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On a collection of Homolidae from the South China Sea, with descriptions of two new species of *Homologenus* A. Milne-Edwards, in Henderson, 1888, and the identities of *Homologenus malayensis* Ihle, 1912, and *Lamoha superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891)

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Abstract. Recent collections from southern Taiwan and the South China Sea obtained 10 species of homolid crabs, of which two species of *Homologenus* A. Milne-Edwards, in Henderson, 1888, are described as new. The taxonomy of the allied *H. malayensis* Ihle, 1912, from Indonesia and Papua New Guinea is also clarified. The identity of *Lamoha superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891) s. str. from the Indian Ocean is discussed and specimens from East Asian seas that had been referred to this species are here shown to be conspecific with *L. longirostris* (Chen, 1986) instead. The taxonomy of *L. superciliosa* and *L. longirostris* is treated.

Key words. Taxonomy, new species, South China Sea, deep sea, homolid crabs, *Homologenus*

INTRODUCTION

In late 2015, Chan Tin-Yam of the National Taiwan Ocean University in Keelung, Taiwan, passed the authors an interesting collection of homolid crabs he and his colleagues obtained from several cruises in the South China Sea, including around Tungsha [= Dongsha] Island. The material, while not extensive, is nevertheless interesting as it contains representatives of a number of rare species. Examination of this material led us to reappraise the taxonomy of *Lamoha superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891) and *L. longirostris* (Chen, 1986), with material previously assigned to the former species from Taiwan now synonymised with *L. longirostris*. *Lamoha superciliosa* s. str. is now restricted to the Indian Ocean. The collection of a good series of specimens of "*Homologenus malayensis* Ihle, 1912" from Taiwan and the South China Sea also prompted us to re-examine the taxonomy of this and allied species. Two new species of *Homologenus* are here recognised, *H. exilis* n. sp. and *H. brevipes* n. sp. *Homologenus malayensis* Ihle, 1912 s. str., is redescribed and figured from a good series of specimens from Papua New Guinea.

The taxonomy of these species is treated in this paper, with the new species diagnosed and figured. The terminology essentially follows that used by Guinot & Richer de Forges (1995), with some recent changes recommended by Davie et al. (2015). The authorship and year of publication for the various species described by Wood-Mason & Alcock follow Huys et al. (2014). Measurements provided (in millimetres) are of the maximum carapace length and width (including spines), respectively. Specimens examined are deposited in the Muséum national d'Histoire naturelle, Paris (MNHN); Oxford University Museum of Natural History, United Kingdom (OUMNH); The Naturalis Biodiversity Center (including the zoological collections of the Amsterdam University), Leiden (NNM ZMA); U.S. National Museum of Natural History, Smithsonian Institution, Washington D.C. (USNM); Crustacean Collection of the National Taiwan Ocean University, Keelung, Taiwan (NTOU); Institute of Oceanology, Chinese Academy of Sciences, Qingdao (IOCAS); and Zoological Reference Collection of the Lee Kong Chian Natural History Museum (formerly the Raffles Museum of Biodiversity Research), National University of Singapore (ZRC).

TAXONOMY

Family Homolidae De Haan, 1833

Homola Leach, 1816

Homola orientalis Henderson, 1888

Homola orientalis Henderson, 1888: 19, pl. 2, fig. 1, 1a (see Guinot & Richer de Forges, 1995: 331; Richer de Forges & Ng, 2007: 30; for complete synonymy)

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Material examined. 1 female (14.7 × 11.5 mm) (ZRC 2016.0553), station CP 4116, 20°02.32′N 114°10.22′E – 20°02.92′N 114°11.29′E, Taiwan, South China Sea, 262–298 m, trawl, coll. NANHAI 2014 Cruise, 11 January 2014. – 1 male (soft, 30.7 × 22.9 mm) (ZRC 2016.0554), station CP 4159, northwest of Tungsha Island, 20°45.92′N 116°41.11′E – 20°47.62′N 116°42.34′E, Taiwan, South China Sea, 190–221 m, dead coral substrate, coll. ZHONGSHA 2015 Cruise, 30 July 2015.

Remarks. The taxonomy of this wide-ranging Indo-West Pacific taxon, which is likely to be a species-complex, has been discussed at length by Guinot & Richer de Forges (1995) and Richer de Forges & Ng (2007).

Lamoha Ng, 1998

Hypsophrys Wood-Mason, in Wood-Mason & Alcock, 1891
Lamoha Ng, 1998: 121 (replacement name for *Hypsophrys* Wood-Mason, in Wood-Mason & Alcock, 1891, preoccupied by *Hypsophrys* Agassiz, 1859 [freshwater fish])

Lamoha superciliosa (Wood-Mason, in Wood-Mason & Alcock, 1891)

(Figs. 1, 2, 5E, F, 6H, 7G, H)

Hypsophrys superciliosa Wood-Mason, in Wood-Mason & Alcock, 1891: 269. – Alcock & Anderson, 1895: pl. 14 fig. 4, 4a. – Alcock, 1900: 14; 1901: 67, pl. 6 fig. 24. – Bouvier, 1896: 32. – Van Straelen: 1928: 19. – Gordon, 1950: 220, 224. – Williams, 1974: 485. – Williams, 1976: 889. – Guinot & Richer de Forges, 1981: 543. – Guinot & Richer de Forges, 1995: 445, figs. 56c–e, 61i. – Ng, 1998: 121. – Ng et al., 2008: 40. – Huys et al., 2014: 27.

Material examined. 1 male (11.8 × 9.9 mm) (OUMNH 2008-09-0039), Laccadive Sea, 12°5′35″N 71°35′50″E, India, 1580–1610 m, coll. 1894, from Indian Museum. – 1 female (15.6 × 13.0 mm) (USNM 42696), station 192, Arabian Sea, 15°11′N 72°28′45″E, 1668–1703 m, coll. RIMSS *Investigator*.

Remarks. Wood-Mason (in Wood-Mason & Alcock, 1891: 269) described *Hypsophrys superciliosa* from INVESTIGATOR station 105 in the Arabian Sea, Indian Ocean (off Goa, India: 15°2′N 73°34′E) from a depth of 1353 m. He observed that he had "Four specimens, two males and two females, of which only one pair is in good order" and he provided measurements for the intact male (16.3 × 13.3 mm) and female (20.5 × 17.0 mm) (Wood-Mason, in Wood-Mason & Alcock, 1891: 270). The current depository of the material is not known but presumably in the Indian Museum. Guinot & Richer de Forges (1995: 445) examined an ovigerous female from the Maldives. The present OUMNH specimen was obtained from the area between the Laccadive Sea and Arabian Sea, the geographical co-ordinates being quite close to the type locality, but it is not a syntype. The present USNM specimen is from the Arabian Sea but it is from a different station and as such, cannot be a syntype as well.

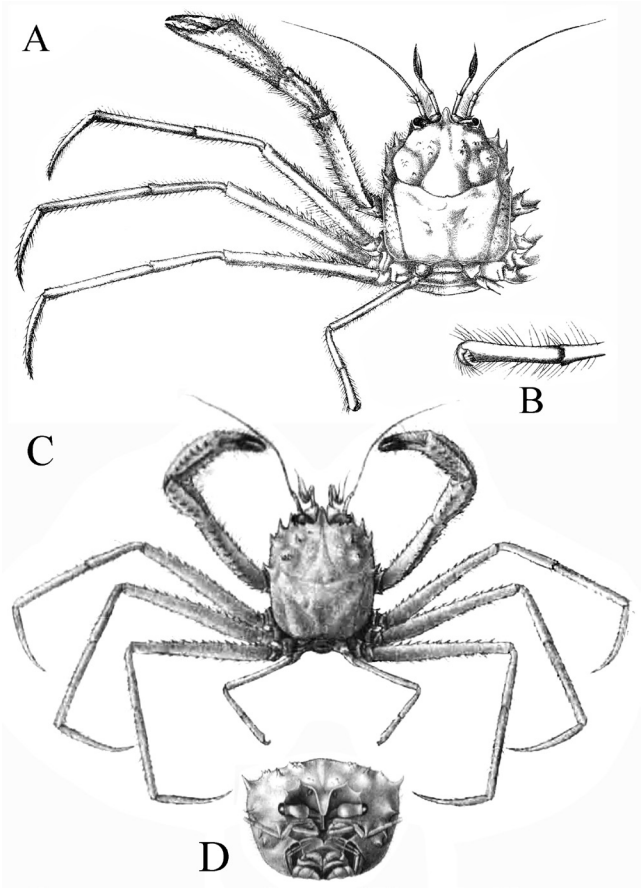

Fig. 1. *Lamoha superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891). A, B, female (after Alcock, 1901: pl. 6 fig. 24); C, D, male (after Alcock & Anderson, 1895: pl. 14 fig. 4, 4a).

The OUMNH specimen agrees well with the original figure of the type (Fig. 1C, D; Alcock & Anderson, 1895: pl. 14 fig. 4, 4a) as well as Alcock (1901: pl. 6 fig. 24) (Fig. 1A, B) in most respects, except that the subhepatic region has only a distinct spine with one sharp granule posterior to it (Figs. 5E, 7G) rather than with two distinct spines (cf. Alcock & Anderson, 1895: pl. 14 fig. 4; Guinot & Richer de Forges, 1995: fig. 56c, d). The USNM specimen on the other hand, possesses two distinct spines on the subhepatic region (Figs. 5F, 7H). The proportions and armature of the P2–P4 of both specimens (Fig. 2) agree well with the original figures (Fig. 1).

The records of "*Lamoha superciliosa*" from the South China Sea and Taiwan by Serène & Lohavanijaya (1973), Richer de Forges & Ng (2008) and Ahyong et al. (2009) are all here regarded as belonging to *L. longirostris*. On the basis of the good series of specimens of *L. longirostris* we have examined from various parts of the Pacific, we now know that the two primary characters used by Guinot & Richer de Forges (1995) and Richer de Forges & Ng (2008) to separate the two species – the number of subhepatic spines (one or two) and the armature of the supraorbital margin (with one or no spine) are variable (see remarks for next species). Richer de Forges & Ng (2008) also commented that the black spot on the cheliped is longer in *L. longirostris* compared to *L. superciliosa* from the South China Sea and Taiwan, but we now find that this character varies as well.

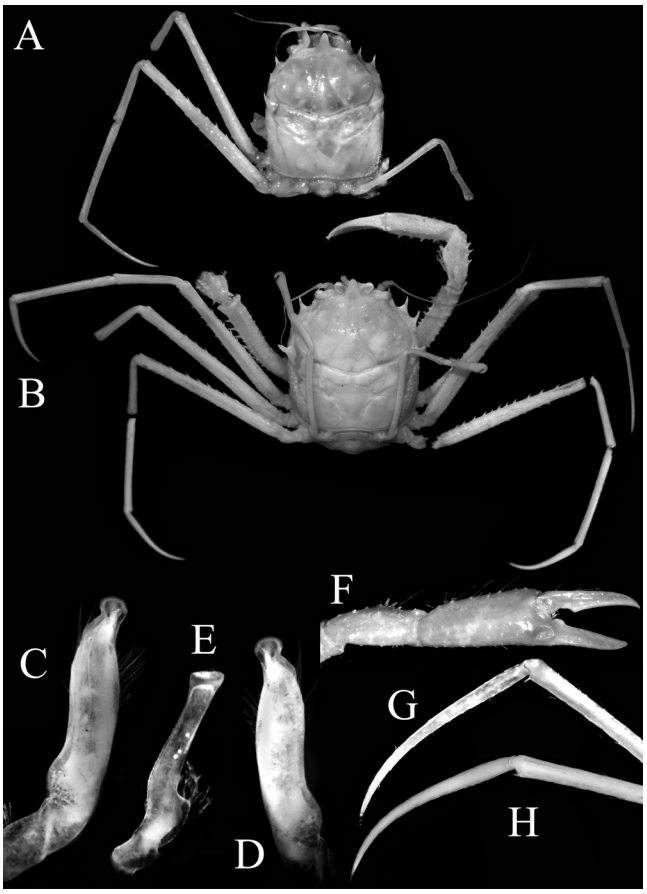

Fig. 2. *Lamoha superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891). A, C–G, male (11.8 × 9.9 mm) (OUMNH 2008-09-0039), Laccadive Sea; B, H, female (15.6 × 13.0 mm) (USNM 42696), Arabian Sea. A, B, overall habitus; C, left G1, ventral view; D, left G1, dorsal view; E, left G2; F, outer view of right chela; G, H, left P4 dactylus.

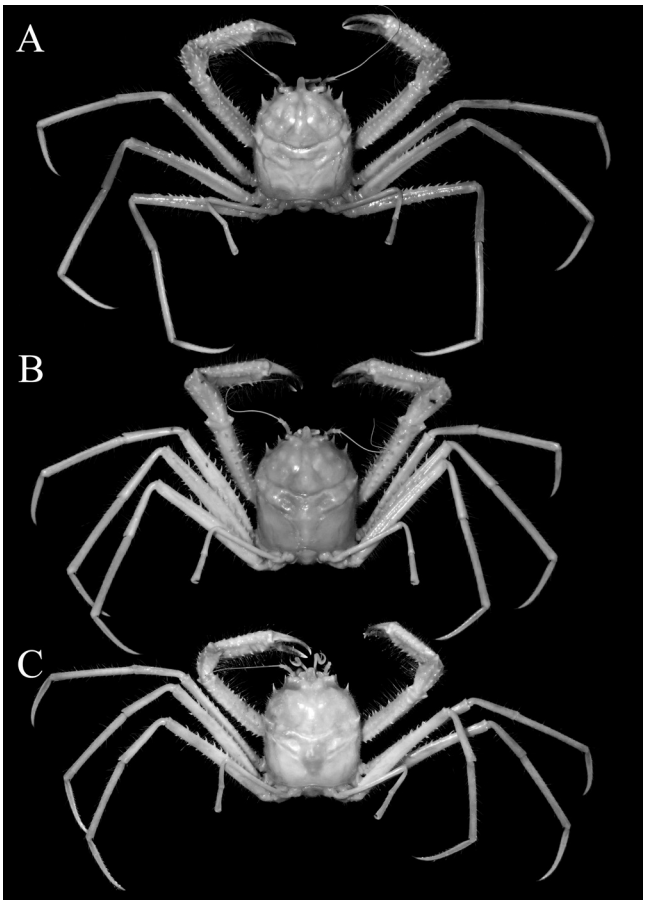

Fig. 3. *Lamoha longirostris* (Chen, 1986). A, paralectotype male (22.9 × 18.6 mm) (ZRC 1999.0007), East China Sea; B, male (29.2 × 24.2 mm) (ZRC 2008.990), Philippines; C, female (24.9 × 20.3 mm) (ZRC 2016.0556), South China Sea.

The only characters that appear to separate *L. superciliosa* s. str. from *L. longirostris* is the general form of the carapace and ambulatory legs. In *L. superciliosa* s. str., the carapace is relatively more quadrate (Figs. 2A, B, 5E, F) (carapace slightly more subovate with the lateral margins usually more converging in *L. longirostris*, Figs. 3, 4A, B, 5A–D); the gastric regions are relatively smoother (Figs. 1A, B, 5E, F) (gastric regions more uneven, with low swellings and some low tubercles in *L. longirostris*, Figs. 3, 4A, B, 5A–D); and more importantly, the P2–P4 dactylus is proportionately longer and more slender (Fig. 2A, B, G, H) (relatively shorter and stouter in *L. longirostris*, Figs. 3, 4). The proportions of the ambulatory dactylus are surprisingly constant regardless of sex or size, being always relatively shorter and stouter in the good series of *L. longirostris* examined here. The relatively longer and more slender dactylus of *L. superciliosa* s. str. is also evident even in the female figured by Guinot & Richer de Forges (1995: fig. 56c) from the Maldives. The G1 (Fig. 2C, D) and G2 (Fig. 2E) structures of *L. superciliosa* are almost identical to those figured for *L. longirostris* by Ng & Chen (1999: figs. 1j, k, 2a, b).

Lamoha superciliosa s. str. is known from few specimens and while it is clearly close to *L. longirostris*, their geographical separation (the former is only known from the eastern Indian Ocean while the latter only from the West Pacific) and the distinctiveness of the ambulatory dactyli indicate that both are separate species.

***Lamoha longirostris* (Chen, 1986)**

(Figs. 3, 4, 5A–D, 6A–G, 7A–F, 23, 24A)

Hypsophrus longirostris Chen, 1986: 227.

Hypsophrys futuna Guinot & Richer de Forges, 1995: 456, figs. 61l, 66 a, g. – Cleva et al., 2007: 251, fig. 20A.

