

Records of Crabs (Crustacea, Decapoda, Brachyura) from the Northern South China Sea off Hong Kong and Taiwan Collected by the RV *Hakuho Maru* (KH-73-2 Cruise)

Masatsune Takeda

Department of Zoology, National Museum of Nature and Science,
4-1-1 Amakubo, Tsukuba, Ibaraki 305-0005, Japan
E-mail: takeda@kahaku.go.jp

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Abstract Crabs collected from the northern South China Sea by the RV *Hakuho Maru* during her KH-73-2 cruise were studied. All the specimens collected were not always brought to the National Museum of Nature and Science, Tokyo, but the results of the identification of the preserved specimens, viz. 15 species of 9 families, will contribute to the knowledge of the carcinological fauna of the northern South China Sea. Some poorly known species are taxonomically noted, with photographs.

Key words: Offshore crabs, northern South China Sea, West Pacific.

Introduction

The main purpose of the KH-73-2 cruise of the RV *Hakuho Maru* was to collect the larvae of Japanese eel, *Anguilla japonica* Temminck & Schlegel, in the South China Sea. The researchers and specialists of other fields working not only in the biology of benthos and fishes but also the calibration of salinity, temperature and depth instruments and the physical studies of bottom boundary layers participated in the cruise. The benthic animals were collected by a 3 m span beam-trawl at 2 stations on the deep-sea shelf of bathyal depths (900, 1700 m), two in the abyssal depths (3450, 4200 m), and 6 stations on and around the continental shelf (55–420 m) in the northernmost part of the South China Sea. The track chart (Fig. 1) is cited from *Preliminary Report of the Hakuho Maru Cruise KH-73-2* published by the Ocean Research Institute (now, Atmosphere and Ocean Research Institute, Uni-

versity of Tokyo.

As for the crab catches, only a part of the specimens was brought to the National Science Museum (now, National Museum of Nature and Science), Tokyo, for identification through the late Prof. M. Horikoshi of the Ocean Research Institute. As mentioned later in the general discussion, the sampling stations positive to crabs were 6 (stations 36, 41, 43-1, 43-2, 44-1 and 44-2), but no specimens from the stations 44-1 and 44-2 are kept in the collections of the National Museum of Nature and Science, Tokyo. The four stations are recorded in Table 1.

All the specimens preserved in the National Museum of Nature and Science, Tokyo (NSMT) are recorded in this paper. They were referred to 15 species of 9 families. In the following lines, the carapace breadth and length are abbreviated as cb and cl, respectively.

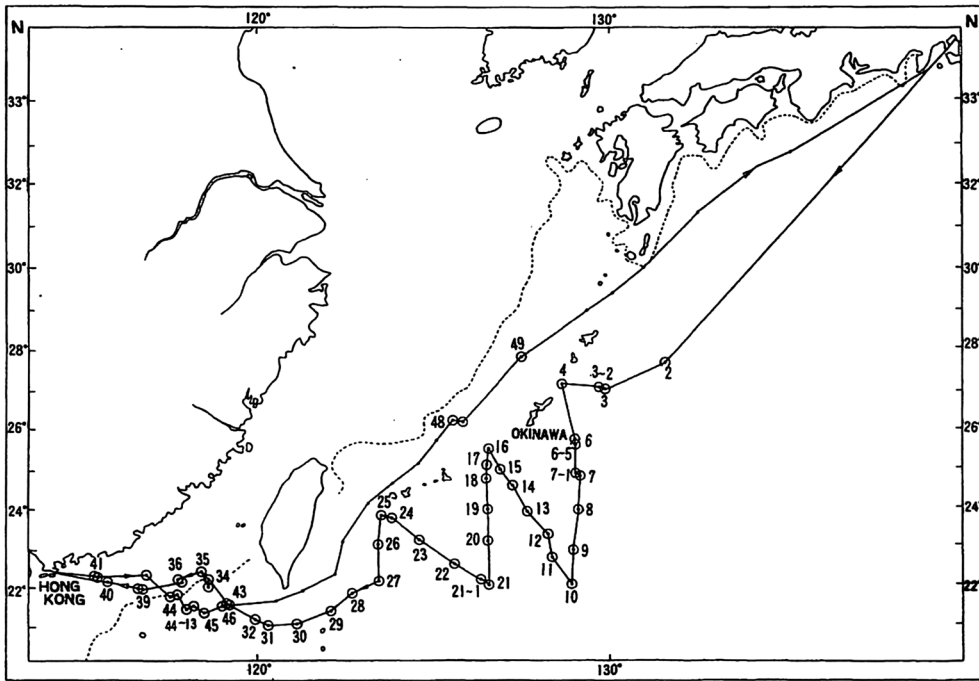


Fig. 1. Track chart of the RV *Hakuho Maru* cruise KH-73-2, cited from *Preliminary Report of the Hakuho Maru Cruise KH-73-2*.

Table 1. Trawling stations for crabs recorded in this paper.

Station	Position	Depth	Date
36	22°08.3'N, 117°44.6'E	80–80m	10–III–1973
41	22°15.3'N, 115°28.2'E–22°15.7'N, 115°28.9'E	55–55m	18–III–1973
43-1	21°48.8'N, 117°00.0'E–21°50.1'N, 117°01.6'E	145–150m	18–III–1973
43-2	21°45.8'N, 117°21.8'E–21°46.9'N, 117°23.4'E	282–290m	18–III–1973

Taxonomic Records of the Species

Family LATREILLIDAE Stimpson, 1858

Genus *Latreillia* Roux, 1830

Latreillia valida De Haan, 1839

Material examined. KH-73-2, St. 36, 80–80m deep, 1 young ♂ (cb 4.5 mm, cl 7.2 mm without rostral spines), NSMT–Cr 26692.

St. 43-2, 282–290m deep, 1 ♂ (cb 6.5 mm, cl 8.6 mm without rostral spines), NSMT–Cr 26693.

