

Checklist of the Brachyura (Crustacea: Decapoda) collected by the SJADES 2018 biodiversity cruise in the Sunda Strait and southwestern Java, Indonesia

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Abstract. The brachyuran crabs (Crustacea: Decapoda) of the SJADES 2018 biodiversity cruise to the Sunda Strait and southwestern Java, in Indonesia, are reported and summarised here. In total, 93 species representing 29 families were collected by the expedition, including nine recently described species (the descriptions of which have been published elsewhere) and 26 new records for Indonesia.

Key words. brachyuran crab, deep-sea expedition, marine biodiversity, taxonomy

INTRODUCTION

The diversity of the brachyuran crabs collected by the SJADES 2018 cruise is summarised here. Some of the collected material has already been reported and treated in previous publications. These include two species of *Cyonomus* A. Milne-Edwards, one of which, *C. java*, was new (Ahyong et al., 2020); three species of *Carcinoplax* H. Milne Edwards (Ng & Castro, 2020); and two species of *Typhlocarcinops* Rathbun, one of which, *T. hadrotes*, was new (Ng & Rahayu, 2020). Other groups of brachyuran crabs are also treated in greater detail by other workers in this current volume. These are the Cyclodorippidae Ortmann (two species, with one new species, *Ketamia rising*) (Ahyong & Mendoza, 2021); the Lyreididae Guinot, Raninidae De Haan, Calappidae De Haan, Ethusidae Guinot, and Leucosiidae Samouelle (22 species, with one new species, *Oreotlos octavus*) (Mendoza & Nugroho, 2021); the Pilumnidae Samouelle (seven species, with one new species, *Pilumnus sjades*) (Ng & Rahayu, 2021); and the Epialtidae, Inachidae, and Oregoniidae (14 species, with one new genus, *Chimaerodinia*, and four new species, *C. musica*, *Neophrys neptunus*, *Samadinia jefrii*, and *S. yoyoae*) (Richer de Forges et al., 2021).

The total brachyuran diversity is presented in a checklist (Part I), with the number of specimens collected listed for

each station where a particular species occurs. In total, 93 species representing 29 families are reported, nine of which were recently described based on the material collected by the expedition. At least 26 species are also recorded for the first time from Indonesian waters. The fresh colouration for most species was recorded during the cruise, and most of those photographs are presented here (see Figs. 1–6), or otherwise published elsewhere (e.g., Ng & Castro, 2020; Mendoza & Nugroho, 2021; Richer de Forges et al., 2021). A more detailed taxonomic treatment, accompanied by detailed photographs and/or illustrations, is given to selected species (Part II), particularly the following 10 species: *Lamoha longipes* (Alcock & Anderson, 1899), *Romaleon luzonense* (Sakai, 1983), *Microgoneplax danielae* Naruse & Castro, 2010, *Singhaplax platypoda* Castro, 2007, *Mariaplax sundaica* Rahayu & Widyastuti, 2018, *Thalamita spinifera* Borradaile, 1902, *Trichopeltarion ovale* Anderson, 1896, *Euryxanthops flexidentatus* Garth & Kim, 1983, *Forestiana* sp., and *Paraxanthodes cumatodes* (MacGilchrist, 1905).

MATERIAL AND METHODS

Details of the preparations for the SJADES 2018 cruise as well as the collection and preservation methods and station data are provided in Chim et al. (2021). All material examined in this report are deposited in the Museum Zoologicum Bogoriense (MZB), Indonesian Institute of Sciences, in Cibinong, Java, Indonesia, and the Zoological Reference Collection (ZRC), Lee Kong Chian Natural History Museum, National University of Singapore. Measurements are of the maximum carapace width followed by the carapace length at the median line, in millimetres. The following abbreviations are used: m. = male; f. = female; juv. = juvenile; ovig. = ovigerous. The alphabetic code used for the stations refer to the collecting gear used, namely: CP = French beam trawl or ‘chalut à perche’; DW = Warén dredge. The precise GPS

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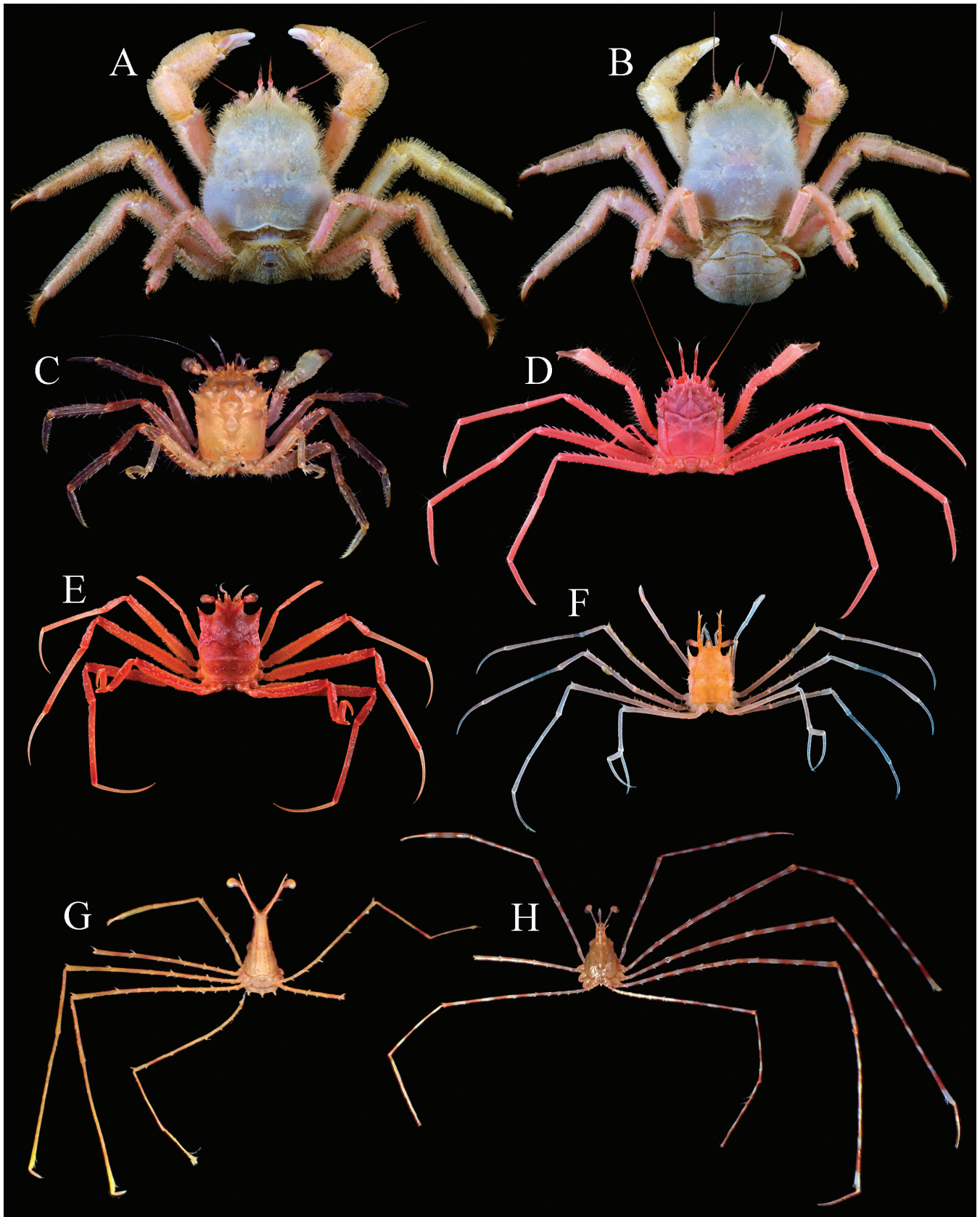


Fig. 1. Fresh colouration. *Dicranodromia karubar* Guinot, 1993, A, male, CP39, B, ovigerous female, CP39; C, *Homola orientalis* Henderson, 1888, male, CP20; D, *Lamoha longipes* (Alcock & Anderson, 1899), female, CP51; E, *Homolomannia sibogae* Ihle, 1912, female, CP37; F, *Homolochunia valdiviae* Doflein, 1904, female, CP39; G, *Latreillia metanesa* Williams, 1982, female, CP37; H, *Latreillia valida* De Haan, 1839, male, CP56. Photography by: Chan T-Y & Lin C-W (A, B, D–F); JCE Mendoza (C, G, H).

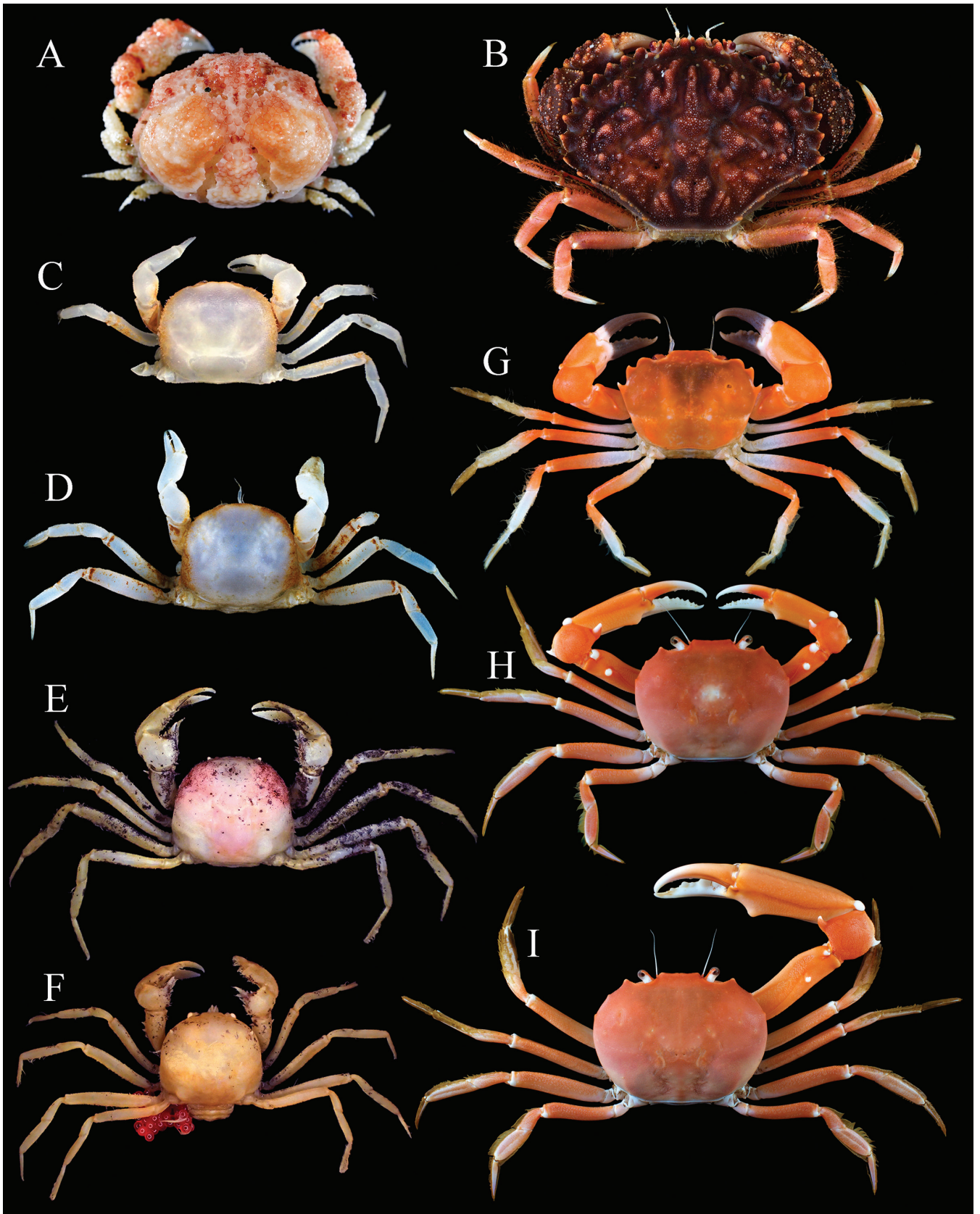


Fig. 2. Fresh colouration. A, *Drachiella aglypha* (Laurie, 1906), female, DW16; B, *Romaleon luzonense* (Sakai, 1983), male, CP07; *Camatopsis rubida* Alcock & Anderson, 1899, C, male, CP26, D, male, CP10; *Hephthopelta lugubris* Alcock, 1899, E, female, CP22, F, ovigerous female, CP33; G, *Carcinoplax abyssicola* (Miers, 1885), male, CP10; *Carcinoplax longimanus* (De Haan, 1833), H, female, CP37, I, male, CP37. Photography by: Chan T-Y & Lin C-W (A, B, D, G-I); JCE Mendoza (C, E, F).