Lamoha superciliosa – Serène & Lohavanijaya, 1973: 30, pl. 4 fig. A. – Ahyong et al., 2009: 98, figs. 66–68. – Richer de Forges & Ng, 2008: 23, figs. 19A–C, 20A–E, 21A–D, 22E, F (not *Hypsophrys superciliosa* Wood-Mason, in Wood-Mason & Alcock, 1891)

Lamoha longirostris – Ng & Chen, 1999: 760. – Ng et al., 2001: 54. – Takeda et al., 2005: 106, fig. 1B. – Ng et al., 2008: 40. – Richer de Forges & Ng, 2008: 20, figs. 17A–D, 18A–G, 22B–D. – Ahyong et al., 2009: 94, figs. 61–63.

Material examined. Paralectotype: male (22.9 × 18.6 mm) (ZRC 1999.0007), East China Sea, St. 2V-9, 28°10′N 127°30′E, 900 m, coll. 3 January 1981. Others: 1 male (29.2 × 24.2 mm) (ZRC 2008.0990), station CP 2753, eastern Luzon, 15°37.23′N 121°58.24′E, Philippines, 1252–1350 m, trawl, coll. AURORA 2007 Expedition, 3 June 2007. – 1 male (25.2 × 20.2 mm) (ZRC 1999.0410), off Tungsha Island, Taiwan, South China Sea, trawl coll. P.-H. Ho, 23

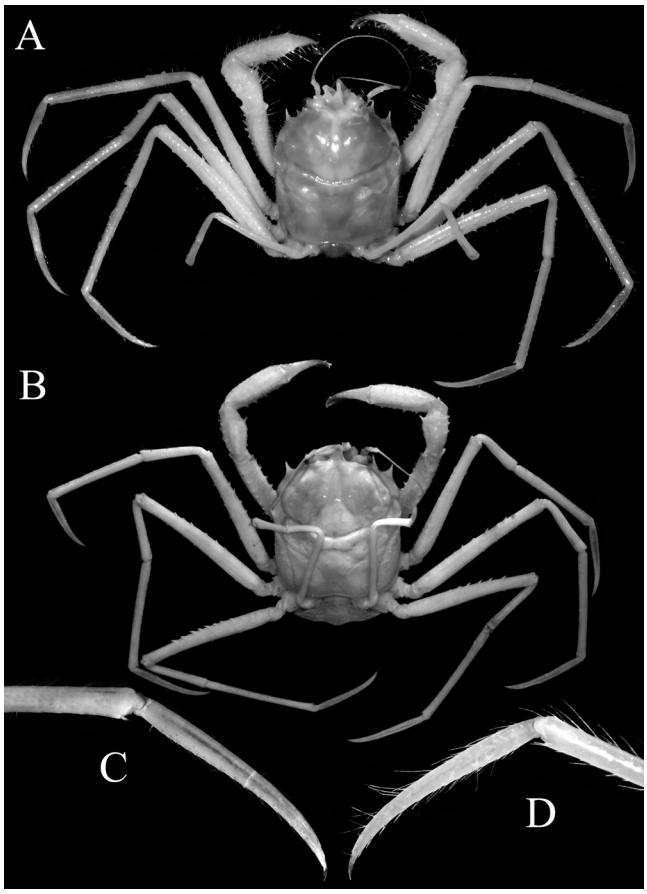

Fig. 4. *Lamoha longirostris* (Chen, 1986). A, male (15.3 × 12.6 mm) (ZRC 2016.0556), South China Sea; B, C, ovigerous female (18.5 × 16.6 mm) (MNHN-IU-2011-2732), Papua New Guinea; D, female (13.1 × 10.0 mm) (ZRC 2008.992), South China Sea. A, B, overall habitus; C, right P4 dactylus; D, left P4 dactylus.

April 1995. – 2 ovigerous females (20.8 × 18.2 mm, 26.3 × 20.8 mm) (ZRC 2008.0991), Taiwan, South China Sea, 1400 m, coll. Taiwan University, 2000s. – 1 male (15.0 × 12.8 mm), 1 ovigerous female (23.2 × 18.9 mm), 1 female (24.9 × 20.3 mm) (ZRC 2016.0555), station CP 4167, off Tungsha Island, 22°06.12′N 119°07.77′E – 22°02.69′N 119°03.64′E, Taiwan, South China Sea, 1306–1756 m, mud substrate, trawl, coll. ZHONGSHA 2015 Cruise, 1 August 2015. – 2 males (24.9 × 20.5 mm, 15.3 × 12.6 mm), 1 ovigerous female (24.2 × 20.4 mm), 1 female (23.4 × 19.4 mm) (ZRC 2016.0556), station CTS 2, cold seep, 22°5.19′N 119°48.03′E – 22°2.22′N 119°48.02′E, off southern Taiwan, South China Sea, 1360–1669 m, mud sediment with many dead bivalves and vent tubes, trawl, coll. 30 May 2015. – 1 female (17.9 × 15.0 mm) (ZRC 2008.0993), Taiwan, station OCP 280, 24°23.71′N 122°14.22′E, 1213–1261 m, eastern Taiwan, South China Sea, trawl, coll. TAIWAN 2005 Cruise, 14 June 2005. – 1 male (18.0 × 14.8 mm), 2 females (13.1 × 10.0 mm, 10.8 × 8.5 mm) (ZRC 2008.0992), station CP 277, 24°23.57′N 122°14.12′E, 1222–1261 m, southern Taiwan, South China Sea, trawl, coll. TAIWAN 2005 Cruise, 14 June 2005. – 1 male (13.8 × 11.2 mm), 2 juvenile females (11.8 × 9.1 mm, 10.0 × 7.2 mm) (ZRC 2016.0557), station CST 17, muddy sediment, Pointer Ridge, Taiwan, 22°3.79′N 118°58.80′E – 22°3.78′N 119°4.11′E, 1482 m coll. 1 May 2016. – 2 ovigerous females (28.6 × 25.3 mm, 27.1 × 23.9 mm) (USNM 1150828), station 98, Pagan Island, Northern Mariana Islands, 18°05′48″N 145°41′48″E, 896 m, coll. *Townsend Cromwell*, 6 May 1982. – 1 male (22.0 × 18.3 mm) (USNM 1150825), station 231, Agrihan Island, Mariana Islands, 18°47.4′N 145°35′E, 1280 m, coll. *Townsend Cromwell*, 11 July 1982. – 1 ovigerous female (18.5 × 16.6 mm) (MNHN-IU-2011-2732), station CP 3686, Papua New Guinea, 03°16′S 147°18′E, 964–1025 m, coll. BIOPAPUA, 26 September 2010.

Remarks. The specimen from the East China Sea is a paralectotype (see Ng & Chen, 1999). *Lamoha futuna* (Guinot & Richer de Forges, 1995) was synonymised with *L. longirostris* by Ng & Chen (1999) after examining the types of both species. The distribution of this deep-sea species is therefore very wide, from the South China Sea and China to the central Pacific.

The prominent black spot on each side of the propodus of their chelipeds (see Richer de Forges & Ng, 2008: fig. 18C, D) is distinct in all specimens, but varies in size. This spot was "interpreted" by Williams (1976) as being a luminescent organ. Nobody, however, has observed this phenomenon on a live animal.

In *L. longirostris*, the supraorbital margin varies from almost entire, without trace of any tooth or spine (Fig. 6G), possessing a low tooth (Fig. 6A, B, E, F) or distinct spine or tooth (Fig. 6C, D). Both specimens of *L. superciliosa* have a small tooth on the supraorbital margin (Fig. 6H). The subhepatic region of *L. longirostris* always has one distinct spine and there is sometimes also a sharp granule or a small spine present on the outer part as well, but always distinctly smaller than the inner one (Figs. 5A, 7A, C, E, F). Many of the specimens of *L. longirostris*, however, have only one spine, with the remainder of the surface smooth (Fig. 5B–D, 7B, D). In *L. superciliosa*, however, this second tooth is either small (Fig. 7G) or can be as large as the inner one (Figs. 1A, C, 7H).

Colour. In life, the carapace, chelipeds and ambulatory legs are red to pink, with the fingers dark-brown to almost black (Figs. 23, 24A) (see also Richer de Forges & Ng, 2008: fig. 18; Ahyong et al., 2009: figs. 61, 62, 66, 67).

Ecology. A specimen of *L. longirostris* was observed by a submersible at a depth of 1212 m in the Mariana Island group (18.323°N 165.979°E) on 13 August 2016 carrying an unidentified sea anemone (Fig. 23). Another *Lamoha* species, *L. inflata* (Guinot & Richer de Forges, 1981) has also been observed to use the P5 to cling to and manipulate sea anemones. Chintiroglou et al. (1996) first reported that specimens of *L. inflata* caught in deep-water traps often carried a species of *Isanthus* (Anthozoa, Actiniaria, Isanthidae). They noted the crabs were caught from hard bottoms and suggested that because the "special chelate structure of the last pair of legs which is raised over the carapace, that the crab must be the active partner, probably manipulating the anemone with the P5 to take it off the substratum and to establish the association." (Chintiroglou

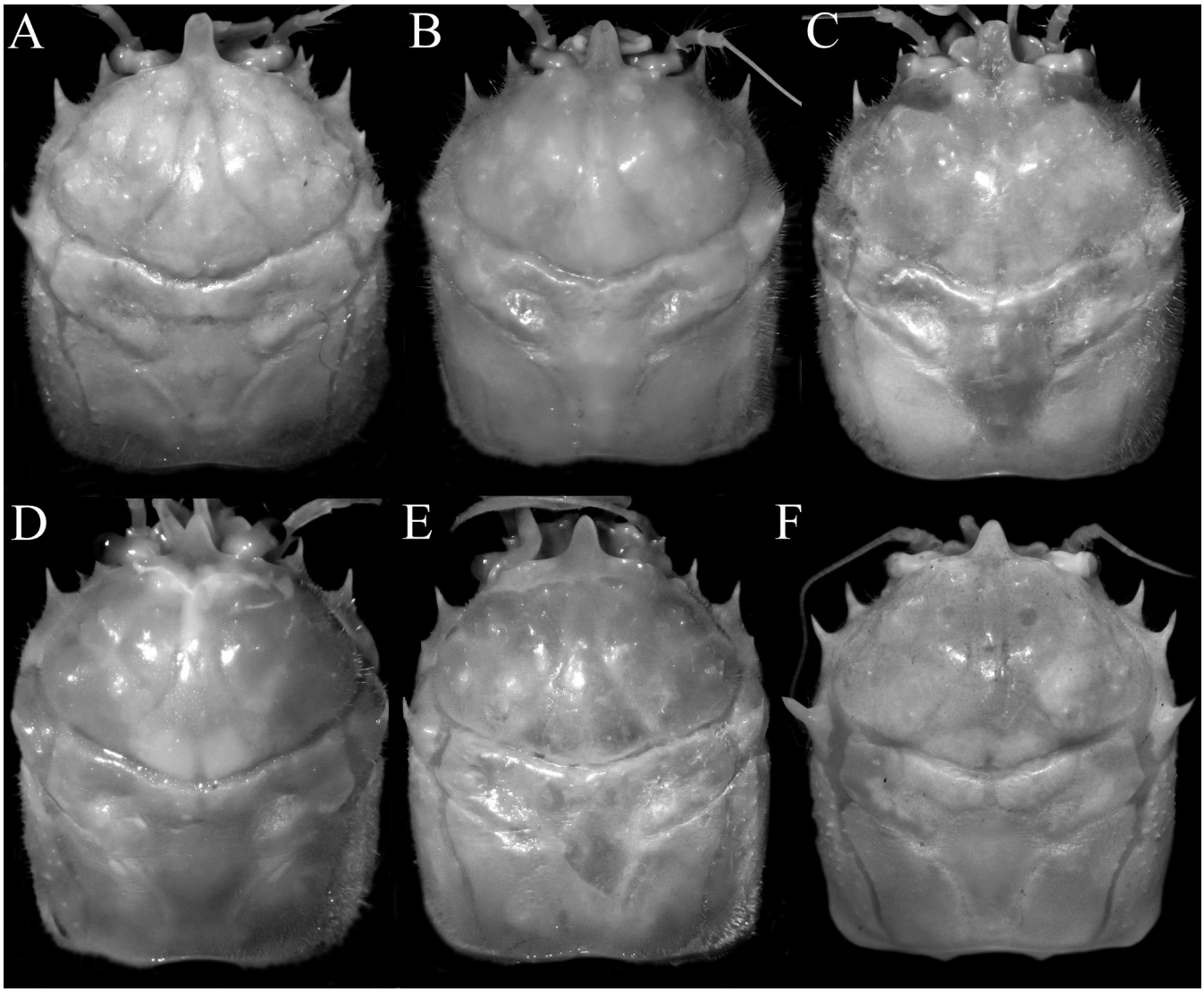

Fig. 5. Carapace. A–D, *Lamoha longirostris* (Chen, 1986). A, paralectotype male (22.9 × 18.6 mm) (ZRC 1999.0007), East China Sea; B, male (29.2 × 24.2 mm) (ZRC 2008.990), Philippines; C, female (24.9 × 20.3 mm) (ZRC 2016.0555), South China Sea; D, male (15.3 × 12.6 mm) (ZRC 2016.0556), South China Sea; E, F, *L. superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891). E, male (11.8 × 9.9 mm) (OUMNH 2008-09-0039), Laccadive Sea; F, female (15.6 × 13.0 mm) (USNM 42696), Arabian Sea.

et al., 1996: 22) (see also Guinot et al., 1995). The present photographs of a *L. longirostris* photographed in situ (Fig. 23) in his natural hard bottom habitat carrying an unidentified anemone confirms their hypothesis. Another homolid, *Paramola japonica* (Parisi, 1915) is also reported to carry sea anemones (see Wicksten, 1985; Guinot & Wicksten, 2015).

Lamoha murotoensis (Sakai, 1979)
(Fig. 24B)

Hypsophrys murotoensis Sakai, 1979: 6. – Guinot & Richer de Forges, 1981: 541. – Miyake, 1983: 197. – Guinot & Richer de Forges, 1995: 449.

Hypsophrys longipes – Matsuzawa, 1977: pl. 87, figs. 1, 2. – Sakai, 1977: 54.

Lamoha murotoensis – Tan et al., 2000: 185. – Ng et al., 2001: 6. – Ng & Wang, 2002: 14. – Richer de Forges & Ng, 2008: 21. – Ahyong et al., 2009: 96.

Material examined. 1 ovigerous female (24.8 × 21.8 mm) (ZRC 2009.0786), station P4, Balicasag, Panglao, Bohol, Visayas, Philippines, 9°31.1′N 123°41.5′E, coll. 31 May 2004. – 1 male (21.8 × 18.9 mm) (ZRC 2001.2276), NE Taiwan, Ilan Province, Nangfangao, Shu-Ao, coll. J.-F. Huang, 3 July 1992. – 1 male (20.4 × 18.4 mm) (ZRC 2016.0200), station CP 4153, north of Macclesfield Bank, 16°13.94′N 114°27.21′E – 16°14.24′N 114°29.55′E, Taiwan, South China Sea, 318 m, sponge substrate with sea pens and echinoderms, trawl, coll. ZHONGSHA 2015 Cruise, 27 July 2015.

Colour. In life, the carapace, chelipeds and ambulatory legs are pink, with the stronger cristae and larger granules and spines on the carapace white (Fig. 24B) (see also Richer de Forges & Ng, 2007: fig. 8B; Ahyong et al., 2009: fig. 64).

Remarks. This distinctively coloured species is widely distributed from Japan to Madagascar (Ahyong et al., 2009).