Remarks. Williams (1982) established a new genus *Eplumura* distinct from the type genus

Latreillia Roux, 1830, in the family Latreillidae, and described all the species of both genera, with fine figures. *Latreillia valida*, one of five congeneric species having the propodus of the last subdorsal leg fringed with plumose setae, is not uncommon in the West Pacific as the deeper inhabitant than *Eplumura phalangium* (De Haan, 1839), one of two *Eplumura* species lacking the plumose setae along both margins of the propodus of the last subdorsal leg.

Distribution. Known from northern Japan to the South China Sea and off Timor, and doubtfully from the southeast coast of Africa. The recorded bathymetric range is from 62 to 304 m.

Family CALAPPIDAE De Haan, 1833

Genus *Cycloes* De Haan, 1837

Cycloes granulosa De Haan, 1837

Material examined. KH-73-2, St. 36, 80–80m deep, 1 ♀ (cb 19.2mm, cl 19.7mm), NSMT-Cr 26694.

Remarks. The carapace shape of this species is different from those of the *Calappa* species, but the tubercles at bases of the right fingers indicate strong relation to the genus *Calappa*. Another representative of the genus *Cycloes*, *C. marisrubri* Galil & Clark, 1996, differs from this species in having the strong radiating ridge with large granules on the carapace, the presence of a

strong tubercle at the outer surface of the cheliped carpus, the bifid upper margin of the carpus, and two knobbed tubercles close to the lower margin of the palm.

Distribution. Known from the West Pacific from Japan to Singapore (Takeda and Manuel-Santos, 2006; Yang *et al.*, 2015; Takeda *et al.*, 2019), 30–100m deep.

Family MATUTIDAE De Haan, 1835

Genus *Izanami* Galil & Clark, 1994

Izanami curtispina (Sakai, 1961)

(Fig. 2A–B)

Material examined. KH-73-2, St. 36,

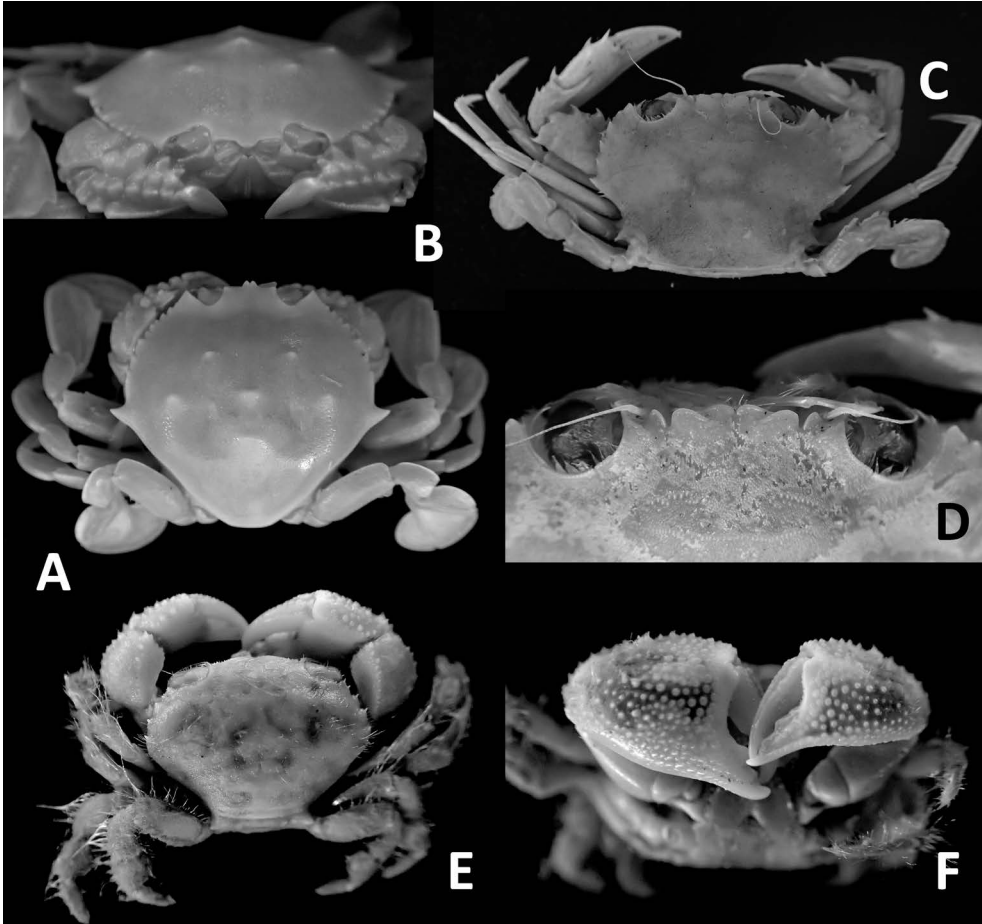


Fig. 2. A–B: *Izanami curtispina* (Sakai, 1961). Male (NSMT-Cr 26695; cb 16.1 mm, cl 14.1 mm). C–D: *Charybdis hongkongensis* Shen, 1934. Female (NSMT-Cr 26703; cb 27.0 mm, cl 19.3 mm). E–F: *Actumnus forcigerus* Stimpson, 1858. Male (NSMT-Cr 26710; cb 12.5 mm, cl 8.9 mm).

80–80 m deep, 1 young ♂ (cb 16.1 mm, cl 14.1 mm), NSMT–Cr 26695; 4 young ♂♂ (cb 10.5 mm, cl 9.5 mm—cb 15.1 mm, cl 13.2 mm), 6 young ♀♀ (cb 10.5 mm, cl 9.5 mm—cb 14.2 mm, cl 12.9 mm), NSMT 26696; 25 juvs, NSMT–Cr 26697.

St. 43–1, 145–150 m deep, 4 young ♀♀ (cb 11.5 mm, cl 10.1 mm—cb 15.5 mm, cl 13.4 mm), 10 juvs, NSMT–Cr 26698.

