

NEW RECORDS AND NEW SPECIES OF HOMOLIDAE DE HAAN, 1839, FROM THE PHILIPPINES AND FRENCH POLYNESIA (CRUSTACEA: DECAPODA: BRACHYURA)

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ABSTRACT. – Studies of an extensive collection of homolid crabs obtained from various recent expeditions to the Central Philippines revealed the presence of two new species (*Latreillopsis mariveneae* and *Yaldwynopsis saguili*) and two new records (*Homola ikedai* and *Paromola macrocheira*). Eleven species are now known from the Philippines. The extensive material of many species previously regarded as rare allowed for the taxonomic reappraisal of several supposedly wide-ranging species, and as a result, two new species are described from French Polynesia (*Homola poupini* and *Yaldwynopsis guinotae*).

KEY WORDS. – Homolidae, Brachyura, new species, new records, Philippines, French Polynesia.

INTRODUCTION

Guinot & Richer de Forges (1995) published a revision of the Homolidae De Haan, 1839, of the world, in which they recognized 14 genera and 59 species. In the subsequent years, only a few changes in the systematics of the Pacific homolid fauna have taken place, although there have been various papers on their distribution and taxonomy (e.g. Ng & Huang, 1997; Tan et al., 2000; Ng & Wang, 2002; Ho et al., 2004). Most significantly, Ng (1998a) showed that the well-known genus *Hypsophrys* Wood-Mason & Alcock, 1891, was a junior homonym of a more senior fish name, and a replacement name, *Lamoha*, was proposed. Ng & Chen (1999) amended the taxonomy of two species, synonymising *Lamoha longirostris* (Chen, 1986) with *H. futuna* Guinot & Richer de Forges, 1995. Ng (1998b) also described a new species from the Central Pacific, *Lamoha hystrix*.

Most homolid crabs inhabit the deep sea (below 200 m) and many species have been regarded as rare, being represented by only few specimens. In fact, up to 1995, studies have been based primarily on the few specimens deposited in various museums from the great expeditions of the mid-19th to 20th century (e.g. CHALLENGER, SIBOGA, VALDIVIA, INVESTIGATOR, ALBATROSS, GALATHEA).

Since the beginning of the present millennium, extensive collections of many groups of deep sea crabs have been

obtained from fishermen on the Philippine island of Balicasag who use tangle nets set at depths varying from 200–600 m, often on steep reef slopes that cannot be effectively collected by any other sampling methods (see McLay & Ng, 2005). In 2004, the Muséum national d'Histoire naturelle (Paris), University of San Carlos (Cebu), National Museum of the Philippines (Manila) and the Raffles Museum of Biodiversity Research of the National University of Singapore, supported by the TOTAL Foundation and the ASEAN Regional Centre for Biodiversity and Conservation (Manila), undertook an unprecedented workshop at Panglao, Bohol, named PANGLAO 2004, designed specifically to evaluate the marine biodiversity of the area (Bouchet & Ng, 2004). This expedition-cum-workshop obtained a large series of specimens by diving, traps, trawling and dredging up to 400 m. This was followed by a deep sea cruise in the Bohol and Sulu Seas in 2005 (PANGLAO 2005) which trawled and dredged between 100 and 2,400 m (Richer de Forges et al., 2005).

Using these extensive collections from the Bohol Sea, we are now able to give a list of homolid species found there. This includes several new species of homolid crabs. Recently, however, Takeda & Manuel-Santos (2007) also reported on a number of new records of crabs from Balicasag Island in the Philippines, including new records of three homolid species, viz. *Moloha majora* (Kubo, 1936), *Lamoha murotoensis* (Sakai, 1979) and *Homolomannia oclusa*

Guinot & Richer de Forges, 1981, which were also found by us. Their new record of *H. dickinsoni* Eldredge, 1980, is here shown to be *H. ikedai* Sakai, 1979, instead. Their record of *Yaldwynopsis spinimanus* (Griffin, 1965) is also here referred to a new species, *Y. saguili*. All the species reported by Takeda & Manuel-Santos (2007) are represented in our collections.

Specimens examined have been deposited in the Crustacean Collection of the National Museum of the Philippines, Manila (NMCR); Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC); Wakayama Museum of Natural History, Japan (WMNH); National Science Museum, Tokyo, Japan (NSMT); Muséum national d'Histoire naturelle, Paris (MNHN); and Te Papa Museum, Wellington, New Zealand (NMNZ). Measurements provided are of the carapace length, from the posterior border to the base of the rostrum, by the largest width without spines respectively. The word 'station' is contracted to 'stn' and 'ovigerous' to 'ovig.'. The terminology used essentially follows that by Guinot & Richer de Forges (1995). For the synonymy, we have added only those that have appeared after Guinot & Richer de Forges (1995). For the sizes of the species, we have provided measurements only for some key specimens, those used in the figures, or of the new taxa described. For most of the described species, Guinot & Richer de Forges (1995) provides full information on the sizes of the various species.

TAXONOMY

HOMOLIDAE De Haan, 1839

Homola orientalis Henderson, 1888

(Fig. 1A)

Homola orientalis Henderson, 1888: 19, Pl. 2 Fig. 1, 1a (see Guinot & Richer de Forges, 1995: 331, for complete synonymy prior to 1995); Ikeda, 1998: 22, 60, 61; Tan et al., 2000: 182, 183; Ng et al., 2001: 6; Takeda & Manuel-Santos, 2007: 88, Fig. 3B.

Material examined. – **Philippines.** Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–500 m: Dec.2000: 2 males, 8 females (5 ovigerous) (ZRC 2001.0368); Jun.2002: 14 males, 12 females (7 ovigerous), 1 juvenile, 1 specimen with *Sacculina* (ZRC 2007.0122); 25–30 Jul.2003: 1 female (ZRC 2007.0123); Nov.2003–Apr.2004: 25 males, 11 females (8 ovigerous), 1 juvenile (ZRC 2007.0124), 1 male, 1 female (NMCR); stn PNI, 29 May 2004: 2 males, 4 females (3 ovigerous) (MNHN); 80–140m, coll. J. Arbasto, 2004–2005: 3 males, 1 ovig. female (NMCR). Maribohoc Bay, Panglao, coll. J. Arbasto, Nov.2003–Apr.2004: 6 males, 10 females (ovigerous), 1 juvenile (MNHN). PANGLAO 2004: Off Panglao and Balicasag Island, Bohol Sea: stn L42, Balicasag Island, 80–90 m, 9°31.2'N 123°40.7'E, 2 Jul.2004: 1 male (photographed) (ZRC 2007.0125); stn P3/4, ca. 100m, 9°31.1'N 123°41.5'E, 31 May 2004: 4 males, 6 females (5 ovigerous) (ZRC 2007.0126); stn T27, between Panglao and Pamilacan Islands, fine sand and mud with echinoderms, 106–137m, 9°33.4'N 123°51.0'E, 25 Jun.2004: 1 juvenile (ZRC 2007.0127); stn T35, between Libaong and Pamilacan, 172–182 m, 9°31.8'N 123°50.4'E, 3 Jul.2004: 1 female (ZRC 2007.0128). PANGLAO 2005: Bohol and Sulu Seas: no stn data: 1 female (ZRC 2007.0129); stn CP2332,

418–477 m, 9°38.8'N 123°45.9'E, 22 May 2005: 1 female (ZRC 2007.0130); stn CP2343, 273–302 m, 9°27.4'N 123°49.4'E, 23 May 2005: 2 males (45.4 × 35.5 mm, 18.4 × 14.9 mm), 1 ovig. female (33.1 × 26.2 mm), 1 juvenile (ZRC 2007.0131); stn CP2344, 128–155 m, 9°28.4'N 123°50.1'E, 23 May 2005: 3 males 1 juvenile (ZRC 2007.0132); stn CA2345, 276 m, 9°28.3'N 123°54.1'E, 23 May 2005: 3 males, 3 females (MNHN); stn 2349, off Pamilacan Island, 219–240 m, 9°31.6'N 123°55.7'E, 24 May 2005: 1 male (ZRC 2007.0133); stn CP2368, 316–318 m, 8°56.1'N 123°16.6'E, 27 May 2005: 1 female (crushed), 1 ovig. female (24.0 × 20.0 mm) (MNHN); stn CA 2373, 123 m, 8°42.4'N 123°13.4'E, 27 May 2005: 2 males, 4 females (MNHN); stn DW2402, 101–349 m, 9°30.8'N 123°41.5'E, 31 May 2005: 1 female (ZRC 2007.0134); stn CP2409, 257–269 m, 9°44.8'N 123°44.8'E, 1 Jun.2005: 1 male, 1 juvenile (ZRC 2007.0135).

Remarks. – This species is the most common homolid in the Indo-West Pacific in the upper bathyal area (Guinot & Richer de Forges, 1995) and the present series of specimens confirms this. The examined material from the Philippines fit well with the typical Pacific form recognised by Guinot & Richer de Forges (1995). As discussed by these authors, the taxonomy of *Homola orientalis* is still not settled and it is possible that we are dealing with a species complex. One male specimen is remarkable by its very large size – 45.4 × 35.5 mm (from stn CP2343, ZRC 2007.0131), but it is otherwise similar in form to the other specimens. It is the largest specimen of this species on record.

Homola ikedai Sakai, 1979

(Figs. 1B, 2)

Homola ikedai Sakai, 1979: 3, 4, colour frontispiece, Fig. 1, Fig. 1b, 3c; Guinot & Richer de Forges, 1995: 338 (part) (see Guinot & Richer de Forges, 1995: 338, for partial synonymy, restricted for Japan); Ikeda, 1998: 23, 66, 67.

Homola dickinsoni – Takeda & Manuel-Santos, 2007: 87, Fig. 3D (not *Homola dickinsoni* Eldredge, 1980).

Material examined. – **Japan:** 1 ovig. female (19.5 × 19.6 mm) (WMNH-Na-Cr. 0053), off Johgashima, Sagami Bay, Japan, 200–220m, coll. 13 Mar.1990.

Philippines: Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–500 m – Dec.2000: 1 ovig. female (ZRC 2001.0385); 28 Nov.2001: 3 males, 1 ovig. female (ZRC 2001.0544); 28 Nov.2001: 1 male, 1 ovig. female (NMCR); 25–30 Jul.2003: 1 male (32.6 × 30.1 mm), 1 female (ZRC 2007.0136); 9 Mar.2004: 1 male, 1 ovig. female (MNHN). Bohol and Sulu Seas, coll. Panglao 2005 Expedition: stn CP2354, 1,773–1,775 m, 9°26.0'N 124°06.5'E, 25 May 2005: 1 female (ZRC 2007.0137); stn CP2359, 437–443 m, 8°49.9'N 123°34.9'E, 26 May 2005: 1 male (29.9 × 27.8 mm) (photographed), 1 female (ZRC 2007.0138); stn CP2360, 357–372 m, 8°48.9'N 123°37.6'E, 26 May 2005: 1 female (16.5 × 16.2 mm) (ZRC 2007.0139); stn DW2365, 303–383 m, 8°58.3'N 123°20.8'E, 26 May 2005: 1 juvenile (MNHN); stn CP2368, 316–318 m, 8°56.1'N 123°16.6'E, 27 May 2005: 1 juvenile (MNHN); stn CP2384, 613–647 m, 8°46.2'N 123°16.14'E, 29 May 2005: 1 male (25.1 × 24.2 mm), 8 juveniles (ZRC 2007.0140); stn CP2394, 566–787 m, 9°28.6'N 123°40.0'E, 30 May 2005: 1 ovig. female (26.7 × 25.9 mm) (ZRC 2007.0141); stn CP2395, 434–532 m, 9°36.2'N 123°43.8'E, 31 May 2005: 2 females (17.3 × 16.4 mm, 17.4 × 16.2 mm) (ZRC 2007.0142); DW2364, 427 m, 9°00.7'N 123°25.5'E, 26 May 2005: 1 juvenile (MNHN).