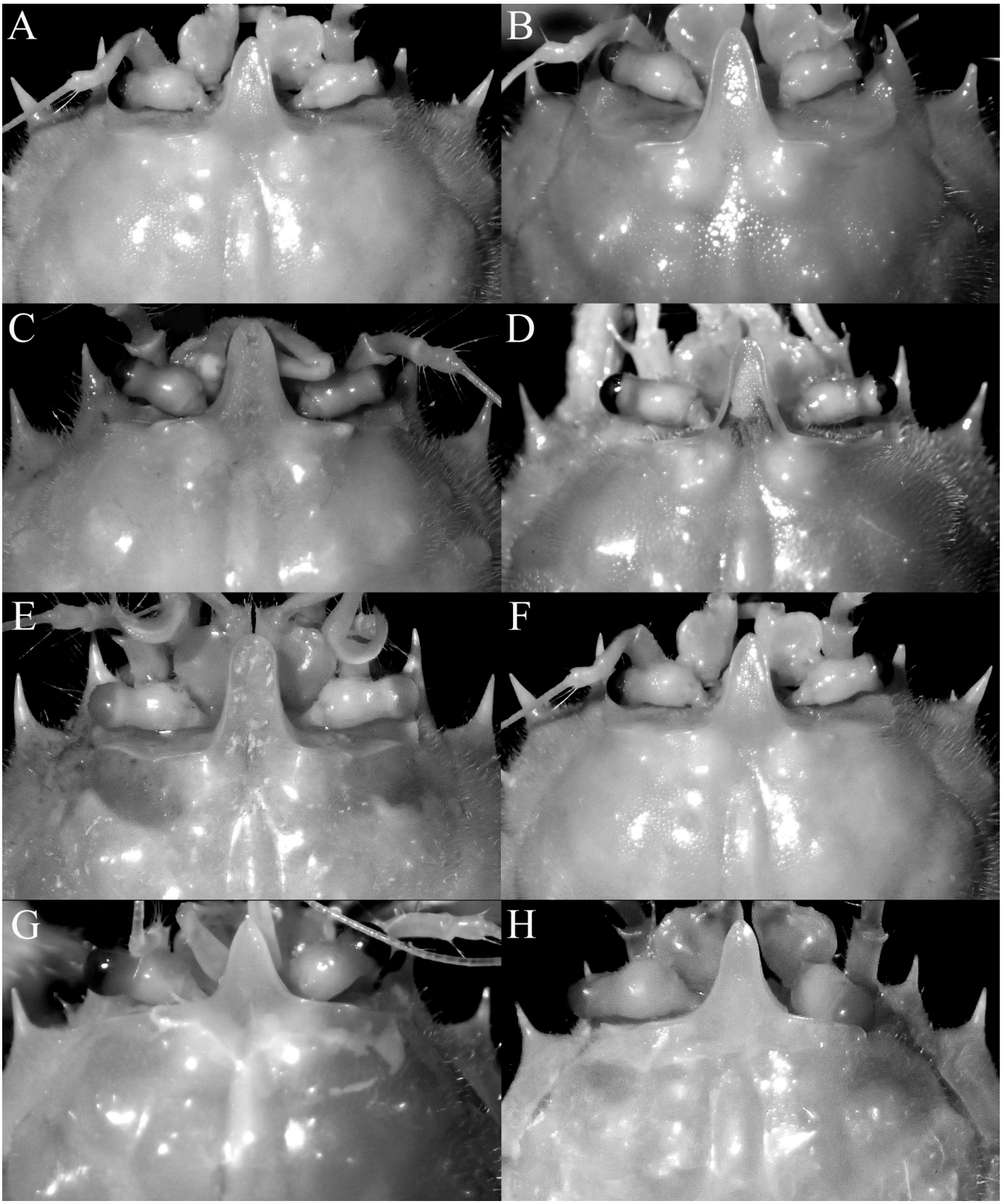

Fig. 6. A–G, *Lamoha longirostris* (Chen, 1986). A, paralectotype male (22.9 × 18.6 mm) (ZRC 1999.0007), East China Sea; B, male (24.9 × 20.5 mm) (ZRC 2016.0556), South China Sea; C, male (29.2 × 24.2 mm) (ZRC 2008.990), Philippines; D, ovigerous female (24.2 × 20.4 mm) (ZRC 2016.0556) South China Sea; E, female (24.9 × 20.3 mm) (ZRC 2016.0555), South China Sea; F, female (23.4 × 19.4 mm) (ZRC 2016.0556), South China Sea; G, male (15.3 × 12.6 mm) (ZRC 2016.0556), South China Sea. H, *L. superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891), male (11.8 × 9.9 mm) (OUMNH 2008-09-0039), Laccadive Sea.

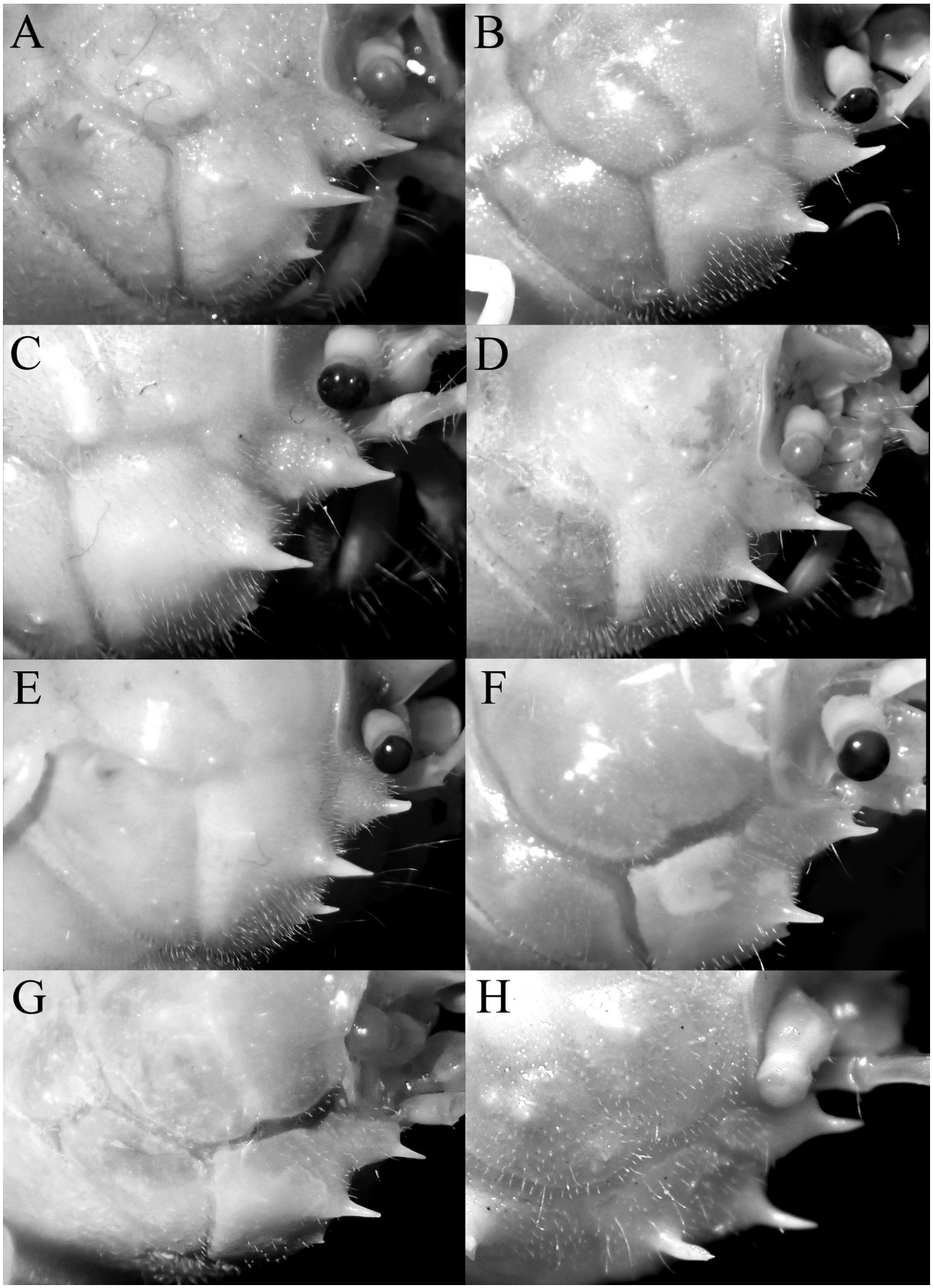

Fig. 7. A–G, *Lamoha longirostris* (Chen, 1986). A, paralectotype male (22.9 × 18.6 mm) (ZRC 1999.0007), East China Sea; B, male (24.9 × 20.5 mm) (ZRC 2016.0556), South China Sea; C, male (29.2 × 24.2 mm) (ZRC 2008.990), Philippines; D, female (24.9 × 20.3 mm) (ZRC 2016.0555), South China Sea; E, female (23.4 × 19.4 mm) (ZRC 2016.0556), South China Sea; F, male (15.3 × 12.6 mm) (ZRC 2016.0556), South China Sea; G, *L. superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891), male (11.8 × 9.9 mm) (OUMNH 2008-09-0039), Laccadive Sea. H, *L. superciliosa* (Wood-Mason, in Wood-Mason & Alcock, 1891), female (15.6 × 13.0 mm) (USNM 42696), Arabian Sea.

Paromola Wood-Mason, in Wood-Mason & Alcock, 1891

Paromola macrochira Sakai, 1961
(Fig. 24C, D)

Paromola macrochira Sakai, 1961: 146, pl. 4, fig. 5. – Griffin, 1965: 87 (part); Serène & Lohavanijaya, 1973: 26, 27, fig. 28 (list). – Sakai, 1976: 40, pl. 10. – Jenkins, 1977: 4 (list). – Matsuzawa, 1977: pl. 85, figs. 1, 2. – Miyake, 1983: 13, 197, pl. 5 fig. 2. – Guinot & Richer de Forges, 1995: 367: figs. 21c–e, 27 f. – Ng & Huang, 1997: 262, fig. 1B, C. – Ikeda, 1998: 68–69, pl. 10. – Miyake, 1998: 13, 197, pl. 5 fig. 2. – Muraoka, 1998: 15; Tan et al., 2000: 186. – Ng et al., 2001: 6. – Chen & Sun, 2002: 140, fig. 58. – Marumura & Kosaka, 2003: 21. – Richer de Forges & Ng, 2007: 36. – Ahyong et al., 2009: 111, figs. 78–81. – Ng et al., 2008: 41. – Ng, 2015: 1447, figs. 1–5.

Paromola alcocki faughni Serène & Lohavanijaya, 1973: 27, fig. 32–38, pl. 3C. – Kensley, 1980: 25.

Moloha ? *alcocki faughni* – Guinot & Richer de Forges, 1995: 376, 383.

Material examined. 1 female (soft, 26.5 × 22.7 mm) (ZRC 2016.0558), station DW 4095, 21°13.20′N 121°33.75′E – 21°12.41′N 121°32.62′E, 517–573 m, Taiwan, South China Sea, trawl, coll. TAIWAN 2013 Cruise, 19 May 2013. – 1 juvenile (11.1 × 8.7 mm) (ZRC 2016.0559), station CP 4117, continental slope off Tungsha Island, 20°00.88′N 114°08.80′E – 20°01.87′N 114°09.36′E, Taiwan, South China Sea, 333–421 m, coll. trawl, NANHAI 2014 Cruise, 11 January 2014. – 2 females (16.5 × 11.4 mm, 16.5 × 11.5 mm) (ZRC 2016.0560), station CP 4155, northeast of Macclesfield Bank, 16°13.60′N 115°01.61′E – 16°11.21′N 114°59.77′E, Taiwan, South China Sea, 510–526 m, trawl, coll. ZHONGSHA 2015 Cruise, 28 July 2015. – 1 soft male specimen (damaged) (ZRC 2016.0561), station CP 4156, northeast of Macclesfield Bank, 16°09.80′N 114°58.73′E – 16°12.19′N 115°00.53′E, Taiwan, South China Sea, 503–511 m, trawl, coll. ZHONGSHA 2015 Cruise, 28 July 2015. – 1 female (16.3 × 11.1 mm) (ZRC 2016.0562), station CP 4137, continental slope off Tungsha Island, 19°53.06′N 114°21.67′E – 19°53.03′N 114°24.74′E, Taiwan, South China Sea, 524–536 m, trawl, coll. ZHONGSHA 2015 Cruise, 23 July 2015.

Colour. Adult *Paramola macrochira* are orangish-brown overall (Ahyong et al., 2009: figs. 78, 79). The smaller specimens obtained from the South China Sea are pale orangish-pink overall, with the ambulatory legs mostly white (Fig. 24C, D).

Remarks. On the juveniles of this large species, the rostral horns appear to be relatively longer than in the adults. Ng (2015) demonstrated that the *Paromola alcocki faughni* from Serène & Lohavanijaya (1973) is a juvenile of *P. macrochira*.

Moloha Barnard, 1946

Remarks. Ng & Kumar (2015) recently reviewed *Moloha* in describing a new species from India and noted that the correct date for the genus should be "Barnard, 1946".

Moloha majora (Kubo, 1936)
(Fig. 24E)

Latreillopsis major Kubo, 1936: 63, pl. 17 (see Guinot & Richer de Forges, 1995: 384; Richer de Forges & Ng, 2007: 34; for complete synonymy, excluding Philippine records).

Material examined. 1 male (54.8 × 47.8 mm, broken) (ZRC 2016.0197), station CP 4153, north of Macclesfield Bank, 16°13.94′N 114°27.21′E – 16°14.25′N 114°29.55′E, Taiwan, South China Sea, 318 m, sponge substrate with sea pens and echinoderms, trawl, coll. ZHONGSHA 2015 Cruise, 27 July 2015.

Colour. The colour is typical for the species, being orangish-red overall (Fig. 24E) (see also Ahyong et al., 2009: fig. 73).

Remarks. *Moloha majora* was described from one male and one female from off Kominato in Japan by Kubo (1936). The current location of this material is not known and may be lost (see Ng & Richer de Forges, 2015).

Homolochunia Doflein, 1904

Homolochunia gadaletae Guinot & Richer de Forges, 1995
(Fig. 24F)

Homolochunia gadaletae Guinot & Richer de Forges, 1995: 434, figs. 50e–f, 51d–f. – Ng & Richer de Forges, 2008: 7. – Ahyong et al., 2009: 83, figs. 51–53.

Homolochunia valdiviae – Sakai, 1955: 106. – Sakai, 1976: 42. – Miyake, 1983: 197. – Nagai, 1994: 50. (not *Homolochunia valdiviae* Doflein, 1904)

Material examined. 1 ovigerous female (34.1 × 26.4 mm), 1 female (11.6 × 8.5 mm) (ZRC 2016.0198), station CP 4156, northeast of Macclesfield Bank, 16°09.80′N 114°58.73′E – 16°12.19′N 115°00.53′E, Taiwan, South China Sea, 503–511 m, trawl, coll. ZHONGSHA 2015 Cruise, 28 July 2015.

Colour. The carapace and pseudorostral spines are brown to orange, with the rest of body dirty-white (Fig. 24F) (see also Ahyong et al., 2009: figs. 51, 52).

Remarks. The female from the South China Sea fits well with the description of *H. gadaletae*. The pseudorostral spines are long, slender, curved downward and possess two accessory spines distally. The subhepatic spines in this species are sharp, with the upper one twice the length of the second one; and the anterolateral and posterolateral spines are all strong and sharp. The ambulatory legs are very long and slender, with long dactyli; the P2–P4 meri all have five spines on the dorsal margin; and the fingers of the P5 pseudochela are long and slender.

Homolomannia Ihle, 1912

Homolomania sibogae Ihle, 1912
(Fig. 24G)

Homolomannia sibogae Ihle, 1912: 208 (for complete synonymy, see Guinot & Richer de Forges, 1995: 460; Richer de Forges & Ng, 2007: 41, fig. 8C, D; Richer de Forges & Ng, 2008: 11, figs. 9A–C, 10A–C; Ahyong et al., 2009: 91, figs. 58–60).

Material examined. 1 male (25.3 × 19.2 mm) (ZRC 2009.0907), Tungkang fishing port, southern Taiwan, coll. P.K.L. Ng, 7 April 2004. – 1 male (15.4 × 10.2 mm), 2 females (12.3 × 8.6 mm, 11.4 × 8.4 mm) (ZRC 2016.0199), station CP 4135, continental shelf of Tungsha Island, 19°58.42′N 114°32.93′E – 19°58.94′N 114°37.70′E, Taiwan, South China Sea, 211–218 m, sandy coral substrate, trawl, coll. ZHONGSHA 2015, 23 July 2015.

Colour. The colour pattern here, a uniform brownish-red (Fig. 24G), is typical for this species, although large individuals tend to be brown (see also Richer de Forges & Ng, 2007: fig. 8C, D; Ahyong et al., 2009: figs. 58, 59).

Paromolopsis Wood-Mason, in Wood-Mason & Alcock, 1891

Paromolopsis boasi Wood-Mason, in Wood-Mason & Alcock, 1891
(Fig. 24H)

Paromolopsis boasi Wood-Mason & Alcock, 1891: 268, fig. 5 (for complete synonymy, see Guinot & Richer de Forges, 1995: 355; Richer de Forges & Ng, 2008: 32; Ahyong et al., 2009: 115, fig. 82).

Material examined. 1 male (31.4 × 26.9 mm) (ZRC 2016.0563), station CP 4118, continental shelf off Tungsha Island, 20°00.76′N 115°00.83′E – 20°01.28′N 115°02.12′E, Taiwan, South China Sea, 700–723 m, trawl, coll. NANHAI 2014 Cruise, 12 January 2014. – 1 male (19.8 × 17.5 mm), 1 female (20.1 × 17.4 mm) (ZRC 2016.0564), station CP 4128, off Tungsha Island, 20°44.86′N 116°08.01′E – 20°42.28′N 116°08.01′E, Taiwan, South China Sea, 420–444 m, trawl, coll. DONGSHA 2014 Cruise, 1 May 2014. – 1 male (20.5 × 18.2 mm), 1 male (20.1 × 17.7 mm) (ZRC 2016.0565), station CP 4137, continental slope off Tungsha Island, 19°53.06′N 114°21.68′E – 19°53.03′N 114°24.74′E, Taiwan, South China Sea, 524–536 m, trawl, coll. ZHONGSHA 2015 Cruise, 23 July 2015. – 1 female (18.8 × 17.1 mm) (ZRC 2016.0566), station CP 4155, northeast of Macclesfield Bank, 16°13.60′N 115°01.61′E – 16°11.21′N 114°59.77′E, Taiwan, South China Sea, 510–526 m, trawl, coll. ZHONGSHA 2015 Cruise, 28 July 2015.