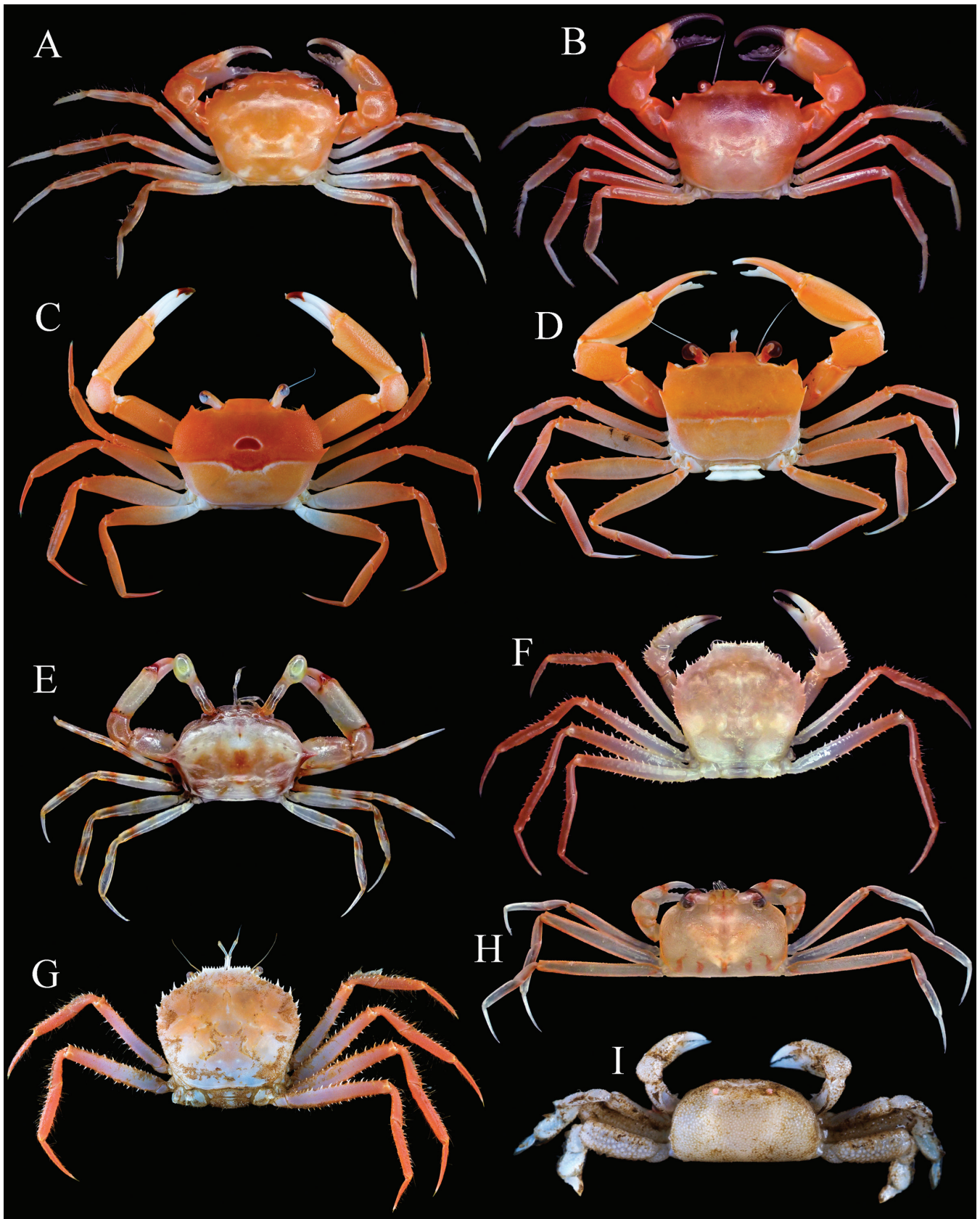


Fig. 3. Fresh colouration. A, *Carcinoplax polita* Guinot, 1989, male, CP34; B, *Carcinoplax longipes* (Wood-Mason, 1891), male, CP51; C, *Exopheticus insignis* (Alcock, 1900), female, CP37; D, *Psoptheticus stridulans* Wood-Mason, 1892, female, CP26; E, *Microgoneplax danieleae* Naruse & Castro, 2010, male, CP37; *Platypilumnus gracilipes* Alcock, 1894, F, male, CP27, G, female, CP26; H, *Hexaplex aurantium* Rahayu & Ng, 2014, male, CP20; I, *Mariaplax sundaica* Rahayu & Widyastuti, 2018, female, DW06. Photography by: Chan T-Y & Lin C-W (C, D, G, I); JCE Mendoza (A, B, E, F, H).

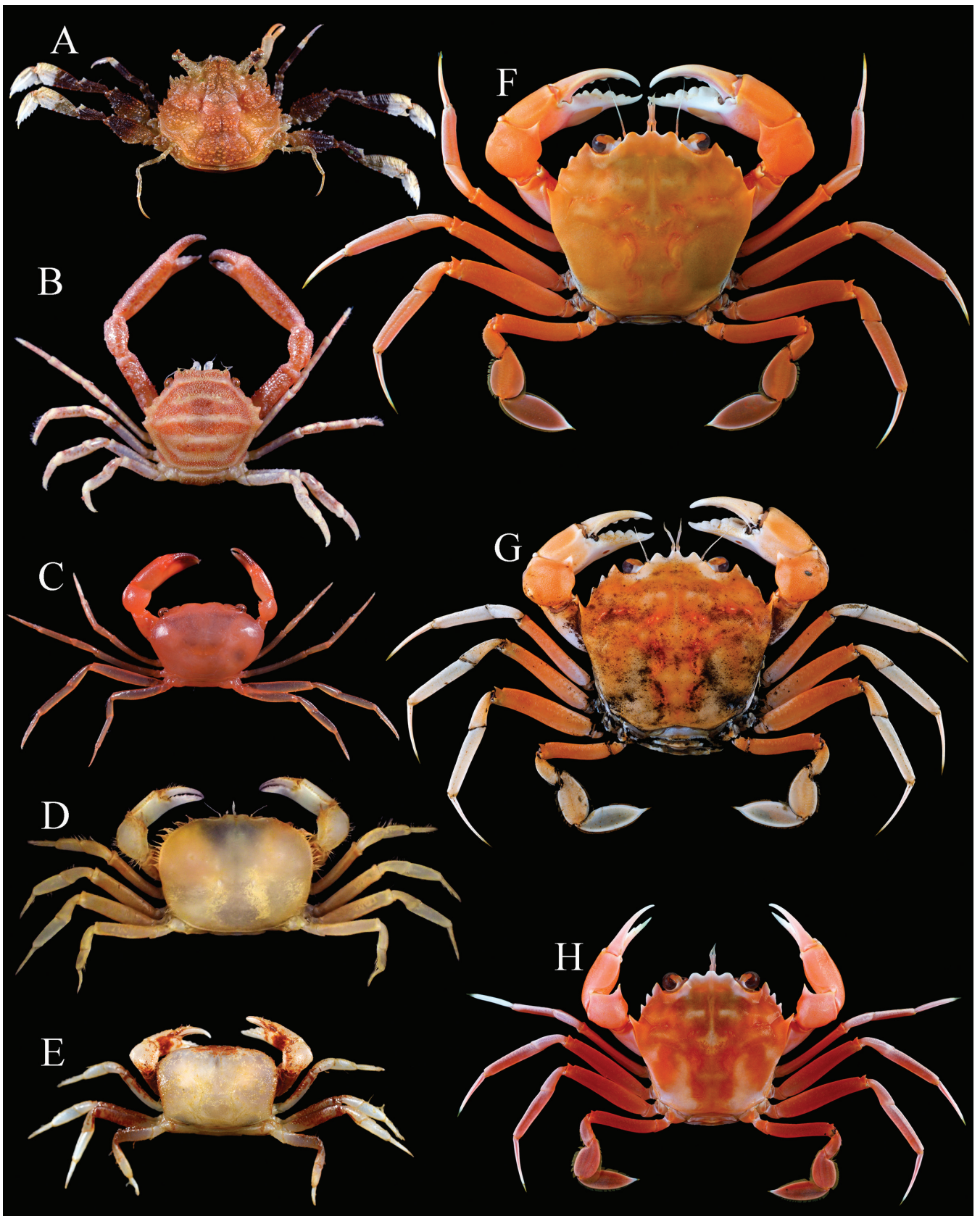


Fig. 4. Fresh colouration. A, *Pseudopalicus serripes* (Alcock & Anderson, 1894), ovigerous female, DW16; B, *Harrovia longipes* Lanchester, 1900, female, DW16; C, *Peleianus suluensis* Serène, 1971, female with epicaridean parasite, DW16; D, *Typhlocarcinops hadrotes* Ng & Rahayu, 2020, female paratype, CP56; E, *Typhlocarcinops transversus* Tesch, 1918, female, DW16; *Benthochascon hemingi* Alcock & Anderson, 1899, F, mature male, CP33, G, mature female, CP50, H, immature female, CP39. Photography by: Chan T-Y & Lin C-W (F–H); JCE Mendoza (A–E).



Fig. 5. Fresh colouration. A, *Catoptrus nitidus* A. Milne-Edwards, 1870, female, DW16; B, *Thalamita spinifera* Borradaile, 1902, female, DW16; C, unidentified portunid megalopa, DW16; D, *Charybdis bimaculata* (Miers, 1886), male, CP37; E, *Retropluma laurentae* McLay, 2006, female, CP56; F, *Bathypium chuni* (Doflein, 1904), male, CP33; G, *Podocatactes foresti* (Guinot, 1989), male, CP07; H, *Trichopeltarion* aff. *alcocki*, male, CP55; I, *Trichopeltarion* aff. *elegans*, female, CP12; J, *Trichopeltarion moosai* (Guinot, 1989), female, CP12; K, *Trichopeltarion* aff. *glaucum* (Alcock & Anderson, 1899), female, CP13. Photography by: Chan T-Y & Lin C-W (D, G–K); JCE Mendoza (A–C, E, F).

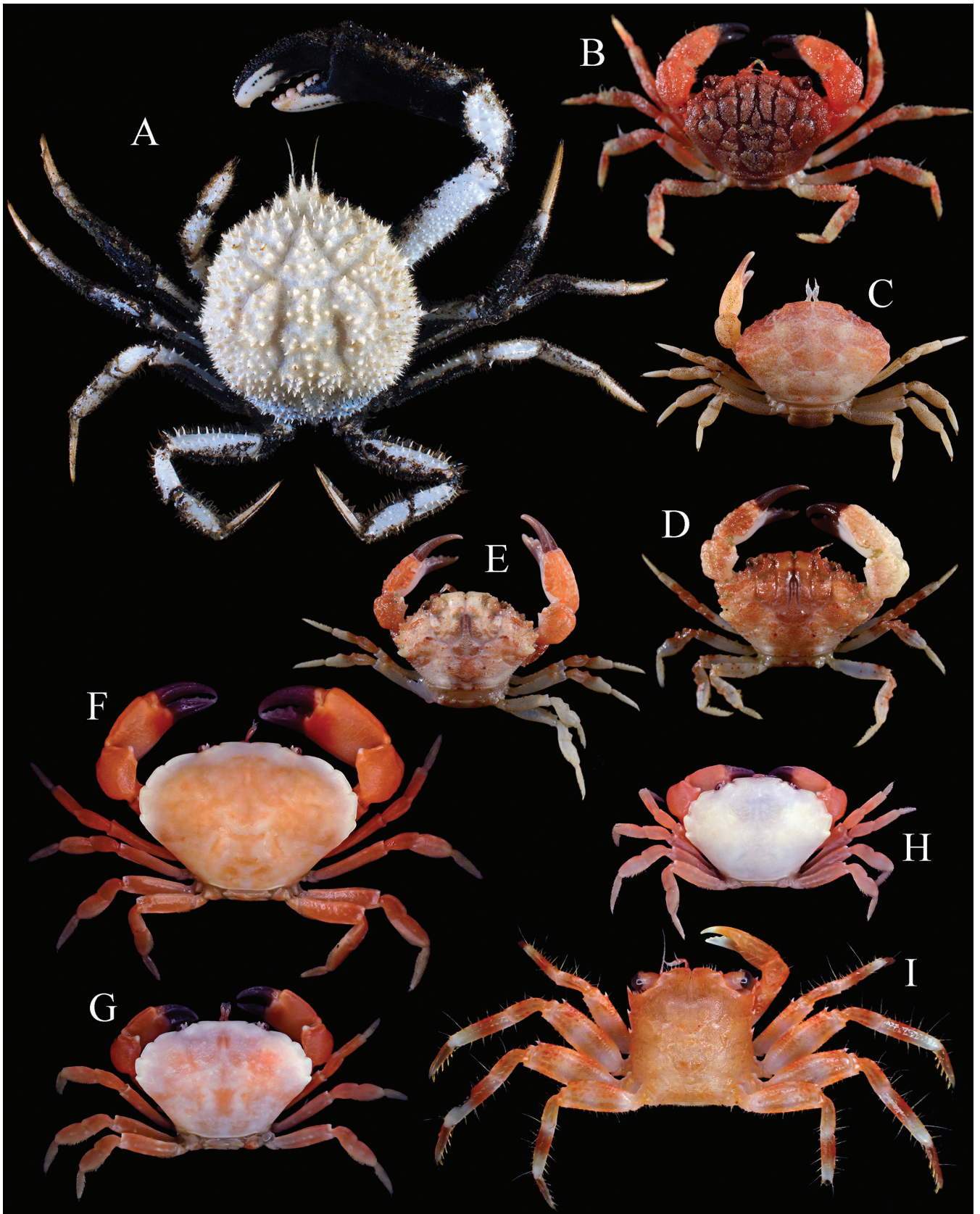


Fig. 6. Fresh colouration. A, *Trichopeltarion ovale* Anderson, 1896, male, CP12; B, *Forestiana* sp., female, DW16; C, *Liomera* sp., ovigerous female, DW16; *Paraxanthodes cumatodes* (MacGilchrist, 1905), D, larger male, DW16, E, smaller male, DW16; *Euryxanthops flexidentatus* Garth & Kim, 1983, F, male, CP34, G, immature female (larger), CP34, H, immature female (smaller), CP34; I, *Euchirograpsus timorensis* Türkay, 1975, female, CP34. Photography by: Chan T-Y & Lin C-W (A); JCE Mendoza (B–I).

coordinates and depth range of the sampling transect/station are also provided where applicable. In the checklist, new distributional species records for Indonesia are indicated by a single asterisk (*), and new species discovered by SJADES 2018 are indicated by a double asterisk (**).

RESULTS

I. Checklist of the Brachyura of SJADES 2018

* New record for Indonesia

** New species discovered by SJADES 2018

Infraorder Brachyura Latreille, 1802

Section Podotremata Guinot, 1977

Superfamily Cyclodorippoidea Ortmann, 1892

Family Cyclodorippidae Ortmann, 1892

1. *Ketamia rising* Ah Yong & Mendoza, 2021** – CP07 (1 m., holotype).
2. *Tymolus glaucommus* (Alcock & Anderson, 1894)* – CP48 (1 ovig. f.).

Family Cymonomidae Bouvier, 1898

3. *Cymonomus chani* Ah Yong & Ng, 2017* – CP44 (1 ovig. f.).
4. *Cymonomus java* Ah Yong, Mitra & Ng, 2020** – CP35 (1 m., holotype).

Superfamily Homolodromioidea Alcock, 1899

Family Homolodromiidae Alcock, 1899

5. *Dicranodromia karubar* Guinot, 1993 (Fig. 1A, B) – CP39 (1 m., 3 ovig. f.); CP51 (1 ovig. f.).