Comparative material: *Homola dickinsoni* Eldredge, 1980: 1 female (dried) (35.6 × 31.1 mm) (ZRC 2001.0758), trap number 57, Anaë Island, Guam, 1,000 feet (304.8 m), coll. 16 Oct. 1975; 1 female (41.5 × 38.7 mm) (ZRC 1997.691, ex Bishop Museum 10479), trap 97, Double Reef Island, Guam, 800 feet (243.8 m), coll. 30 Nov. 1976. *Homola eldredgei* Guinot & Richer de Forges, 1995: 1 female (33.3 × 31.9 mm) (ZRC), off South Africa, coll. trawlers, 2005.

Description based on the Philippine specimens. – Surface regions of carapace well defined. Rostrum short, flat, superficially ending with a simple point, but on magnification, tip of rostrum has tiny fissure; 2 small pseudorostral spines with another small spine inserted just behind; with 1 supraorbital spine. Protogastric area with 3 well aligned spines; mesogastric area swollen, with 3 tubercles; 1 median tooth just above mesogastric area. First anterolateral spines stronger than other teeth, slightly divergent; limit between posterolateral border and dorsal carapace armed by 5 small spines of decreasing sizes. Subhepatic area inflated, with 4 spines. Posterolateral border of carapace smooth. Cardiac area

well defined. Basal antennae article short, wide, with distal border possessing 2 low projections. Eye peduncle short, cornea inflated with a subspherical cornea. Third maxilliped: ischium thin without spine, merus enlarged with a flat expanded external border.

Chelipeds densely covered with setae. Merus triangular with 3 rows of spines: 9 spines on upper border, 9 or 10 spines on internal lower border, 9 spines on external lower border. Carpus short, with a line of 4 spines on lower internal edge 4 or 5 spines on lower surface. Propodus short, inflated, densely covered with setae on all surfaces, with longer setae on inner surface. Dactylus thin, sharp. Fingers not pigmented.

Ambulatory legs long, thin with laterally compressed articles. Merus P2–P4 spines on upper border, smooth on lower border: P2 with 13 spines, P3 with 8 or 9 spines, P4 with 15 spines. Distal border of merus P2–P4 with a curved spine. P5 short, small, sub-dorsal, with sub-chelate propodus and dactylus; 3 spines present on lower border of merus, smooth on upper border.

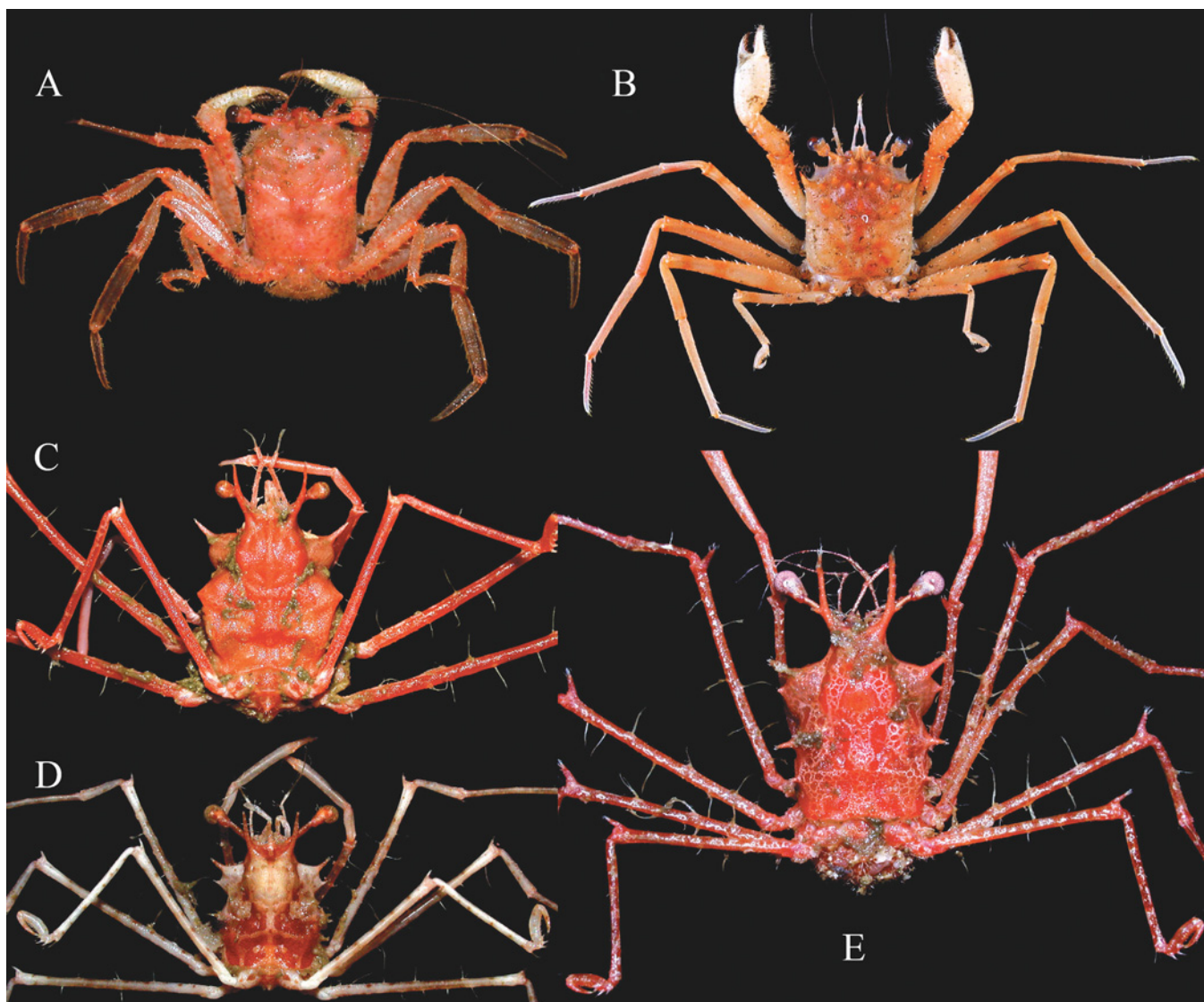


Fig. 1. Colours in life: A, *Homola orientalis*, ovig. female (21.5 × 17.2 mm) (ZRC 2007.0122); B, *Homola ikedai*, the Philippines, male (29.9 × 27.8 mm) (ZRC 2007.0138); C, *Latreillopsis bispinosa*, female (22.1 × 16.0 mm) (ZRC 2007.0149); D, *Latreillopsis tetraspinosa*, male (9.6 × 7.5 mm) (ZRC 2007.0161); E, *Latreillopsis mariveneae*, new species, holotype female (14.2 × 12.5 mm) (NMCR).

Remarks. – *Homola ikedai* Sakai, 1979, belongs to a group of *Homola* species having a quadrangular carapace shape with a strong anterolateral tooth. Other members of this group are *H. dickinsoni* Eldredge, 1980, *H. eldredgei* Guinot & Richer de Forges, 1995, and *H. coriolisi* Guinot & Richer de Forges, 1995.

Homola ikedai was described from Japan where it seems to be relatively rare (Sakai, 1979; Ikeda, 1998). The colour figure provided by Sakai (1979: frontispiece) shows the main characteristic of the species, viz. the long and slender legs, and the very strong, sharp and anteriorly directed anterolateral spine. Ikeda (1998) added more ecological notes on the basis of material from Sagami Bay in Japan, and also provided several good color pictures of freshly collected *H. ikedai*.

We have on hand a specimen of *H. ikedai* from Japan (Fig. 2A–C) and comparisons of this with the detailed type descriptions and figures of the species by Sakai (1979), as well as the extensive material from the Philippines lead us to believe that it is best to regard all this material as conspecific for the time being. However, the present material from the Philippines differs from those of Japan in the following aspects. All the known specimens from Japan are relatively smaller in size compared to those from the Philippines (CL < 25 mm vs. < 33 mm) and all have the anterolateral spines more divergent, i.e. they are directed more laterally (Fig. 2A, B vs. Fig. 2D, E). In Japanese *H. ikedai*, the posterolateral border is lined with four or five distinct spinules (Fig. 1B), although Sakai (1979) wrote 12 or 13 spinules. It seems likely that Sakai (1979) included all the

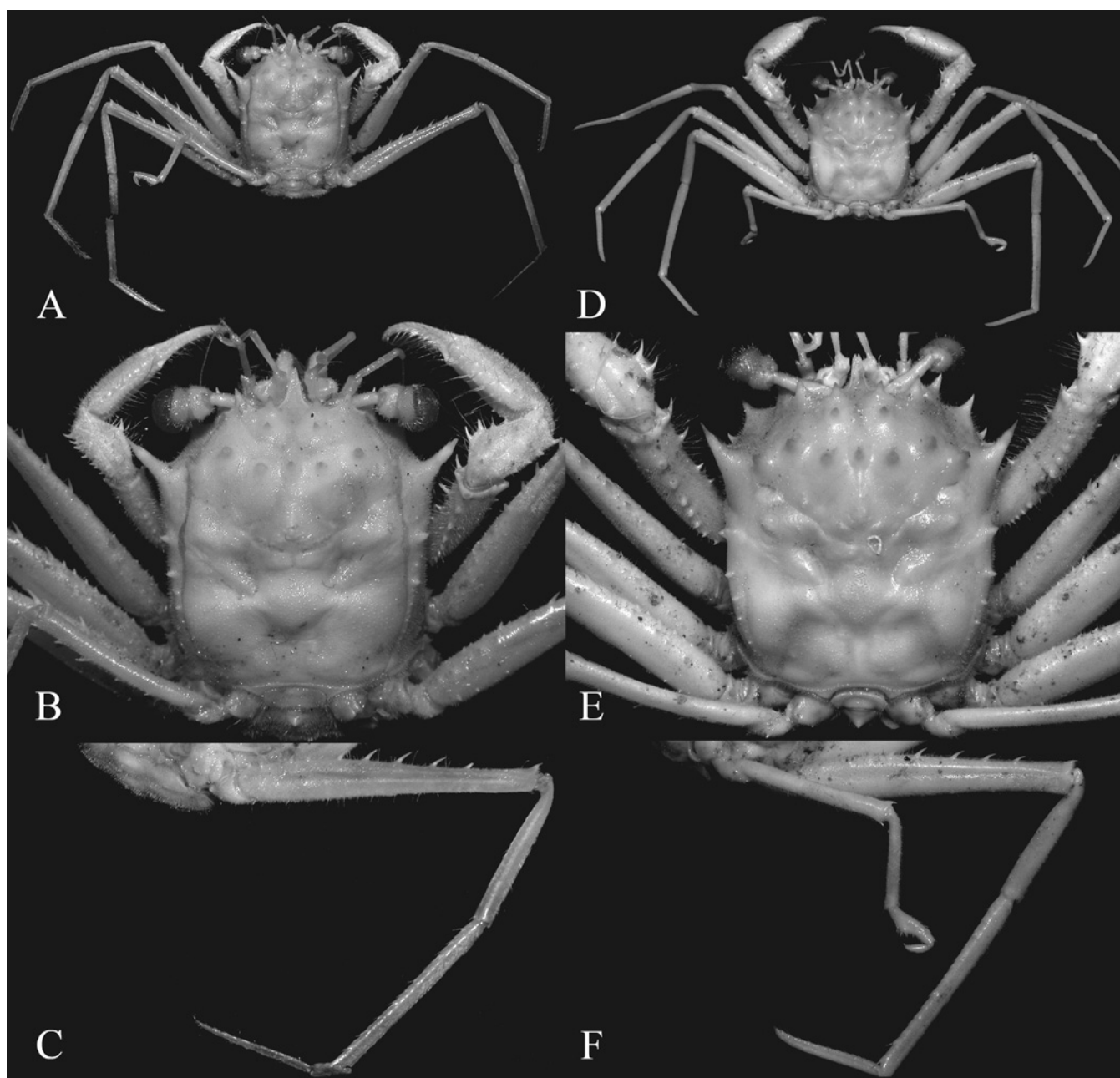


Fig. 2. *Homola ikedai*: A–C, female (19.5 × 19.6 mm) (WMNH-Na-Cr. 0053), Japan; D–F, male (29.9 × 27.8 mm) (ZRC 2007.0138), the Philippines. A, D, general dorsal view; B, E, dorsal view of the carapace; C, F, right P4s.

spinules on the side of the carapace, including very small ones and those on the subhepatic region. There are five to seven spinules on the posterolateral border of the specimens from the Philippines (Fig. 2E). On the upper border of the merus of P2-P4, Japanese *H. ikedai* have 7–10 strong spines (Fig. 2C) but there are 10 or 11 small spines in the specimens from the Philippines (Fig. 2F). The ambulatory legs of the two populations are distinct – those from Japan specimens taper more markedly towards the distal part, and appear relatively longer and more slender (Fig. 2C) than those from the Philippines (Fig. 2F). It is possible the Philippine specimens belong to a separate species, but until more characters can be found, the above differences do not seem sufficiently strong to warrant establishing a new taxon at this time.