Colour. The colour in life is a typical orangish-brown on the carapace and ambulatory legs (Fig. 24H) (see also Ahyong et al., 2009: fig. 82).

Remarks. The taxonomy of this widely distributed Indo-West Pacific species has been discussed at length by Guinot & Richer de Forges (1995).

Homologenus A. Milne-Edwards, in Henderson, 1888

Remarks. *Homologenus* is a genus composed of small species living in deep waters, often greater than 1000 m, on muddy or sandy substrates. Eleven species are known from the Atlantic and the Pacific Oceans: *H. rostratus* (A. Milne-Edwards, 1880) (Caribbean Islands); *H. braueri* Doflein, 1904 (Somalian coast); *H. malayensis* Ihle, 1912 (Indonesia); *H. broussei* Guinot & Richer de Forges, 1981 (French Polynesia); *H. asper* Zarenkov, in Zarenkov & Khodkina, 1983 (East Pacific Marcus-Necker seamounts); *H. donghaiensis* Chen, 1986 (East China Sea); *H. orientalis* Zarenkov, 1990 (East Pacific seamounts); *H. levii* Guinot & Richer de Forges, 1995 (New Caledonia); *H. wallis* Guinot & Richer de Forges, 1995 (Wallis and Futuna Islands); *H. boucheti* Guinot & Richer de Forges, 1995 (Madere, eastern Atlantic); and *H. namakae* Ng, 2016 (Hawaii). Two new species from the South China Sea (*H. exilis* n. sp. and *H. brevipes* n. sp.) allied to *H. malayensis* and *H. donghaiensis* are described below.

The two new species of *Homologenus* described here are represented by both sexes, and allow us to observe some sexually dimorphic features. In females, the armature on P2–P4 (Figs. 9A, 10A, 12E–G, 16A, B, 19A–C, I–K) is stronger and more prominent than in males (Figs. 9B, 10B, 12I–K, 16C, 19E–G, M–O). The spines on the pleonal somites 2–5 in males (Fig. 21A, B, D, E, G, H), however, are always stronger and more prominent than in females (Figs. 11F, 15F, 17F).

Of interest is that all specimens of *H. brevipes* have been collected from deep waters just off the narrow continental shelf of eastern and southeastern Taiwan; whilst those of *H. exilis* are from off Tungsha Island, some 400 km west-southwest of Taiwan.

Homologenus malayensis Ihle, 1912
(Figs. 8–12, 18A, B, 20A, B, 21A–C, 24I, J)

Homologenus malayensis Ihle, 1912: 209. – Ihle, 1913: 70, figs. 25, 31, 36–38, pl. 2, figs. 13–15. – Balss, 1940: fig. 98. – Guinot, 1979: 232. – Guinot & Richer de Forges, 1981: 553. – Guinot & Richer de Forges, 1995: 476, figs. 65 A, B, 66 d. – Ng et al., 2008: 40.

Material examined. 2 males (carapace widths 6.2 mm, 6.1 mm; both with broken rostrums) (ZRC 2016.0194, ex MNHN-IU-2011-2712), station CP 3762, 03°57′S 153°49′E, 995–1050 m, Papua New Guinea, coll. BIOPAPUA, 14 October 2010. – 1 ovigerous female (11.8 × 9.6 mm; rostrum broken) (MNHN-IU-2014-18963), station CP 4449, New Ireland, Papua New Guinea, 02°10′S 150°11′E, 623–908 m, coll. KAVIENG 2014, 1 September 2014. – 1 ovigerous female (14.6 × 14.0 mm) (ZRC 2016.0195, ex MNHN-IU-2014-18991), station CP 4442, New Ireland, Papua New Guinea, 02°164S 150°36′E, 892–925 m, coll. KAVIENG

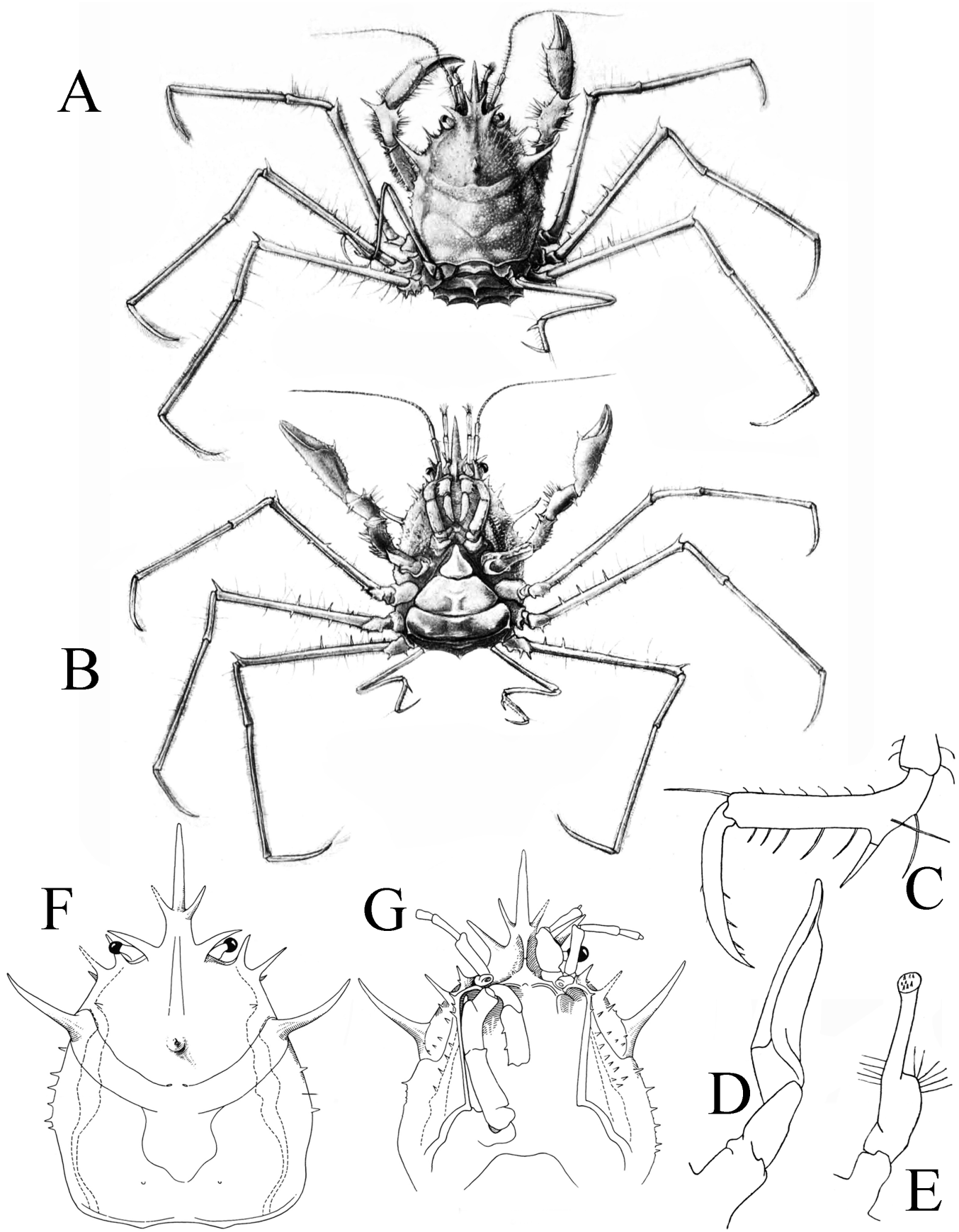

Fig. 8. *Homologenus malayensis* Ihle, 1912. A, B, F, G, lectotype female (15.5 × 9.8 mm, ZMA DE 102.967), station 122, northern Sulawesi, 1°58.5′N 125°00.5′E, Indonesia, 1264–1165 m, coll. SIBOGA Expedition, Weber, 17 July 1899 (A, B, after Ihle, 1913: pl. 2 figs. 13, 14; F, G, after Guinot & Richer de Forges, 1995: fig. 65); C, type specimen, sex not stated (after Ihle, 1913: fig. 31); D, E, paralectotype male (size not specified) (after Ihle, 1913: figs. 37, 38). A, overall habitus; B, ventral view of cephalothorax; C, left P5 pseudochela (propodus and dactylus); D, left G1; E, left G2; F, dorsal view of carapace; G, ventral view of cephalothorax.

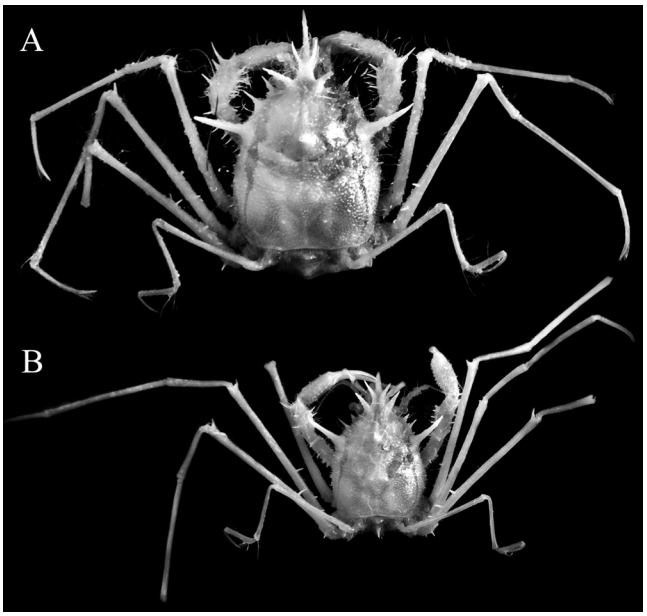

Fig. 9. *Homologenus malayensis* Ihle, 1912, overall habitus. A, lectotype female (15.5 × 9.8 mm) (NNM ZMA DE 102.967), station 122, northern Sulawesi, 1°58.5′N 125°00.5′E, Indonesia, 1264–1165 m, coll. SIBOGA Expedition, Weber, 17 July 1899; B, paralectotype (11.3 × 6.1 mm) (NNM ZMA DE 102.967), same data as lectotype. Photographs courtesy of Charles Fransen.

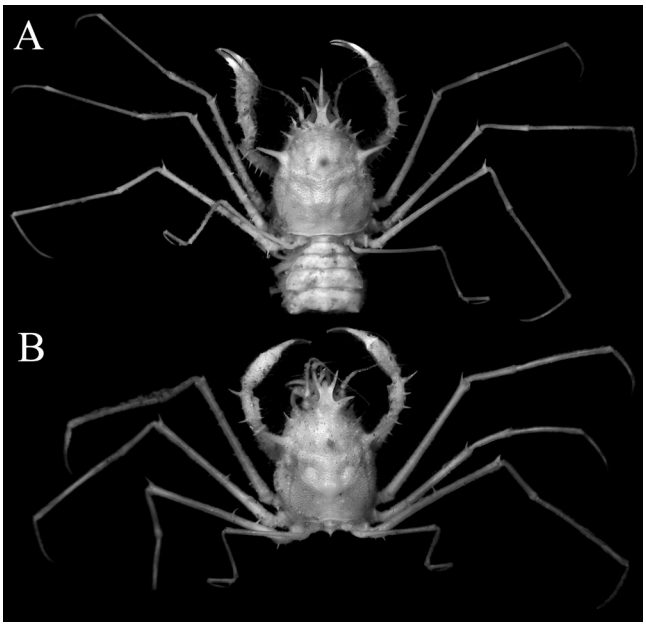

Fig. 10. *Homologenus malayensis* Ihle, 1912, overall habitus. A, female (16.0 × 13.9 mm) (ZRC 2016.0196), Papua New Guinea; B, male (carapace width 6.2 mm, rostrum damaged) (ZRC 2016.0194), Papua New Guinea.

2014, 31 August 2014. – 1 ovigerous female (13.8 × 12.3 mm) (MNHN-IU-2014-18813), station CP 4436, New Ireland, Papua New Guinea, 02°16′S 150°45′E, 1128–1135 m, coll. KAVIENG 2014, 30 August 2014. – 1 female (11.4 × 10.6 mm) (MNHN-IU-2014-18809), station CP 4433, New Ireland, Papua New Guinea, 02°16′S 150°48′E, 1056–1200 m, coll. KAVIENG 2014, 30 August 2014. – 1 ovigerous female (14.9 × 9.9 mm) (MNHN-IU-2014-8052), station CP 4431, New Ireland, Papua New Guinea, 02°16′S - 150°40′E, 830–894 m, coll. KAVIENG 2014, 29 August 2014. – 1 male (10.7 × 6.2 mm) (MNHN-IU-2015-1182), station CP 4434, New Ireland, Papua New Guinea, 02°19′S 150°47′E, 1066–1200 m, coll. KAVIENG 2014, 30 August 2014. – 2 ovigerous females (16.0 × 13.9 mm, 16.1 × 12.9 mm) (ZRC 2016.0196, ex MNHN-IU-2015-80), station CP 4245, 04°06′S 148°10′E, northwest of Vitu Islands, Bismarck Sea, 790–808 m, coll. MADEEP 2014, 22 April 2014.

Colour. The carapace is essentially dirty white to pale pink overall but the numerous setae trap a great deal of sediment, giving the animals an overall light brown appearance in life (Fig. 24I, J).

Remarks. In their revision of the genus, Guinot & Richer de Forges (1995) examined and figured the types and clarified the identity of *H. malayensis*. They characterised it by the presence of a distinct gastric spine, absence of distinct spines behind the lateral spine, the distal margin of P2 to P4 armed only with a single spine and unarmed ventral margin of P4 (Figs. 8B, 12G, K) (Guinot & Richer de Forges, 1995: 469–470). They recorded the species from northwest of Sulawesi in Indonesia (type locality), southern Java and southern Philippines (Guinot & Richer de Forges, 1995: 476) with a doubtful record from Japan. Guinot & Richer de Forges (1995: 476, fig. 65) selected a lectotype female among the material of Ihle (1912, 1913) and figured the carapace (Figs. 8A, B, F, G, 9A). These agree very well with the material from Papua New Guinea (Figs. 10–12). The figure of the G1 by Ihle (1913: fig. 37) (Fig. 8D) was made in situ and shows the laterally flattened distal chitinous part; it actually agrees with other material examined here when viewed under the equivalent orientation (Fig. 12C).

Guinot & Richer de Forges (1995: 476) also recorded several specimens from Indonesia and southern Philippines and referred them to *H. malayensis* on the basis of the ambulatory leg armature. Considering their provenance, it seems reasonable they also belong to this species as presently defined. The doubtful record by Nagai (1994) from Japan is here referred to the present new species, *H. exilis*.

The figures of *H. malayensis* by Ihle (1913: pl. 2 figs. 13, 14) (Fig. 8A, B) depict a female specimen which apparently has slightly shorter and stouter legs than the material we have on hand from Papua New Guinea (Fig. 10). However, this is just the consequence of how the legs are oriented when drawn and/or photographed. When viewed obliquely, the legs, especially the merus, appears more slender than it actually is, giving the impression of being more slender. Charles Fransen (The Naturalis, Leiden) kindly photographed the types of *H. malayensis* for us (Fig. 9) and the proportions of their ambulatory legs agree very well with the material here figured from Papua New Guinea (Fig. 10).