Superfamily Homoloidea De Haan, 1839

Family Homolidae De Haan, 1839

6. *Homola orientalis* Henderson, 1888 (Fig. 1C) – CP20 (1 m.); CP37 (1 m.).
 7. *Homolochunia valdiviae* Doflein, 1904 (Fig. 1F) – CP39 (1 f.).
 8. *Homolomannia sibogae* Ihle, 1912 (Fig. 1E) – CP37 (1 m., 2 f.).
 9. *Lamoha longipes* (Alcock & Anderson, 1899) (Figs. 1D, 7, 8) – CP51 (1 f.).
- + Homolid megalopa sp. 1 – CP37 (1 ex.).

Family Latreilliidae Stimpson, 1858

10. *Latreillia metanesa* Williams, 1982 (Fig. 1G) – CP37 (1 f.).
11. *Latreillia valida* De Haan, 1839 (Fig. 1H) – CP56 (1 m., 1 f.).

Superfamily Raninoidea De Haan, 1839

Family Lyreididae Guinot, 1993

12. *Lyreidus brevifrons* Sakai, 1937* – CP33 (3 m., 2 f.); CP39 (2 f., 1 ovig. f.); CP50 (2 m., 1 f.); CP55 (1 f.).
13. *Lysirude channeri* (Wood-Mason, 1885) – CP03 (1 m., 1 f.); CP12 (1 m.); CP22 (1 f.); CP23 (1 ovig. f.); CP26 (1 m., 5 f.); CP27 (3 m., 2 f., 3 ovig. f.); CP33 (2 m., 3 f.); CP45 (1 m.); CP50 (2 m.); CP51 (2 m.).

Family Raninidae De Haan, 1839

14. *Raninoides longifrons* Chen & Türkay, 2001 – CP56 (1 f., 1 ovig. f.).
15. *Raninoides personatus* Henderson, 1888 – DW01 (1 m.).

Section Eubrachyura Saint Laurent, 1980

Subsection Heterotremata Guinot, 1977

Superfamily Aethroidea Dana, 1851

Family Aethridae Dana, 1851

16. *Drachiella aglypha* (Laurie, 1906)* (Fig. 2A) – DW16 (1 f.).

Superfamily Calappoidea De Haan, 1833

Family Calappidae De Haan, 1833

17. *Mursia australiensis* Campbell, 1971* – CP02 (1 juv. f.); CP34 (1 juv. f.).

Superfamily Cancroidea Latreille, 1802

Family Cancridae Latreille, 1802

18. *Romaleon luzonense* (Sakai, 1983)* (Figs. 2B, 9, 18A–D) – CP07 (1 m., 2 f.); CP08 (1 m., 4 f., 1 ovig. f.); CP10 (1 m.).

Superfamily Dorippoidea MacLeay, 1838

Family Ethusidae Guinot, 1977

19. *Ethusa abbreviata* Castro, 2005 – CP33 (1 ovig. f.); CP56 (1 ovig. f.).
20. *Ethusa andamanica* Alcock, 1894* – CP07 (1 m., 1 f.); CP38 (3 f.).
21. *Ethusa exophthalma* (Castro, 2005)* – CP10 (1 ovig. f.); CP22 (1 f.); CP26 (1 ovig. f.); CP39 (1 ovig. f.); CP45 (1 ovig. f.); CP48 (2 m., 1 ovig. f.); CP50 (1 ovig. f.); CP51 (1 m., 1 f., 2 ovig. f.); CP55 (1 f., 1 ovig. f.).
22. *Ethusa granulosa* Ihle, 1916 – CP07 (6 m., 3 f., 3 ovig. f.); CP08 (1 m., 3 f., 1 ovig. f.); CP38 (1 ovig. f.).
23. *Ethusa hirsuta* McArdle, 1900 – CP08 (1 ovig. f.).
24. *Ethusa indica* Alcock, 1894 – CP13 (1 ovig. f.); CP18 (2 m., 2 ovig. f.); CP28 (1 ovig. f.); CP52 (1 m., 1 f., 2 ovig. f.).
25. *Ethusina ciliacirrata* Castro, 2005* – CP13 (1 ovig. f.).
26. *Ethusina paralongipes* Chen, 1993* – CP44 (1 m.).
27. *Ethusina robusta* (Miers, 1886) – CP14 (1 f.).

Superfamily Goneplacoidea MacLeay, 1838

Family Chasmocarcinidae Serène, 1964

28. *Camatopsis rubida* Alcock & Anderson, 1899 (Fig. 2C, D) – CP10 (2 m.); CP26 (1 m.); CP37 (2 f.); CP55 (1 m., 1 juv.).
29. *Hephthopelta lugubris* Alcock, 1899 (Fig. 2E, F) – CP22 (3 f., 1 ovig. f.); CP33 (1 ovig. f.); CP48 (1 m.); CP49 (1 m.); CP51 (1 m.).

Family Goneplacidae MacLeay, 1838

30. *Carcinoplax abyssicola* (Miers, 1885) (Fig. 2G) – CP07 (1 f.); CP08 (2 m., 7 f.); CP10 (1 m.); CP23 (1 m., 1 f.); CP39 (1 m., 2 f.).
31. *Carcinoplax longimanus* (De Haan, 1833) (Fig. 2H, I) – CP37 (5 m., 5 f.).

32. *Carcinoplax longipes* (Wood-Mason, in Wood-Mason & Alcock, 1891) (Fig. 3B) – CP22 (1 ovig. f.); CP23 (1 m., 1 f.); CP33 (1 m.); CP35 (1 m., 1 ovig. f.); CP39 (12 m., 4 ovig. f.); DW46 (1 juv. f.); CP47 (2 ovig. f.); CP48 (1 m.); CP51 (1 m.).
33. *Carcinoplax polita* Guinot, 1989 (Fig. 3A) – CP34 (1 m.).
34. *Exopheticus insignis* (Alcock, 1900) (Fig. 3C) – CP37 (4 f., 1 ovig. f., 4 juv.).
35. *Psopheticus stridulans* Wood-Mason, 1892 (Fig. 3D) – CP26 (1 f.); CP39 (1 ovig. f.).
36. *Microgoneplax danielae* Naruse & Castro, 2010 (Figs. 3E, 10E) – CP37 (1 m.).
37. *Singhaplax platypoda* Castro, 2007 (Fig. 10A–D) – DW16 (1 ovig. f.); DW17 (1 f.).

Family Mathildellidae Karasawa & Kato, 2003

38. *Platypilumnus gracilipes* Alcock, 1894 (Fig. 3F, G) – CP02 (1 ovig. f.); CP26 (2 f.); CP27 (1 m., 1 ovig. f.).

Superfamily Hexapodoidea Miers, 1886

Family Hexapodidae Miers, 1886

39. *Hexaplax aurantium* Rahayu & Ng, 2014 (Fig. 3H) – CP20 (1 m.).
40. *Mariaplax sundaica* Rahayu & Widayastuti, 2018 (Fig. 3I) – DW06 (1 f.).

Superfamily Leucosioidea Samouelle, 1819

Family Leucosiidae Samouelle, 1819

41. *Arcania* aff. *brevifrons* Chen, 1989 – DW16 (1 f.).
42. *Ebalia serenei* Chen, 1989* – DW16 (4 m., 2 f.); DW17 (1 m., 1 f.).
43. *Ihleus lanatus* (Alcock, 1896) – DW16 (2 m.).
44. *Oreotlos octavus* Mendoza & Nugroho, 2021** – DW16 (1 m., holotype).
45. *Parilia pattersoni* Ng, Devi & Kumar, 2018* – CP56 (1 m.).
46. *Tanaoa nanus* Galil, 2003 – CP07 (19 m., 15 f., 1 ovig. f.); CP08 (33 m., 34 f., 4 ovig. f.); CP09 (1 ovig. f.).
47. *Tanaoa pustulosus* (Wood-Mason, in Wood-Mason & Alcock, 1891)* – CP33 (1 m.); CP39 (1 m.); CP47 (1 m.); CP51 (1 m., 1 f.).
48. *Tanaoa retpela* Galil & Ng, 2015* – CP50 (1 f.).
49. *Toru pilus* (Tan, 1993)* – CP20 (1 m.); CP38 (1 ovig. f.).
50. *Urashima lamellidentatus* (Wood-Mason, 1892)* – CP50 (1 f.); CP55 (1 juv. f.).

Superfamily Majoidea Samouelle, 1819

Family Epialtidae MacLeay, 1838

51. *Chimaerodinia musica* Richer de Forges, Lee & Ng, 2021** – CP51 (1 m., holotype).
52. *Crocodycinus brevirostris* (Doflein, 1904) – CP13 (1 ovig. f.); CP23 (2 m., 3 f.); CP27 (1 ovig. f.); DW32 (1 f.); CP33 (2 m., 1 ovig. f.); CP34 (1 m., 1 f.); CP35 (1 f., 1 ovig. f.); CP47 (2 m., 1 f.); CP48 (1 f., 1 ovig. f.); CP51 (7 m., 6 f., 4 ovig. f.); CP53 (2 f., 1 ovig. f.); CP58 (1 m., 2 f.).

53. *Laubierinia globulifera* (Wood-Mason, in Wood-Mason & Alcock, 1891) – CP07 (6 m., 1 f., 2 ovig. f.); CP08 (1 m.); CP20 (1 m., 1 f.).
54. *Neophrys neptunus* Richer de Forges, Lee & Ng, 2021** – CP47 (1 f., holotype).
55. *Oxypleurodon cuneus* Wood-Mason, in Wood-Mason & Alcock, 1891 – CP03 (1 f.); CP07 (2 m., 1 f., 2 ovig. f.); CP20 (5 m., 1 f.); CP34 (5 m., 1 f., 1 ovig. f.); CP38 (5 m., 1 f., 4 ovig. f.).
56. *Samadinia livermorii* (Wood-Mason, in Wood-Mason & Alcock, 1891)* – CP08 (2 f.); CP23 (1 f., 1 ovig. f.); CP25 (1 m.); CP26 (1 f.); CP33 (2 m., 1 ovig. f.); CP39 (6 m., 12 f., 2 ovig. f.); CP47 (2 m., 1 f.); CP48 (1 m., 1 f.); CP51 (1 m.).
57. *Samadinia jeffrii* Richer de Forges, Lee & Ng, 2021** – CP23 (1 ovig. f., paratype); CP48 (1 m., holotype, 2 m., 2 f., 1 ovig. f., all paratypes).
58. *Samadinia yoyoe* Richer de Forges, Lee & Ng, 2021** – CP18 (1 m., holotype, 3 m., 1 f., all paratypes); CP20 (1 ovig. f., paratype); CP48 (4 m., 2 ovig. f., all paratypes).
59. *Tunepugettia corbariae* Lee, Richer de Forges & Ng, 2019 – CP12 (1 f.); CP23 (3 m., 1 f.); CP24 (1 m., 1 f.); CP33 (5 m., 2 f.); CP35 (1 m.); CP50 (1 f.); CP51 (1 m.).

Family Inachidae MacLeay, 1838

60. *Cyrtomaia pilosa* Ihle & Ihle-Landenberg, 1931 – CP08 (3 m., 3 f.).
61. *Cyrtomaia suhmi* Miers, 1885 – CP22 (1 m., 1 juv.); CP23 (2 m.); CP27 (1 ovig. f.); CP28 (1 juv.); CP33 (1 f., 1 ovig. f.); CP35 (1 juv., 1 ex.); CP39 (1 f., 1 juv.); CP48 (1 m., 3 juv.); CP50 (2 ovig. f.); CP51 (1 juv.).
62. *Physacheus tonsor* Alcock, 1895* – CP03 (1 m.); CP07 (1 m., 1 ovig. f.); CP08 (1 m.); CP20 (2 m., 1 f., 1 ovig. f.); CP34 (1 ovig. f.).
63. *Platymaia alcocki* Rathbun, 1916* – CP02 (1 f.); CP37 (1 m.); CP38 (21 m., 43 f.); CP39 (1 m.).

Family Oregoniidae Garth, 1958

64. *Pleistacantha pungens* (Wood-Mason, in Wood-Mason & Alcock, 1891)* – CP02 (1 f.); CP08 (1 m.).

Superfamily Palicoidea Bouvier, 1898

Family Palicidae Bouvier, 1898

65. *Pseudopalicus serripes* (Alcock & Anderson, 1894) (Fig. 4A) – DW16 (1 ovig. f.).

Superfamily Parthenopoidea MacLeay, 1838

Family Parthenopidae MacLeay, 1838

66. *Rhinolambrus cybelis* (Alcock, 1895) – DW16 (1 juv. m.).
67. *Rhinolambrus lamelliger* (White, 1847) – DW16 (1 juv. f.).

Superfamily Pilumnoidea Samouelle, 1819

Family Pilumnidae Samouelle, 1819

68. *Harrovia longipes* Lanchester, 1900 (Fig. 4B) – DW16 (1 f.).
69. *Heteropilumnus trichophoroides* De Man, 1895 – DW16 (1 f.).

70. *Peleianus suluensis* Serène, 1971* (Fig. 4C) – DW16 (1 f.).
71. *Pilumnus sjades* Ng & Rahayu, 2020** – DW16 (1 m., holotype, 1 m., paratype).
72. *Typhlocarcinops arcuatus* (Miers, 1886) – DW16 (1 f.).
73. *Typhlocarcinops hadrotes* Ng & Rahayu, 2020** (Fig. 4D) – CP37 (1 m., paratype); CP56 (1 m., holotype, 2 m., 2 f., all paratypes).
74. *Typhlocarcinops transversus* Tesch, 1918 (Fig. 4E) – DW16 (1 f.).

Superfamily Portunoidea Rafinesque, 1815

Family Geryonidae Colosi, 1923

75. *Benthochascon hemingi* Alcock & Anderson, 1899 (Fig. 4F–H) – CP33 (1 m., 1 ovig. f.); CP39 (6 f.); CP50 (1 m., 1 f.).

Family Portunidae Rafinesque, 1815

76. *Catoptrus nitidus* A. Milne-Edwards, 1870 (Fig. 5A) – DW16 (1 f.).
 77. *Charybdis bimaculata* (Miers, 1886) (Fig. 5D) – CP37 (42 m., 17 f.).
 78. *Thalamita spinifera* Borradaile, 1902 (Figs. 5B, 11, 12) – DW16 (1 m., 1 f.).
- + Portunid megalopa sp. 2 (Fig. 5C) – DW16 (1 ex.)