We have on hand two topotypic specimens of *H. dickinsoni* from Guam and we are able to confirm the differences with the specimens of *H. ikedai* from the Philippines (misidentified as *H. dickinsoni* by Takeda & Manuel-Santos, 2007). Compared to *H. ikedai*, *H. dickinsoni* is a relatively larger species than *H. ikedai* (CL 25 mm vs. 38 mm), the rostrum is bifid (simple in *H. ikedai*), the meri of P3-P4 have the lower border possessing two rows of spines (without spines in *H. ikedai*), the lower border of P5 has four or five spines (three spines in *H. ikedai*), the merus of P5 is relatively shorter compared to *H. ikedai*, the carpus of the cheliped is relatively short and the surface spinous (carpus longer and with only few spinules in *H. ikedai*), and there are distinct spines along the inferior border of the cheliped in *H. dickinsoni* (no spines in *H. ikedai*). Takeda & Manuel-Santos (2007: 87) referred six specimens from Balicasag Island to *H. dickinsoni* but we disagree. The characters of the Japanese specimen, extensive present material (30 specimens), also from Balicasag and Panglao, as well as the figure of “*H. dickinsoni*” in Takeda & Manuel-Santos (2007: Fig. 3D) all suggest that it is best to refer the present Philippine material to *H. ikedai*. *Homola dickinsoni* was originally described from Guam by Eldredge (1980) and was re-described in Guinot & Richer de Forges (1995).

Compared to *H. ikedai*, *H. eldredgei* has a slightly bifid rostrum (simple in *H. ikedai*), the P5 merus is short, reaching just to the gastric grooves when articulated anteriorly (P5 merus relatively much longer, extending beyond the gastric grooves when articulated anteriorly), the lower border of meri of P2–P4 are spinulose all along the entire length (spinular only along the distal part in *H. ikedai*). *Homola ikedai* differs from *H. coriolisi* in having a simple rather than a bifid rostrum, and the lower border of the P4 merus smooth and unarmed whilst there are six or seven spines in *H. coriolisi*.

There are additional useful photographs of the holotypes of *H. eldredgei* and *H. coriolisi* in the recent catalogue of MNHN brachyuran types published (see Cleve et al., 2007).

Homola poupini, new species

(Figs. 3, 9D–F)

Homola ikedai – Guinot & Richer de Forges, 1995: 338, Figs. 9c, 11c–d, 12c, 13f (not *Homola ikedai* Sakai, 1979).

Material examined. – Holotype: male (21.3 × 18.5 mm) (MNHN-B16575), Tuamotu, Mururoa atoll, traps 350–360 m, French Polynesia, coll. Carsin, 1984. Paratype: 1 male (21.5 × 18 mm) (MNHN-B 22364), Marquesas Islands.

Description. – Carapace quadrangular. Rostrum simple. Spine disposition as follows: 2 pseudorostral spines with 2 smaller spines behind; 1 strong supra-ocular spine, same size as pseudorostrals; 3 protogastric spines are approximately aligned; 1 tooth median above mesogastric area; anterolateral spine very strong, sharp, diverging. Posterolateral border lined by a series of 6 small spines, decreasing in size posteriorly. Posterolateral border of carapace smooth. Subhepatic region inflated, bearing 5 spines, anterior 2 stronger, 3 small spines under subhepatic area. Cardiac area well defined. Basal antennal article short. Eye peduncle long, cornea sub-spherical. Third maxilliped relatively narrow. Chelipeds short, with long setae: merus triangular with a row of spines on each angle; 8 spines on upper angle, 7 spines on lower angle and 7 or 8 spines, not so well aligned, on inner angle; carpus with 3 long sharp teeth at inner angle; propodus short, inflated with rows of long setae.

Ambulatory legs long, slender: Merus of P2 with 5 spines on upper border, merus of P3 with 7 spines on upper border, merus of P4 with 10 spines on upper border and 6 little spines on inferior border. P5 short, thin: basis with 1 spine, merus with 3 spines on inferior border and 1 spine at upper distal end; carpus long, covered with setae, with 1 spine on distal end; propodus short, curved with numerous spines; dactylus sharp, propodus subchelate.

Etymology. – In honor of our colleague, Joseph Poupin, who through his many surveys, has obtained an excellent series of deep sea crustaceans from French Polynesia, including homolid crabs.

Remarks. – *Homola poupini*, new species, is closest to *H. ikedai* Sakai, 1979, with which it had been identified by Guinot & Richer de Forges (1995) when they examined the Poupin’s collection from Marquesas and Tuamotu. We have on hand the same two specimens identified as “*H. ikedai*” by Guinot & Richer de Forges (1995). Direct comparison of the two species, however, reveal three main differences, viz. the anterolateral spines are more distinctly divergent in *H. ikedai* than in *H. poupini*, new species (Fig. 2B, E vs. Fig. 3A, B); the spines on the anterolateral border of *H. poupini*, new species, are relatively stronger and more numerous (six spines) than in *H. ikedai* (two spines and some granules) (Fig. 3B vs. Fig. 2B, E); and on the inferior border of the merus of P4, there is a series of nine spines in *H. poupini*, new species (Fig. 3C) (only six little spines in *H. ikedai* (Fig. 2C, F)).

Moloha majora (Kubo, 1936)

Paromola majora Kubo, 1936: 63, Pl. 17 (see Guinot & Richer de Forges, 1995: 384, for complete synonymy prior to 1995); Ikeda, 1998: 24, 72, 73; Tan et al., 2000: 185, 186, Fig. 4; Ng et al., 2001: 6; Takeda & Manuel-Santos, 2007: 90, Fig. 9B.

Material examined. – **Philippines:** Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–500 m – 28 Nov.2001: 1 female (20.4 × 18.3 mm) (ZRC 2001.0551); Jun.2002: 3 males, 5 females (ZRC 2007.0143); Jul.2003: 1 male (33.3 × 29.2 mm) (ZRC 2007.0144); 2 Mar.2004: 2 males (MNHN); Nov.2003–29 May 2004: 2 males, 1 female (ZRC 2007.0145); coll. J. Arbasto, 2004–2005: 1 male (66.9 × 57.0 mm) (NMCR), 1 male (NMCR). Bohol and Sulu Seas, coll. Panglao 2005 Expedition: stn CP2332, 418–477 m, 9°38.8'N 123°45.9'E, 22 May 2005: 1 female (19.8 × 16.2 mm), (MNHN); stn CP2343, 273–302 m, 9°27.4'N 123°49.4'E, 23 May 2005: 2 males (ZRC 2007.0146); stn CP2372, Dipolog Bay, 255–301 m, 8°38.7'N 123°16.0'E, 27 May 2005: 1 female (ZRC 2007.0147).

Remarks. – *Moloha majora* (Kubo, 1936) was described from Japan (see Sakai, 1976) and has also been reported from Taiwan (Tan et al., 2000). Takeda & Manuel-Santos (2007) first recorded this species from the Philippines, also from Balicasag.

Latreillopsis bispinosa Henderson, 1888

(Fig. 1C)

Latreillopsis bispinosa Henderson, 1888: 22, Pl. 2 Fig. 3, 3a–c (see Guinot & Richer de Forges, 1995: 397, for complete synonymy prior to 1995); Tan et al., 2000: 185; Ng et al., 2001: 6.

Material examined. – **Philippines:** Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–500 m: Dec.2000: 1 female (ZRC 2001.0396); 4 Mar.2000, from L. Kirkendale: 1 male (ZRC 2007.0148); 28 Nov.2001: 5 males, 3 ovig. females (ZRC 2001.0550); Jun.2002: 2 males, 3 females (2 ovig.) (ZRC 2007.0149); Nov.2003: 2 females (1 ovig.) (ZRC 2007.0150); Dec.2003: 1 male, 1 female (ZRC 2007.0151); Mar.2004: 1 male (ZRC 2007.0152); 2 Mar.2004: 3 males, 2 females (1 ovig.) (MNHN); Apr.2004: 1 male, 1 broken specimen (ZRC 2007.0153); coll. J. Arbasto, 2004–2005: 2 males, 1 ovig. female (MNHN). Maribohoc Bay, coll. J. Arbasto, Nov.2003–Apr.2004: 2 males, 1 ovig. female, 1 juvenile (NMCR). PANGLAO 2004: Bohol Sea, 29 May 2004: 2 males, 3 ovig. females (ZRC 2007.0154); May.2004, Balicasag: 4 males 1 female (ZRC 2007.0155); Balicasag 2 males 2 females (1 ovig.) (ZRC 2007.0156); Jun.2004, stn T27: 1 female (MNHN); stn P1, Maribohoc Bay, 90–200 m, 9°36.1'N 123°45.0'E, 30 May.2004: 2 males (1 photographed) (ZRC 2007.0157); stn P3/4, ca. 100 m, 9°31.1'N 123°41.5'E, 31 May 2004: 2 males, 5 females (3 ovigerous) (ZRC 2007.0158); stn T2, Bolod, coarse sand, 152