In the series of specimens examined (as well as what is known about *H. malayensis*, cf. Guinot & Richer de Forges, 1995), there is usually only one spine on the anterolateral angle of the merus of the third maxilliped (Fig. 8G). Two ovigerous female specimens from Papua New Guinea (13.8 ×

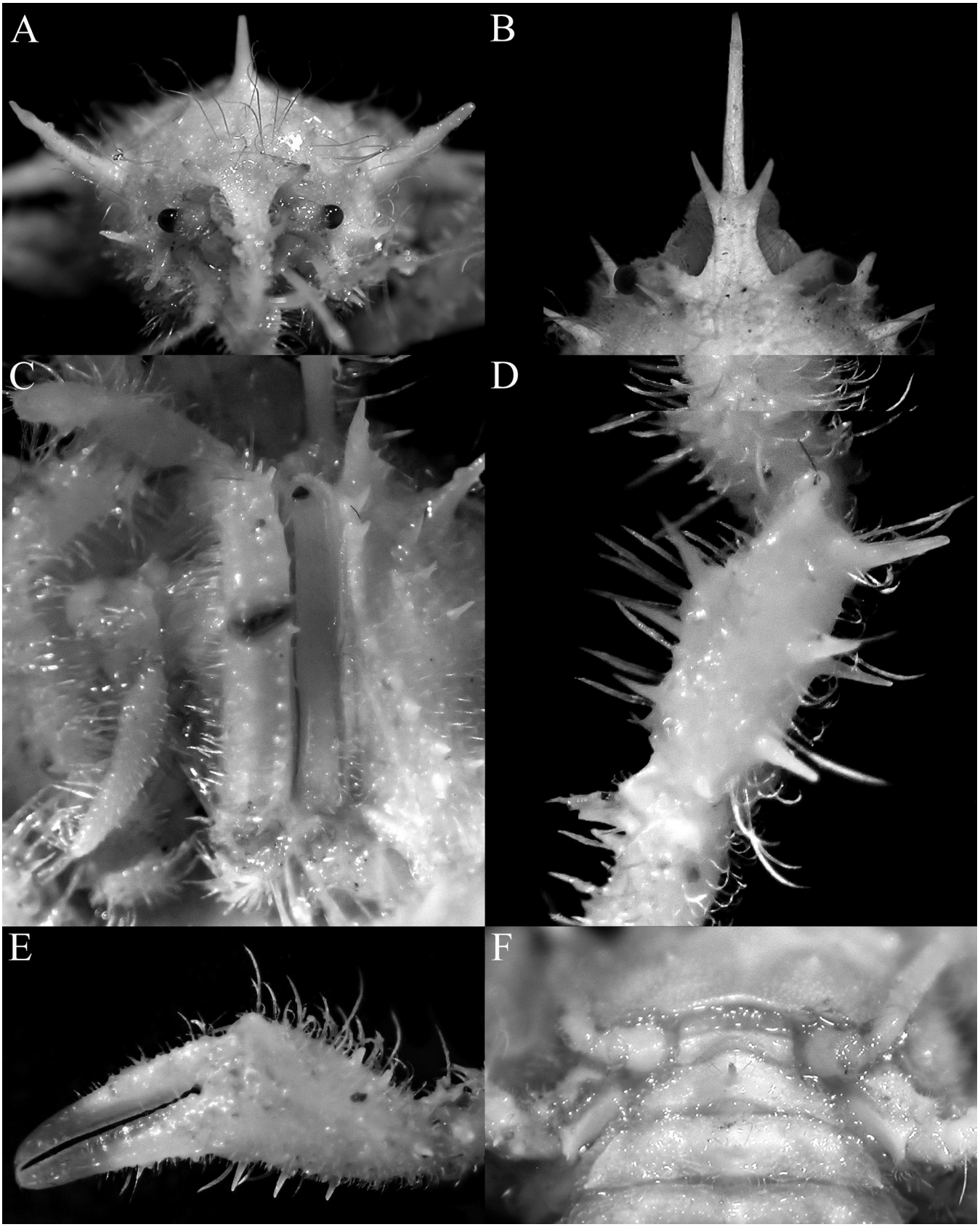

Fig. 11. *Homologenus malayensis* Ihle, 1912, female (16.0 × 13.9 mm) (ZRC 2016.0196), Papua New Guinea. A, frontal view of cephalothorax; B, rostrum, pseudorostrum and orbit; C, left third maxilliped; D, dorsal view of right cheliped carpus; E, outer view of left chela; F, posterior carapace margin and male pleonal somites 1.

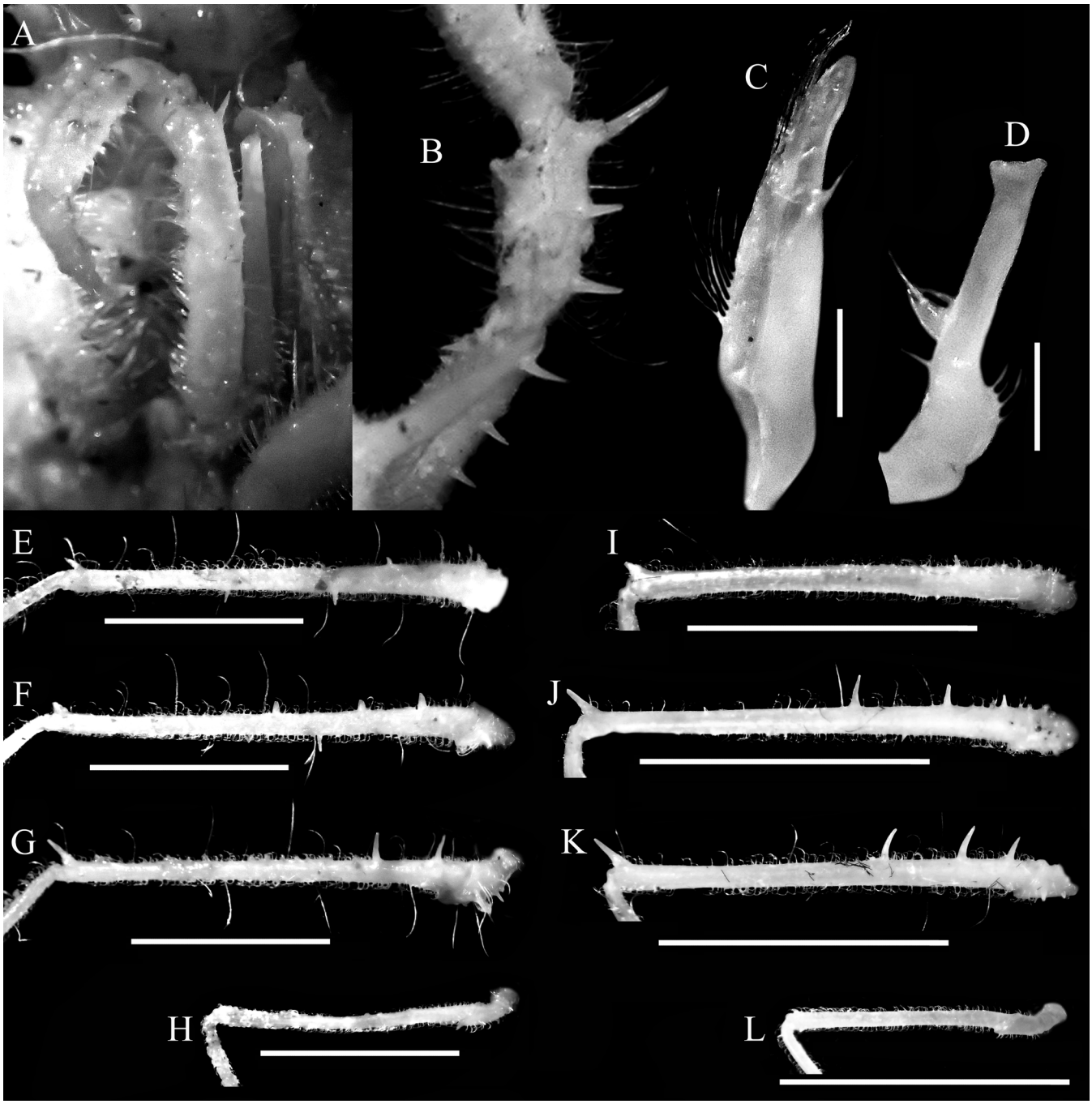

Fig. 12. *Homologenus malayensis* Ihle, 1912. A–D, I–L, male (carapace width 6.2 mm, rostrum damaged) (ZRC 2016.0194), Papua New Guinea; E–H, female (16.0 × 13.9 mm) (ZRC 2016.0196), Papua New Guinea. A, left third maxilliped; B, dorsal view of right cheliped carpus; C, left G1; D, left G2; E–L, female left P2–P5 merus, respectively; I–L, male left P2–P5, respectively. Scales: C, D = 0.5 mm; E–L = 5.0 mm.

12.3 mm, MNHN-IU-2014-18813; 16.0 × 13.9 mm, MNHN-IU-2015-80), however, have two spines (Fig. 11C), so this character is not always reliable.

***Homologenus exilis* n. sp.**
(Figs. 14, 15, 18D–F, 19A–H, 20C–E, 21D–F, 22A–C)

?*Homologenus malayensis* – Nagai, 1994: 50, pl. 1, fig. 3. (not *Homologenus malayensis* Ihle, 1912)

Material examined. Holotype: ovigerous female (13.5 × 10.4 mm) (NTOU), station CP 4132, southwest of Tungsha Island, 20°11.46′N 116°20.14′E – 20°07.26′N 116°21.51′E, 957–988 m, Taiwan, South China Sea, sandy bottom, trawl, coll. ZHONGSHA 2015 Cruise, 22 July 2015. Paratypes: 1 male (10.2 × 7.4 mm) (ZRC 2016.0568), same data as holotype. – 1 female (15.1 × 11.4 mm) (ZRC 2016.0569), station CP 4133, southwest of Tungsha Island, 20°04.51′N 116°22.37′E–19°58.89′N 116°24.28′E, 999–1070 m, Taiwan, South China Sea, sandy bottom with thin stalked sponges, trawl, coll. ZHONGSHA 2015 Cruise, 22 July 2015. – 1 male (11.4 × 9.6 mm) (ZRC 2016.0570), station CST 11, muddy bottom with numerous branching corals, Formosa Ridge, Taiwan, 22°8.83′N 119°15.68′E – 22°6.46′N 119°17.43′E, 1176–1318 m, coll. 27 April 2016.

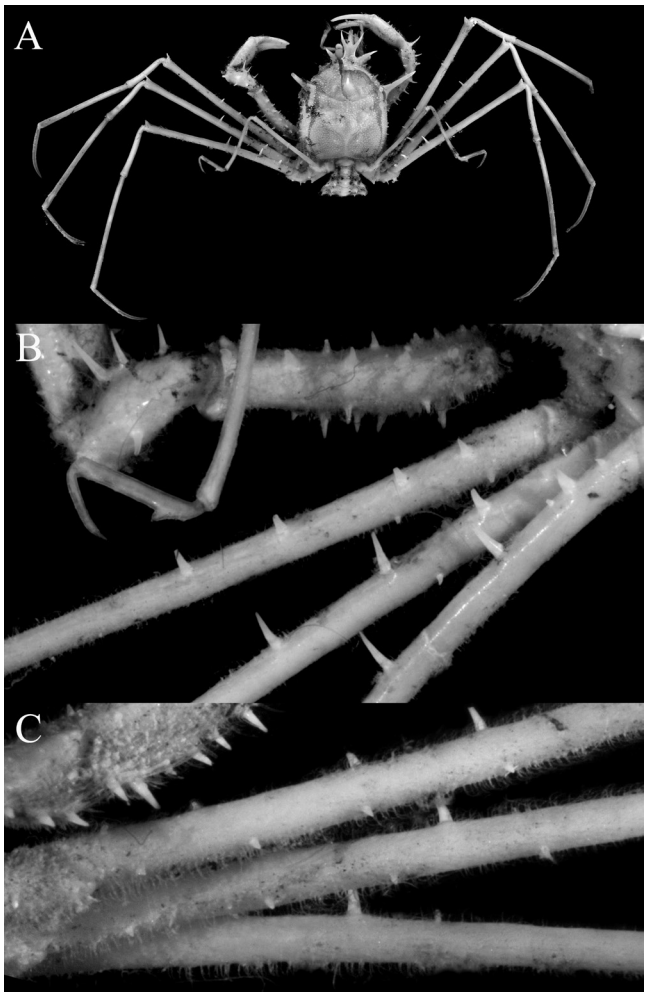

Fig. 13. *Homologenus donghaiensis* Chen, 1986, holotype male (11.0 × 10.3 mm) (IOCAS KY8B-71), East China Sea, 900 m, on soft mud, 3 August 1981. A, overall habitus; B, dorsal view of left P1–P5; C, ventral view of P2–P4. Photographs courtesy of W. Jiang.

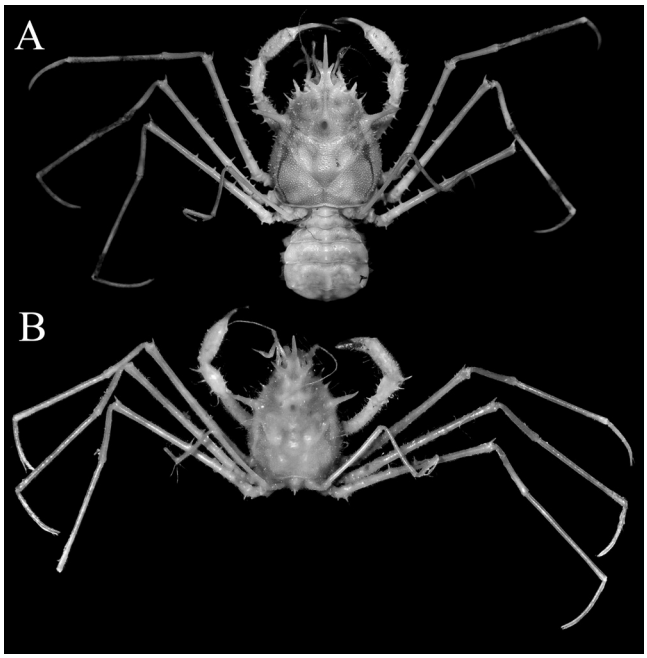

Fig. 14. *Homologenus exilis* n. sp., overall habitus. A, holotype ovigerous female (13.5 × 10.4 mm) (NTOU), South China Sea; B, paratype male (10.2 × 7.4 mm) (ZRC 2016.0568), South China Sea.

Diagnosis. Small species, covered with scattered long and short setae (Fig. 14). Carapace longer than wide; male carapace longitudinally ovate; anterior half of female carapace slightly narrower than posterior half; surface of carapace granulous; gastro-cardiac and branchio-cardiac grooves well marked; with long sharp median gastric spine and 2 short epigastric spines; short spine at angle of buccal cavity; line of prominent granules marking border of pterygostomian region (Figs. 14, 15A, 18D–F). Rostrum very long, curved, sharp, with 2 short accessory pseudorostral spines pointing anteriorly (Figs. 14, 15A, B, 18D–F). Strong pseudorostral spines in supra-ocular position gently curving laterally outwards; supraorbital margin with short spine (Figs. 14, 15A, B, 18D–F). Basal antennal spine strong (Fig. 15A). Subhepatic spine slender (Fig. 15A). Anterolateral spine long, sharp, pointing obliquely outwards (Figs. 14, 15A, 18D–F). Anteroexternal angle of merus of third maxilliped with 2 sharp curved spines (Fig. 15C). Female cheliped short; chela slightly inflated: chela with 6 small spines on ventral margin and 3 spines on dorsal margin; fingers long, slender, curved inwards; carpus with 3 long spines on external face; merus with 5 strong spines on outer margin and 6 spines on inner margin (Fig. 15D, E). Male cheliped short; chela inflated, triangular in cross-section, fingers closely appressed when closed; margins of merus spinose; carpus with 4 prominent spines; dorsal margin of chela with 4 spines, ventral margin with 4 spines (Fig. 21F). Ambulatory legs (P2–P4) very long, slender; P5 in dorsal position, merus without spines, reaching base of anterolateral spine when folded on carapace, dactylus long, slender, curved, sharp, touching proximal spine of propodus, forming pseudochela (Figs. 14, 19D, H, 20C–E); female: P2 merus with 4 or 5 spines on dorsal margin, outer surface with 2 spines, ventral margin with 6 spinules; P3 merus with 5 long straight spines on dorsal margin, outer surface with 1 short spine, ventral margin with 8 spines and spinules; P4 merus with 4 or 5 spines on dorsal margin, outer surface with 1 spinule, ventral margin with 5 or 6 spines (Figs. 14A, 19A–C); male: P2 merus with 3 or 4 spines on dorsal margin, outer surface with 2 spines, ventral margin with 6 spinules; P3 merus with 4 long straight spines on dorsal margin, outer surface with 2 spinules, ventral margin with 5 spines and spinules; P4 merus with 3 spines on dorsal margin, outer surface with 1 spinule, ventral margin with 3 spines (Figs. 14B, 19E–G); P2–P4 propodus very long, dactylus very long, falciform (Fig. 14). Armature of pleonal somites as follows: female somite 2 with 1 median spine, somite 3 with 4 low spines, somite 4 with 4 very low spines, somite 5 with 4 very low spines, telson, somites 1, 5 and 6 unarmed (Fig. 15F); male somite 2 with 1 median spine, somite 3 with 5 low spines, somite 4 with 4 low spines, somite 5 with 4 low spines, telson, somites 1 and 6 unarmed (Fig. 21D, E). G1 relatively stout, distal part subtruncate (Fig. 22A, B).

Etymology. From the Latin "*exilis*" meaning "thin or slender", alluding to the relatively long ambulatory legs of the species when compared to the other new species, *H. brevipes*. Used as a noun in apposition.