Superfamily Retroplumoidea Gill, 1894

Family Retroplumidae Gill, 1894

78. *Bathypluma chuni* (Doflein, 1904) (Fig. 5F) – CP27 (1 f., 1 ovig. f.), CP33 (3 m., 2 f., 1 ovig. f.), CP51 (1 m.).
80. *Retropluma laurentae* McLay, 2006 (Fig. 5E) – CP56 (1 f.).

Superfamily Trichopeltarioidea Tavares & Cleva, 2010

Family Trichopeltariidae Tavares & Cleva, 2010

81. *Podocatactes foresti* (Guinot, 1989) (Fig. 5G) – CP07 (4 m., 2 f.); CP08 (2 m., 1 f.).
82. *Trichopeltarion alcocki* Doflein, in Chun, 1903 – CP25 (1 juv. m.); CP48 (1 juv. f.).
83. *Trichopeltarion* aff. *alcocki** (Fig. 5H) – CP03 (1 juv.); CP20 (1 juv. m.); CP33 (2 m., 2 f., 3 juv.); CP45 (1 m.); CP50 (2 f., 2 juv. f.); CP55 (4 m., 1 f., 1 ovig. f.).
84. *Trichopeltarion* aff. *elegans** (Fig. 5I) – CP12 (1 f.); CP33 (2 m., 2 f.); CP47 (1 m.); CP50 (2 m., 1 f.); CP51 (1 m., 4 f., 2 ovig. f.); CP55 (1 m.).
85. *Trichopeltarion* aff. *glaucum** (Alcock & Anderson, 1899) (Fig. 5K) – CP13 (1 f.).
86. *Trichopeltarion moosai* (Guinot, 1989) (Fig. 5J) – CP12 (1 f.); CP35 (1 m.); CP47 (1 m.).
87. *Trichopeltarion ovale* Anderson, 1896* (Figs. 6A, 13) – CP12 (3 m.).

Superfamily Xanthoidea MacLeay, 1838

Family Xanthidae MacLeay, 1838

88. *Euryxanthops flexidentatus* Garth & Kim, 1983* (Figs. 5F–H, 14, 18I–K) – CP02 (1 f.), CP34 (1 m., 2 juv. f.).
89. *Forestiana* sp.* (Figs. 6B, 15) – DW16 (1 f., 1 megalopa).
90. *Liomera* sp. – (Fig. 6C) DW16 (1 ovig. f.).
91. *Paraxanthodes cumatodes* (MacGilchrist, 1905)* (Figs. 6D, E, 16, 18L–N) – DW16 (2 m., 1 f.).

Subsection Thoracotremata Guinot, 1977

Superfamily Grapsoidea MacLeay, 1838

Family Plagusiid Dana, 1851

92. *Euchirograpsus timorensis* Türkay, 1975 (Figs. 6I, 17) – CP34 (1 f.).

Family Varunidae H. Milne Edwards, 1853

93. *Varuna litterata* (Fabricius, 1798) – ship at anchor (Cilacap Bay).

II. Taxonomic Accounts of Selected Species

Family Homolidae De Haan, 1839

Lamoha Ng, 1998

Lamoha longipes (Alcock & Anderson, 1899)

(Figs. 1D, 7, 8)

Hypsophrys longipes Alcock & Anderson, 1899: 6; Alcock, 1899a: 15, pl. 1, fig. 1, 1a; Alcock, 1899b: 164; Alcock, 1901: 69, pl. 6 fig. 25; Doflein, 1904: 17, 145, pl. 11, figs. 1, 2; Guinot & Richer de Forges, 1995: 447, fig. 56a, b, f.

Lamoha longipes – Richer de Forges & Ng, 2020: 247, fig. 6.
Not *Lamoha longipes* – Richer de Forges & Ng, 2008: 20, figs. 16A, C, 22A = *Lamoha woodmasoni* Richer de Forges & Ng, 2020.

Material examined. 1 female (12.1 × 15.5 mm) (ZRC 2020.0110), station CP51, on coarse sand, mud and plastic trash substrate, Pelabuhanratu Bay, southern Java, Indonesia, Indian Ocean, 7°04.874'S 106°25.396'E – 7°05.348'E 106°25.044'E, 569–657 m, coll. SJADES cruise, *Baruna Jaya VIII*, 2 April 2018.

Description. Carapace rectangular, longer than wide (length to width ratio 1.28) with spines on anterior part (Fig. 7A–C). Pseudorostrum bifid distally with 2 sharp spines separated by a V-shaped cleft; proepistome with sharp spine (Fig. 7D). Orbits open, with round eyes and long ocular peduncle (Fig. 7E). Short spine at base of each side of pseudorostrum; 1 large supraocular spine; 6 subhepatic spines in total; 1 lateroanterior spine, lateroposterior border of the carapace with small spinules (Fig. 7B, F). Homolian line prominent, running length of carapace; branchio-gastric groove deep; 8 short spines on gastric region; antennae longer than the carapace (Fig. 7A). Basal antennal article with strong urinary article (Fig. 7D). Epistome transversely narrow (Fig. 7D). Third maxilliped pediform with small granules on external margins of ischium and merus, margins appear serrate (Fig. 8B). Cheliped relatively short, setose on dorsal margin; basis-ischium subquadrate with 2 spinules on dorsal margin, 3 spinules on each ventral margin; merus spination as follows: 9–11 on dorsal margin, 9 on ventral margin, spiny on each border, carpus short with 7 spines and spinules; propodus smooth; dactylus slender with cutting margins blade-like (Fig. 8D, E). P2–P4 (Figs. 7A, 8F–H, L–N) very long; anterior edge of each coxa with short serrated flange; each basis-ischium with 1 spine on each dorsal edge, forming bracket around merus; spines and spinules on dorsal margin of meri as follow: 12–14 on P2, 14 on P3, 12 on P4; spines and

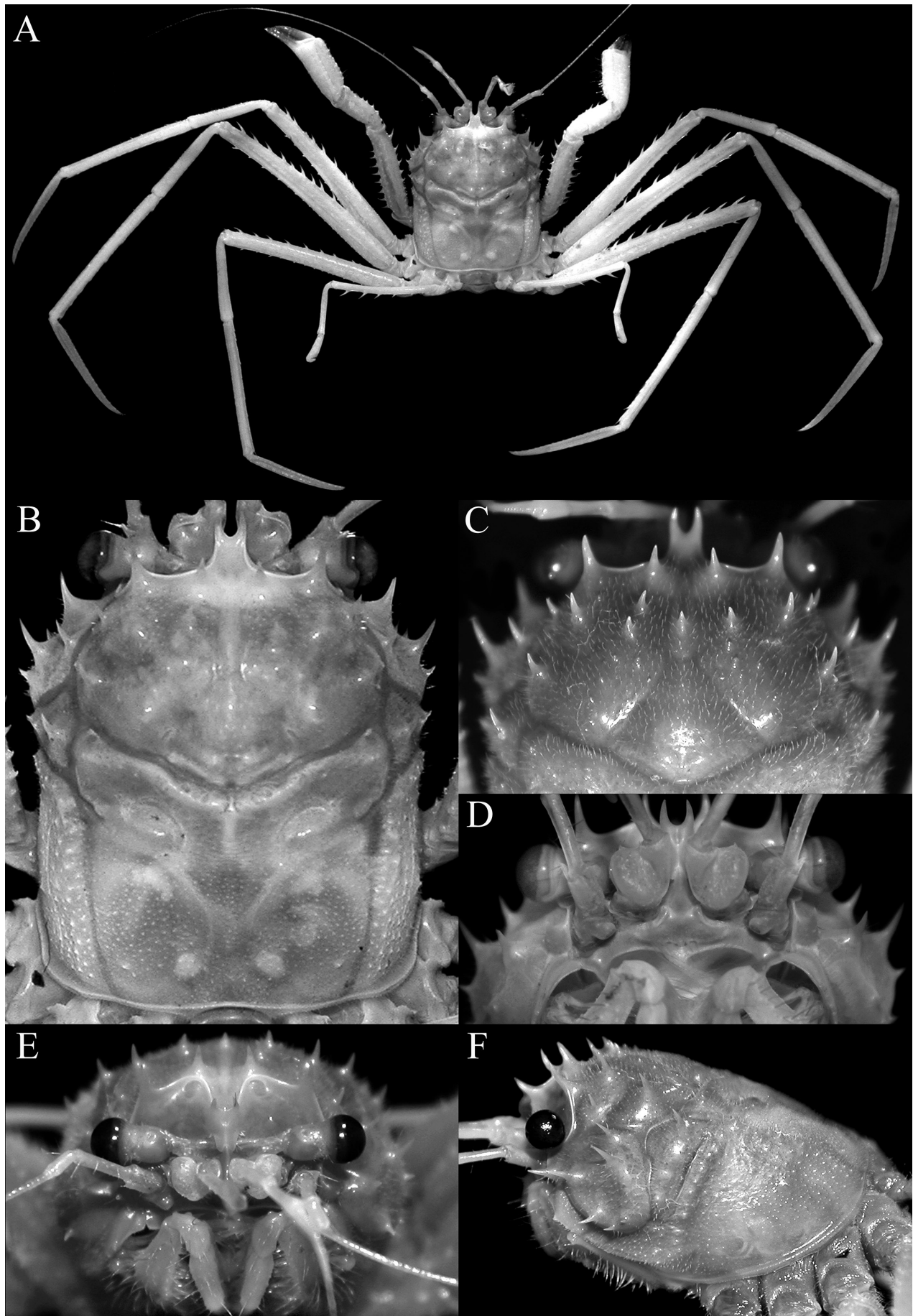


Fig. 7. *Lamoha longipes* (Alcock & Anderson, 1899), female (12.1 × 15.5 mm) (ZRC 2020.0110). A, overall dorsal view; B, dorsal view of carapace; C, anterior part of carapace showing position of spines; D, epistome, antennae and antennules; E, frontal view of cephalothorax; F, left lateral view of cephalothorax.

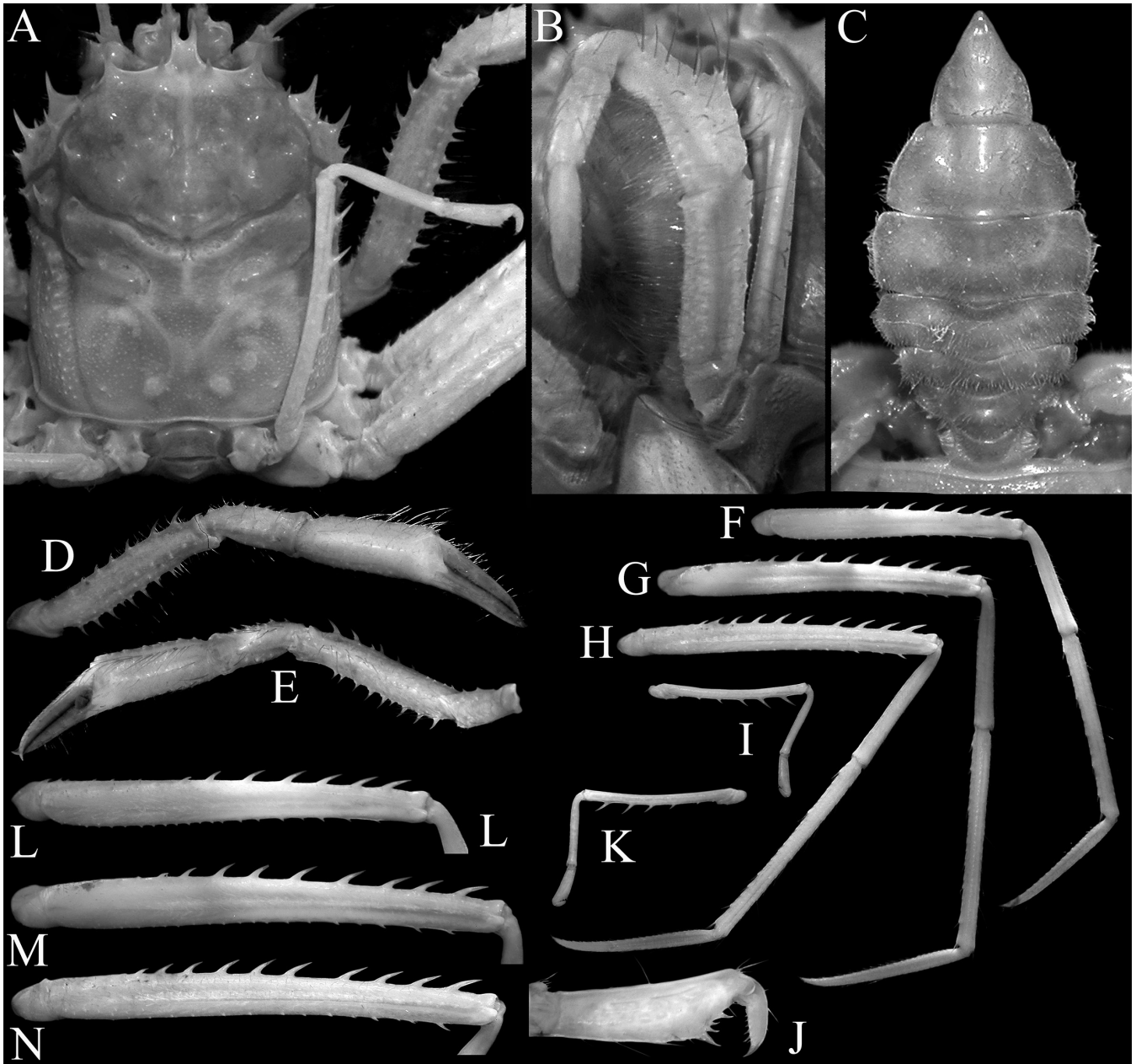


Fig. 8. *Lamoha longipes* (Alcock & Anderson, 1899), female (12.1 × 15.5 mm) (ZRC 2020.0110). A, dorsal view of carapace showing position of folder P5; B, left third maxilliped; C, pleon; D, E, right cheliped, external view (D) and internal view (E); F–I, right P2–P5, respectively; J, pseudochela of right P5; K, left P2; L–N, right P2–P4 merus. F–I, K, all same scale; L–N, same scale.

spinules on ventral margin of meri as follow: 20 or 21 on P2, 22 on P3, 13 or 14 on P4; P5 (Fig. 8I–K) reduced, when folded dorsally, merus reaches at branchio-gastric groove, basis-ischium with 1 ventral spinule, merus with 5 or 6 spines and spinules on ventral margin, dorsal margin unarmed, carpus long curved, propodus enlarged distally forming a pseudochela with short curved dactylus. Female pleon with 6 free somites and telson; telson triangular (Fig. 8C).