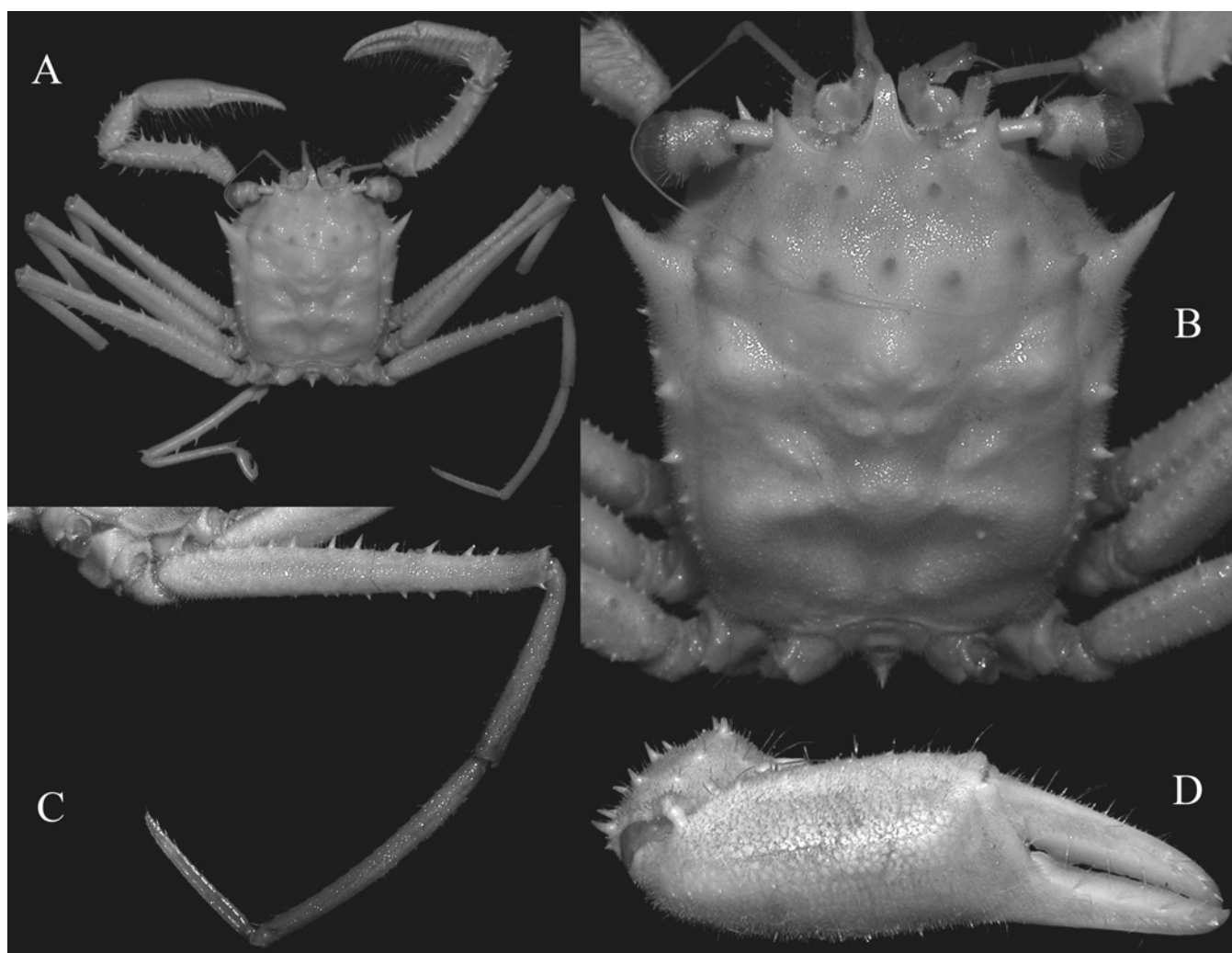


Fig. 3. *Homola poupini*, new species, holotype male (21.3 × 18.5 mm) (MNHN–B16575): A, general dorsal view; B, dorsal view of carapace; C, P4; D, outer surface of right cheliped.

m, 9°32.4'N 123°47.8'E, 31 May 2004: 1 male (MNHN); stn T26, Cortes, mud, 123–135 m, 9°43.3'N 123°48.8'E, 24 Jun.2004: 1 male, 1 female.(MNHN); stn T39, Cervera Shoal, muddy sand, 100–138 m, 9°30.1'N 123°50.4'E, 6 Jul.2004: 1 male, 1 broken specimen (MNHN). PANGLAO 2005: Bohol and Sulu Seas, stn 2371, Dipolog Bay, 172–175 m, 8°34.8'N 123°16.2'E, 27 May.2005: 1 male (MNHN); stn CP2380, 163–271 m, 8°41.3'N 123°17.8'E, 28 May.2005: 3 males, 2 females (MNHN); stn CP2381, 275–280 m, 8°43.3'N 123°19.0'E, 28 May.2005: 2 ovig. females (18.8 × 15.7 mm, 17.5 × 14.9 mm), 1 male (photographed) (ZRC 2007.0159).

Colour. – Completely bright red all over (Fig. 1C).

Remarks. – This small species is very common in the Philippines and has also been reported from Shikoku Islands and Sagami Bay in Japan (Guinot & Richer de Forges, 1995).

***Latreillopsis tetraspinosa* Dai & Chen, 1980**
(Fig. 1D)

Latreillopsis tetraspinosa Dai & Chen, 1980: 39, Figs. 1–5 (see Guinot & Richer de Forges, 1995: 404, for complete synonymy prior to 1995); Takeda & Manuel-Santos, 2007: 88, Fig. 4A.

Material examined. – **Philippines:** Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–500 m – Dec.2000: 1 female (ZRC 2001.0396); 28 Nov.2001: 1 male, 6 females (2 ovig.) (ZRC 2007.0160); Jun.2002: 1 male (9.6 × 7.5 mm), 1 female (ZRC 2007.0161); Nov.2003: 1 male, 2 females (ZRC 2007.0162); Jan.2004: 1 male, 1 broken male (ZRC 2007.0163); Feb.2004: 1 male (ZRC 2007.0164); Mar.2004: 1 juvenile male, 2 females (1 ovig.) (MNHN); Apr.2004: 3 females (1 ovig.) (ZRC 2007.0165); Apr.2004: 1 male, 1 female (MNHN); May 2004: 2

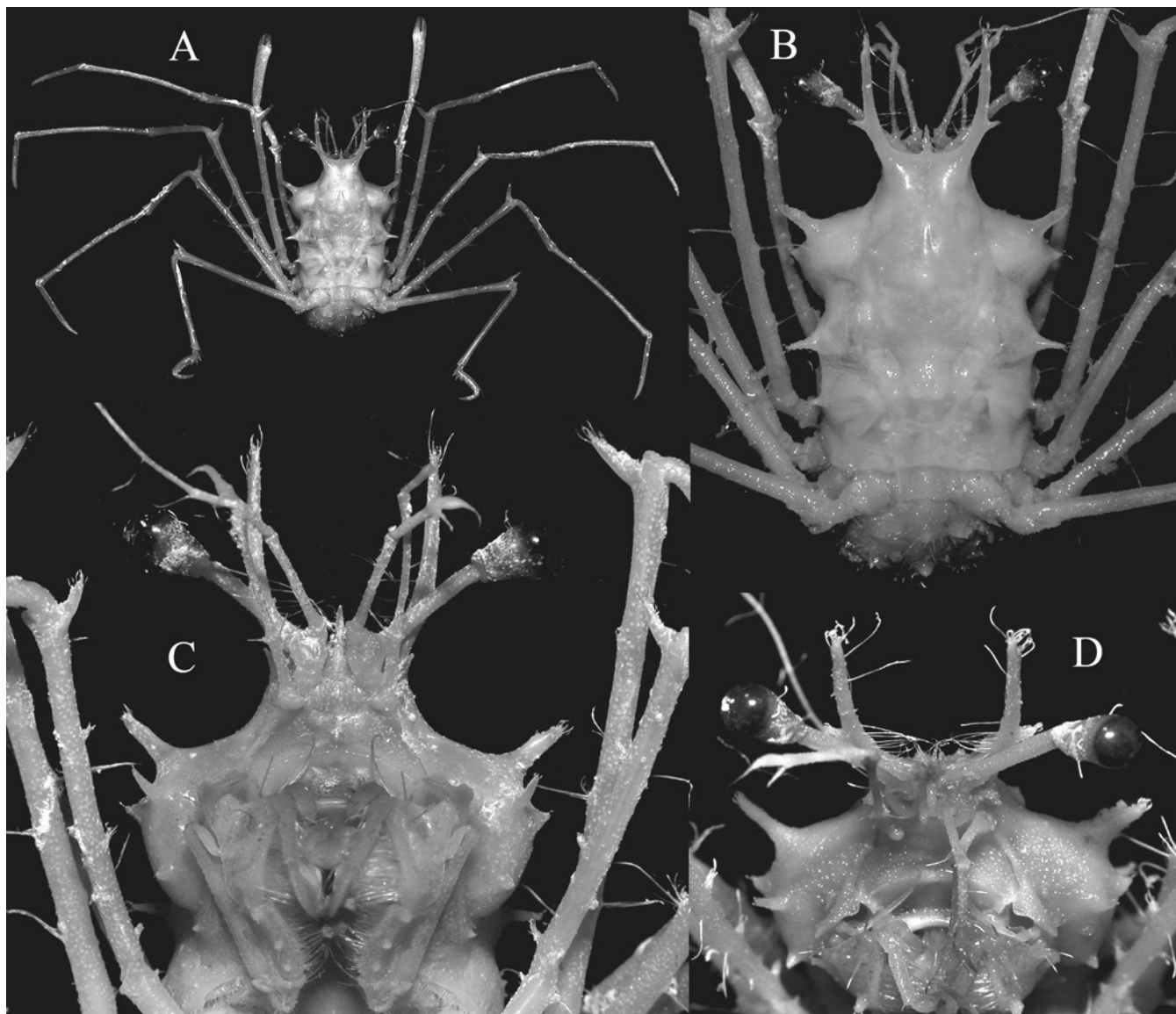


Fig. 4. *Latreillopsis mariveneae*, new species, holotype female (14.2 × 12.5 mm) (NMCR): A, general dorsal view; B, dorsal view of carapace; C, ventral view of buccal cavity and front; D, frontal view of carapace.

males, 2 females (1 ovig.) (MNHN); May 2004: 1 specimen with *Sacculina* (ZRC 2007.0166); 2004: 1 male, 5 females (1 ovig.) (MNHN). PANGLAO 2004: stn T36, Bohol Sea, 9°28.2'N 123°50.7'E, 134–190 m, 7 Jul.2004: 1 male (NMCR); stn B38, Balicasag Island, bioclastic sand at entrance of cave C, 17–18 m, 9°30.9'N 123°40.8'E, 2 Jul.2004: 1 female (photographed) (ZRC 2007.0167); stn P3/4, ca. 100 m, 9°31.1'N 123°41.5'E, 31 May 2004: 2 males (1 photographed) (ZRC 2007.0168); stn T1, Bolod, mud with many sponges, 83–102 m, 9°32.4'N 123°47.3'E, 30 May 2004: 2 males, 1 ovig. female (ZRC 2007.0169); Balicasag: 2 females (damaged) (2007.0170); stn T4, Bolod, substrate with many large sponges, 82 m, 9°33.0'N 123°48.5'E, 1 Jun.2004: 1 male, 1 female (NMCR). PANGLAO 2005: stn CP2344, off Pamilacan Island, 128–142 m, 9°28.4'N 123°50.1'E, 23 May 2005: 1 female (NMCR); stn CP2372, Dipolog Bay, 255–301 m, 8°38.7'N 123°16.0'E, 27 May 2005: 1 juvenile (ZRC 2007.0171); stn CP2377, Dipolog Bay, 85–88 m, 8°40.6'N 123°20.3'E, 28 May 2005: 1 female (10.0 × 7.5 mm) (photographed) (ZRC 2007.0172); CP2378, Dipolog Bay, 65 m, 8°38.8'N 123°20.1'E, 28 May 2005: 1 male (7.1 × 7.5 mm), 2 ovig. females (13.6 × 10.8 mm, 11.6 × 9.1 mm) (ZRC 2007.0173); stn CP2379, Dipolog Bay, 72–77 m, 8°39.9'N 123°20.2'E, 28 May 2005: 2 males, 2 ovig. females (NMCR).

Colour. – Brown with white on the hepatic and gastric areas (Fig. 1D).

Remarks. – This recently described species occurs from Japan to Indonesia (Guinot & Richer de Forges, 1995) and was also recorded by Takeda & Manuel-Santos (2007).

Latreillopsis mariveneae, new species
(Figs. 1E, 4)

Material examined. – Holotype: ovig. female (14.2 × 12.5 mm) (NMCR), Balicasag Island, Panglao Island, Bohol, Philippines, coll. fishermen with tangle nets on the reef slope, 100–500 m, Jun.2002.

Paratype: 1 male (9.9 × 7.1 mm) (ZRC), Balicasag Island, Panglao Island, Bohol, Philippines, coll. fishermen with tangle nets, 29 May 2004.

Etymology. – Dedicated to Mrs. Marivene Manuel-Santos, Curator of Crustacea in the National Museum of the Philippines.

Diagnosis. – Carapace with areas strongly defined. Mesogastric area elevated, surmounted by a large tubercle, with 2 protogastric tubercles. Cardiac area with 2 round swellings. Hepatic area inflated with 4 spines, anterior spine very strong, sharp, directed forward. Anterolateral border with 1 sharp spine directed laterally. Posterolateral border with a smaller spine. Rostrum short, straight, sharp. Pseudorostral spines long, curved 3–4 times length of rostrum; an accessory spine present on proximal part and a small spinule on distal part. Ocular peduncles long, thin. Antennae: basal article with 2 distal spines, surface granulated. Third maxilliped: ischium narrow, with 3 granules; merus larger with granules and a sharp border at antero-external angle. Chelipeds long, slender; propodus slightly larger than other articles, merus with 3 spinules on superior border and a very strong spine on distal end; no spine at inferior border; propodus enlarged distally. P2–P4: merus long, smooth, with only a very strong distal spine. P5: merus reaching to base of pseudorostral spines.