Remarks. The genus *Izanami* erected by Galil and Clark (1994) is most remarkably differentiated from the well-established *Matuta* Weber, 1795, in having the almost rudimentary lateral teeth of the carapace. The type species is *Matuta inermis* Miers, 1884, and another congeneric species is *M. curtispina* Sakai, 1961. Both species are without doubt close to each other, but readily distinguished from each other by the carapace seemingly narrower in *I. inermis* than *I. curtispina*. Galil and Clark (1994) enumerated some differences in the carapace surface, the penultimate segment of the male abdomen, the first to third ambulatory propodi, and the first male pleopod.

Distribution. Known from Japan (Sagami Bay, off Aichi Pref., off Yakushima I., 35–150 m), East and South China Seas (110–160 m deep), Arafura Sea, and Madagascar.

Family LEUCOSIIDAE Samouelle, 1819

Genus *Tokoyo* Galil, 2003

Tokoyo eburnea (Alcock, 1895)

Material examined. KH–73–2, St. 43–1, 145–150 m deep, 1 ovig. ♀ (cb 14.1 mm, cl 14.0 mm), NSMT–Cr 26699.

Remarks. This species long known as *Randallia eburnea* has been transferred to the new genus *Tokoyo* by Galil (2003) as the type species, with another congeneric new species, *T. cirrata*. The third species, *T. trilobata* described by Komatsu *et al.* (2005) is reduced to the junior synonym of *T. eburnea*. The distal part of the first male pleopod is, as figured by Takeda (1973: Fig. 3e, f), Galil (2003: Fig. 4D–F) and Komatsu *et al.* (2005: Fig. 7d, e), directed medially at right

angle.

Distribution. From Japan to the Andamans and the Laccadive Sea through the West Pacific localities and Australia, 35–366 m deep.

Family INACHIDAE MacLeay, 1838

Genus *Achaeus* Leach, 1817

Achaeus curvirostris

(A. Milne–Edwards, 1873)

Material examined. KH–73–2, St. 43–1, 145–150 m deep, 1 ♂ infested by a small *Sacculina* (cb 6.0 mm, cl 11.7 mm without rostral spines), NSMT–Cr 26700.

Remarks. In the specimen at hand, all the chelipeds and ambulatory legs are missing, but the carapace is characteristic in having the long neck, the tuberculate mesogastric and cardiac regions, the preorbital and supraorbital spines. The carapace examined agrees well with the photographs of a male from Nakagusuku Bay, Okinawa Island given by Takeda *et al.* (2019). According to Griffin and Tranter (1986). *Stenorhynchus fissiformis* Haswell, 1879, *Achaeus tenuicollis* Miers, 1886, and *A. elongatus* Sakai, 1938 are synonymous with this species.

Distribution. From Japan to Australia and New Zealand, and further to the western Indian Ocean, 3–165 m deep.

Genus *Cyrtomaia* Miers, 1886

Cyrtomaia suhmi Miers, 1886

Material examined. KH–73–2, St. 43–2, 282–290 m deep, 3 young ♂♂ (cb 7.9 mm without lateral spines, cl 77 mm without pseudorostral spines—cb 10.5 mm, cl 9.4 mm), NSMT–Cr 26701.

Remarks. All the three specimens examined are young, with the comparatively shorter, straight and weakly divergent protogastric spine, agreeing with the photographs given by Guinot and Richer de Forges (1982: Pl. 5 figs. A–D). This species is otherwise well explained and illustrated by Griffin and Brown (1976), Guinot and Richer de Forges (1986), and Griffin and

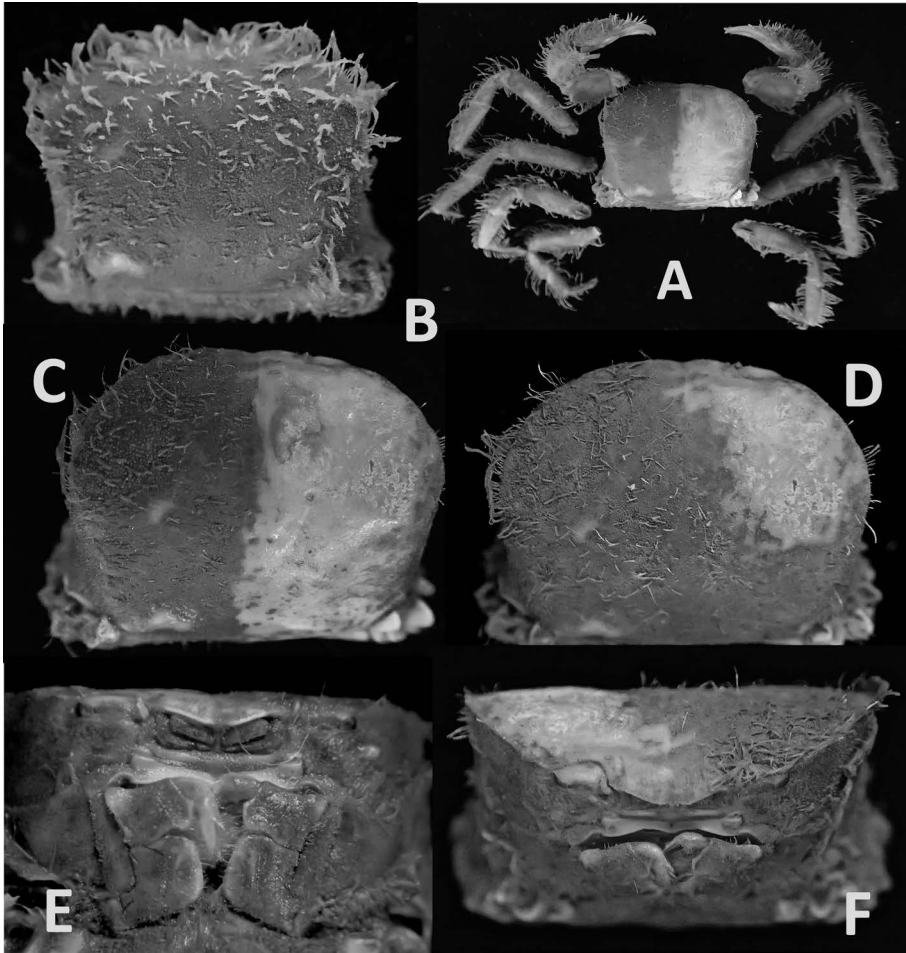


Fig. 3. *Cryptolutea sagamiensis* (Sakai, 1935). A–F: Female (NSMT–Cr 26712; cb 15.8 mm, cl 12.7 mm).