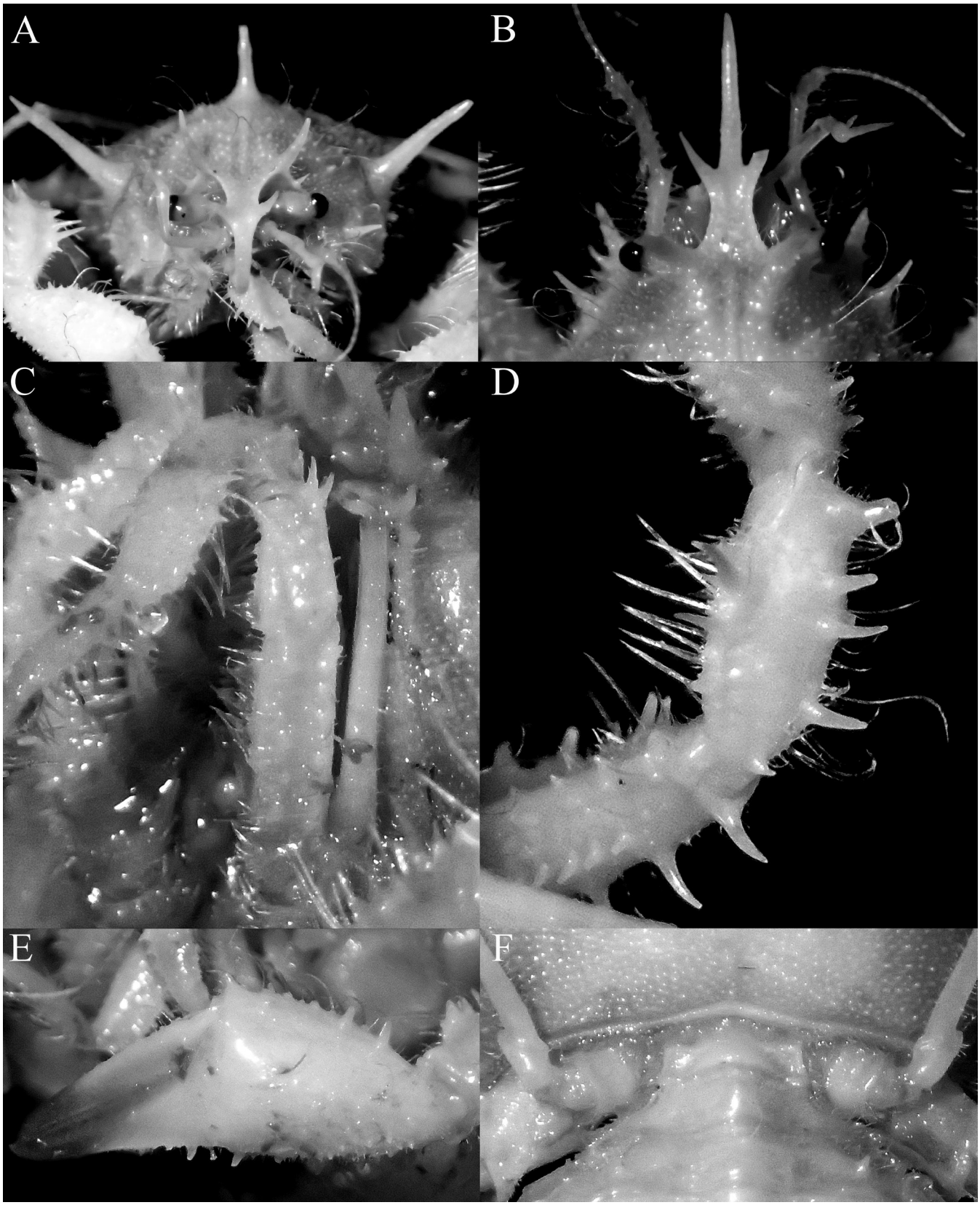

Fig. 15. *Homologenus exilis* n. sp., holotype ovigerous female (13.5 × 10.4 mm) (NTOU), South China Sea. A, frontal view of cephalothorax; B, rostrum, pseudorostrum and orbit; C, left third maxilliped; D, dorsal view of right cheliped carpus; E, outer view of left chela; F, posterior carapace margin and male pleonal somites 1–3.

Remarks. The two new species described here are superficially similar and resemble *H. malayensis* Ihle, 1912, and were referred to this taxon initially. They also resemble *H. donghaiensis* Chen, 1986 (see Ng & Chen, 1999). The most notable difference is the observation that in *H. malayensis*, the ventral margin of the merus of the P4 is completely unarmed (Figs. 8B, 12G, K) whereas in the two new species, there are two distinct spines on the ventral margin (Fig. 19C, G, K, O). In addition, *H. malayensis* also differs from *H. exilis* n. sp. and *H. brevipes* n. sp. in having a proportionately longer male telson (Fig. 21A vs. Fig. 21D, G), and the G1 is less prominently curved (Fig. 12C vs. Fig. 22A, D). Compared to *H. donghaiensis*, the two new species have more longitudinally ovate and more pyriform carapaces (Fig. 18D–I) (carapace distinctly more rectangular in *H. donghaiensis*, Figs. 13A, 18C); the carpus of the cheliped has relatively weaker spines (Figs. 15D, 17D) (very strong and long in *H. donghaiensis*, Fig. 13A, B); and the ventral margin of the P4 merus is armed with spines (Fig. 19C, G, K, O) (unarmed in *H. donghaiensis*, Fig. 13A–C).

In addition to the above differences, *H. exilis* differs from *H. malayensis* in that the anteroexternal angle of the merus of the third maxilliped has two spines (Fig. 15C) (usually with only 1 spine in *H. malayensis*, Figs. 8G, 12A; Guinot & Richer de Forges, 1995: fig. 65B). The proportions of their ambulatory legs are similar (cf. Figs. 9, 10, 12E–G, I–K, 14, 19A–C, E–G).

With regards to the very long P2–P4, *H. exilis* superficially resembles *H. donghaiensis* Chen, 1986. However, *H. exilis* can be easily distinguished by its more pyriform male carapace (Figs. 14, 18D–F) (more rectangular with the lateral margins subparallel in *H. donghaiensis*, Figs. 13A, 18C; Ng & Chen, 1986: fig. 3a); the anteroexternal angle of the merus of the third maxilliped has two spines (Fig. 15C) (only one spine in *H. donghaiensis*, cf. Ng & Chen, 1999: fig. 3f); the spines on the margins of the carpus of the cheliped are relatively weak (Fig. 15D) (carpal spines prominent and strong in *H. donghaiensis*, Fig. 13A, B; Ng & Chen, 1999: fig. 3b); the P2–P4 are proportionately shorter (Figs. 14, 19A–C, E–G) (P2–P4 distinctly longer in *H. donghaiensis*, Fig. 13A; Ng & Chen, 1999: fig. 3d); the P5 merus is relatively shorter (Figs. 14, 19D, H) (P5 merus distinctly longer in *H. donghaiensis*, Fig. 13A; Ng & Chen, 1999: fig. 3e); and the P5 dactylus is proportionately longer, extending beyond the subproximal propodal spine (Figs. 14, 20C–E) (P5 dactylus relatively shorter, not reaching the subproximal propodal spine in *H. donghaiensis*, Fig. 13A, B; Ng & Chen, 1999: fig. 3e). The distal part of the G1 of *H. exilis* also appears to be slightly more truncate and stouter (Fig. 22A, B) compared to that of *H. donghaiensis* (cf. Ng & Chen, 1999: fig. 3h).

Homologenus exilis different from *H. brevipes* by the proportionately longer rostrum (Figs. 14, 15B, 18D, E) (distinctly shorter in *H. brevipes*, Figs. 16, 17B, 18G–I); the pseudorostral spines are gently curving laterally (Fig. 18D–F) (spines straight and directed obliquely laterally in *H. brevipes*, Fig. 18G–I); the proportionately longer median gastric spine

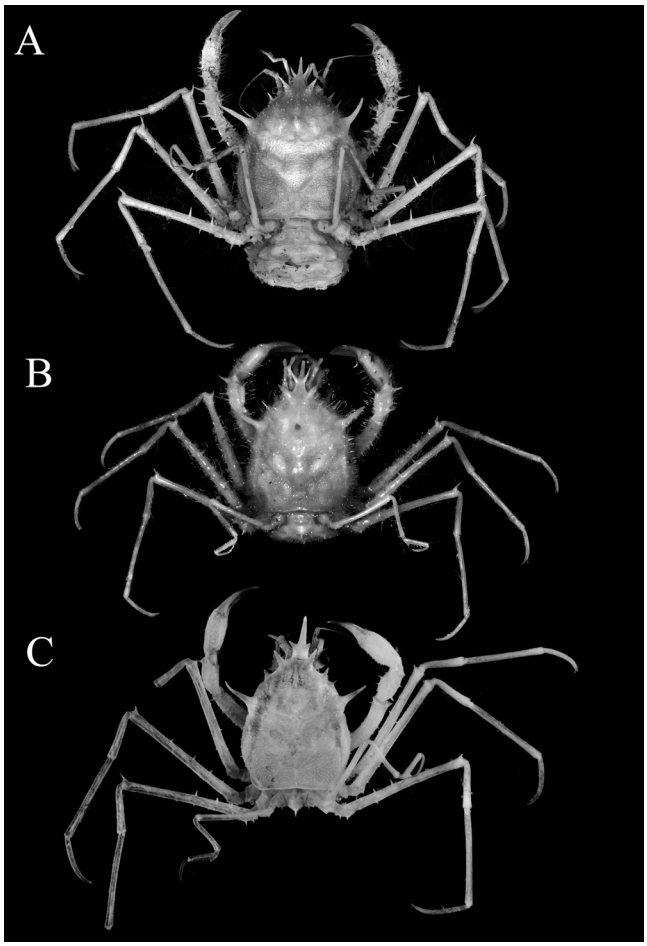

Fig. 16. *Homologenus brevipes* n. sp., overall habitus. A, holotype ovigerous female (15.0 × 10.7 mm) (NTOU), Taiwan; B, paratype ovigerous female (15.4 × 13.5 mm) (ZRC 2016.0572), Taiwan; C, paratype male (7.6 × 5.9 mm) (ZRC 2016.0574), Taiwan.

(Fig. 15A) (proportionately shorter in *H. brevipes*, Fig. 17A); the anteroexternal angle of the merus of the third maxilliped has two spines (Fig. 15C) (only one spine in *H. brevipes*, Fig. 17C); the distinctly longer P2–P4 (Figs. 14, 19A–C, E–G) (relatively shorter P2–P4 in *H. brevipes*, Figs. 16, 19I–K, M–O); the P5 merus, when folded, reaches to the base of the anterolateral spine (Fig. 14) (not reaching base of anterolateral spine in *H. brevipes*, Fig. 16); and the P5 dactylus is relatively more slender and longer (Fig. 20C–E) (P5 dactylus relatively shorter and stouter in *H. brevipes*, Fig. 20F–H). The distal part of the G1 of *H. exilis* (Fig. 22A, B) is also relatively more truncate and stouter than that of *H. brevipes* (Fig. 22D, E). The anterolateral spines of *H. exilis* are also relatively longer and directed more laterally (Fig. 18D–F) compared to those of *H. brevipes* which are shorter and directed more anteriorly (Fig. 18G–I). In general, in most specimens, the carapace and P2–P4 in *H. brevipes* are more setose (e.g., Figs. 16, 19I–P) compared to the condition in *H. exilis* (e.g., Figs. 14, 19A–H).

The Japanese specimen from Wakayama Prefecture figured by Nagai (1994: pl. 1 fig. 3) as "*Homologenus malayensis*" appears to be closer to *H. exilis* on the basis of its relatively longer rostrum and ambulatory legs.

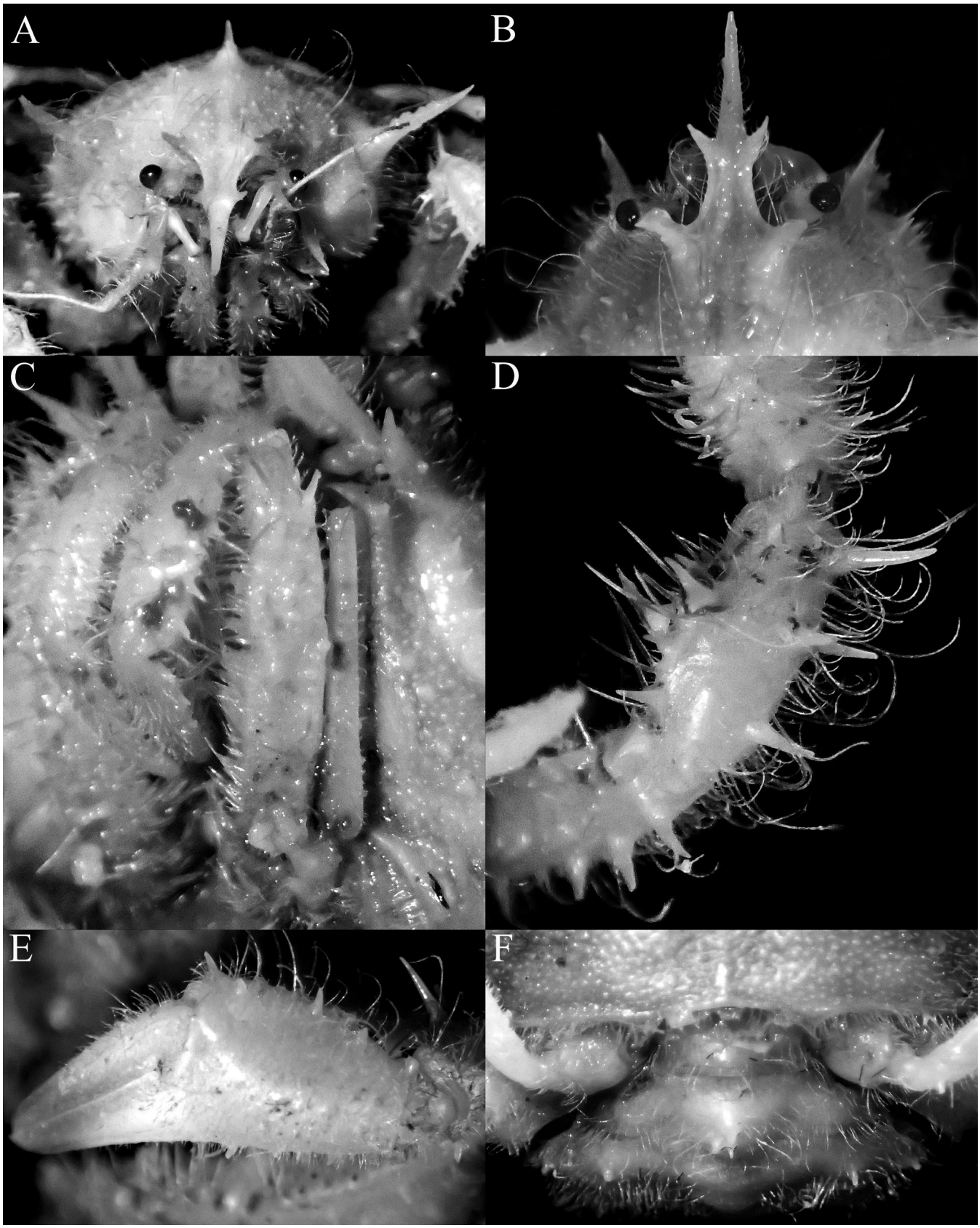

Fig. 17. *Homologenus brevipes* n. sp., holotype ovigerous female (15.0 × 10.7 mm) (NTOU), Taiwan. A, frontal view of cephalothorax; B, rostrum, pseudorostrum and orbit; C, left third maxilliped; D, dorsal view of right cheliped carpus; E, outer view of left chela; F, posterior carapace margin and male pleonal somites 1–3.