Colour. – A photograph of a live specimen shows a distinctive color pattern. The body is red with a reticulate pattern of white lines (Fig. 1E).

Remarks. – In the key provided by Guinot & Richer de Forges (1995: 394) in their revision of the genus, *Latreillopsis mariveneae*, new species, belongs to the group whose members possess several accessory spinules on the pseudorostral spines. It is, however, very different from one its members, *L. laciniata* Sakai, 1936, which has three accessory spinules and spinules on the merus of P2–P4 (vs. no spinule in *L. mariveneae*). *Latreillopsis mariveneae*, new species, is perhaps closest to *L. cornuta* Guinot & Richer de Forges, 1995, described from the South China Sea, and *L. antennata* Guinot & Richer de Forges, 1995, from New Caledonia.

However, *L. mariveneae*, new species, is easily distinguishable from *L. cornuta* in the following features: the carapace is relatively longer in *L. mariveneae* than *L. cornuta* (see Fig. 4A, B, versus Guinot & Richer de Forges, 1995: Figs. 37e–h, 41C); in *L. mariveneae*, there is a strong lateral accessory spine at the proximal part of the pseudorostral spine with a second small spine proximal to it (the pseudorostral spines are short and curved like horns in *L. cornuta* and the lateral accessory spinules are situated medially on the main spine); the lateral carapace spines are relatively sharper and longer in *L. mariveneae* than in *L. cornuta*; there are two spines on the distal border of the first basal article in *L. mariveneae* (in *L. cornuta*, the first basal article is slender and unarmed); and the margins of the meri of P2–P4 are smooth in *L. mariveneae* (with four spinules on the merus in *L. cornuta*).

Compared to *L. antennata*, there are three large granules on the surface of the merus of the third maxilliped in *L. mariveneae* (one in *L. antennata*); there is only one spinule on the hepatic area in *L. mariveneae* (two spinules in *L. antennata*); the distal border of the basal antennal article has two blunt projections in *L. mariveneae* (two spines in *L. antennata*); the accessory spine on the pseudorostral spines are on the proximal part in *L. mariveneae* (on the distal part in *L. antennata*); and the merus of the P5 has a long spine on the distal border in *L. mariveneae* (only a small spine in *L. antennata*).

Paromola macrochira Sakai, 1961

Paromola macrochira Sakai, 1961: 146, Pl. 4 Fig. 5 (see Guinot & Richer de Forges, 1995: 367 for complete synonymy up to 1995); Ng & Huang, 1997: 262, Fig. 1B, C; Ikeda, 1998: 23, 68, 69; Tan et al., 2000: 186; Ng et al., 2001: 6.

Material examined. – 1 ovig. female (171.9 × 139.9mm) (NMCR), Cota Batu, Mindanao, by trawling about 800 m using tangle nets, 2004.

Remarks. – This is the largest specimen of this characteristic species on record, and its presence in the southern Philippines represents a substantial range extension to the south. It is a new record for the Philippines.

***Yaldwynopsis* Guinot & Richer de Forges, 1995**

Remarks. – The genus *Yaldwynopsis* Guinot & Richer de Forges, 1995, was established for only one species originally described from New Zealand, *Y. spinimanus* (Griffin, 1965) but these authors also had material from Japan, French Polynesia and Hawaii. However, in 1995, these authors only had few specimens of this genus at their disposal and the degree of variation was not well understood so they adopted a conservative approach in recognizing all of them as one species. The new material from the Philippines now allow us to better define the characters and variability, and we are now convinced that what had been regarded as one species in fact comprises three separate taxa, two of which are described as new here. Colin McLay (New Zealand) also kindly helped us examine an adult male specimen of *Y. spinimanus* sensu stricto in NMNZ and provided us with numerous photographs, which confirm our observations. It is now clear that the records from Japan, the material we have on hand from the Philippines and Taiwan belong to *Yaldwynopsis saguili*, new species.

A third species from French Polynesia, previously discussed by Guinot and Richer de Forges (1995) under the name *Yaldwynopsis* aff. *spinimanus*, is also here described as new, *Y. guinotae*. Since we were unable to re-examine the Hawaiian specimen (supposedly in the Bishop Museum in Hawaii), we

cannot be sure if it is also *Y. guinotae*, new species, or even a separate taxon.

***Yaldwynopsis spinimanus* (Griffin, 1965)**
(Fig. 5)

Paramola spinimana Griffin, 1965: 87, Pls. 1, 2, Figs. 1–8.

Yaldwynopsis spinimanus – Guinot & Richer de Forges, 1995: 437 (part) (see Guinot & Richer de Forges, 1995: 437, for partial synonymy, restricted for New Zealand).

Material examined. – 1 male (51.5 × 36.0 mm) (NMNZ CR-1860), off Pinnacle Rocks, near Poor Knights Islands, New Zealand, in crayfish pot, ca. 100 m, coll. F. Cotterill, 10 Jan. 1969.

Remarks. – This species was described on the basis of a single large male 53.0 × 41.0 mm from Three Kings Island, New Zealand from a depth of about 100 m (Griffin, 1965: 87). It was described and figured in detail by Guinot & Richer de Forges (1995: 439) and returned to New Zealand. This specimen should be in the present day NMNZ but it could not be located during the period of our study and appears to have been misplaced (R. Webber via C. L. McLay, pers. comm.). Another fresher specimen of the same species, however, was found, and while not the holotype, nevertheless agrees with the original description and figures by Griffin (1965) in all key aspects.

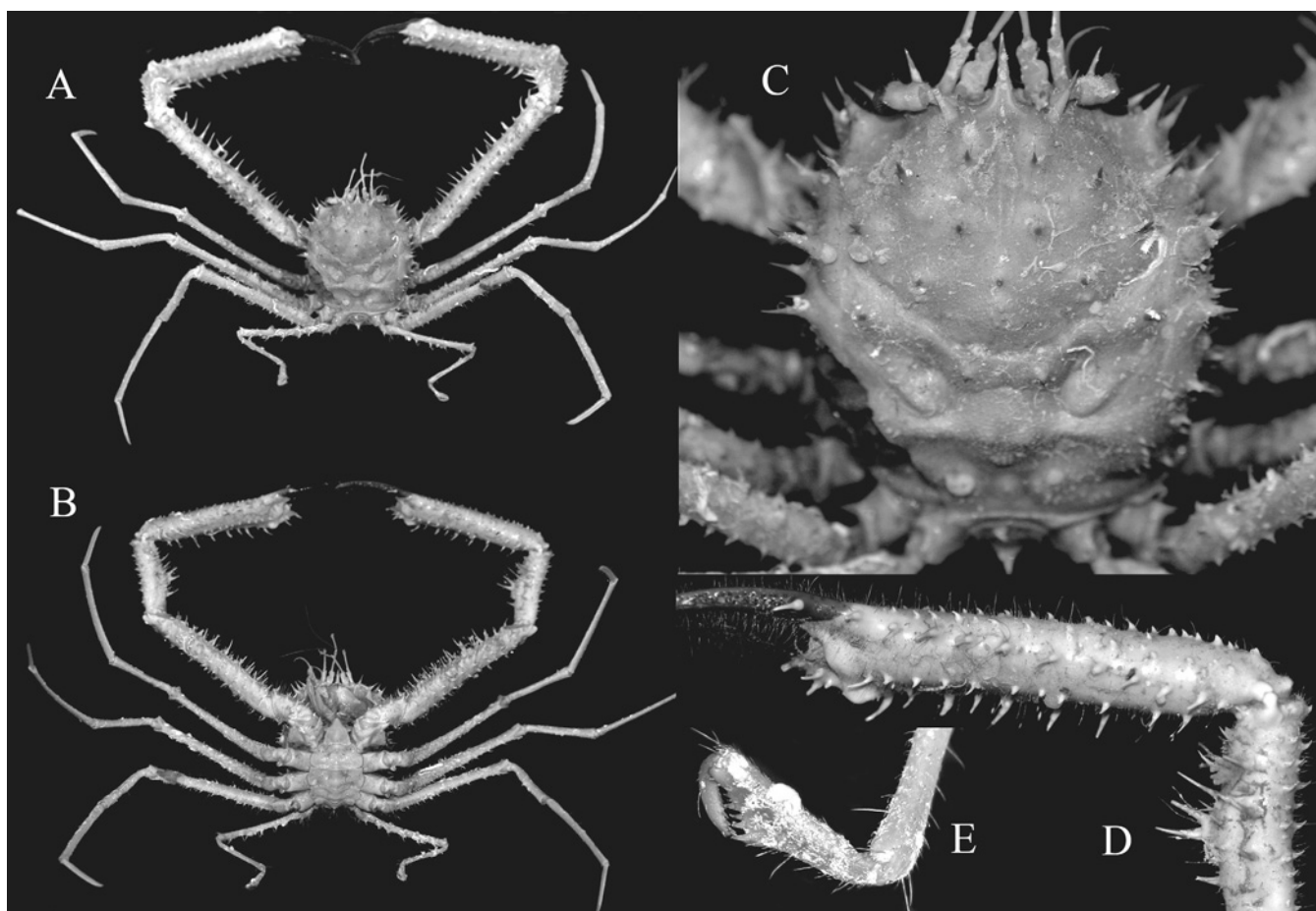


Fig. 5. *Yaldwynopsis spinimanus*, male (51.5 × 36.0 mm) (NMNZ CR-1860): A, general dorsal view; B, general ventral view; C, dorsal view of carapace; D, lateral view of right cheliped; E, left P5.

***Yaldwynopsis saguili*, new species**

(Figs. 6, 8A, 9A–C)

Yaldwynopsis spinimanus – Guinot & Richer de Forges, 1995: 437, Fig. 52A, B, 53a, b, g, 54A–C; Takeda & Manuel-Santos, 2007: 90, Fig. 3A (not *Paromola spinimana* Griffin, 1965).

Material examined. – Holotype: Male (36.9 × 30.5 mm) (NMCR), Balicasag Island, Bohol and Sulu Seas, Philippines, coll. PANGLAO 2004 and 2005 Expeditions, 80–140 m.

Paratypes: Balicasag Island, Panglao Island, Bohol, Philippines, coll. fishermen with tangle nets on the reef slope, 100–500 m, 28 Nov.2001: 1 male (32.3 × 26.0 mm) (ZRC 2001.0549); Balicasag Island, Bohol and Sulu Seas, coll. Panglao 2004 and 2005 Expeditions, 80–140 m – 1 female (31.6 × 24.6 mm), 1 ovig. female (25.4 × 20.7 mm) (ZRC 2007.0174), 1 female (26.1 × 21.4 mm) (MNHN); 2 males (30.3 × 23.2mm, 24.5 × 20.5mm) (NSMT-Cr 16667), Balicasag Island, coll. local fishermen via T. Kase, 6 Mar.1999; 1 male (27.3 × 20.7mm), 1 ovig. female (38.3 × 30.3mm), 1 female (24.0 × 21.0 mm) (NSMT-Cr 16544), Balicasag Island, coll. local fishermen via M. Takeda & H. Komatsu, Feb.2003.

Others: **Taiwan:** Tashi fishing port, northeastern Taiwan, coll. T. Y. Chan, 1999: 1 male (20.8 × 17.4 mm) (ZRC 2007.0175). **Japan:** 1 male (40.3 × 32.0mm) (NSMT-Cr 5704), Murad Ki-nad Sea, coll. trawl, via S. Nagai; 2 males (30.5 × 28.5 mm, 37.1 × 29.7mm), 1 ovig. female (40.8 × 32.6 mm) (NSMT-Cr 11661), gill net for lobsters, 60–120m, Kii Minabe Port, coll. H. Saito, 26 Feb.1993.