Tranter (1986). The keys to the species prepared by Guinot and Richer de Forges (1982) and Griffin and Tranter (1986) are based on the characters such as the cylindrical or flattened antennule (cylindrical in *C. suhmi*), presence or absence of the preocular spine (absent in *C. suhmi*), presence or absence of the intercalated spine (absent in *C. suhmi*), the divergent or subparallel pseudo-rostral spines (divergent in *C. suhmi*), and the smooth or granulated surface of the carapace (smooth in *C. suhmi*). In Japanese waters this species is known as *C. curviceros* Bouvier, 1915, which was originally described from Japan as the subspecies of *C. suhmi* and later raised to the specific rank by Sakai (1976) who dealt with the

specimens from Tosa Bay, Japan.

Distribution. Japan, Philippines, Indonesia, Australia, Bay of Bengal and India, 120–910 m deep.

Genus *Glypachaeus* Alcock, 1895

Glypachaeus hyalinus

(Alcock & Anderson, 1894)

Material examined. KH-73-2, St. 43-1, 145–150 m deep, 1 ♂ (cb 6.0 mm without lateral spines, cl 10.5 mm without rostral spines), NSMT–Cr 26702.

Remarks. This extremely spiny, distinctive species was described by Alcock and Anderson

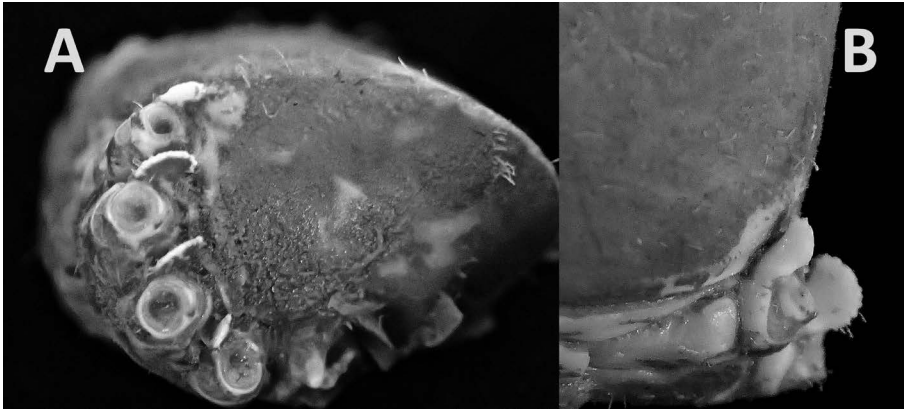


Fig. 4. *Cryptolutea sagamiensis* (Sakai, 1935). A–B: Female (NSMT–Cr 26712; cb 15.8 mm, cl 12.7 mm), showing coxal plates of ambulatory legs.

(1894, as *Achaeus*), and later recorded by Alcock (1895), Griffin (1974, 1976), Griffin and Tranter (1986), Serène and Vadon (1981), and Takeda and Marumura (1995). The second species, *G. tenuicollis* was described by Takeda (1978) from off Iriomote Island, southern Ryukyu Islands, and as mentioned by Griffin and Tranter (1986), the differences of both species are distinct as for not only the shape and armature of the carapace and rostrum, but also the first male pleopod. The carapace of *G. tenuicollis* is apparently narrower than *G. hyalinus*.

Distribution. Known from the Indian Ocean (off Mombasa, Kenya; Gulf of Aden; off Sri Lanka), and the West Pacific (Timor; off Luzon, Philippines; South China Sea; Kii Penin., Japan), 50–175 m deep.

Family PORTUNIDAE Rafinesque, 1815

Genus *Charybdis* De Haan, 1833

Subgenus *Goniohellenus* Alcock, 1899

Charybdis (Goniohellenus) hongkongensis

Shen, 1934

(Fig. 2C–D)

Material examined. KH-73-2, St. 41, 55–55 m deep, 1 ♀ (cb 27.0 mm with lateral teeth, cl 19.3 mm), NSMT–Cr 26703; 1 young ♂ (cb 21.8 mm, cl 14.6 mm), 1 young ♀ (cb 10.6 mm, cl 7.8 mm), NSMT–Cr 26704.

Remarks. This species is generally close to *Charybdis (Goniohellenus) truncata* (Fabricius, 1798), as correctly pointed in the original author and by Leene (1938). In both species the arrangement of six frontal lobular teeth is distinctive; the median pair is subtruncated, not produced forward, and separated by a small V-shaped notch and the following fused longitudinal furrow; the submedian pair is slightly wider than the median pair, anteriorly just attained to the level of median pair, and its outer margin is longitudinal, and the anterior margin is convex and retreated toward the base of the median pair; the lateral pair is distinctly isolated from the submedian pair by a deep, narrow U-shaped sinus, with rounded tip. The shape of the frontal lobes may be somewhat variable, and not always useful to distinguish *Ch. truncata* and *Ch. hongkongensis*. In *Ch. hongkongensis*, however, the last anterolateral tooth of the carapace is more prominent and always exceeds the tip of the fourth anterolateral tooth.

Distribution. Hongkong (Shen, 1934); Banda Sea, 397 m deep (Leene, 1938); Andaman Sea, 29–60 m deep (Stephenson and Rees, 1967); Sunda Strait, 35–49 m deep, Marura Strait, 15–44 m deep, west of Malay Peninsula (Stephenson, 1972); Coasts of China (Dai *et al.*, 1986; Dai and Yang, 1991).

Genus *Libystes* A. Milne-Edwards, 1867

Libystes edwardsi Alcock, 1899

Material examined. KH-73-2, St. 41, 55–55 m deep, 1 young ♂ (cb 7.0 mm, cl 4.5 mm), NSMT-Cr 26705.