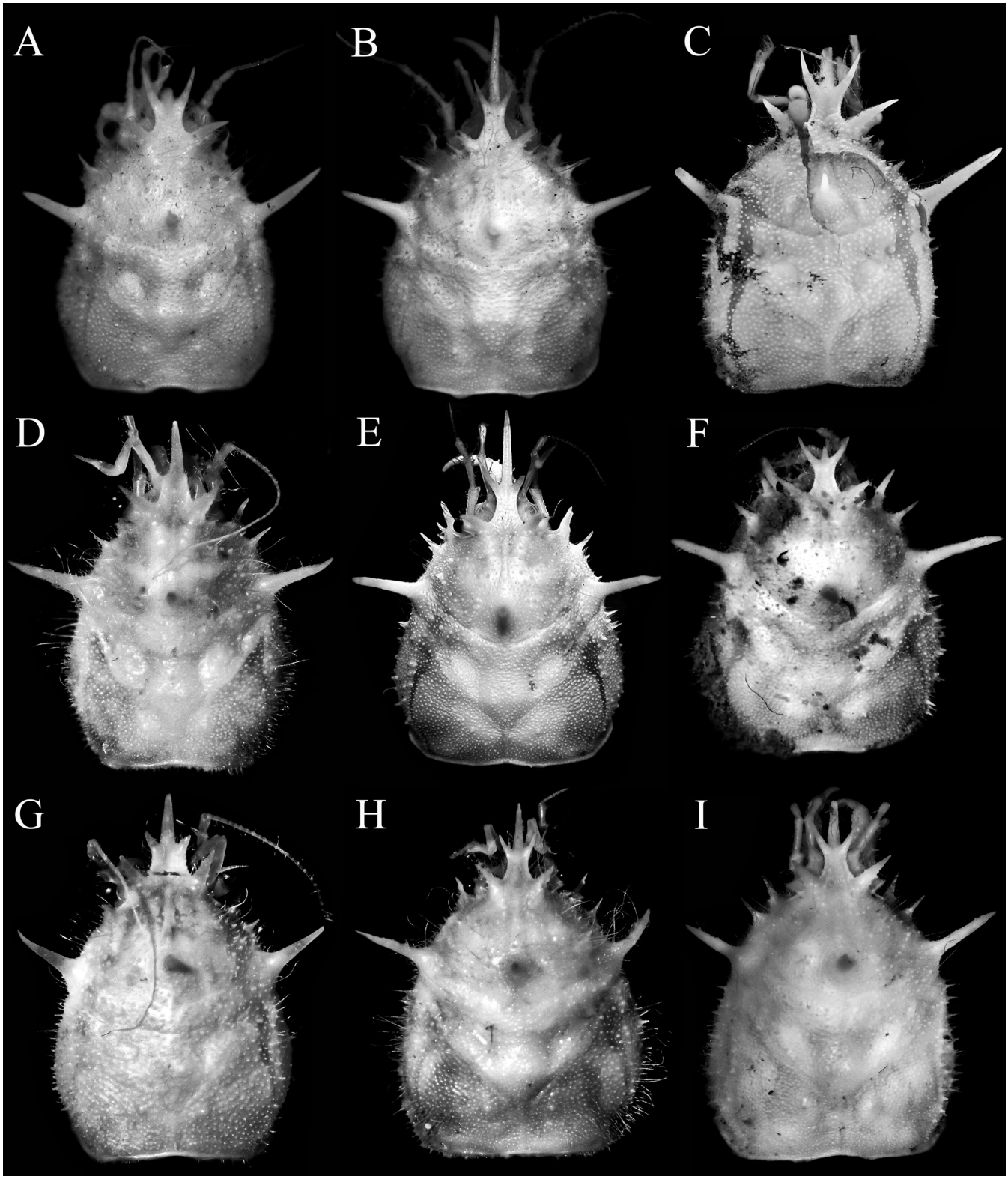

Fig. 18. Carapace of *Homologenus* species. A, *H. malayensis* Ihle, 1912, male (carapace width 6.2 mm, rostrum damaged) (ZRC 2016.0194), Papua New Guinea; B, *H. malayensis* Ihle, 1912, female (16.0 × 13.9 mm) (ZRC 2016.0194), Papua New Guinea; C, *H. donghaiensis* Chen, 1986, holotype male (11.0 × 10.3 mm) (IOCAS KY8B-71), East China Sea (photograph: W. Jiang); D, *H. exilis* n. sp., paratype male (10.2 × 7.4 mm) (ZRC 2016.0568), South China Sea; E, *H. exilis* n. sp., holotype ovigerous female (13.5 × 10.4 mm) (NTOU), South China Sea; F, *H. exilis* n. sp., paratype female (15.1 × 11.4 mm) (ZRC 2016.0569), South China Sea; G, *H. brevipes* n. sp., paratype male (7.6 × 5.9 mm) (ZRC 2016.0574), Taiwan; H, *H. brevipes* n. sp., holotype ovigerous female (15.0 × 10.7 mm) (NTOU), Taiwan; I, *H. brevipes* n. sp., paratype ovigerous female (15.4 × 13.5 mm) (ZRC 2016.0572), Taiwan.

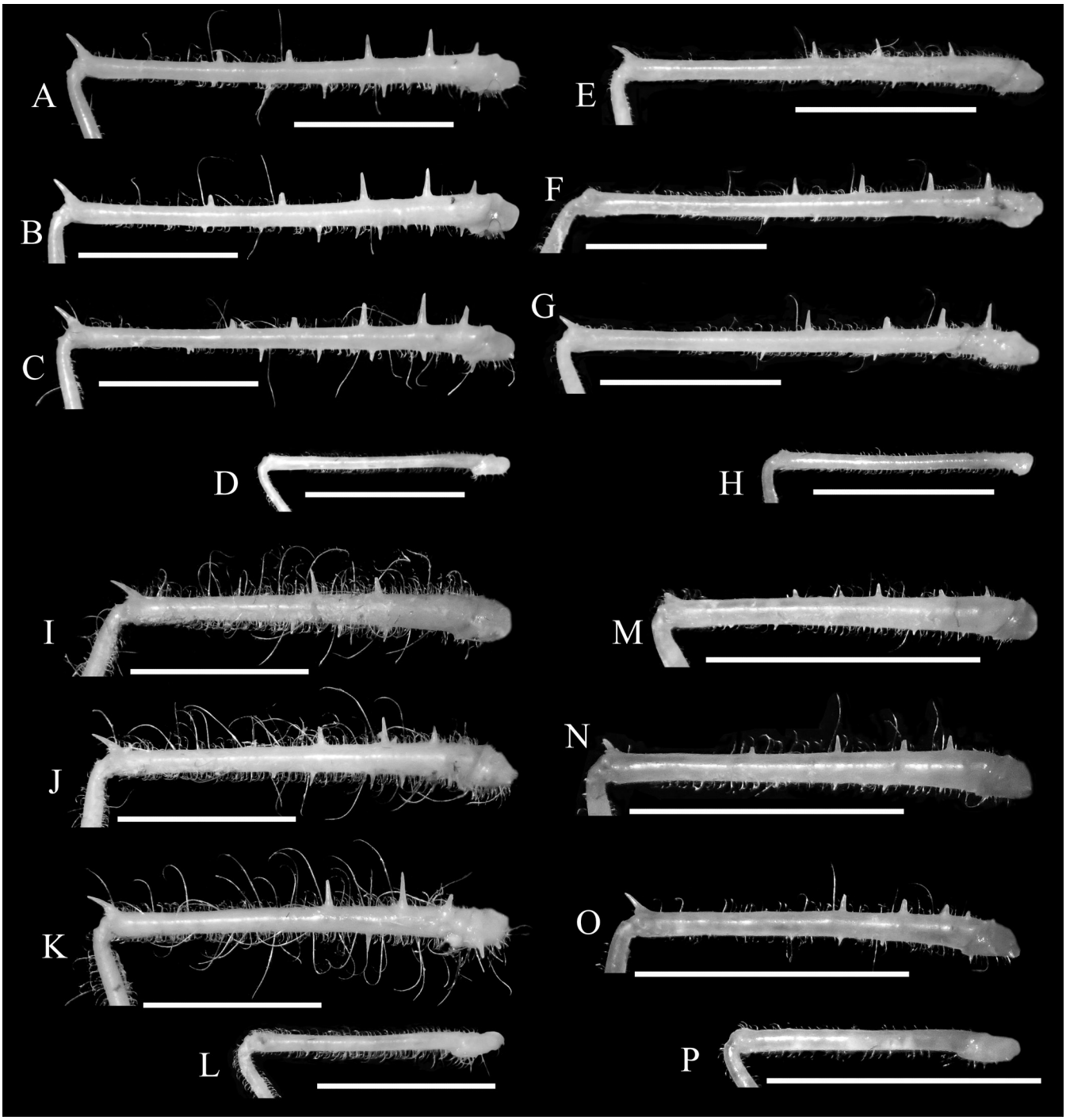

Fig. 19. Left P2–P5 merus of *Homologenus* species. A–D, *H. exilis* n. sp., holotype ovigerous female (13.5 × 10.4 mm) (NTOU), South China Sea; E–H, *H. exilis* n. sp., paratype male (10.2 × 7.4 mm) (ZRC 2016.0568), South China Sea; I–L, *H. brevipes* n. sp., holotype ovigerous female (15.0 × 10.7 mm) (NTOU), Taiwan; M–P, *H. brevipes* n. sp., paratype male (7.6 × 5.9 mm) (ZRC 2016.0574), Taiwan. A–D, I–L, female left P2–P5 merus, respectively; E–H, M–P, male left P2–P5, respectively. Scales = 5.0 mm.

***Homologenus brevipes* n. sp.**
(Figs. 16, 17, 18G–I, 19I–P, 20F–H, 21G–I, 22D–F)

Homologenus malayensis – Ho et al., 2004: 642, fig. 1A. – Ahyong et al., 2009: 86, fig. 54, 55. (not *Homologenus malayensis* Ihle, 1912)

Material examined. Holotype: ovigerous female (15.0 × 10.7 mm) (NTOU), station PCP 344, 22°15.95′N 120°0.11′E, 995–1073 m, southern Taiwan, trawl, coll. TAIWAN 2006 Cruise, 8 March 2006. Paratypes: 1 ovigerous female (14.8 mm, rostrum broken) (ZRC 2013.0298), station PCP 344, 22°15.95′N 120°0.110′E, 995–1073 m, coll. TAIWAN 2006 Cruise, 8 March 2006. – 1 ovigerous female (16.8 × 15.0 mm) (ZRC 2009.1161), station CP 141, 22°12.04′N 119°59.96′E, 985–1110 m, eastern Taiwan, trawl, TAIWAN 2001 Cruise, 24 November 2001. – 1 male (12.7 × 10.0 mm) (ZRC 2009.1162), station CD 136, 22°7.75′N 120°0.87′E, 998–1211 m, eastern Taiwan, trawl, coll. TAIWAN 2001 Cruise, 22 November 2001. – 3 ovigerous females (17.0 × 15.0 mm, 17.4 × 14.3 mm, 16.8 × 13.9 mm) (ZRC 2009.1160), station CP 134, 22°16.56′N 120°6.11′E, 736–1040 m, eastern Taiwan,

Fig. 20. Right P5 pseudochela (propodus and dactylus) of *Homologenus* species. A, *H. malayensis* Ihle, 1912, female (16.0 × 13.9 mm) (ZRC 2016.0196), Papua New Guinea; B, *H. malayensis* Ihle, 1912, male (carapace width 6.2 mm, rostrum damaged) (ZRC 2016.0194), Papua New Guinea; C, *H. exilis* n. sp., holotype ovigerous female (13.5 × 10.4 mm) (NTOU), South China Sea; D, *H. exilis* n. sp., paratype female (15.1 × 11.4 mm) (ZRC 2016.0569); E, *H. exilis* n. sp., paratype male (10.2 × 7.4 mm) (ZRC 2016.0568), South China Sea; F, *H. brevipes* n. sp., holotype ovigerous female (15.0 × 10.7 mm) (NTOU), Taiwan; G, *H. brevipes* n. sp., paratype ovigerous female (15.4 × 13.5 mm) (ZRC 2016.0572), Taiwan; H, *H. brevipes* n. sp., paratype male (7.6 × 5.9 mm) (ZRC 2016.0574), Taiwan.

trawl, coll. TAIWAN 2001 Cruise, 22 November 2001. – 1 ovigerous female (15.4 × 13.5 mm) (ZRC 2016.0572), station CD 192, 22°17.19′N 120°1.01′E, 960–1302 m, southern Taiwan, trawl, coll. TAIWAN 2002 Cruise, 28 August 2002. – 1 ovigerous female (13.8 × 10.2 mm) (ZRC 2016.0573), station PCP 445 (NTOU B00069), 22°17.10′N 120°0.17′E, 982–999 m, southern Taiwan, trawl, coll. TAIWAN 2006 Cruise, 14 July 2008. – 1 ovigerous female (12.4 × 9.9 mm, broken rostrum), 1 male (7.6 × 5.9 mm) (ZRC 2016.0574), southern Taiwan, 22°17.17′N 120°00.18′E – 22°13.24′N 120°00.32′E, coll. trawl, 5 July 2013. – 1 ovigerous female (16.1 × 10.9 mm) (ZRC 2016.0575), station OCP 280, 24°23.71′N 122°14.22′E, 1213–1261 m, eastern Taiwan, trawl, coll. TAIWAN 2005 Cruise, 14 June 2005.

Diagnosis. Small species, covered with numerous long and short setae (Fig. 16). Carapace longer than wide; male carapace longitudinally ovate; anterior half of female carapace distinctly less wide than posterior half; surface of carapace granular; gastro-cardiac and branchio-cardiac grooves well marked; with short, sharp median gastric spine and 2 short epigastric spines; short spine at angle of buccal cavity; line

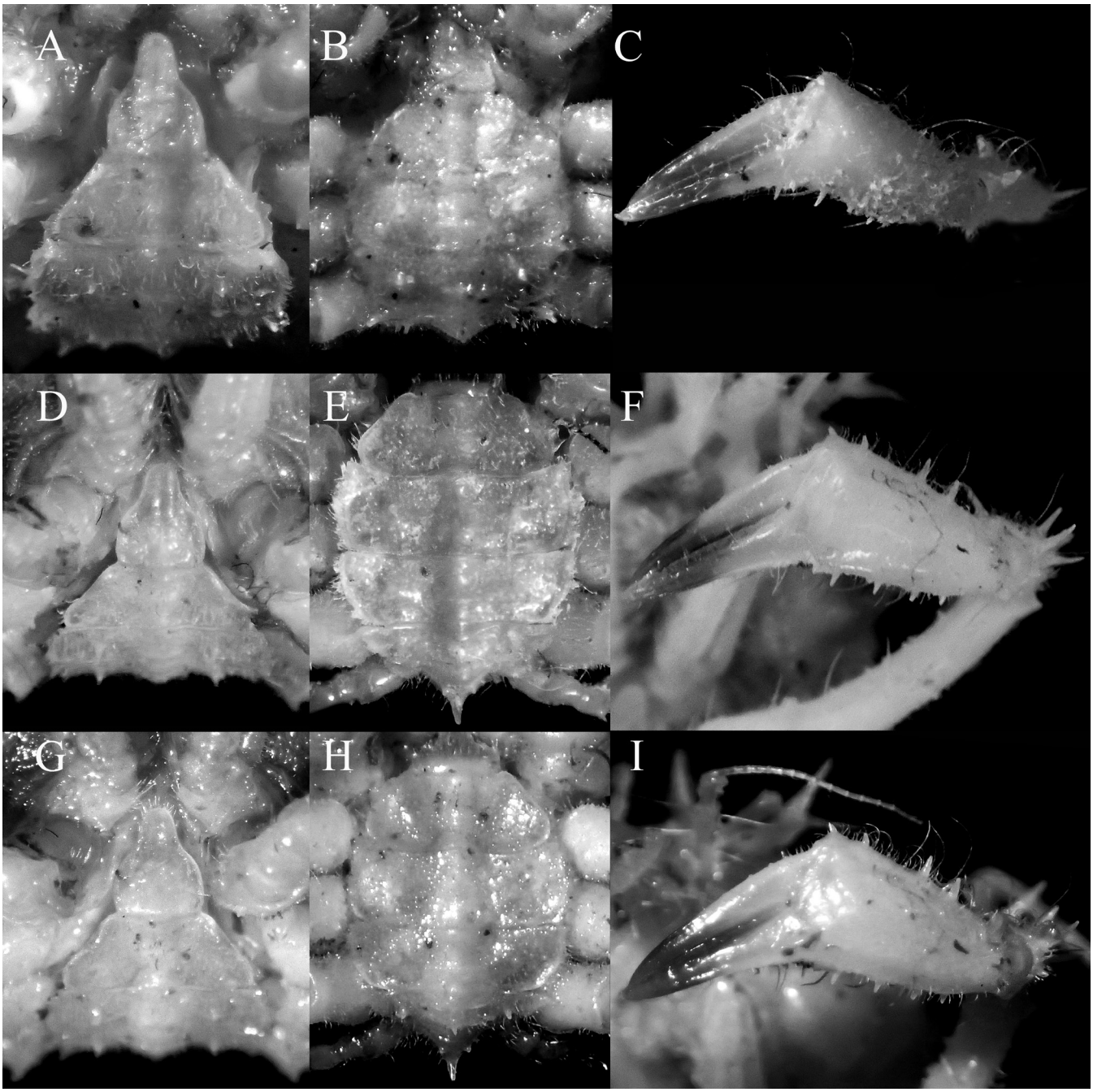

Fig. 21. A–C, *Homologenus malayensis* Ihle, 1912, male (carapace width 6.2 mm, rostrum damaged) (ZRC 2016.0194), Papua New Guinea; D–F, *H. exilis* n. sp., paratype male (10.2 × 7.4 mm) (ZRC 2016.0568), South China Sea; G–I, *H. brevipes* n. sp., paratype male (7.6 × 5.9 mm) (ZRC 2016.0574), Taiwan. A, D, G, telson and pleonal somites 5 and 6; B, E, H, pleonal somites 2–6; C, F, I, outer view of left chela.