Etymology. – The species honors Noel Saguil, who so ably organised the PANGLAO 2004 expedition in the Philippines.

Description. – Dorsal surface of carapace with deep grooves and well defined regions. Rostrum sharp, short. Two strong pseudorostral spines, same size as rostrum. Anterior part of carapace very spinose, spines strong, conical with a sharp orange coloured tip; mesogastric region with 2 short dorsally-directed median spines and 2 small posteriorly-directed spines behind second median gastric spine; 1 supra-orbital spine; 1 spine below rostrum; protogastric area with 5 spines; anterolateral spine longest, followed by a series of 5 spines (decreasing in length) along posterolateral border. Hepatic area inflated with 5 spines. Cardiac area without spines. Basal antennal article with 2 distal spines. Third maxilliped: ischium slender with 2 spines on inner border and 3 small spinules on exterior border. Merus slender with 6–8 spines of irregular size. Eyes short, with a spherical cornea.

Chelipeds very spinose. Merus with 3 rows of long, sharp, curved spines upper row with 5 or 7 spines; lower internal border with 9 or 10 spines, longest spines on distal part; lower outer border of merus with 10–12 spines. Carpus short, with row of 6 spines on superior border, 2 of which are longer than other spines; 3 long spines on lower external border. Propodus with 2 rows of long spines: upper border of 6 or 7 spines; lower border of 11 spines. Dactylus with 2 spines on upper border.

Ambulatory legs P2–P4 long, thin, articles slightly flattened laterally; all meri with a strong curved spine at distal angle; all dactyli long, flat, with a regular row of small spine-like

setae at inferior border. Upper border of merus of P2 with 7 spines, lower border with 9 smaller spines. P3 merus with 6 upper spines and 6 lower spines. P4 merus with 6 or 7 upper spines and 4 or 5 lower spines. P5 short and sub-chelate, very thin: upper border of merus smooth, lower border with 4 spines.

Remarks. – The differences between *Yaldwynopsis saguili*, new species, and *Y. spinimanus* are distinct. *Yaldwynopsis saguili*, new species, has longer and more slender ambulatory legs and chelipeds than *Y. spinimanus*. On the merus of P3 there is one row of six spines on the upper border of the merus of *Y. saguili*, new species, but there are at least eight spines in *Y. spinimanus*. On the upper border of the merus of P4, there are two rows of 10 or 11 spines in *Y. saguili*, new species, but less than eight on *Y. spinimanus*; and on the lower border of the merus, there are four small spinules in *Y. saguili*, new species, but with at least eight on *Y. spinimanus*. On the propodus of P1 of *Y. saguili*, along the inner border, there is a row of six to eight very long spines but there are 10–12 on *Y. spinimanus*. The lower border of the propodus of P1 has 11 or 12 spines in *Y. saguili*, new species, but there are only 10 on *Y. spinimanus*. There is one spine on the dactylus of the cheliped in *Y. saguili* but this structure is unarmed in *Y. spinimanus*. The merus of the third maxilliped has two long spines in *Y. saguili*, new species, but there is only one spine in *Y. spinimanus*.

We have also examined the material reported in Takeda & Manuel-Santos (2007) as “*Yaldwynopsis spinimanus*” from the Philippines and they agree with *Y. saguili*, new species. In addition, we also examined two lots of “*Y. spinimanus*” from Japan. They are also *Y. saguili*, new species, as defined at present.

***Yaldwynopsis guinotae*, new species**

(Fig. 7)

Yaldwynopsis aff. *spinimanus* – Guinot & Richer de Forges, 1995: 438, Figs. 53c–f.

Material examined. – Holotype: female (34.0 × 25.0 mm) (MNHN-B 24312), Tuamotu, Fangataufa atoll, stn 231, French Polynesia, 22°12.0'S 138°45.9'W, 270 m, by traps, coll. J. Poupin, 21 May 1990.

Etymology. – Named after Danièle Guinot from the Muséum national d'Histoire naturelle in Paris for her major contribution to carcinology and especially to the podotreme crabs.

Description. – Carapace and legs very spinose. Surface of the carapace with deep grooves and well marked regions. Rostrum simple, not longer than other spines of anterior part of body. Carapace with 1 supra-ocular spine; 1 pseudo-orbital spine followed by a small one just behind orbit; 4 protogastric spines, exterior-most one with small accessory spine; 1 small mesogastric spine; 1 anterolateral spine very strong, directed forwards, followed behind along anterolateral border by a

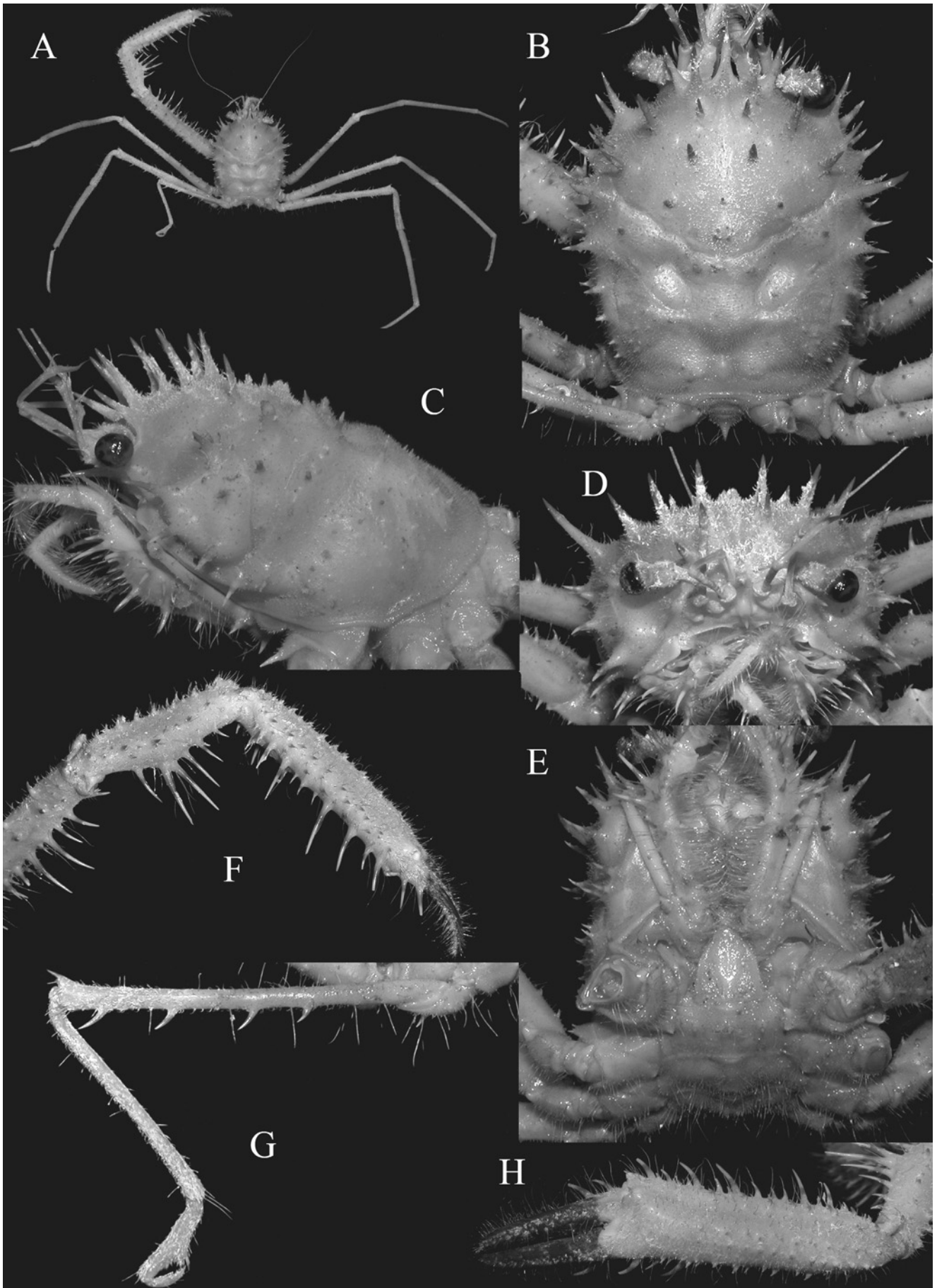


Fig. 6. *Yaldwynopsis saguili*, new species, holotype male (36.9 × 30.5 mm) (NMCR): A, general dorsal view; B, dorsal view of carapace; C, lateral view of carapace; D, frontal view of carapace; E, ventral view of cephalothorax; F, dorsal view of left cheliped; G, P5; H, outer view of the left chela.

series of spines of decreasing size. Cervical groove well marked. Lateral border of carapace on branchial region covered with little spines. Subhepatic region bearing 5 strong spines. One sub-orbital spine, as long as supra-orbital spine. Ocular peduncle short, eyes sub-spherical. Antennules with a bulbous basal article, other articles long, slender with very short flagellum. Antennae short, with first article urinary article prominent. Second article cylindrical with 1 subterminal spine, third article long, weakly curved. Third maxilliped subpediform, very spinous, basis with 2 strong spines, ischium with 6 spines, merus with 10 spines, carpus short, without spine, propodus with 3 long spines at outer border, dactylus long, unarmed.

Chelipeds: missing on right of holotype, broken on left. Ischium sub-trigonal in cross-section, with rows of spines on each margin; merus long, very spinous: inferior rows with 13 and 16 spines, longer in middle of merus, on upper edge a row of 12 somewhat staggered spines; carpus short, with several rows of spines, longest one of 6 spines on inner edge; propodus slender (broken on holotype), with 2 well aligned

rows of spines, 10 on upper border and 11 on lower border; fingers slender with hooked sharp tips, a group of 4 spines at proximal part of dactylus.

Ambulatory legs long, slender: P2 with upper margin of merus bearing 10 spines; P3 with 12 spines on upper border of merus; P4 with 8 not well aligned spines on upper border of merus and 6 or 7 spines on lower border; P5 small and sub-chelate, slender with spiny merus: 2 spines on upper border and 4 spines on lower border.

Remarks. – The material from the Philippines and Taiwan, as well as a re-appraisal of *Y. spinimanus* sensu stricto, shows that the material previously assigned to this taxon provisionally by Guinot & Richer de Forges (1995) should in fact be referred to a new species, here named *Y. guinotae*, new species. This new species appears to be a relatively large one, the holotype female examined here (34.0 mm CL) is still immature whilst we have specimens of *Y. saguili*, new species, ovig. at 25.4 mm carapace length. *Yaldwynopsis guinotae* is perhaps closest to *Y. saguili*, but it is clearly a