Remarks. The generic validity of two genera, *Libystes* A. Milne-Edwards, 1867 (type species: *L. nitidus* A. Milne-Edwards, 1867) and *Catoptrus* A. Milne-Edwards, 1870 (type species: *C. nitidus* A. Milne-Edwards, 1870), has not been established so long, but since some studies such as Serène (1966) and Stephenson (1975), they are considered to be distinct, with some peculiar characters such as the carapace shape and anterolateral armature, the third maxilliped and the male first pleopod. At present, *Libystes* and *Catoptrus* are known by six and five species, respectively (Ng *et al.*, 2008).

In the young male examined, both chelipeds, all the ambulatory legs and the left swimming leg are detached; the carapace is transversely oblong, the carapace anterolateral margin is regularly convex with five or six small teeth of variable sizes behind the similar tooth at the external orbital angle. Even if the number of the carapace anterolateral teeth may be variable individually, but in this species the teeth are always distinct and their number is larger than in the other species. The specimen examined is keyed out to *L. edwardsi* in a key to all the *Libystes* species made by Stephenson (1975).

Distribution. This species ranges from Japan (Sakai, 1976) through the Southeast Asia and the Andamans to the Iranian Gulf (Alcock, 1899). 35–50 m deep.

Genus *Parathranites* Miers, 1886

Parathranites orientalis (Miers, 1886)

Material examined. KH-73-2, St. 43-2, 282–290 m deep, 1 young ♀ (cb 12.9 mm with lateral teeth, cl 9.8 mm), NSMT-Cr 26706.

Remarks. The detailed records with fine figures were given by Miers (1886) as *Lupocyclus* (*Parathranites*), Sakai (1939, 1965, 1976), Bar-

nard (1950), Stephenson (1961), Takeda and Miyake (1968), and Dai and Yang (1981). The examined specimen is small, but readily identified as this species with the characteristic armature of the carapace anterolateral margin; four teeth with each tip directed forward along the anterolateral margin and the last tuberculate tooth directed laterally and curved forward at the tip.

Distribution. The records of occurrence are not always many, with wide biogeographical range from central Japan to eastern Australia and South Africa, and bathymetrical range from 59 to 300 m deep.

Family GONEPLACIDAE MacLeay, 1838

Genus *Carcinoplax* H. Milne-Edwards, 1852

Carcinoplax purpurea Rathbun, 1914

Material examined. KH-73-2, St. 41, 55–55 m deep, 1 ♂ (cb 23.1 mm, cl 16.7 mm), 1 ♀ (cb 29.0 mm, cl 21.8 mm), 1 young ♀ (cb 13.4 mm, cl 10.5 mm), NSMT-Cr 26707.

Remarks. This species was first illustrated by Sakai (1965b), and then extensively studied by Guinot (1989) and Castro (2007). Otherwise, some important contributions were published, with figures, by Sakai (1976), Chen (1984, 1998), Dai *et al.* (1986), Dai and Yang (1991), Hsueh and Huan (2002), and Takeda *et al.* (2019). In the larger specimens the carapace becomes to be rounded quadrate somewhat similar to that of *Carcinoplax longimana* (De Haan, 1833), but the inner surface of both chelipeds are unarmed, differing from the chelipeds of *C. longimana* armed with a strong tubercle.

In life, the carapace is pale whitish purple, with a dark longitudinal band from the front to the median part of the posterior carapace margin. In the specimens long preserved in spirit the color pattern was remained.

Distribution. West Pacific from Japan to Indonesian waters, 17–180 m deep.

Family XANTHIDAE MacLeay, 1838
 Genus *Nanocassiope* Guinot, 1967
Nanocassiope granulipes (Sakai, 1939)

Material examined. KH73–2, St. 43–2, 282–290 m deep, 1 ovig. ♀ (cb 4.6 mm, cl 3.3 mm), NSMT–Cr 26708.

Remarks. This small species known as one of six *Nanocassiope* species since Guinot (1967) has been recorded by Sakai (1939 as *Heteropanope*; 1965 as *Micropanope*; 1976 as *Nanocassiope*), Takeda and Miyake (1968), and Takeda and Komatsu (2018). The carapace dorsal surface is minutely granulated, with the regions indicated by linear furrows, and four anterolateral teeth are distinct and subtriangular. The chelipeds are massive and covered with conical and sharp serrated granules or small tubercles, with the sharp tips of the fingers. These external characters indicate that the generic position of the species is in *Nanocassiope* Guinot, 1967, or *Alainodaeus* Davie, 1992. In these and some related genera the first male gonopods are characteristic and of generic importance. In this ovigerous female, the first anterolateral tooth is well developed and similar to the following three teeth, indicating the generic position of the species closer to *Nanocassiope* rather than *Alainodaeus*.

Distribution. Hitherto known from Sagami Bay, the Ogasawara Islands, Tosa Bay, and the East China Sea, with a doubtful record from South Africa by Serène (1964), 30–120 m deep. The known geographic and bathymetric ranges were extended south to the northern South China Sea and 290 m deep, respectively.

Family PILUMNIDAE Samouelle, 1819
 Genus *Actumnus* Stimpson, 1858
Actumhus forficigerus Stimpson, 1858
 (Fig. 2E–F)

Material examined. KH–73–2, St. 36, 80–80 m deep, 3 ♂♂ (cb 10.2 mm, cl 7.6 mm—cb 11.6 mm, cl 8.5 mm), 1 ovig. ♀ (cb 7.0 mm, cl 5.6 mm), NSMT–Cr 26709.

St. 43–1, 145–150 m deep, 1 ♂ (cb 12.5 mm, cl 8.9 mm), NSMT–Cr 26710; 1 young ♂ (cb 7.4 mm, cl 6.0 mm), 1 ovig. ♀ (cb 13.8 mm, cl 10.4 mm), NSMT–Cr 26711.

Remarks. As mentioned by Takeda and Komatsu (2017) who described two new *Actumnus* species from the Ryukyu Islands, *A. forficigerus* is rather close to *A. squamosus* (De Haan, 1835) than *A. setifer* (De Haan, 1835) in the general appearance of the carapace. The carapace of *A. forficigerus* is, however, less convex with the dorsal regions poorly defined and covered with velvety tomentum mixed with long silky hairs. The outer surface of the cheliped palm is covered with relatively smaller granules or tubercles, with the larger granules each tipped with a strongly procurved, horny spinule.