of prominent granules marking border of pterygostomian region (Figs. 16, 17A, 18G–I). Rostrum very long, curved, sharp, with 2 short accessory pseudorostral spines pointing anteriorly (Figs. 16, 17A, B, 18G–I). Well-developed pseudorostral spines in supra-ocular position almost straight, directed obliquely anteriorly; supraorbital margin with short spine (Figs. 16, 17A, B, 18G–I). Basal antennal spine strong (Fig. 17A). Subhepatic spine slender (Fig. 17A). Anterolateral spine long, sharp, pointing obliquely outwards, relatively more anteriorly in angle (Figs. 16, 17A, 18G–I). Anteroexternal angle of merus of third maxilliped with 1 sharp curved spine (Fig. 17C). Female cheliped short; chela slightly inflated: chela with 5 small spines on ventral margin and 4 spines on dorsal margin; fingers long, slender, curved inwards; carpus with 3 long spines on external face; merus with 8 strong spines on outer margin and 6 spines on inner margin (Fig. 17D, E). Male cheliped short; chela inflated, triangular in cross-section, fingers closely appressed when closed; margins of merus spinose; carpus with 4 prominent spines; dorsal margin of chela with 4 spines, ventral margin with 4 spines (Fig. 21I). Ambulatory legs (P2–P4) long, slender; P5 reduced, in dorsal position, merus unarmed, not reaching base of anterolateral spine when folded on carapace; dactylus long, relatively wider, curved, sharp, reaching proximal spine of propodus, forming pseudochela (Figs. 16, 19L, P, 20F–H); female: P2 merus with 3 spines on dorsal

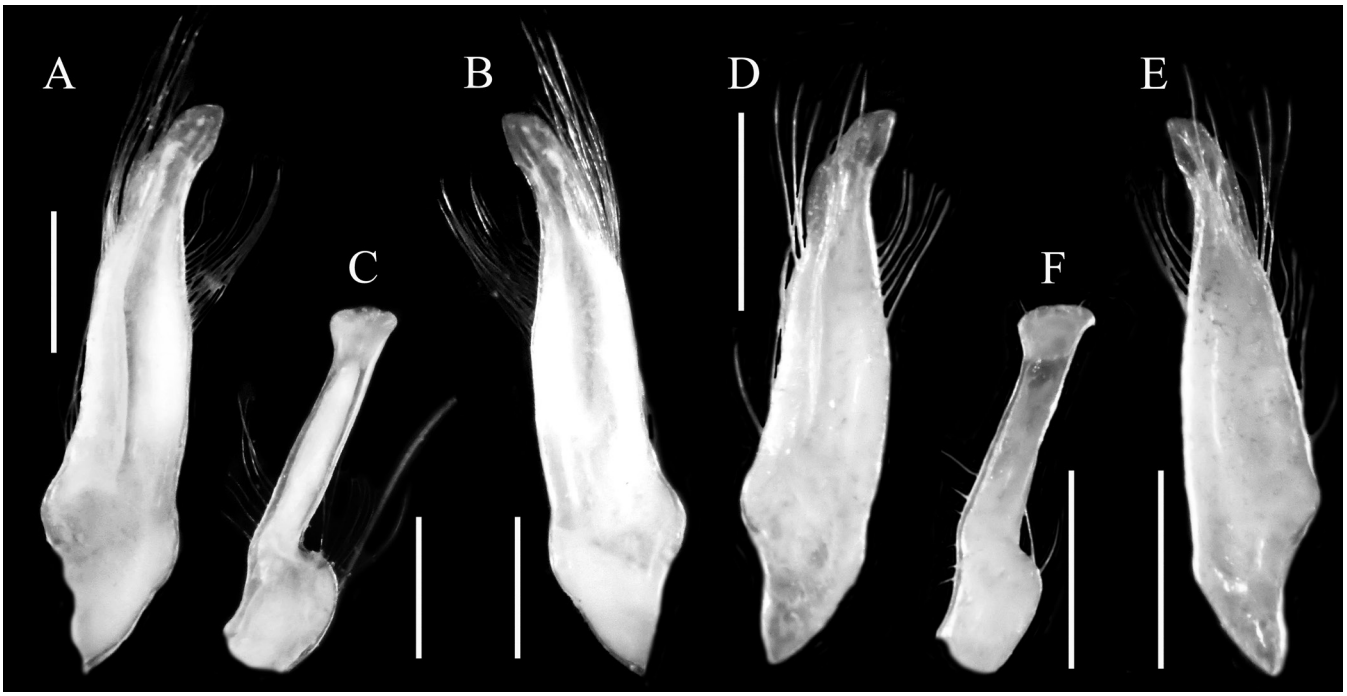

Fig. 22. Gonopods of *Homologenus* species. A–C, *H. exilis* n. sp., paratype male (10.2 × 7.4 mm) (ZRC 2016.0568), South China Sea; D–F, *H. brevipes* n. sp., paratype male (7.6 × 5.9 mm) (ZRC 2016.0574), Taiwan. A, C, D, F, ventral view; B, E, dorsal view. Scales = 0.5 mm.

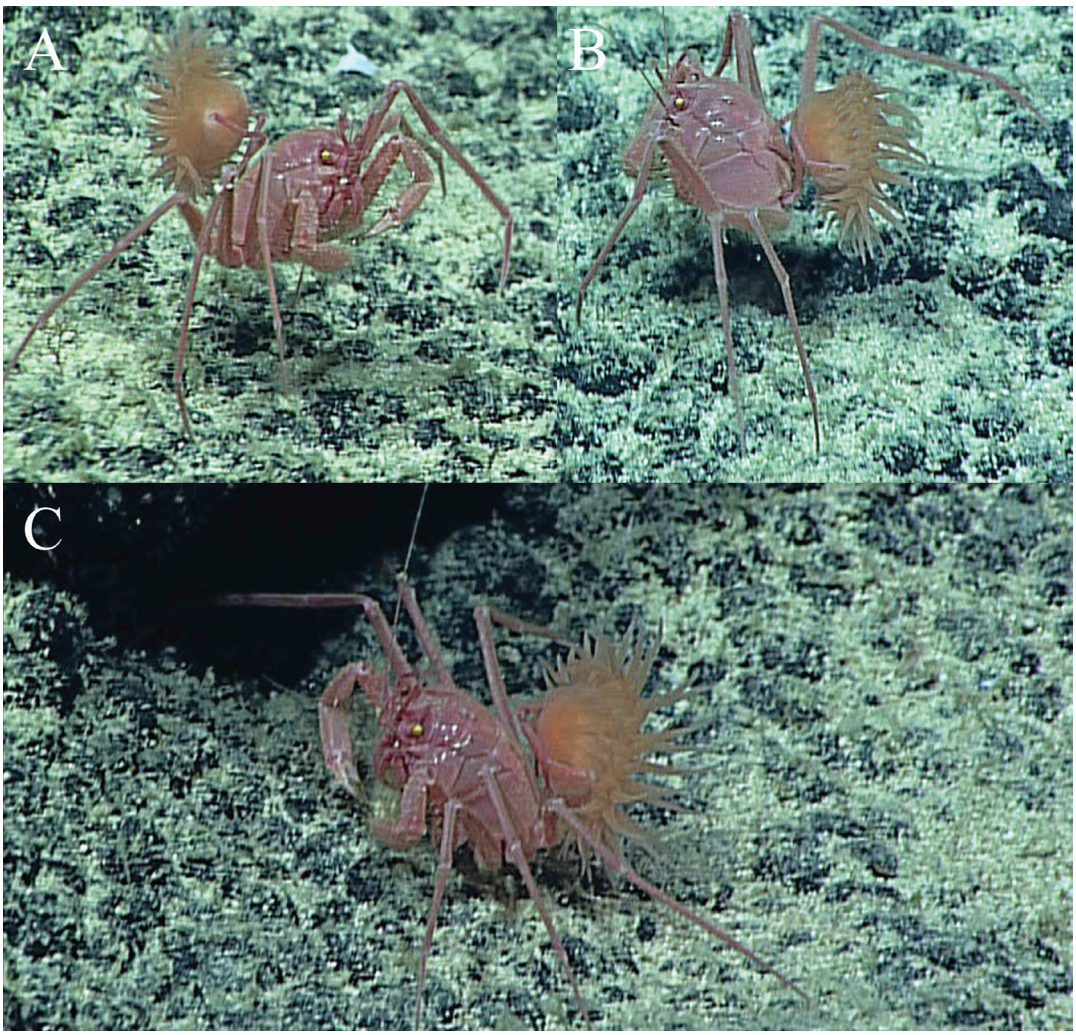

Fig. 23. *Lamoha longirostris* (Chen, 1986) carrying an unidentified sea anemone in vicinity of Mariana Island group at a depth of 1212 m on 13 August 2016. Photographs courtesy of the U.S. National Oceanographic and Atmospheric Administration Office of Ocean Exploration and Research.

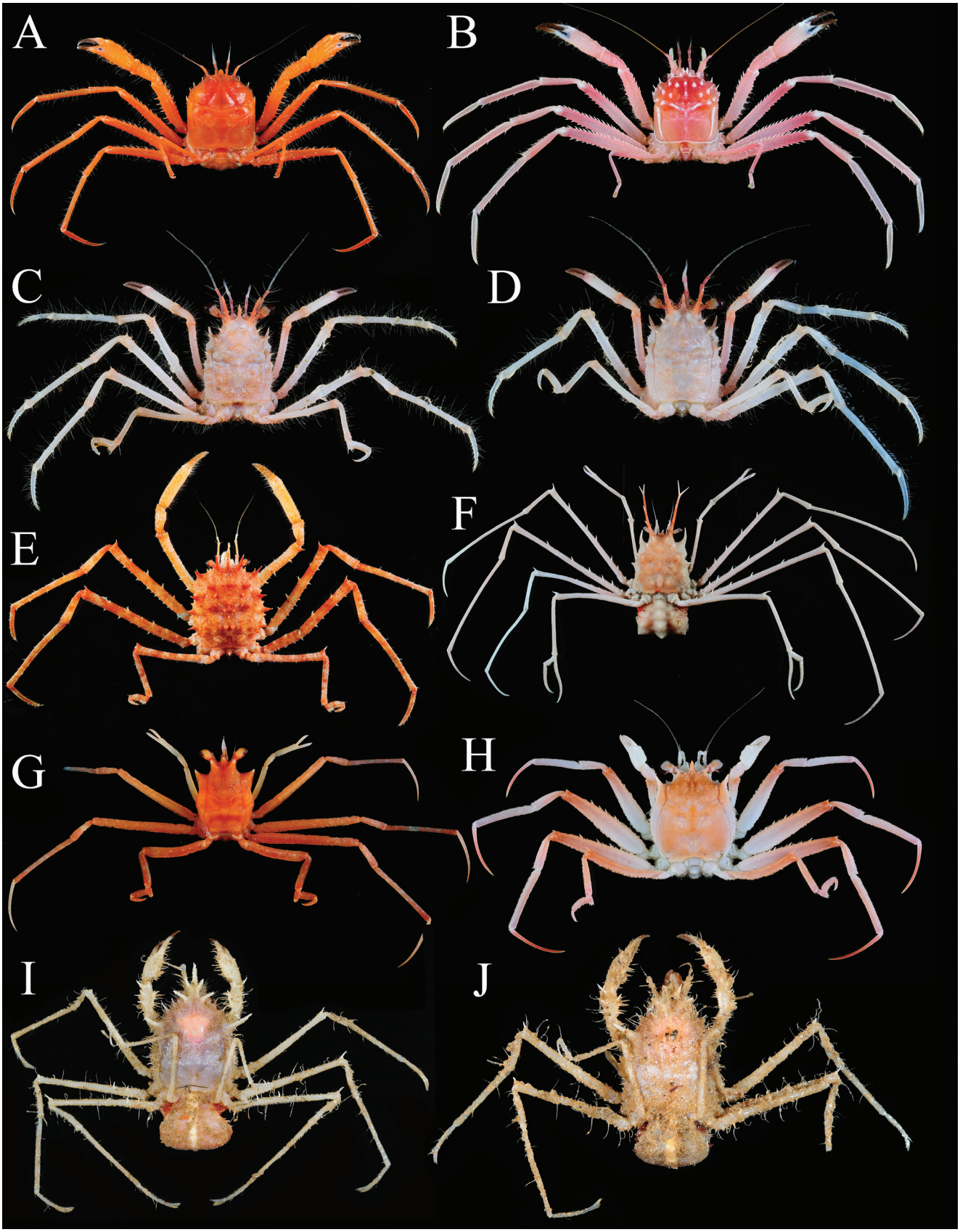

Fig. 24. Colour in life, A–H from South China Sea; I, J from Papua New Guinea and Bismarck Sea. A, *Lamoha longirostris* (Chen, 1986), female (24.9 × 20.3 mm) (ZRC 2016.0555); B, *Lamoha murotoensis* (Sakai, 1979), male (20.8 × 18.4 mm) (ZRC 2016.0200); C, *Paromola macrochira* Sakai, 1961, female (16.5 × 11.4 mm) (ZRC 2016.0560); D, *Paromola macrochira* Sakai, 1961, female (16.3 × 11.1 mm) (ZRC 2016.0562); E, *Moloha majora* (Kubo, 1936), male (54.8 × 47.8 mm) (ZRC 2016.0197); F, *Homolochunia gadaletae* Guinot & Richer de Forges, 1995, ovigerous female (34.1 × 26.4 mm) (ZRC 2016.0198); G, *Homolomania sibogae* Ihle, 1912, male (15.4 × 11.3 mm) (ZRC 2016.0199); H, *Paromolopsis boasi* Wood-Mason, in Wood-Mason & Alcock, 1891, male (20.1 × 17.7 mm) (ZRC 2016.0565); I, *Homologenus malayensis* Ihle, 1912, ovigerous female (16.0 × 13.9 mm) (MNHN-IU-2015-80); J, *Homologenus malayensis* Ihle, 1912, ovigerous female (14.9 × 9.9 mm) (MNHN-IU-2014-8052).

margin, outer surface with 2 or 3 spinules, ventral margin with 3 or 4 spinules; P3 merus with 2 or 3 spines on dorsal margin, outer surface with 1 spinule, ventral margin with 4 spines; P4 merus with 3 spines on dorsal margin, outer surface with 2 spinules, ventral margin with 2 spines (Figs. 16A, B, 19I–K); male: P2 merus with 4 or 5 spines on dorsal margin, outer surface with 2 spinules, ventral margin with 4 or 5 spinules; P3 merus with 4 spines on dorsal margin, outer surface with 2 spinules, ventral margin with 5 or 6 spinules; P4 merus with 4 spines on dorsal margin, outer surface with 2 spinules, ventral margin with 4 spines (Figs. 16C, 19M–O); P2–P4 propodus long, dactylus long, falciform (Fig. 16). Armature of pleonites as follows: female somite 2 with 1 median spine, somite 3 with 4 low spines, somite 4 with 4 very low spines, somite 5 with 4 very low spines, telson, somites 1, 5 and 6 unarmed (Fig. 17F); male somite 2 with 1 median spine, somite 3 with 5 low spines, somite 4 with 4 low spines, somite 5 with 4 low spines, telson, somites 1 and 6 unarmed (Fig. 21G, H). G1 relatively stout, distal part tapering to cone-like structure (Fig. 22D, E).

Etymology. The name alludes to the relatively shorter ambulatory legs of this species when compared to those of the allied new species, *H. exilis*. Used as a noun in apposition.

Colour. The specimen illustrated in colour by Ahyong et al. (2009: 86, fig. 54) is the present holotype of *H. brevipes*. In life, the carapace is dirty white overall with the anterior part of the carapace pink.

Remarks. As discussed earlier, there are several differences between *H. brevipes* n. sp. and *H. malayensis* Ihle, 1912. The most significant is in the ventral margin of the P4 merus in *H. brevipes* n. sp. possessing two spines (Fig. 19K, O) (margin unarmed in *H. malayensis*, Figs. 8B, 12G, K). In addition, the rostrum of *H. brevipes* is relatively shorter (Fig. 16, 17B, 18G–I) (rostrum distinctly longer in *H. malayensis*, Figs. 8A, F, 9, 10, 11B, 18A, B); and the pseudorostral spines are almost straight and directed anterolaterally (Figs. 17B, 18G–I) (gently curving laterally in *H. malayensis*, Figs. 8A, F, 9, 10, 11B, 18A, B).

In addition to the difference in carapace shape and armature of the P4 merus discussed above, male *H. brevipes* can be separated from *H. donghaiensis* (known only from one male) in having the spines on the dorsal margin of P2–P4 straight (Fig. 19I–K, M–O) (spines are curved backwards in *H. donghaiensis*, Fig. 13A–C); the male has only five spines on the dorsal margin of the P2 merus (Figs. 16A, 19I, M) (with only 3 or 4 spines in male *H. donghaiensis*, Fig. 13A, B); the spines on pleonal somites 2 and 3 are low but distinct (Fig. 17F) (very short or not visible in *H. donghaiensis*, Ng & Chen, 1999: fig. 3g); and the dactylus of P5 reaches to the subproximal spine of the propodus (Fig. 20F–H) (P5 dactylus relatively shorter, not reaching the subproximal propodal spine in *H. donghaiensis*, Fig. 13A, B; Ng & Chen, 1999: fig. 3e).

The female specimen reported and figured as "*H. malayensis*" in Ho et al. (2004: fig. 1A) from southern Taiwan could not be examined but the colour figure leaves no doubt it is conspecific with *H. brevipes*.

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