of a new species of *Calappa* (Crustacea: Brachyura: Calappidae, Matutidae). Phuket Mar. Biol. Center Spec. Publ. 23: 341–360.
Ng, P. K. L., Clark, P. F., Clark, B., Kamanli, S. A. (2021). *Pseudolitochira integra* (Miers, 1884) (Crustacea: Brachyura: Pilumnidae): redescribed and illustrated from micro-CT scanning the type female. Zootaxa 4969: 377–391.
Ng, P. K. L., Clark, P. F. (2022a). Descriptions of three new *Pseudolitochira* Ward, 1942 species (Crustacea: Brachyura: Pilumnidae) from the West Pacific. J. Nat. Hist. 56: 349–364.
Ng, P. K. L., Clark, P. F. (2022b). The generic assignment of *Pilumnus lanuginosus* Klunzinger, 1913 (Brachyura, Pilumnidae). Crustaceana 95: 1215–1222.
Ng, P. K. L., Lin, C.-W. (2023). Two new species of hairy crabs (Pilumnidae) and the first record of *Crinitocinus alcocki* (Borradaile, 1900) (Acidopsidae) (Crustacea: Brachyura) from Taiwan. Zootaxa 5297: 101–114.
Nobili, G. (1906a). Diagnoses préliminaires de 34 espèces et variétés nouvelles et de 2 genres nouveaux de Décapodes de la Mer Rouge. Bull. Mus. Hist. Nat., Paris 11: 393–411.
Nobili, G. (1906b). Faune carcinologique de la Mer Rouge. Décapodes et Stomatopodes. Ann. Sci. Nat. (9) 4 : 1–347, pls. 1–11.
Nobili, G. (1907). Recerche sui Crostacei della Polinesia. Decapodi, Stomatopodi, Anisopodi e

Isopodi. Mem. Reale Accad. Sci, Toriono (II) 57: 352–430, pls. 1–3. (In Italian).
Odhner, T. (1925). Monographierte Gattungen der Krabben-familie Xanthidae. I. Göteb. Kungl.Vet.-och Vit.-Samh. Handl. (4), 29 (1): 1–92, pls. 1–5.
Ooishi, S. (1970). Marine Invertebrate Fauna of the Ogasawara and Volcano Islands Collected by Ooishi, Y. Tomida, K. Izawa and S. Manabe. In: Report on the Marine Biological Expedition to the Ogasawara (Bonin) Islands, 1968. Toba Aquarium and Asahi Shimbun Publishing Company, pp. 75–104, pls. 1–25.
Ortmann, A. (1893). Die Decapoden-Krebse des Strassburger Museums, mit bersonderer Berücksichtigung der van Herrn Dr. Döderlein bei Japan und bei den Riu-Kiu-Inseln gesammelten und zur Zeit im Strassburger Museum aufbewahrten Formen. VII. Theil. Abtheilung: Brachyura (Brachyura genuina Boas) II. Unterabtheilung: Cancroidea, 2. Section: Cancrinea, 1. Gruppe: Cyclometopa. Zool. Jahrb. 7: 411–495, pl. 17.
Poore, G. C. B., Ahyong, S. T. (2023). Marine Decapod Crustacea. A Guide to Families and Genera of the World. CSIRO Publishing, Melbourne, xi + 916 pp.
Poupin J., Cleva, R., Bouchard, J.-M., Dinhut, V., Dumas, J. (2018). The crabs from Mayotte Island (Crustacea, Decapoda, Brachyura). Atoll Res. Bull. 617: i–vi, 1–109.
Rathbun, M. J. (1906). The Brachyura and Macrura of the Hawaiian Islands. Bull. U. S. Fish Com. 23: 827–930, pls. 1–24.
Rathbun, M. J. (1910). The Danish Expedition to Siam 1899-1900. V. Brachyura. D. Kgl. Danske Videns. Selsk. Skrift. (7) 5: 301–367, pls. 1–2, 1 map.
Rathbun, M. J. (1911). The Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the leadership of Mr. J. Stanley Gardiner. XI. Marine Brachyura. Trans. Linn. Soc. London (2) 14: 191–261, pls. 15–20.
Rathbun, M. J. (1930). The cancroid crabs of America. Bull. U. S. Natn. Mus. 152: i–xvi, 1–609.
Sakai, T. (1937). Studies on the crabs of Japan. II. Oxystomata. Sci. Rep. Tokyo Bunr. Daig. (B) Suppl. 3: 67-192, pls. 10–19.
Sakai, T. (1939). Studies on the Crabs of Japan. IV. Brachygnatha, Brachyrhyncha. Yokendo Ltd., Tokyo, pp. 365–741, pls. 42–111.
Sakai, T. (1961). New species of Japanese crabs from the collection of His Majesty The Emperor of Japan. Crustaceana 3: 131–150, pls. 3–4.
Sakai, T. (1965). The Crabs of Sagami Bay, collected by His Majesty the Emperor of Japan. Maruzen, Tokyo, xxix + 206 + 92 + 32 pp., 100 pls.
Sakai, T. (1972). On seven rare species of crabs of the family Parthenopidae (decapod crustaceans) from Japan. Proc. Jap. Soc. Syst. Zool. 8: 32–33.
Sakai, T. (1976). Crabs of Japan and the Adjacent Seas. Kodansha Ltd., Tokyo, xxix + 773 pp. (English vol.); 461 pp. (Japanese vol.); 16 pp. + 251 pls. (Plates).
Sakai, T. (1980). On new and rare crabs taken from Japanese and central Pacific waters. Res. Crust. 10: 73–84, frontispiece 2, pl. 5. (In English and Japanese)
Sakai, T. (1983). Eight new species of Indo-Pacific crabs from the collections of. the Smithsonian Institution. Proc. Biol. Soc. Washington 96: 623–631.
Serène, R., Nguyen, V. L. (1958). *Chlorodopsis* (Brachyura) du Viet-Nam. Ann. Fac. Sci., Univ. Saigon 1958 : 87–147, pls. 1–4.
Serène, R., Nguyen, V. L. (1960). Les espèces de *Carpilodes* (Brachyura-Xanthidae) de Viêt-Nam. Ann. Fac. Sci. Saigon 1960: 173–187, pls. 1–2.
Serène, R. (1962) [imprint 1961]. Les espèces Indo-Pacifique d'*Actea* et des celles genres *Pseudactea* et *Banareia*. (2e partie). Bull. Soc. Zool. Fr. 86: 673–693, pl. 1.
Serène, R. (1984). Crustacés Décapodes Brachyoures de l'Océan Indien occidental et de la Mer Rouge. Xanthoidea: Xanthidae et Trapeziidae. Addendum Carpiliidae et Menippidae par A. Crosnier. Faune Tropicale 24: 1–349, pls. 1–48.
Takeda, M., Koyama, Y. (1974). On some rare crabs from Kii Province. Res. Crust. 6: 103-121. (In Japanese and English).
Takeda, M. (1976). Studies on the Crustacea Brachyura of the Palau Islands. III. Xanthidae (1). Res. Crust. 7: 69–99, pls. 9–11.
Takeda, M. (1977). Crabs from shallow waters off Mage-jima Island, southwest Japan. Bull. Natn. Sci. Mus., Tokyo (A) 3: 73–89.
Takeda, M., Shikatani, N. (1990). Crabs of the genus *Calappa* from the Ryukyu Islands, with description of a new species. Zool. Sci. 7: 477–484.
Takeda, M., Marumura, M. (2002). The genus *Pseudactea* Serène, 1962 (Crustacea, Decapoda), with a description of a new species from central Japan. Bull. Natn. Sci. Mus., Tokyo (A) 28: 101-107.
Takeda, M., Manuel-Santos, M. R. (2006). Crabs from Balicasag Island, Bohol, the Philippines: Dromiidae, Dynomenidae, Homolidae, Raninidae, Dorippidae, and Calappidae. Mem. Natn. Sci. Mus., Tokyo 44: 83–104.
Takeda, M., Komatsu, H. (2018). Offshore crabs of the family Xanthidae and some related families (Crustacea, Decapoda, Brachyura) from the Ogasawara Islands, Japan. Mem. Natn. Mus. Nat. Sci., Tokyo 52: 153–189.
Takeda, M., Takakura, H. (2025). Some subtidal crabs