Distribution. From Japan (Sagami Bay to Amami–Oshima Island) and the East China Sea, 35–200 m deep. The geographic range was extended south to the northern South China Sea.

Genus *Cryptolutea* Ward, 1936
Cryptolutea sagamiensis (Sakai, 1935)
 (Figs. 3–5)

Material examined. KH–73–2, St. 41, 55–55 m deep, 1 ♀ infested by a small *Sacculina* (cb 15.8 mm, cl 12.7 mm), NSMT–Cr 26712.

Remarks. The female specimen at hand was compared with the following specimens identified as *Cryptolutea sagamiensis* (Sakai, 1935). — A male (cb 24.3 mm, cl 19.0 mm), NSMT–Cr 6895, Uchinoura Bay, Kagoshima Pref., 18 May, 1969, coll. by Fac. Fish., Kagoshima Univ.; A female (cb 17.6 mm, cl 13.3 mm), NSMT–Cr 5048, Kagoshima Bay, 50–55 m deep, 8 Jan., 1994, coll. by M. Imajima and M. Takeda.

Cryptolutea sagamiensis has been repeatedly recorded by Sakai (1935, 1936, 1939, 1965, 1976) as a species of the genus *Ceratoplax*, without additional detailed description and figures. The bulk of the specimens collected by the late Showa Emperor of Japan in Sagami Bay and recorded by Sakai (1965a) is at present accommodated in the Showa Memorial Institute, the

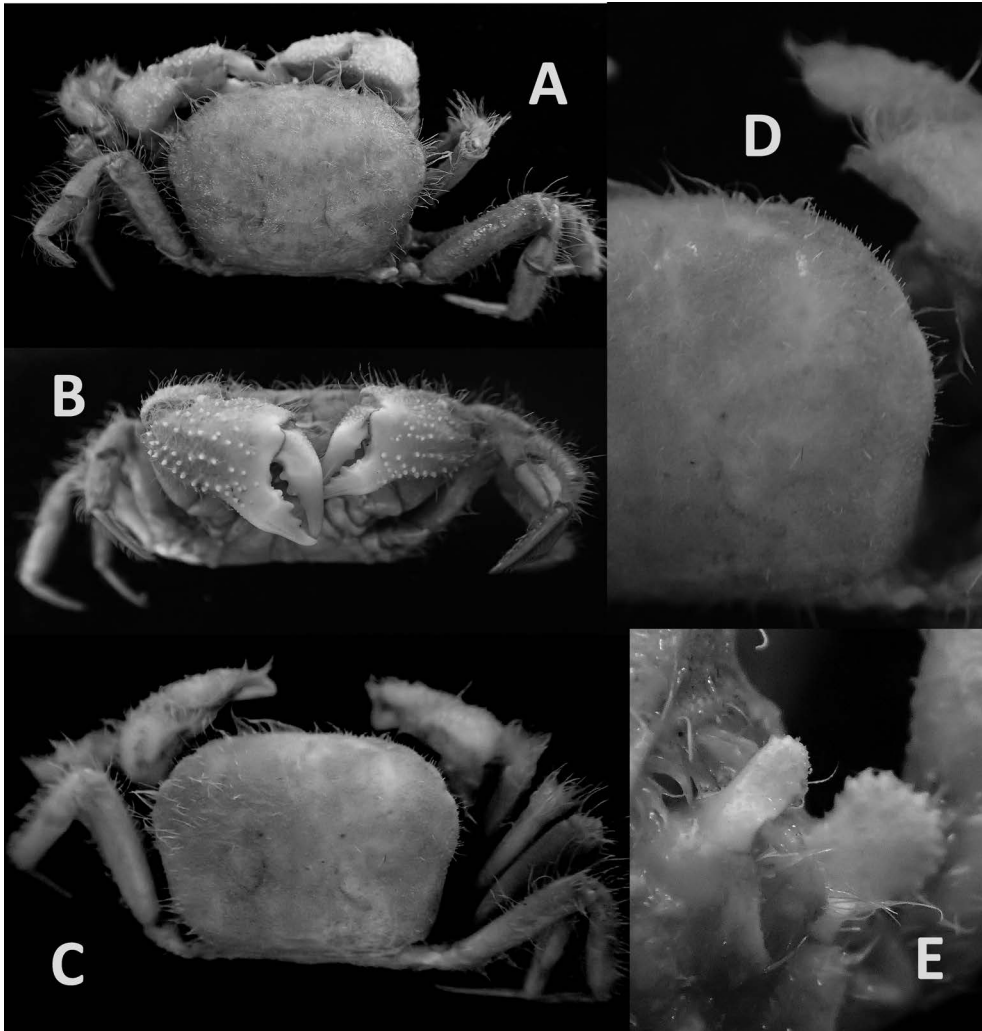


Fig. 5. *Cryptolutea sagamiensis* (Sakai, 1935). A–B, E: Male (NSMT–Cr 5048; cb 24.3 mm, cl 19.0 mm) from Kaohgsima Bay. C–D; Female (NSMT–Cr 6895; cb 24.3 mm, cl 19.0 mm) from Uchinoura Bay, Kagoshima Pref.

National Museum of Nature and Science, Tokyo, but there are no specimens identified as *Cerato-plax sagamiensis* in the collections.

In the specimens from Kagoshima, the carapace is entirely covered with hairs or setae of various lengths, making typical appearance of hairs in the *Pilumnus* species. However, the carapace is narrowly quadrate, with the flattened and ill-defined dorsal surface, and the anterolateral margin is convex, bluntly crested and divided into four obscure lobes. It is remarkable that each

ambulatory coxa is equipped with a wing-like plate, the presence of which is the most important criteria of the genus *Cryptolutea*.