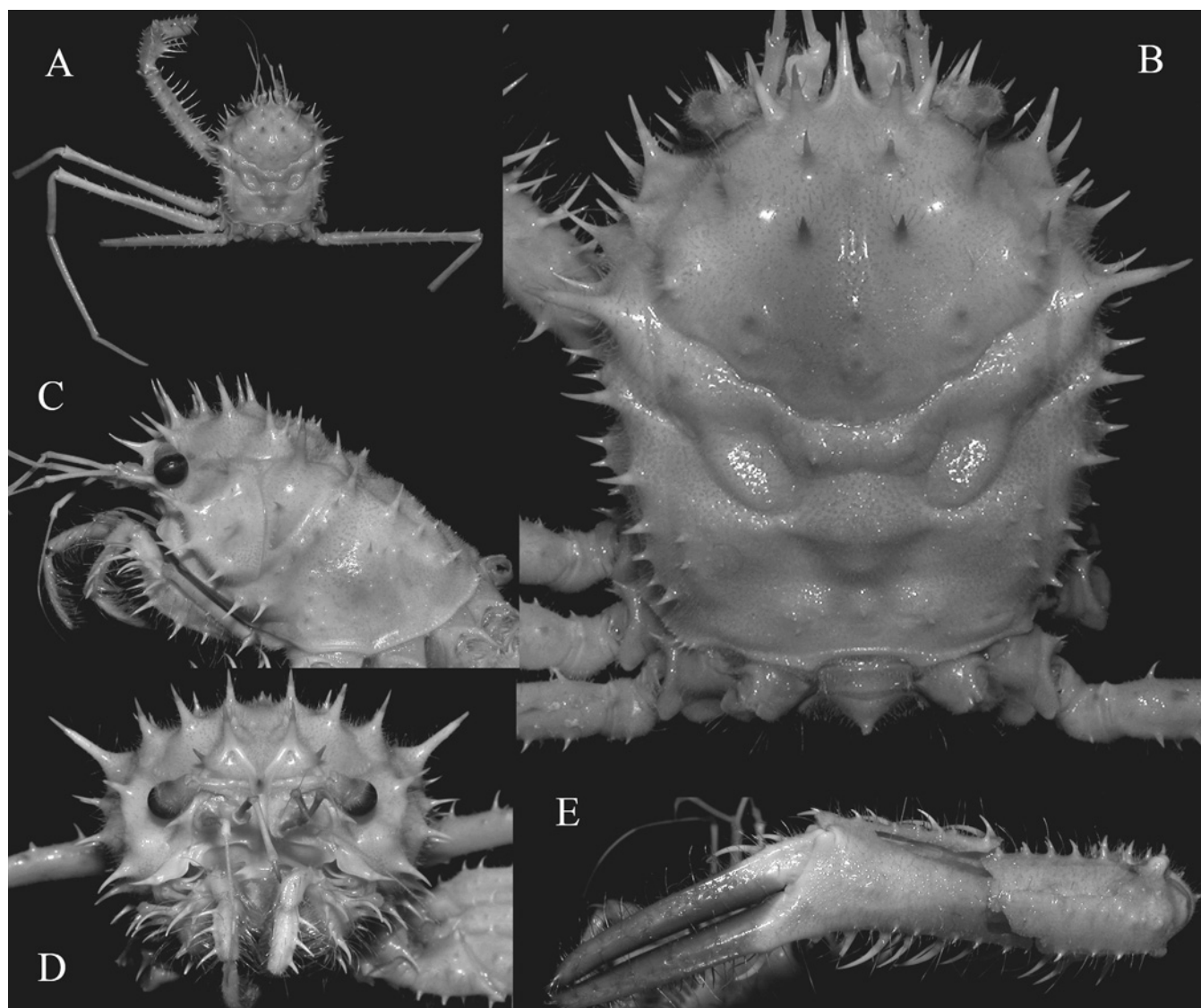


Fig. 7. *Yaldwynopsis guinotae*, new species, holotype female (34.0 × 25.0 mm) (MNHN-B 24312): A, general dorsal view; B, dorsal view of carapace; C, lateral view of carapace; D, frontal view of carapace; E, outer view of the cheliped (broken).

more spinose taxon. The main differences are in the armature on the meri of the ambulatory legs: seven spines on the upper border of the P2 in *Y. saguili* (10 in *Y. guinotae*); seven spines on the upper border of the P3 in *Y. saguili* (12 in *Y. guinotae*); seven spines on the upper border of the P4 in *Y. saguili* (eight in *Y. guinotae*); and the upper border of the P5 is smooth in *Y. saguili* (and *Y. spinimanus*) (with two spines in *Y. guinotae*). Like *Y. saguili*, new species, the ambulatory legs of *Y. guinotae*, new species, are also proportionately longer and more slender than in *Y. spinimanus*.

***Lamoha murotoensis* (Sakai, 1979)**

(Fig. 8B)

Hypsophrys murotoensis Sakai, 1979: 6, Figs. 2a–c, 3d (see Guinot & Richer de Forges, 1995: 449, for complete synonymy prior to 1995); Ikeda, 1998: 25, 74, 75.

Lamoha murotoensis – Ng, 1998a: 121; Tan et al., 2000: 185; Ng et al., 2001: 6; Takeda & Manuel-Santos, 2007: 88, Fig. 3.

Material examined. – **Philippines:** Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–400 m, 28 Nov.2001: 1 male (28.6 × 25.0 mm) (ZRC 2001.0545); Mar.2004: 1 male (35.5 × 31.6 mm) (ZRC 2007.0176), 1 ovig. female (30.3 × 26.3 mm) (NMCR), 1 ovig. female (28.5 × 26.0 mm) (MNHN). PANGLAO 2004: stn P3/4, Bohol Sea, ca. 100 m, 9°31.1'N 123°41.5'E, 31 May 2004: 1 ovig. female (24.1 × 22.3 mm) (photographed) (ZRC 2007.0177).

Remarks. – This species has an extensive range from Japan to Madagascar but has not been reported from the Philippines previously.

***Homolomannia sibogae* Ihle, 1912**

(Fig. 8C, D)

Homolomannia sibogae Ihle, 1912: 208 (see Guinot & Richer de Forges, 1995: 460, for complete synonymy prior to 1995); Ikeda, 1998: 25, 74, 75; Tan et al., 2000: 183, 184, Figs. 1b, 3; Ng et al., 2001: 6; Takeda & Manuel-Santos, 2007: 88, Fig. 9C.

Material examined. – **Philippines:** Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–400 m – Dec.2000: 1 male, 1 ovig. female (ZRC 2001.0369); Nov.2001: 7 males, 6 females (4 ovig.) (ZRC 2001.0546); Jun.2002: 9 males, 7 females (4 ovig.) (including 1 male photographed) (ZRC 2007.0178); 25–30 Jul.2003: 3 males, 3 females (1 ovig.) (ZRC 2007.0179); Dec.2003–29 May 2004: 19 males, 18 females (11 ovig.) (ZRC 2007.0180); coll. J. Arbasto: 1 male, 1 female (ZRC 2007.0181). Maribohoc Bay, Panglao, Bohol, coll. J. Arbasto – Nov.2003–Apr.2004: 5 males, 5 females (2 ovig.) (ZRC 2007.0182); Jul.2004–May 2005, north Coast of Panglao, coll. J. Arbasto: 1 male (MNHN). PANGLAO 2004: stn P3/4, Bohol Sea, ca. 100 m, 9°31.1'N 123°41.5'E, Jun.2004: 3 males, 3 females (1 ovig.) (NMCR); stn T34, between Libaong and Pamilacan, sand with echinoderms, 145–163 m, 9°31.3'N 123°51.4'E, 3 Jul.2004: 1 juvenile (MNHN). coll. PANGLAO 2005: Bohol and Sulu Seas, no station: 3 males, 1 juvenile (ZRC 2007.0183); stn CP2331, 255–262 m, 9°39.2'N 123°47.5'E, 22 May 2005: 2 males, 2 juveniles (MNHN); stn CP2332, 418–477 m, 9°38.8'N 123°45.9'E, 22 May 2005: 2 males, 6 females, 2 juveniles (MNHN); stn CP2335, 733–743 m, 9°34.3'N 123°37.8'E, 22 May 2005: 1 male (24.1 × 18.3

mm) (photographed) (ZRC 2007.0184); stn CP2340, 291–318 m, 9°29.4'N 123°44.4'E, 23 May 2005: 1 male, 2 juveniles (ZRC 2007.0185); stn 2341, off Pamilacan Island, 544–712 m, 9°24.5'N 123°49.7'E, 23 May 2005: 1 male (MNHN); stn CP2342, 1,239–1,258 m, 9°24.4'N 123°52.9'E, 23 May 2005: 1 juvenile (ZRC 2007.0186); stn CP2343, 273–356 m, 9°24.4'N 123°52.9'E, 23 May 2005: 3 juveniles (MNHN); stn CP2344, 128–155 m, 9°28.4'N 123°50.1'E, 23 May 2005: 1 female (MNHN); stn CP2348, 164–196 m, 9°29.6'N 123°52.5'E, 24 May 2005: 2 males, 1 female, 1 juvenile (ZRC 2007.0187); stn CP2349, 229–240 m, 9°31.6'N 123°55.74'E, 24 May 2005: 3 males (NMCR); stn CP2372, Dipolog Bay, 255–301 m, 8°38.7'N 123°16.0'E, 27 May 2005: 1 male, 1 female (ZRC 2007.0188); stn CP2380, 163–171 m, 8°43.3'N 123°17.8'E, 28 May 2005: 5 males, 2 females, 3 juveniles (ZRC 2007.0189); stn CP2381, 275–280 m, 8°43.3'N 123°19.0'E, 28 May 2005: 2 males, 6 females (MNHN); stn CP2393, 396–414 m, 9°30.1'N 123°41.6'E, 30 May 2005: 2 females, 1 juvenile (ZRC 2007.0190); stn CP2404, 479–481 m, 9°39.4'N 123°43.3'E, 1 Jun.2005: 1 male (ZRC 2007.0191); CP2405, 310–387 m, 9°39.0'N 123°46.1'E, 1 Jun.2005: 1 female (MNHN); stn CP2406, 379–389 m, 9°40.6'N 123°46.8'E, 1 Jun.2005: 2 males (ZRC 2007.0192); stn CP2407, 204–256 m, 9°41.3'N 123°48.5'E, 1 Jun.2005: 1 juvenile (ZRC 2007.0193); stn CP2409, 257–269 m, 9°44.8'N 123°44.8'E, 1 Jun.2005: 1 juvenile (ZRC 2007.0194); stn DW2402, off Balicasag Island, 101–118 m, 9°30.8'N 123°41.5'E, 31 May 2005: 1 female (ZRC 2007.0195).

Remarks. – *Homolomannia sibogae* is one of the most frequently encountered species of homolids in the Philippines. New catches from the PANGLAO 2005 expedition considerably increases the bathymetric range of this species: from 204–1,258 m. It has been collected from steeper slopes (e.g. at Balicasag) as well as in flatter areas; although on the basis of the material on hand, it appears to be more common in the latter habitat.

Homolomannia occlusa

Guinot & Richer de Forges, 1981

(Fig. 8E, F)

Homolomannia occlusa Guinot & Richer de Forges, 1981: 554, Fig. 3F, 4I, Pl. 6 Fig. 2, 2a–c Guinot & Richer de Forges, 1995: 463, Figs. 62A, B, 63C; Tan et al., 2000: 183; Ng et al., 2001: 6; Takeda & Manuel-Santos, 2007: 88, Fig. 9F.

Material examined. – **Philippines:** Balicasag Island, Panglao Island, Bohol, coll. fishermen with tangle nets on the reef slope, 100–500 m – 28 Nov.2001: 1 male, 1 ovig. female (ZRC 2001.0548); Jun.2002: 2 male, 1 ovig. female (ZRC 2007.0196); 2 Mar.2004: 2 males, 1 ovig. female (ZRC 2007.0197); Apr.2004: 1 male (NMCR); Nov.2003–May 2004: 2 females (1 ovig.) (ZRC 2007.0198); Nov.2003–May 2004: 1 male, 3 females (NMCR); Nov.2003–May 2004: 4 males, 3 females (2 ovig.) (MNHN) Bohol Sea, coll. PANGLAO 2004 Expedition: stn P1, Maribohoc Bay, 90–200 m, 9°36.1'N 123°45.0'E, 27 Jun.2004: 1 female (ZRC 2007.0199); stn P3/4, ca. 100 m, 9°31.1'N 123°41.5'E, 31 May 2004: 1 male (22.7 × 18.4 mm) (photographed) (ZRC 2007.0200); stn T10, 80–90 m, 9°31.2'N 123°40.7'E, 2 Jul.2004, 15 Jun.2004: 1 female (11.1 × 8.3 mm) (photographed) (ZRC 2007.0201).

Remarks. – The species *Homolomannia occlusa* was described by Guinot & Richer de Forges (1981) from Madagascar. It was reported from Taiwan by Tan et al. (2000). Takeda & Manuel-Santos (2007) first reported six specimens

of this species from Balicasag Island, and we have on hand many more specimens.

In addition to the morphological characters distinguishing the two species enumerated by Guinot & Richer de Forges (1995), the two species also differ markedly in their living colours. *Homolomannia sibogae* is usually a dull brown, occasionally being pale orange (Fig. 8C, D) whilst *H. occlusa* is always bright red (Fig. 8E, F).