Remarks. *Hypsophrys longipes* was described by Alcock & Anderson (1899) from 11 specimens collected off the coast of Travancore in the Arabian Sea from 786 m, but no figure was provided. Alcock redescribed the species with detailed figures (Alcock, 1899a: 15, pl. 1 fig. 1). Doflein (1904) subsequently reported the species from two specimens collected by the “Valdivia” in 1899 in eastern Sumatra between 600 and 800

m. Guinot & Richer de Forges (1995: 447) in their revision of the Homolidae, referred an ovigerous female measuring 33.2 × 29.0 mm collected from the Seychelles Islands to *L. longipes* (as a *Hypsophrys*), noting that it agreed with most of the characters diagnosed by Alcock & Anderson (1899) and Alcock (1899a). They noted two differences: that the lateroposterior margin of the carapace is covered with spinules on the Seychelles specimen (vs. only strong granules on the types) and there was no black pigmented spot on the outer surface of the chela. The lateroposterior margin of the carapace can probably be accounted for by variation; the absence of the black pigmented spot on the outer surface of the chela is harder to explain. Williams (1974) noted that this spot was observed in a large syntype female he examined although it was not described or figured by Alcock & Anderson (1899) or Alcock (1899a). We believe

the Seychelles female is conspecific with *L. longipes* as the carapace, setation, ambulatory legs armature and proportions all agree very well with the type figures.

Richer de Forges & Ng (2020) distinguished *L. longipes* s. str. from a new species, *L. woodmasoni*, from Papua New Guinea and Solomon Islands by their carapace shape and armature, shape of the rostrum and armature of the P5 merus. They did not have material of *L. longipes* available for that study, relying only on the original descriptions and figures (see Alcock & Anderson, 1899; Alcock, 1901). The present female specimen is not fully adult as the pleopods are not very setose but it agrees very well with the original figures and supports the distinguishing characters highlighted by Richer de Forges & Ng (2020). In addition, the P2–P5 meri of *L. longipes* are all proportionately longer (Figs. 7A, 8F–H) than those of *L. woodmasoni* (cf. Richer de Forges & Ng, 2020: fig. 4D–G). *Lamoha longipes* is restricted to the Indian Ocean, with western Pacific records of this species referable to *L. woodmasoni* instead (cf. Richer de Forges & Ng, 2008: 21).

The present female specimen from southern Java (Figs. 7, 8) differs from the Indian types of *L. longipes* and specimen from Seychelles in possessing a more longitudinally rectangular carapace, the surfaces of the carapace and pereopods are only weakly setose, the pseudorostrum is proportionately longer, and the P2–P4 are proportionately longer and more slender (vs. carapace more quadrate and densely setose, the pseudorostrum is proportionately shorter, and the P2–P4 are proportionately shorter and broader; cf. Alcock, 1899a: pl. 1 fig. 1, 1a, b; Alcock, 1901: pl. 6 fig. 25, 25a, b; Guinot & Richer de Forges, 1995: fig. 56a, b; Richer de Forges & Ng, 2020: fig. 6). In fact, the Javan specimen closely resembles the male and female material reported by Doflein (1904: pl. 11, figs. 1, 2) which was obtained from off the shores of Nicobar Islands and off Bencoolen in eastern Sumatra. This site is relatively close to the southern Javan one. It would appear that the Javanese and Sumatran specimens belong to a different species from *L. longipes*, but until the types of the latter can be re-examined, it seems best to defer describing a new species for now.

Family Cancridae Latreille, 1802

Romaleon Gistel, 1848

Romaleon luzonense (Sakai, 1983)

(Figs. 2B, 9, 18A–D)

Cancer luzonensis Sakai, 1983: 628, fig. 3f.

Cancer (Romaleon) nadaensis, Davie, 1991: 508, 509.

Romaleon luzonense, Ng et al., 2008: 53; Schram & Ng, 2012: 670.

Material examined. 1 male (31.9 × 23.7 mm), 2 females (18.8 × 14.1 mm, 39.1 × 29.0 mm) (ZRC), station CP07, on coarse sand, gravel, rubble and wood, Sunda Strait, between Tabuan I. and Sumatra, Indonesia, Indian Ocean, 5°44.678'S

104°51.151'E – 5°44.917'S 104°52.061'E, 379–409 m, coll. SJADES cruise, *Baruna Jaya VIII*, 25 March 2018; 1 male (20.2 × 15.4 mm), 4 females (18.7 × 14.0 mm – 27.1 × 19.3 mm), 1 ovig. female (25.7 × 19.4 mm) (ZRC), station CP08, on coarse sand, gravel and rubble, Sunda Strait, between Tabuan I. and Sumatra, Indonesia, Indian Ocean, 5°45.126'S 104°51.080'E – 5°45.225'S 104°51.710'E, 425–442 m, coll. SJADES cruise, *Baruna Jaya VIII*, 25 March 2018; 1 male (30.6 × 22.4 mm) (ZRC), station CP10, on mud-clay, Sunda Strait, south of Umbar Bay, Sumatra, Indonesia, Indian Ocean, 5°45.399'S 104°56.098'E – 5°46.183'S 104°56.565'E, 429–446 m, coll. SJADES cruise, *Baruna Jaya VIII*, 25 March 2018.

Comparative material. Holotype, female (46.9 × 34.2 mm) (USNM 195064), station 5289, 13°41'50"N, 120°58'30"E, 172 fathoms (= 86 m), off Matacot Point, Luzon I., Philippines, coll. U.S.S. *Albatross*, 22 July 1907.

Description. Carapace (Fig. 9A, F, K) subovate, about 1.35–1.38 times wider than long; convex longitudinally and transversely; regions well defined, strongly areolate, separated by deep furrows; frontal, orbital regions depressed; epigastric (1M) region distinct, protogastric region (2M) partially divided longitudinally, distinct from fused meso-, metagastric (3M) region, urogastric (4M) region entire, sometimes fused with cardiac region; cardiac (1P) region partially divided longitudinally; branchial regions subdivided into several areolae; dorsal surface covered with round granules which are larger on the areolae, smaller in the furrows, glabrous except for thin layer of very fine tomentum visible only under high magnification. Front 0.13 times carapace width, tridentate, central tooth smallest, placed slightly beneath (ventral to) broader lateral teeth; lateral teeth separated from inner orbital tooth by wide U-shaped depression; supraorbital margin granulate, with two thin fissures. Anterolateral margin arcuate, armed with 9 triangular teeth, including external orbital tooth; tips of 9th teeth forming widest extent of carapace; anterolateral teeth forming rim around anterior carapace. Posterolateral margin concave, lined with round granules and 3 or 4 larger, lobiform teeth or granular tubercles, the first of which is immediately posterior to 9th anterolateral tooth, and the last of which is near the junction with posterior margin. Posterior margin nearly straight, slightly concave, lined with round granules.

Eyes (Fig. 9B, G) relatively small, ocular peduncles short, distal ends granular, corneas well developed; infraorbital margin granulate, forming deep sulcus at junction with external orbital tooth. Basal article of antennule (Fig. 9C, H) large, nearly filling antennular fossa, antennules folding diagonally, nearly vertically. Basal article of antenna (Fig. 9C, H) large, distal part projecting anteriorly and visible from dorsal view beneath infraorbital tooth; flagellum long, setose, excluded from orbit, entering concavity between front and infraorbital tooth instead. Posterior margin of epistome (Fig. 9B, G) with central region projecting ventrally. Third maxillipeds (Fig. 9C, H) with anterolateral angle of merus projecting.

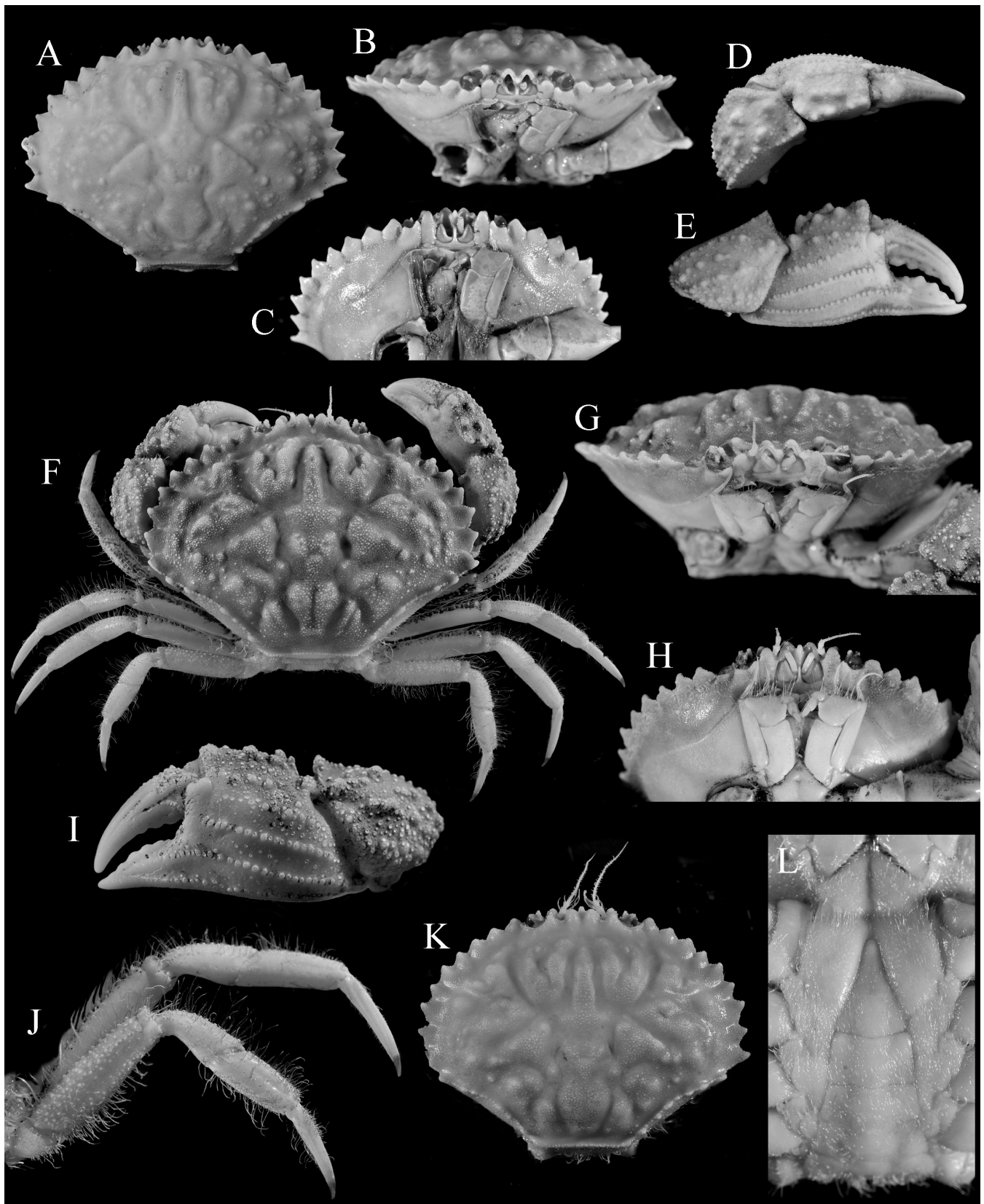


Fig. 9. *Romaleon luzonense* (Sakai, 1983): A–E, holotype female (46.9 × 34.2 mm) (USNM 195064); F–J, male (31.9 × 23.7 mm) (ZRC) CP07; K, L, male (30.6 × 22.4 mm) (ZRC) CP10. A, K, carapace, dorsal view; B, G, cephalothorax, anterior view; C, H, carapace and fronto-oral field, anteroventral view; D, left chela, dorsal view, E, right chela, external view; F, dorsal habitus; I, left chela, external view; J, right P4 and P5, dorsal view; L, thoracic sternum and pleon, ventral view.

Male thoracic sternum (Fig. 9L) narrow, smooth, sparsely setose; sternites 1–4 fused, but deep transverse furrows visible between sternites 2/3 and 3/4, deep longitudinal furrow visible from exposed sternites 2 through 4, continuing into the median line within the sterno-pleonal cavity; uninterrupted sutures dividing sternites 4/5, 5/6, 6/7, and 7/8; median line visible within sterno-pleonal cavity from level of posterior third of sternite 4 through sternite 8; sternite 8 hidden completely by pleon; sterno-pleonal cavity deep, tubercle of sterno-pleonal lock on sternite 5 equidistant between sutures 4/5 and 5/6.

Chelipeds (Fig. 9D, E, I) symmetric, homochelous, robust; external surfaces of carpi, propodi granular; lower half of palm with 4 longitudinal rows of round, uniformly sized granules; fingers smooth, longitudinally ridged, tip of fixed finger extending further than tip of dactylus. Ambulatory legs (Fig. 9F, J) moderately long, P3, P4 longest, nearly as long as carapace width; anterior margins of meri, carpi, and propodi lined with large conical granules, anterior and posterior margins from meri to dactyli lined with long, conspicuous setae; dactyli unarmed, distally tipped with chitinous claw.

Male pleon (Fig. 9L) narrowly triangular, smooth, setose; telson acutely triangular, length 1.45 times basal width; 6th pleonal somite subrectangular, wider than long; somites 3–5 fused, but with remnants of sutures still visible near lateral margins; somites 1, 2, narrow, granular, relatively more thickly setose.

G1 (Fig. 18A–C) straight, stout, subconical, tapering gradually to a thin tip; distal end unarmed except for some minute, scattered spinules. G2 (Fig. 18D) slightly longer than G1, slender, sinuous, terminal segment subequal in length to subterminal segment. Penis emerging from base of P5 coxa, just anterior to P5 coxosternal condyle.