The South China Sea specimen has the carapace contour and anterolateral armature similar to the Kagoshima specimens, but the carapace dorsal surface is densely pubescent just like the figure of *Heteropilumnus sasekumani* (Serène, 1971) given by the original author (1971) and Ng and Davie (1991). However, the different appearance of the pubescent hairs may be due to the

muddy bottom condition. It is difficult to find the definite specific difference as for the frontal, orbital and anterolateral armature, the chelipeds, the ambulatory legs, and the coxal pectinated plates of the ambulatory legs, and thus the South China Sea specimen is identified as *Cryptolutea sagamiensis*. (Sakai, 1935).

Other than *C. sagamiensis*, the genus *Cryptolutea* includes *C. granulosa* (MacGilchrist, 1905), *C. lindemanensis* Ward, 1936 (type species), *C. teschi* (Serène, 1971) and *C. arafrensis* Davie & Humpherys, 1997. Of them *C. granulosa*, *C. teschi* and *C. arafrensis* are distinctive in the granulation and sculputure of the carapace dorsal surface and the lobate anterolateral lateral margin of the carapace, but the type species, *C. lindemanensis* from Lindeman Island, Whitsunday Passage, ME Queensland, Australia, was poorly known until the re-description of the holotype by Ng and Davie (1991). The re-description and figures of the holotype seem to be thorough, but at present it is quite difficult to find the specific differences between *C. lindemanensis* and *C. sagamiensis* as far as the descriptions concerned. It is highly probable that both names are synonymous with each other and *Cryptolutea sagamiensis* (Sakai, 1935) prior to *C. lindemanensis* Ward, 1936 is available as the valid name.

Distribution. *Cryptolutea sagamiensis* was known from Sagami and Tosa Bays, 30–95 m deep, and recorded at present from Kagoshima and the northern South China Sea, 50–55 m deep. *Cryptolutea lindemanensis* was described on six males and ten females from tidal zone of Lindeman Island, Whitsunday Passage, ME Queensland, Australia.

Genus *Serenepilumnus* Türkay & Schuhmacher, 1985

Serenepilumnus velasquezi (Serène, 1971)
(Fig. 6)

Material examined. KH-73-2, St. 36, 80–80 m deep, 1 ♂ (cb 8.0 mm with lateral teeth, cl 6.3 mm), NSMT-Cr 26713; 1 ♂ (cb 5.5 mm,

cl 4.2 mm), NSMT-Cr 26714; 1 ♀ (cb 8.1 mm, cl 6.2 mm), NSMT-Cr 26715; 1 ♀ (cb 6.8 mm, cl 5.2 mm), NSMT-Cr 26716; 2 ♂♂ (cb 6.0 mm, cl 5.5 mm; cb 6.1 mm, cl 5.6 mm), 1 ♀ (cb 7.2 mm, cl 5.8 mm), 1 ovig. ♀ (cb 5.5 mm, cl 4.4 mm), NSMT-Cr 26717.

Remarks. The name of the new genus *Leopoldius* established by Serène (1971) to accommodate *Parapilumnus leopoldi* Gordon, 1934 (type species), *Pilumnus kuekenthali* De Man, 1902, and a new species, *L. velasquezi*, was preoccupied by the name of the dipteran insect, as indicated by Manning and Holthuis (1981), and subsequently, the replacement name *Serenepilumnus* was proposed by Türkay and Schuhmacher (1985). Another congeneric species is, as suggested by Davie (1989), *Halimede pisifer* MacLeay, 1838 (with two synonyms, *Pilumnus verrucosipes* Stimpson, 1858 and *Halimede delagoae* Barnard, 1954). All of these four species are small in size and covered with shaggy hairs on the carapace, with weakly divided carapace areolae.

In the short original description of *Leopoldius velasquezi* by Serène (1971), it is noted that the new species is intermediate between *Parapilumnus leopoldi* and *Pilumnus kuekenthali*, differing from them in the narrow carapace with sharper granulation on the carapace dorsal surface, and also the new species is distinguished from *P. kuekenthali* by the more deeply separated frontal lobes and the shorter movable finger.

The specimens at hand have been identified with the above short notes. The given photograph in the original description is of low quality, but shows the certain specific characters. The carapace is densely covered with shaggy hairs for the carapace, chelipeds and ambulatory legs; the hairs are generally arranged to show the carapace dorsal areolation, and the anterolateral three teeth are not spiniform, with long and flattened appearance.

Distribution. Originally described on a female from Puerto Galera, Mindoro, Philippines.