(Crustacea, Decapoda, Brachyura) from Suruga Bay, Pacific coast of central Japan. Bull. Natn. Mus. Nat. Sci., Tokyo (A) 51: 1–17.

Tan, S.-H., Huang, J.-F., Ng, P. K. L. (1999). Crabs of the family Parthenopidae (Crustacea, Decapoda, Brachyura) from Taiwan. Zool. Stud. 38: 196–206.

Tan, S.-H., Ng, P. K. L. (2003). The Parthenopidae of Guam (Crustacea Decapoda: Brachyura: Parthenopidae). Micronesica 35-36: 385–416.

Tan, S.-H., Ng, P. K. L. (2007). Review of the subfamily Daldorfiinae Ng & Rodríguez, 1986 (Crustacea: Decapoda: Brachyura: Parthenopidae). Raffles Bull. Zool. 6: 121–167.

Targioni Tozzetti, A. (1877). Crostacei Brachiuri e Anomouri. Zoologia del Viaggio Intorno al Globo della R. Piorocorvetta Magenta durante gli anni 1865–68. Pubblicazioni del R. Istituto di Studi Superiori Pratici e di Perfezionamento in Firenze. Sez. Sci. Fisi. Nat. 1: xxix+257, 13 pls. (In Italian).

Tirmizi, N. M., Kazmi, Q. B. (1988). Marine fauna of Pakistan: 4. Crustacea: Brachyura (Dromiacea, Archeobrachyura, Oxystomata, Oxyrhyncha). BCCI Found. Chair, Inst. Mar. Sci., Univ. Karachi, Publ. 1: 1–244, 2 frontispieces, 2 pls.

White, T. (1847). Descriptions of a new genus and five new species of Crustacea. Appendix. No. VIII. In: Narrative of the Surveying Voyage of H. M. S. Fly, commanded by Captain F. P. Blackwood, R. N. in Torres Strait, New Guinea, and Other Islands of the Eastern Archipelago during the Years 1842–1846: together with an Excursion into the Interior of the Eastern Part of Java by J. Beete Jukes, M. A. F. G. S. London 2: 335–338, pl. 2.

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