Female morphology similar to that of the male, except in the thoracic sternum, pleon, and genitalia. Pleon wider than that of male, with lateral margins slightly convex, all somites freely articulated. Vulvae large, transversely ovate, set close to each other on sternite 6, anterior borders impinging on sternal suture 5/6.

Live colouration. Orange carapace and pereopods; fingers of chelipeds light brown; tips of ambulatory dactyli white; white spots on joints of ambulatory legs; undersides creamy white; long setae brownish yellow (Fig. 2B).

Remarks. Sakai (1983) described *Cancer luzonensis* based on one female specimen collected by the Albatross Philippine Expedition from Batangas Bay, SW Luzon I., Philippines. He provided a brief description and drawing of the holotype, and remarked: “This species is related to *Cancer nadaensis* Sakai (1969) in its general aspect, but the dorsal surface of the carapace is deeply areolated, differing from the smooth surface of *C. nadaensis*, and the last anterolateral tooth is less produced laterally.” (Sakai, 1983: 630). Davie (1991: 509) examined the holotype of *Cancer luzonensis*

and commented that while being similar to *Platepistoma* Rathbun in having well-defined carapace regions separated by deep furrows, the carapace of *C. luzonensis* lacks the tomentum and the strong granulation seen in *Platepistoma*. He agreed with Sakai (1983) regarding the similarity with *Cancer nadaensis*, although he had not examined the type of the latter. Nonetheless, he indicated some doubt over the placement of these two species in the subgenus *Cancer* (*Romaleon*). Later, Ng et al. (2008: 53) placed *C. luzonensis* in the genus *Romaleon* Gistel (type species: *R. gibbosulum* (De Haan)) due to its similarity to *C. nadaensis* and in accordance with the latest systematics of the genus *Cancer* Linnaeus (see Nations, 1975; Schweitzer & Feldmann, 2000; Schram & Ng, 2012).

The present material from the Sunda Strait matches the original description by Sakai (1983), although they are all smaller than the holotype. The holotype of *C. luzonensis* (USNM 195064) deposited in the Smithsonian Institution and figured here (Fig. 9A–E), has been previously examined by the first author (JCEM, pers. obs.). The condition of the specimen was poor, with the ambulatory legs, right third maxilliped, and parts of the pleon missing and the chelipeds detached. Nonetheless, the form of the carapace (i.e., areolation, lateral dentition), chelipeds, and third maxillipeds were sufficiently similar to affirm their conspecificity. As far as is known, there have been no additional records of *R. luzonense*, nor has it been figured since its description, and the male morphology was unknown until now. This is only the second report of this species, and the first outside of its type locality. The generic affinities of *R. luzonense* and *R. nadaense* are still not very well understood and can only be clarified when additional material becomes available in the future.

Romaleon luzonense has been found at a depth range of 86–446 m, in muddy-sandy to gravelly substrates.

Family Goneplacidae MacLeay, 1838

Microgoneplax Castro, 2007

Microgoneplax danielleae Naruse & Castro, 2010 (Figs. 3E, 10E)

Material examined. 1 male (6.8 × 3.8 mm) (ZRC 2019.1695), station CP37, substrate fine mud with pieces of small branches, south of Cilacap, Java, Indonesia, 8°07.462'S 109°05.639'E – 8°07.864'S 109°06.470'E, 163–166 m, beam trawl, coll. SJADES 2018, 30 March 2018.

Remarks. The present male agrees very well with the description of the species by Naruse & Castro (2010), described and previously only known from two males collected in Ambon Bay to the east. The present specimen is the largest known, the two types being 6.0 × 3.1 mm and 4.7 × 2.6 mm (Naruse & Castro, 2010).

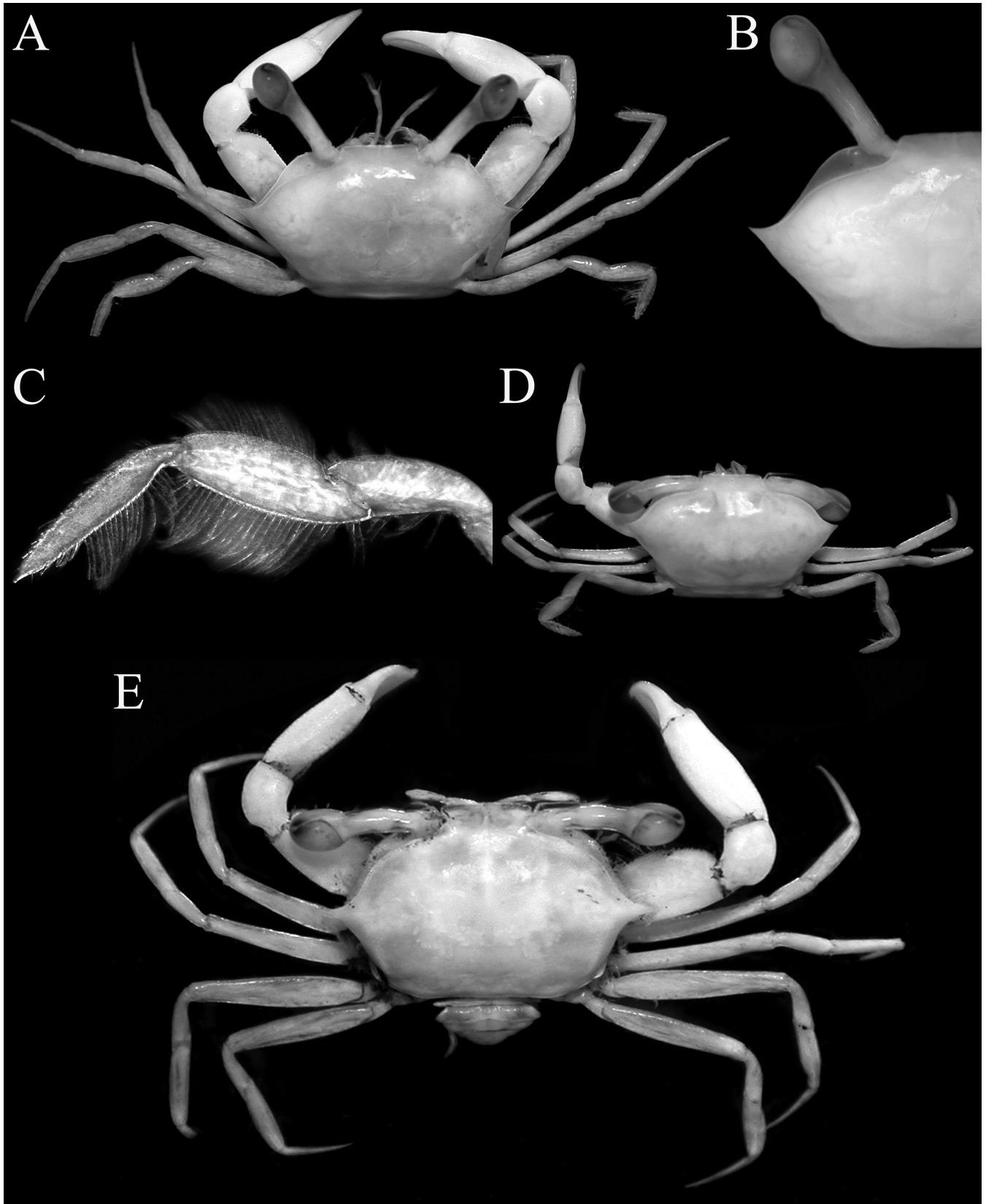


Fig. 10. A–C, *Singhaplax platypoda* Castro, 2007, ovigerous female (6.5×3.4 mm) (ZRC 2019.1693); D, *Singhaplax platypoda* Castro, 2007, female (5.8×3.1 mm) (ZRC 2019.1694); E, *Microgoneplax danieleae* Naruse & Castro, 2010, male (6.8×3.8 mm) (ZRC 2019.1695). A, D, E, overall dorsal view; B, left side of carapace; C, left fourth ambulatory propodus and dactylus.

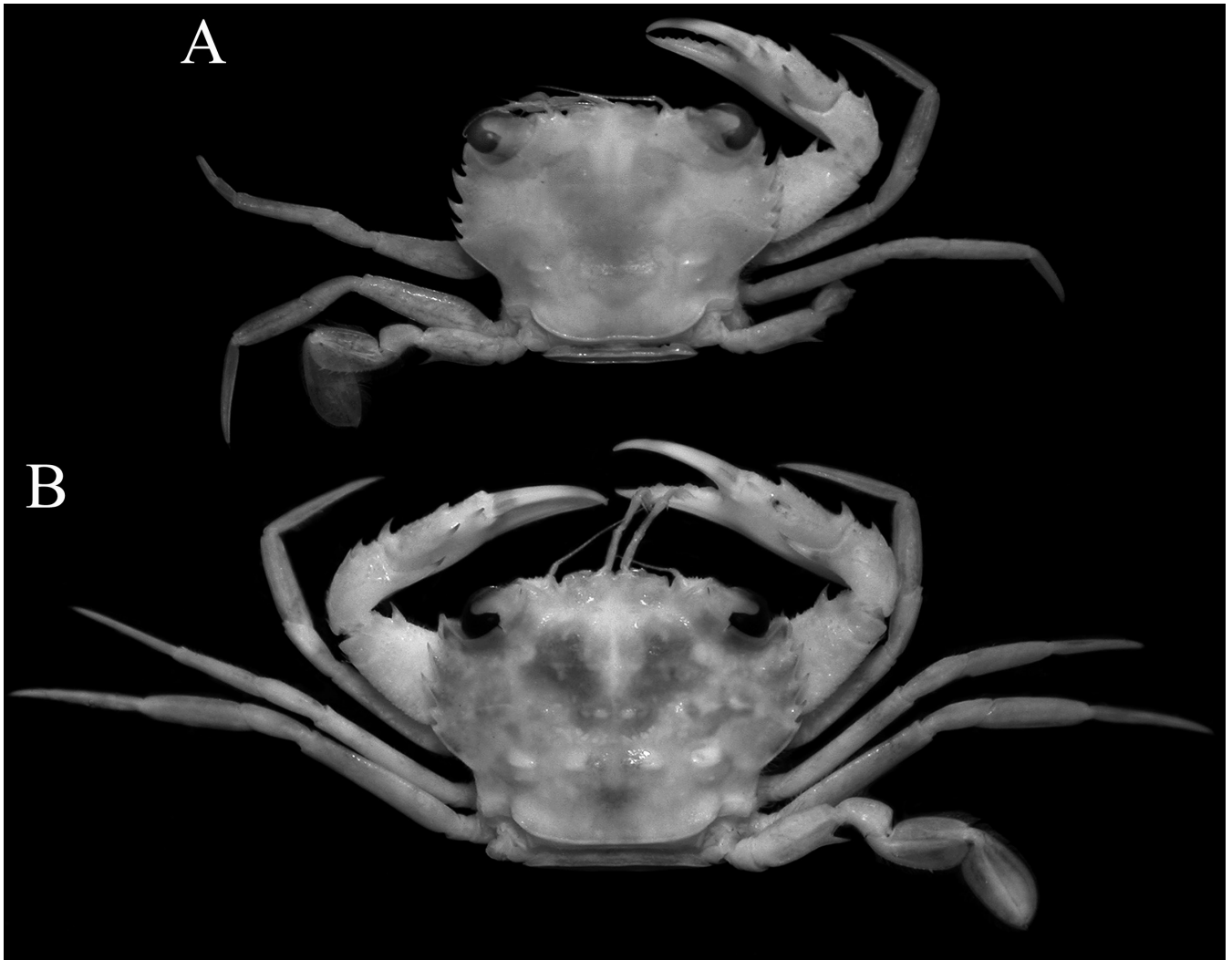


Fig. 11. *Thalamita spinifera* Borradaile, 1902, overall dorsal view. A, male (10.8×7.7 mm) (ZRC 2020.0395); B, female (9.8×6.9 mm) (ZRC 2020.0395).

Singhaplax Serène & Soh, 1976

Singhaplax platypoda Castro, 2007
(Fig. 10A–D)

Material examined. 1 ovigerous female (6.5×3.4 mm) (ZRC 2019.1693), station DW16, substrate gravel, sand and some mud, Sunda Strait (sea mount reef), Java, Indonesia, $6^{\circ}09.803'S$ $104^{\circ}57.976'E$ – $6^{\circ}09.606'S$ $104^{\circ}58.208'E$, 92–103 m, dredge, coll. SJADES 2018, 26 March 2018; 1 female (5.8×3.1 mm) (ZRC 2019.1694), station DW17, substrate gravel, dead corals and small rocks, Sunda Strait (sea mount reef), Java, Indonesia, $6^{\circ}07.333'S$ $105^{\circ}00.762'E$ – $6^{\circ}07.221'S$ $105^{\circ}00.865'E$, 448–469 m, dredge, coll. SJADES 2018, 26 March 2018.

Remarks. Although both specimens on hand are females, they agree well with the description of this species by Castro (2007), notably in the structure of the fourth ambulatory leg; the flattened dactylus being diagnostic (cf. Castro, 2007: fig. 37). *Singhaplax platypoda* was described from Kai Islands in the Moluccas, further east to the present sites.

Family Hexapodidae Miers, 1886

Mariaplax Rahayu & Ng, 2014

Mariaplax sundaica Rahayu & Widyastuti, 2018
(Fig. 3I)

Material examined. 1 female (3.8×2.4 mm) (ZRC 2020.0398), station DW06, on mud and clay, Sunda Strait, between Tabuan Island and Sumatra, Java, Indonesia, Indian Ocean, $5^{\circ}43.413'S$ $104^{\circ}49.712'E$ – $5^{\circ}43.779'S$ $104^{\circ}50.060'E$, 266–294 m, coll. SJADES cruises, *Baruna Jaya VIII*, 25 March 2018.

Remarks. The present specimen agrees well with the original account of the species by Rahayu & Widyastuti (2018) who described it from a single 5.3×3.1 mm female from the same area as the present specimen. No males of this species are known.