GENERAL DISCUSSION

The homolid fauna of the Philippines now consists of 13 species. Three are new species, *Latreillopsis mariveneae*, *Yaldwynopsis guinotae* and *Yaldwynopsis saguili*. Five are new records: *Homola ikedai* Sakai, 1979, *Moloha majora*

(Kubo, 1936), *Lamoha murotoensis* (Sakai, 1979), *Paromola macrochira* Sakai, 1961, and *Homolomannia occlusa* Guinot & Richer de Forges, 1981. The only two species known from the Philippines and not included in our collections are found in very deep waters: *Paromolopsis boasi* Wood-Mason, 1891, and *Homologenus malayensis* Ihle, 1912 (see Guinot & Richer de Forges, 1995). Interestingly, 11 species are known from Taiwan (Ng et al., 2001; Ho et al., 2004), a much more intensely studied area (see Ng et al., 2001).

Most remarkable is that 10 of the 11 species found in our surveys from the Philippines are present on the tiny island of Balicasag, which represents the highest concentration of homolid species known to date. Considering there are 14 genera and 56 species in the Indo-West Pacific (see Guinot & Richer de Forges, 1995; Ng, 1998b; Ng & Chen, 1999), this is a very high percentile indeed.

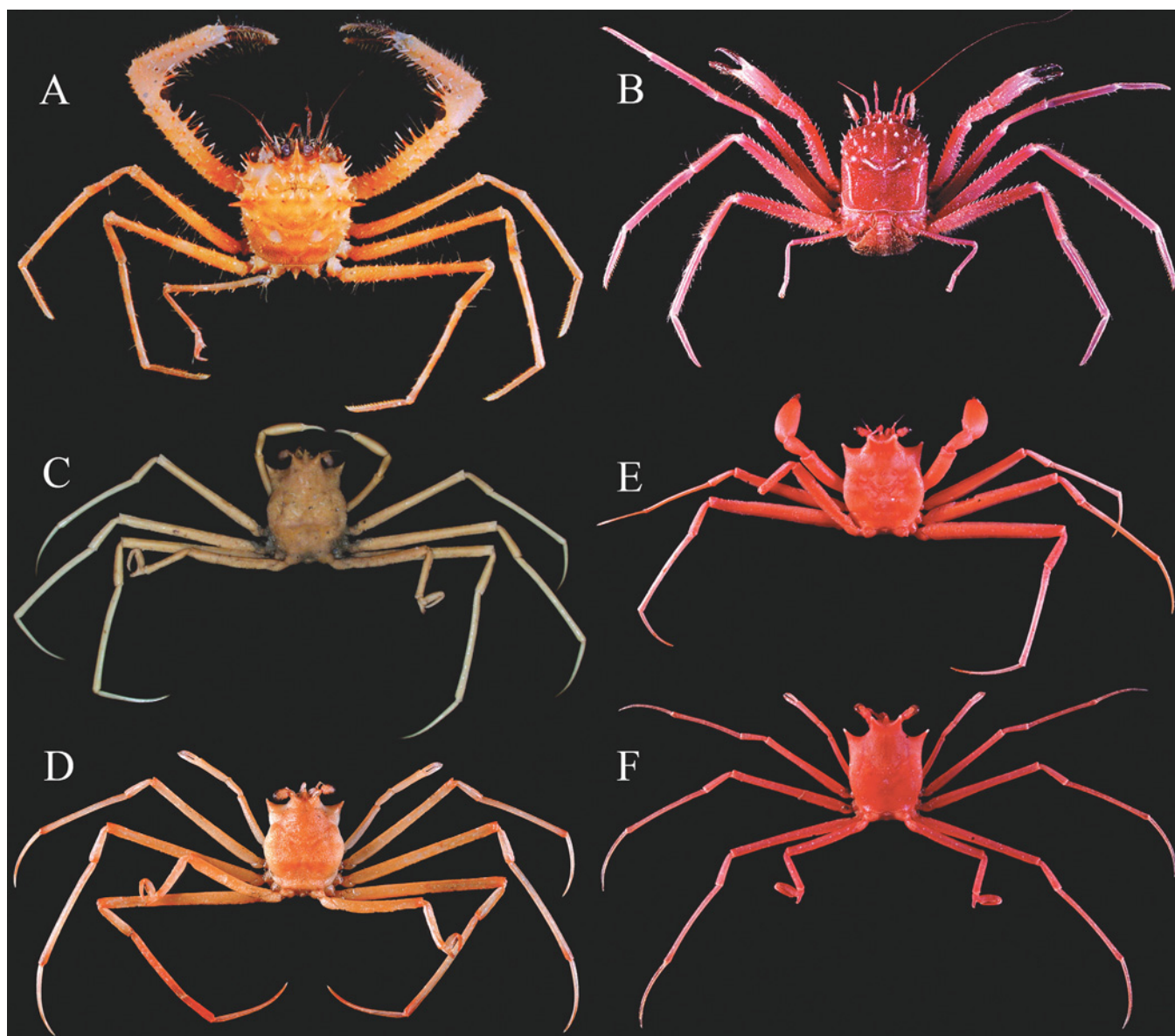


Fig. 8. Colours in life: A, *Yaldwynopsis saguili*, new species, Taiwan, male (20.8 × 17.4 mm) (ZRC 2007.0175); B, *Lamoha murotoensis*, ovig. female (24.1 × 22.3 mm) (ZRC 2007.0177); C, *Homolomannia sibogae*, male (26.7 × 19.5 mm) (ZRC 2007.0178); D, *Homolomannia sibogae*, male (24.1 × 18.3 mm) (ZRC 2007.0184); E, *Homolomannia occlusa*, male (22.7 × 18.4 mm) (ZRC 2007.0200); F, *Homolomannia occlusa*, female (11.1 × 8.3 mm) (ZRC 2007.0201).

Five species were obtained only by tangle nets along the deep steep slopes of Balicasag Island: *Latreillopsis tetraspinosa*, *Latreillopsis marivenae*, new species, *Yaldwynopsis saguili*, new species, *Lamoha murotoensis* and *Homolomannia oclusa*. These species were not collected on the relatively flatter muddy substrates around Balicasag with the beam trawl during the PANGLAO 2005 Expedition, suggesting that the preferred habitat of these species is the poorly collected steeper parts of the reef slope.

The supposedly very rare *Homolomannia oclusa* is perhaps the best case in point. Throughout its known range, the species is considered as rare. The species was described from only one adult female and one juvenile female (Guinot & Richer de Forges, 1981) from Madagascar, while Tan et al. (2000) had only one male specimen from Taiwan. From the Panglao area, we have 28 specimens! Almost all had been collected using tangle nets set against relatively steep slopes in deeper parts of the reef, a habitat not normally sampled. Only one specimen (ZRC 2007.0201) was obtained by a trawl. This suggests that the species normally inhabits steeper slopes, unlike the allied *H. sibogae*, which lives on flatter terrain. This probably explains why *H. oclusa* appears to be such a rare species – normal collecting methods, using trawls and dredges, can only sample flatter areas; the steep slopes are not accessible with these techniques. The few specimens caught previously in Madagascar and Taiwan were likely stragglers from their normal habitat and had been collected by chance.

The apparent rarity of *Yaldwynopsis* species is also probably associated with this aspect of sampling impediment. Until this study, few specimens have been collected. *Yaldwynopsis spinimanus* is only known from two specimens in New Zealand. In the study of Guinot & Richer de Forges (1995), they had few specimens of what they provisionally identified as *Y. spinimanus* – three from Japan, one from Hawaii and one from French Polynesia. Even in Japan, which has been intensely studied, it is apparently a rare species (see also Sakai, 1976). Only one specimen is known from Taiwan (present material), another well studied area (Ng et al., 2001). All the material from the Philippines – six specimens in all, was from tangle nets in Balicasag! Interestingly, the recent specimen from New Zealand (NMNZ CR-1860) and the two specimens from French Polynesia were collected by traps in relatively deeper water. In the case of French Polynesia, the traps were laid against steep substrates, which cannot be trawled or dredged (J. Poupin, pers. comm.).

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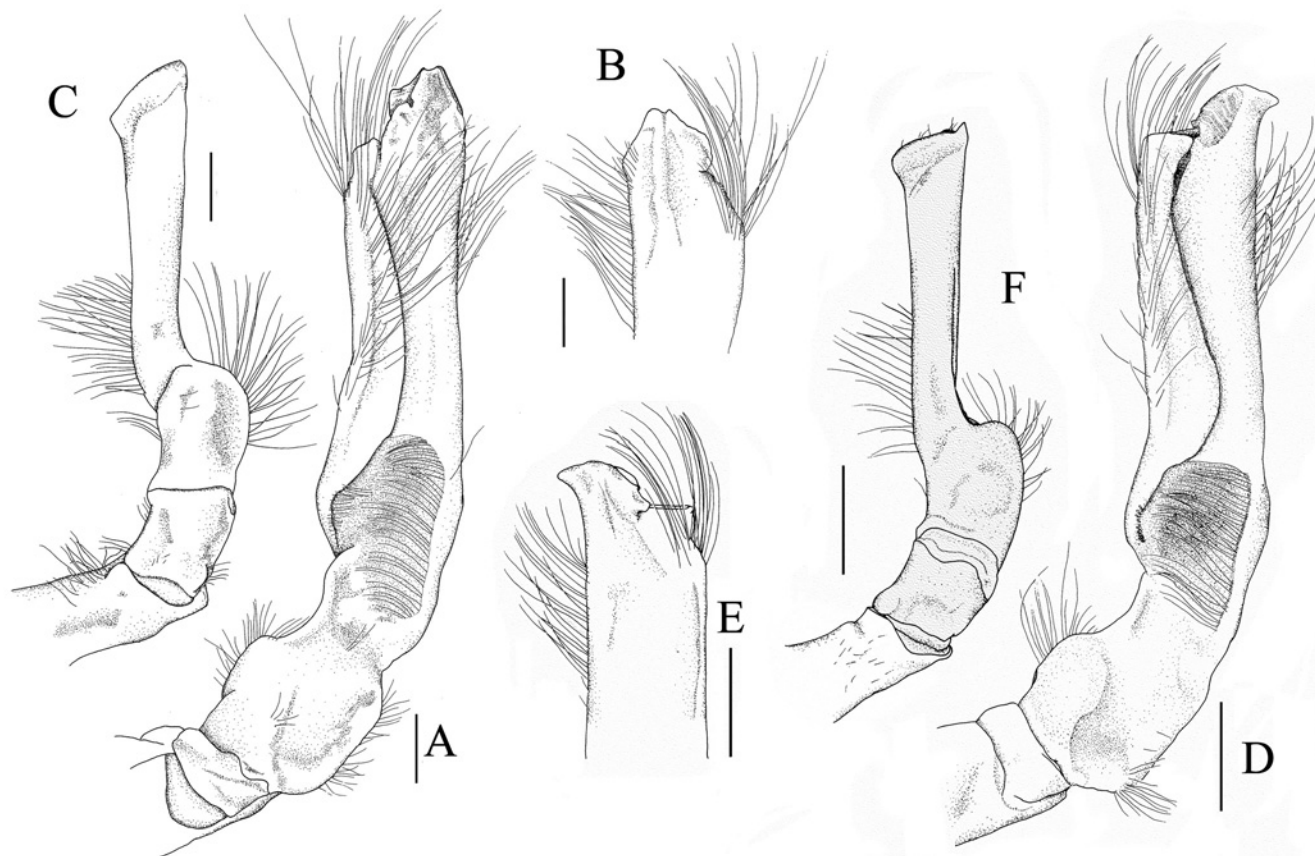


Fig. 9. Left Gonopod 1: A–C, *Yaldwynopsis saguili*, new species, holotype male (36.9 × 30.5 mm) (NMCR); D–F, *Homola poupini*, new species, holotype male (21.3 × 18.5 mm) (MNHN-B16575). Scales bars = 1 mm.

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