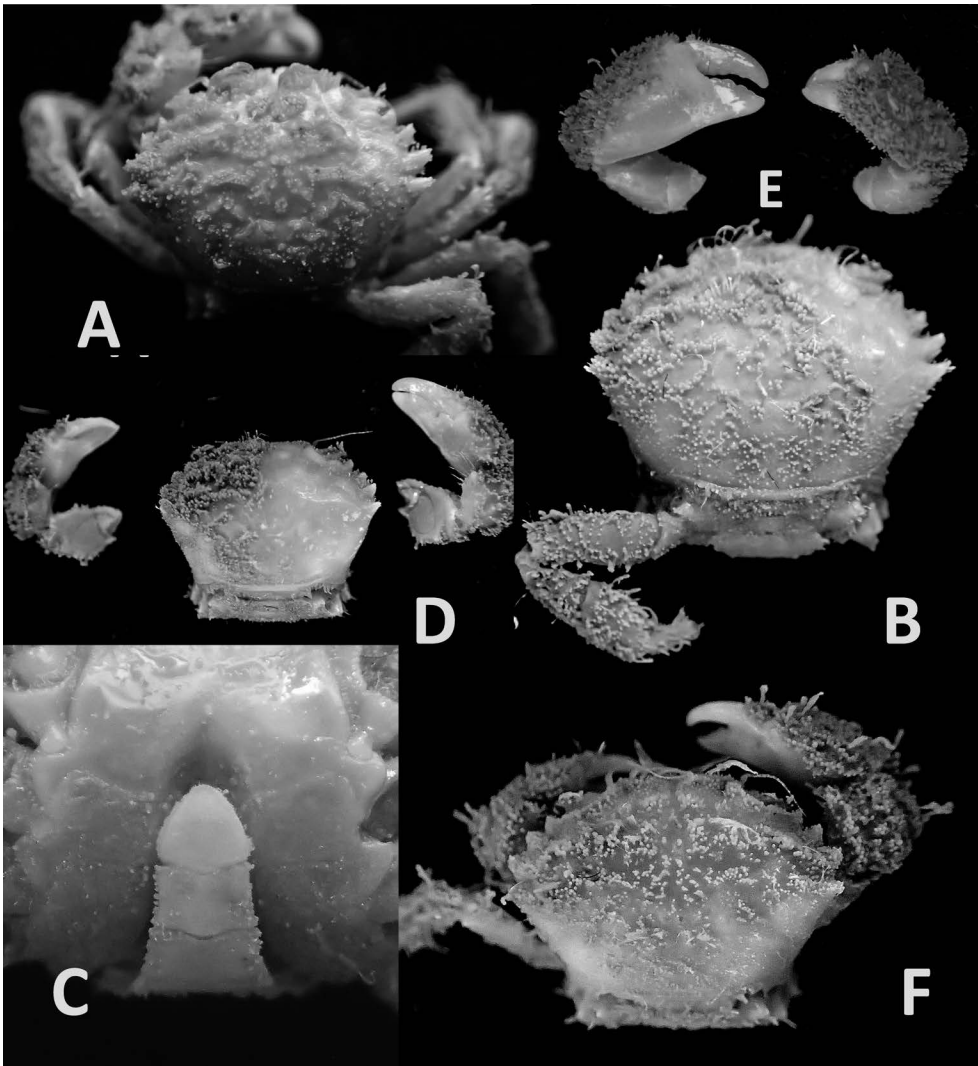


Fig. 6. *Serenepilumnus velasquezi* (Serène, 1971). A: Female (NSMT-Cr 26715; cb 8.1mm, cl 6.2mm). B-C: Male (NSMT-Cr 26713; cb 8.0mm, cl 6.3mm). D-E: Male (NSMT-Cr 26714; cb 5.5mm, cl 4.2mm). F: Female (NSMT-Cr 26716; cb 6.8mm, cl 5.2mm).

Discussion

The preliminary report of the RV *Hakuho Maru* cruise KH-73-2 has been published in 1974 by the Ocean Research Institute (now, Atmosphere and Ocean Research Institute), University of Tokyo (Preliminary Report of the *Hakuho Maru* Cruise KH-73-2: Western North Pacific Waters, adjacent to Ryukyu and Taiwan Islands, 78 pp.). In this schematic report, the list

of the catches of benthic animals was prepared by Yamamoto *et al.* (1974), but most of the crabs were tentatively identified only to the families. It is impossible to know the exact number of the species and individual, but their records are as follows. St. 36—XANTHIDAE 2 spp., CALAPPIDAE 1 sp., and LATREILLIDAE 1 sp.; St. 41—*Liagore rubromaculata*, *Lyreidus integrus*, LEUCOSIIDAE 1 sp., *Portunus* sp., *Thalamita* sp., MAJIDAE 1 sp., and GONEPLACIDAE 2 spp.; St. 43-1—PORTUNI-

DAE 1 sp., LEUCOSIIDAE 1 sp., MAJIDAE 1 sp., *Latreillia valida*, LATREILLIDAE 1 sp., and XANTHIDAE 1 sp.; St. 43–2—*Portunus* sp., and MAJIDAE 2 spp.; St. 44–1—MAJIDAE 1 sp.; St. 44–2—*Portunus* 2 spp., and XANTHIDAE 1 sp. As shown in the track chart (Fig. 1) and Table 1, two stations, 39 and 40, are on the continental shelf (77 and 95 m deep) off Hong Kong, and the other 6 stations are on and around the continental shelf (55–437 m deep) off Taiwan in the northernmost part of the South China Sea. According to the preliminary report recorded above, the crabs were obtained from the stations 36, 41, 43–1, 43–2, 44–1, 44–2, but no specimens from the last two stations are preserved in the National Museum of Nature and Science, Tokyo (NSMT).

The crab specimens preserved in the NSMT are not all of the collections, but it is worthy of noting because of few chances to get the specimens and to know the carcinological fauna of the South China Sea. They were referred to the following 15 species of 9 families.

- LATREILLIDAE — *Latreillia valida* De Haan, 1839
 CALAPPIDAE — *Cycloes granulatus* De Haan, 1837
 MATUTIDAE — *Izanami curtispina* (Sakai, 1961)
 LEUCOSIIDAE — *Tokoyo eburnea* (Alcock, 1895)
 INACHIDAE — *Achaeus curvirostris* (A. Milne-Edwards, 1873); *Cyrtomaia suhmi* Miers, 1886;
Glypachaeus hyalinus (Alcock & Anderson, 1894)
 PORTUNIDAE — *Charybdis hongkongensis* Shen, 1934;
Libystes edwardsi Alcock, 1899;
Parathranites orientalis (Miers, 1886)
 GONEPLACIDAE — *Carcinoplax purpurea* Rathbun, 1914
 XANTHIDAE — *Nanocassiope granulipes* (Sakai, 1939)
 PILUMNIDAE — *Actumnus forficigerus* Stimpson, 1858; *Cryptolutes sagamiensis* (Sakai, 1935);
Serenopilumnus velasquezii (Serène, 1971).

The important monographic works concerning the crabs from the sea adjacent to Hongkong and Taiwan are *Crabs of the China Seas* by Dai and Yang (1991) and *An annotated checklist of brachyuran crabs from Taiwan (Crustacea: Decapoda)* by Ng *et al.* (2001). Of 15 species recorded in this paper, the species recorded in these two works are only 5 species, *Latreillia valida*, *Cycloes granulosa*, *Tokoyo eburnea*,

Charybdis hongkongensis, and *Parathranites orientalis*. Of the remaining 10 species, *Izanami curtispina* and *Libystes edwardsi* are recorded by Ng *et al.* (2001) and Dai and Yang (1991), respectively. The remaining 8 species are unknown from the sea in question, meaning that the knowledge of offshore carcinological fauna still remains poor.

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