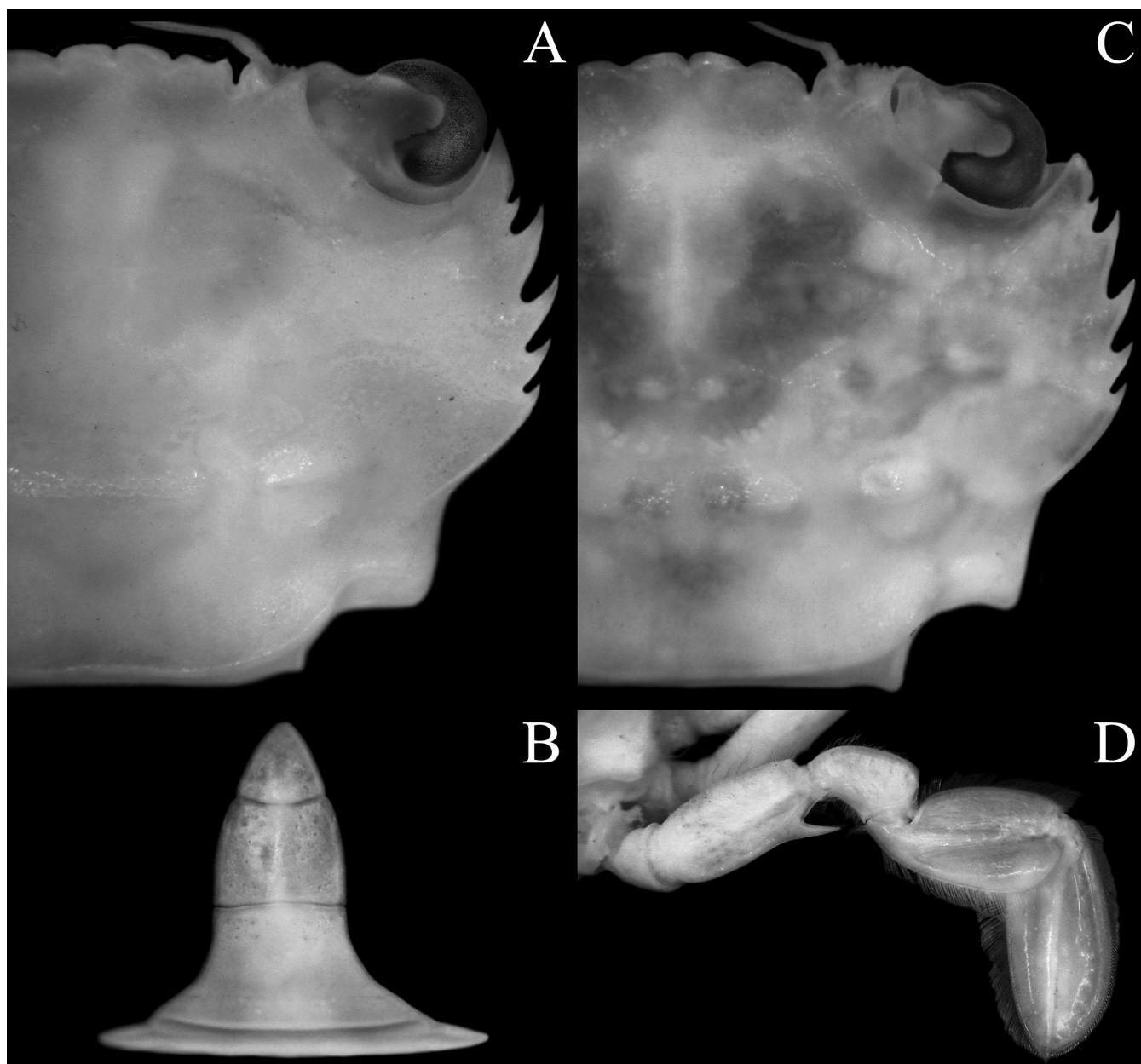


Fig. 12. *Thalamita spinifera* Borradaile, 1902, A, B, male (10.8 × 7.7 mm) (ZRC 2020.0395); C, D, female (9.8 × 6.9 mm) (ZRC 2020.0395). A, C, right side of carapace; B, male pleon (somites 3–6 and telson); D, right fourth ambulatory leg.

Family Portunidae Rafinesque, 1815

Thalamita Latreille, 1829

Thalamita spinifera Borradaile, 1902 (Figs. 5B, 11, 12, 18E–H)

Material examined. 1 male (10.8 × 7.7 mm), 1 female (9.8 × 6.9 mm) (ZRC 2020.0395), station DW16, gravel mostly, on edge of seamount, bottom with gorgonians, hard and soft corals, Sunda Strait, Java, Indonesia, Indian Ocean, 6°09.803'S 104°57.976'E – 6°09.606'S 104°58.208'E, 92–103 m, coll. SJADES cruises, *Baruna Jaya VIII*, 26 March 2018.

Remarks. Crosnier (1975) discussed at length the taxonomy of a group of *Thalamita* species with a small supplementary

tooth at the base of the first anterolateral spine: *T. exetastica* Alcock, 1899, *T. macrodonta* Borradaile, 1902, *T. spinifera* Borradaile, 1902, *T. macrospinifera* Rathbun, 1911, and *T. pseudospinifera* Crosnier, 1975, all from the Indian Ocean. Apel & Spiridonov (1998) expanded on this and recognised two more species from the western Indian Ocean: *T. indistincta* Apel & Spiridonov, 1998, and *T. loppenthini* Apel & Spiridonov, 1998.

The present specimens agree very well with *T. spinifera* Borradaile, 1902, as redescribed and figured by Crosnier (1975) in all characters, including the carapace, shape of male pleon (Figs. 11, 12), and G1 structure (Fig. 18E–G). The subequal last two anterolateral teeth, strong cardiac and mesobranchial ridges and relatively simpler G1 structure are diagnostic for the species.

Ng et al. (2019: 5, fig. 1F) recorded *T. macrodonta* from western India, and the last two anterolateral teeth of their poorly preserved specimen appear to be subequal. Typical specimens of *T. macrodonta* have the last tooth larger but this specimen cannot be *T. spinicarpa* as there are no cardiac and mesobranchial ridges are visible. In all other aspects, it conformed to the species as defined by Crosnier (1975: fig. 4c, d) and Apel & Spiridonov (1998: fig. 59).

Family Trichopeltariidae Tavares & Cleva, 2010

Remarks. Several specimens were collected from various stations, and they appear to belong to at least seven distinct species of *Podocatactes* Ortmann and *Trichopeltarion* A. Milne-Edwards, based on their carapace, fronto-oral, and sternal morphology (see Guinot, 1989; Tavares & Cleva, 2010). Of these, we were able to confirm the species identity of only four: *Podocatactes foresti* (Guinot, 1989) (Fig. 5G); *Trichopeltarion alcocki* Doflein, in Chun, 1903; *T. moosai* (Guinot, 1989) (Fig. 5J); and *T. ovale* Anderson, 1896 (see below). The others could not be easily assigned to any known species, and were given only provisional names based on the known species they were most similar to. These were: *T. aff. alcocki* (Fig. 5H), *T. aff. elegans* (Fig. 5I), and *T. aff. glaucum* (Fig. 5K). These species will be subjected to a fuller and more detailed treatment, including thorough comparisons with type specimens and material from the wider geographic ranges, in a separate paper.

Trichopeltarion A. Milne-Edwards, 1880

Trichopeltarion ovale Anderson, 1896 (Figs. 6A, 13)

Material examined. 3 males, 51.0 × 57.7 mm, 69.4 × 70.0 mm, 71.1 × 75.5 mm (ZRC 2020.0104), station CP12, muddy bottom, Sunda Strait, SE of Tabuan I., Indonesia, Indian Ocean, 5°52.252'S 104°66.786'E – 5°52.728'S 104°56.422'E, 615–698 m, coll. SJADES cruise, *Baruna Jaya VIII*, 25 March 2018.

Remarks. Anderson (1896) gave a detailed description of *Trichopeltarion ovale* based on one female specimen collected by the RIMS *Investigator* off the southwestern coast of Sri Lanka. This specimen was illustrated in Alcock & Anderson (1896: pl. 25 fig. 4, 4a). A second, male specimen, also collected by the *Investigator*, was later illustrated by Alcock & McGilchrist (1905: pl. 75 fig. 1, 1a–c), although its exact provenance is unknown (Guinot, 1989). Subsequently, this species was reported from Japan, the Philippines, and Indonesia, although Guinot (1989) suggested that these are probably not conspecific with the holotype. Tavares & Cleva (2010) published photographs of the holotype female and the male illustrated by Alcock & McGilchrist (1905), as well as additional material of

“*T. ovale*” from Indonesia, particularly from the Makassar Strait, between Borneo and Sulawesi, and from Ceram Island and the Tanimbar Islands. However, Naruse & Hashimoto (2013), upon examining the various material identified as *T. ovale* from the Indo-West Pacific, concluded that the Pacific forms (including the Indonesian material reported by Guinot (1989) and Tavares & Cleva (2010)) should be recognised as a distinct and new species, *T. danieleae*. They outlined the diagnostic morphological differences between *T. danieleae* and *T. ovale*. The present specimens from the Sunda Strait are clearly assignable to the latter species. In particular, the present material has a profusion of well-developed spines on the dorsal surface of the carapace (Fig. 13A, B, F, G) (vs. large tubercles in the gastric and cardiac regions and spines relegated to the carapace margins in *T. danieleae*; cf. Tavares & Cleva, 2010: fig. 23; Naruse & Hashimoto, 2013: figs. 1, 2, 5). The armature of the pereopods is also indicative, with the present specimens having 10 or 11 long spines on the extensor margins of the P5 meri, and there are more spines on the flexor margins and dorsal surfaces of the meri (Fig. 13E, H) (vs. fewer than 10 spines on P5 merus extensor margin and usually no spines on the dorsal surface except for larger specimens in *T. danieleae*; cf. Naruse & Hashimoto, 2013: figs. 1, 2, 5). The carapace of the smallest male (Fig. 13A) in the present sample matches that of the female holotype (cf. Alcock & Anderson, 1896: pl. 25 fig. 1; Tavares & Cleva, 2010: fig. 22A), in not having the hepatic and first and second epibranchial teeth small and not projecting beyond the other marginal spines; whereas both of the larger males (Fig. 13F) in the present sample closely resemble the male depicted in Alcock & McGilchrist (1905: pl. 75 fig. 1) in having these teeth more conspicuous and projecting (cf. Tavares & Cleva, 2010: fig. 22C).

On the other hand, the large infraorbital tooth is observed to be more slanted mesially and impinging into the 2nd and 3rd articles of the antenna (Fig. 13D, J) (vs. directed anteriorly in the female holotype; cf. Alcock & Anderson, 1896: pl. 25 fig. 4a), and the inner and medial supraorbital teeth are large (Fig. 13C, I) (vs. small in the female holotype, fide Naruse & Hashimoto, 2013). These two states are observed in *T. danieleae* (viz. Naruse & Hashimoto, 2013: 396, table 1). In fact, within *T. danieleae* itself, there remains some morphological variation among the populations from Japan, Taiwan, and Indonesia (Naruse & Hashimoto, 2013), suggesting that the variations within the two related species, and therefore their taxonomic delineations, are not yet fully understood due to a small sample size. As such we echo Naruse & Hashimoto (2013) in highlighting the need for more collections in and around Indonesian waters.

For the moment, *T. ovale* is known from only two localities in the eastern Indian Ocean: southwestern Sri Lanka (type locality) and now, the Sunda Strait, Indonesia. It has been collected from depths of 329–698 m, with coral rubble or mud-gravel substrates.

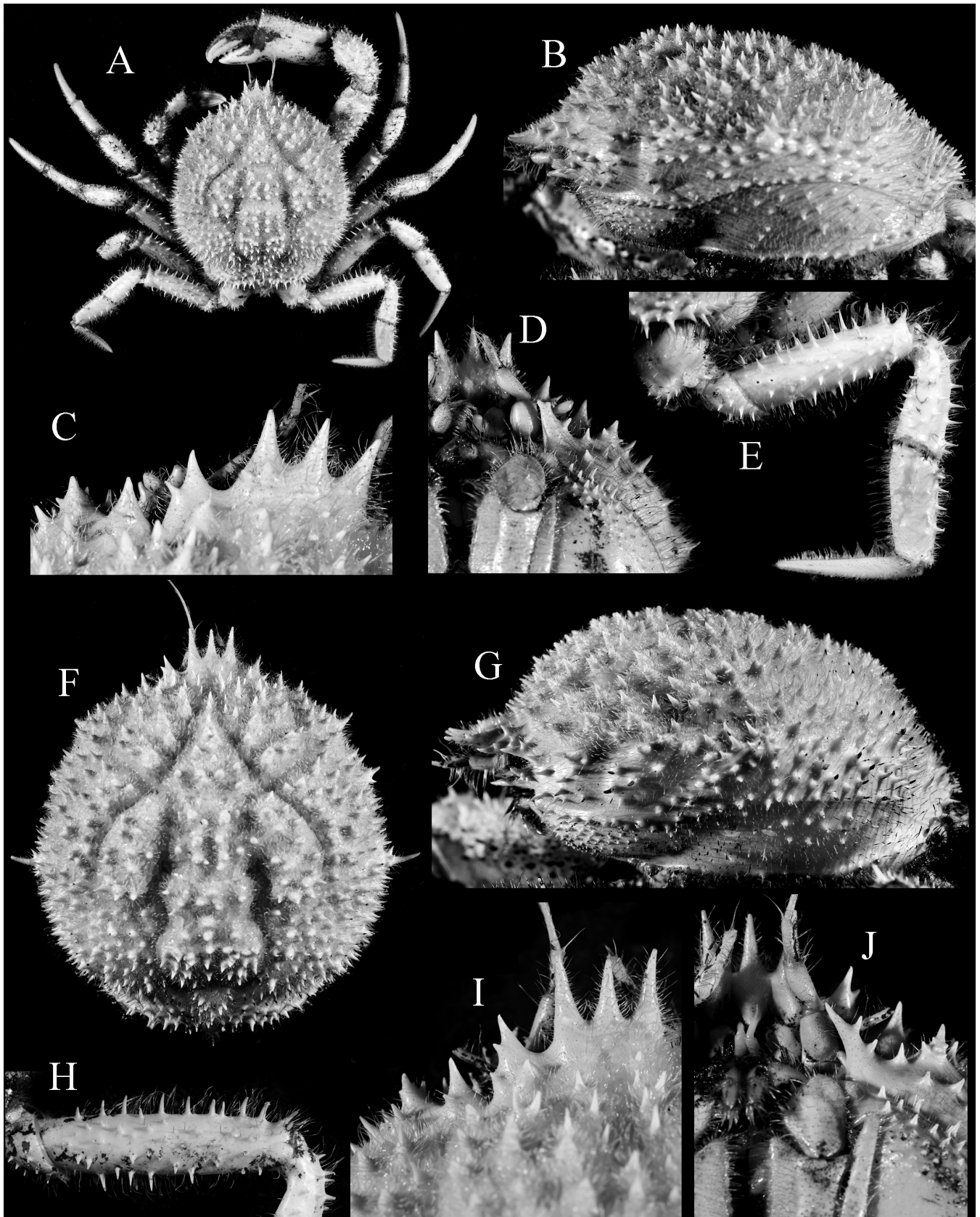


Fig. 13. *Trichopeltarion ovale* Anderson, 1896, A–E, male (51.0 × 57.7 mm) (ZRC 2020.0104) CP12; F–J, male (69.4 × 70.0 mm) (ZRC 2020.0104) CP12. A, dorsal habitus; B, G, carapace, lateral view; C, I, left exorbital, mesial supraorbital, internal supraorbital spines and rostrum, dorsal view; D, J, left infraorbital spine and antenna, ventral view; E, right P5, dorsal view; F, carapace, dorsal view; H, right P5 merus, dorsal view.

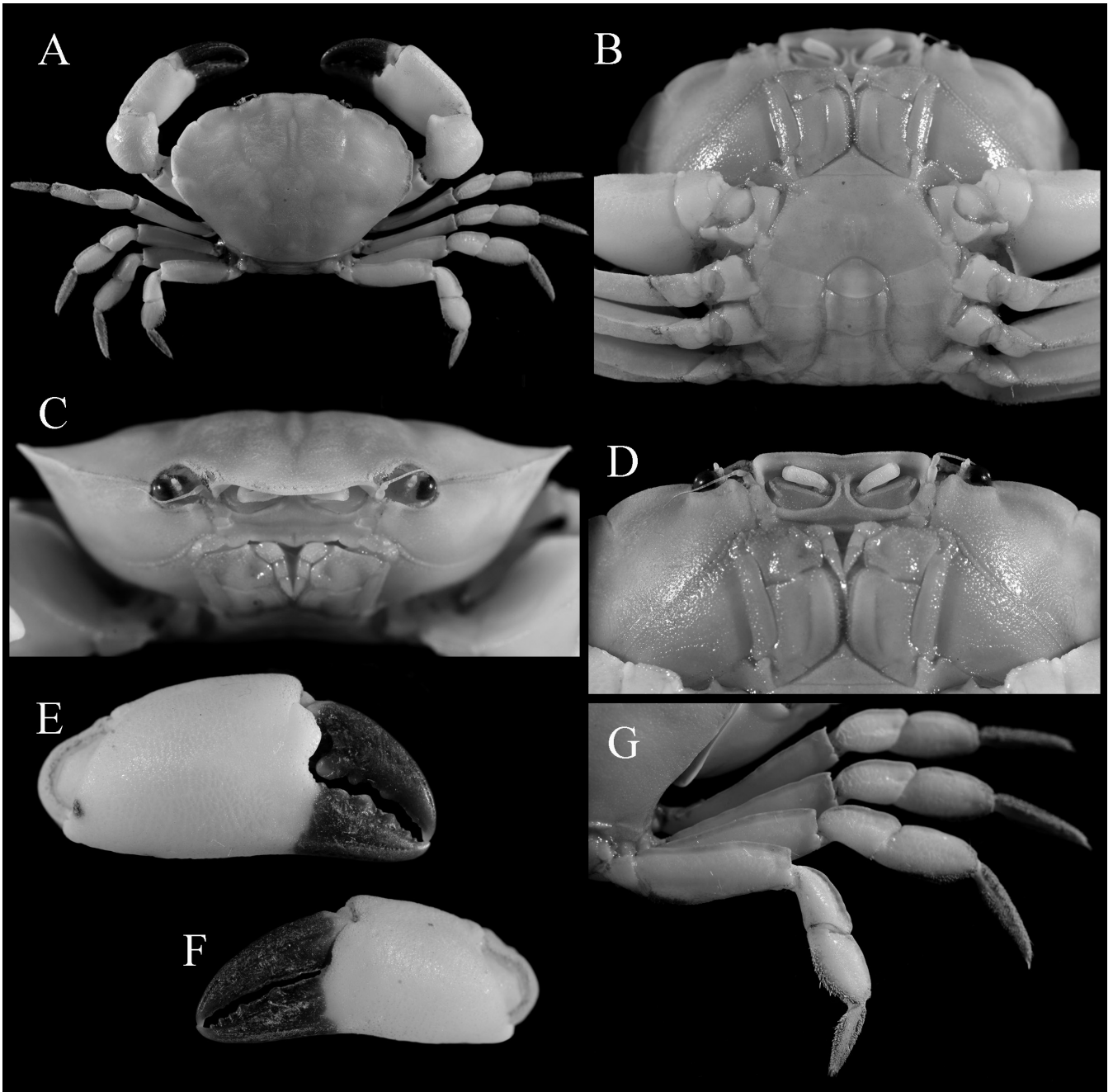


Fig. 14. *Euryxanthops flexidentatus* Garth & Kim, 1983, male (17.2 × 12.0 mm) (ZRC) CP34. A, dorsal habitus; B, cephalothorax and pleon, ventral view; C, cephalothorax, anterior view; D, fronto-oral field, anteroventral view; E, major chela, external view; F, minor chela, external view; G, right ambulatory legs (P2–P5), dorsal view.

Family Xanthidae MacLeay, 1838

***Euryxanthops* Garth & Kim, 1983**

***Euryxanthops flexidentatus* Garth & Kim, 1983**

(Figs. 6F–H, 14, 18I–K)

Material examined. 1 female with asymmetric sternum (21.0 × 14.9 mm) (ZRC), station CP02, mud with clay, Sunda Strait, southwest of Rakata I., Indonesia, Indian Ocean, 6°16.066'S 105°15.053'E – 6°14.668'S 105°15.256'E, 257–281 m, coll. SJADES cruise, *Baruna Jaya VIII*, 24 March 2018; 1 male (17.2 × 12.0 mm), 2 juv. females (8.5 × 6.2 mm, 11.7 × 8.2 mm) (ZRC), station CP34, gravel with

wood, south of Tanjung Boyongkareuceng, Indonesia, Indian Ocean, 7°44.464'S 107°39.018'E – 7°44.575'S 107°39.447'E, 243–234 m, coll. SJADES cruise, *Baruna Jaya VIII*, 29 March 2018.

Remarks. *Euryxanthops flexidentatus* was described by Garth & Kim (1983) on the basis of a single male specimen collected by the *Albatross* Philippine Expedition, from off northwestern Mindanao. Several more specimens were recorded subsequently from southern Taiwan (Kuo et al., 2015). The present specimens agree well with the published descriptions and illustrations of this species, including the live colouration (cf. Garth & Kim, 1983: 678, fig. 3; Kuo et al., 2015: figs. 1A–C, 2). The illustration of the carapace

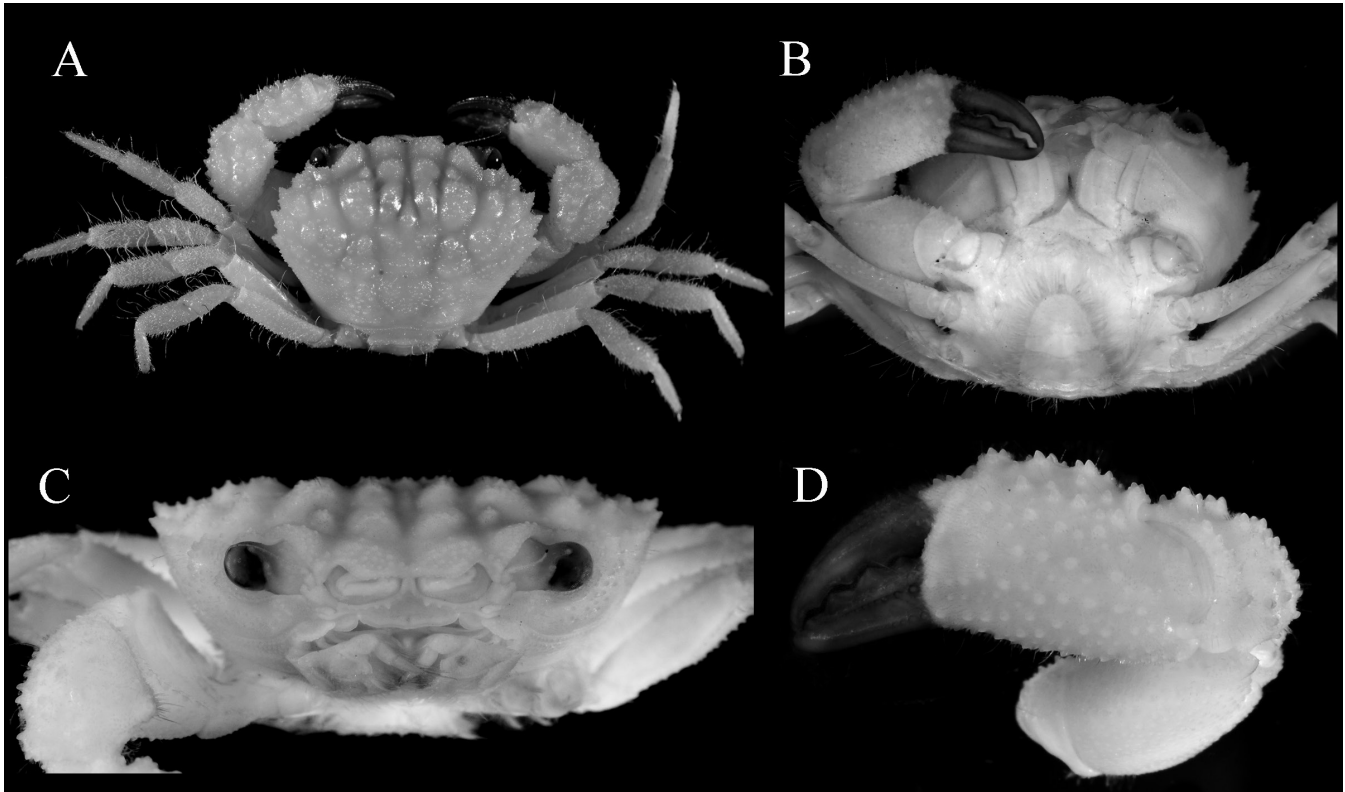


Fig. 15. *Forestiana* sp., female (8.2 × 5.9 mm) (ZRC), DW16. A, dorsal habitus; B, cephalothorax, pleon, and right cheliped, ventral view; C, cephalothorax, anterior view; D, left cheliped, external view.

of the holotype by Garth & Kim (1983: fig. 3a), makes it appear to have a longer carapace, however, the first author has examined the holotype (USNM 195345) deposited in the Smithsonian Institution, and has confirmed that the actual specimen has a tangibly shorter carapace, which is more similar to the specimens from Taiwan (cf. Kuo et al., 2015: fig. 1A–C) and Indonesia (Figs. 6F–H, 14A). Furthermore, the G1 illustrated by Garth & Kim (1983: fig. 3d) has a damaged tip, and the probable more typical form of the G1 shows the distal tip to have a scoop-like terminal lobe, and several long, plumose, sub-apical setae (Fig. 18I, J; also Kuo et al., 2015: fig. 2), and a pronounced flange on the lateral margin of the proximal half. The specimens from Taiwan and Indonesia differ from the holotype in having the margin of the first lobe on the carapace anterolateral margin curving more gently posteriad (Fig. 14A) (vs. more abruptly posteriad after its apex in the holotype, cf. Garth & Kim, 1983: fig. 3a). In this respect, they are also somewhat similar to another species, *E. cepros* Davie, 1997 (type locality: Seychelles), wherein the margin of the first lobe is more horizontal (cf. Davie, 1997: fig. 17c). However, the carapace of *E. cepros* has the branchial regions extended more laterally, the front more projecting towards the anterior, the last (4th) anterolateral lobe less projecting, and the posterolateral margins relatively longer; and the G1 does not have the well developed flange on the lateral margin (cf. Davie, 1997: fig. 13e).

Euryxanthops flexidentatus has been collected from depths of 234–333 m, from sandy or muddy bottoms. It is known from the Philippines (type locality), Taiwan, and now, also from the Sunda Strait and southwestern Java, Indonesia.

Forestiana Guinot & Low, 2010

Forestiana sp. (Figs. 6B, 15)

Material examined. 1 female (8.2 × 5.9 mm) (ZRC), station DW16, gravel, sand and some mud, sea mount reef, Sunda Strait, Indonesia, Indian Ocean, 6°09.803'S 104°57.976'E – 6°09.606'S 104°58.208'E, 103–92 m, coll. SJADES cruise, *Baruna Jaya VIII*, 26 March 2018.

Remarks. The present specimen is an adult female, with the pleopods already well formed and setose at the tips (Fig. 15B), and clearly allied to some genera of actaeine xanthids, particularly certain species of *Meractaea* Serène and *Forestiana* Guinot & Low. It is similar to *Meractaea takunan* Komatsu & Takeda, 2011 (type locality: southern Japan), in the live colouration, general outline and lobulation of the carapace, form of the front, shape of the third maxillipeds, and proportions of the ambulatory legs (cf. Komatsu & Takeda, 2011: figs. 1, 2A). Both species were also taken from deep water (~100 m). However, the present specimen differs from *M. takunan* in having a setose carapace and pereopods (Figs. 6B, 15A) (vs. glabrous, cf. Komatsu & Takeda, 2011: figs. 1, 2); more acute and projecting anterolateral teeth (Fig. 15A) (vs. lower and wider anterolateral teeth, cf. Komatsu & Takeda, 2011: figs. 1, 2); finer granules on the carapace dorsal surface and chelipeds (Fig. 15A, C, D) (vs. larger tubercles forming areolae, cf. Komatsu & Takeda, 2011: figs. 1, 2); relatively longer and more slender legs, with small, conical, evenly spaced granules lining both anterior and

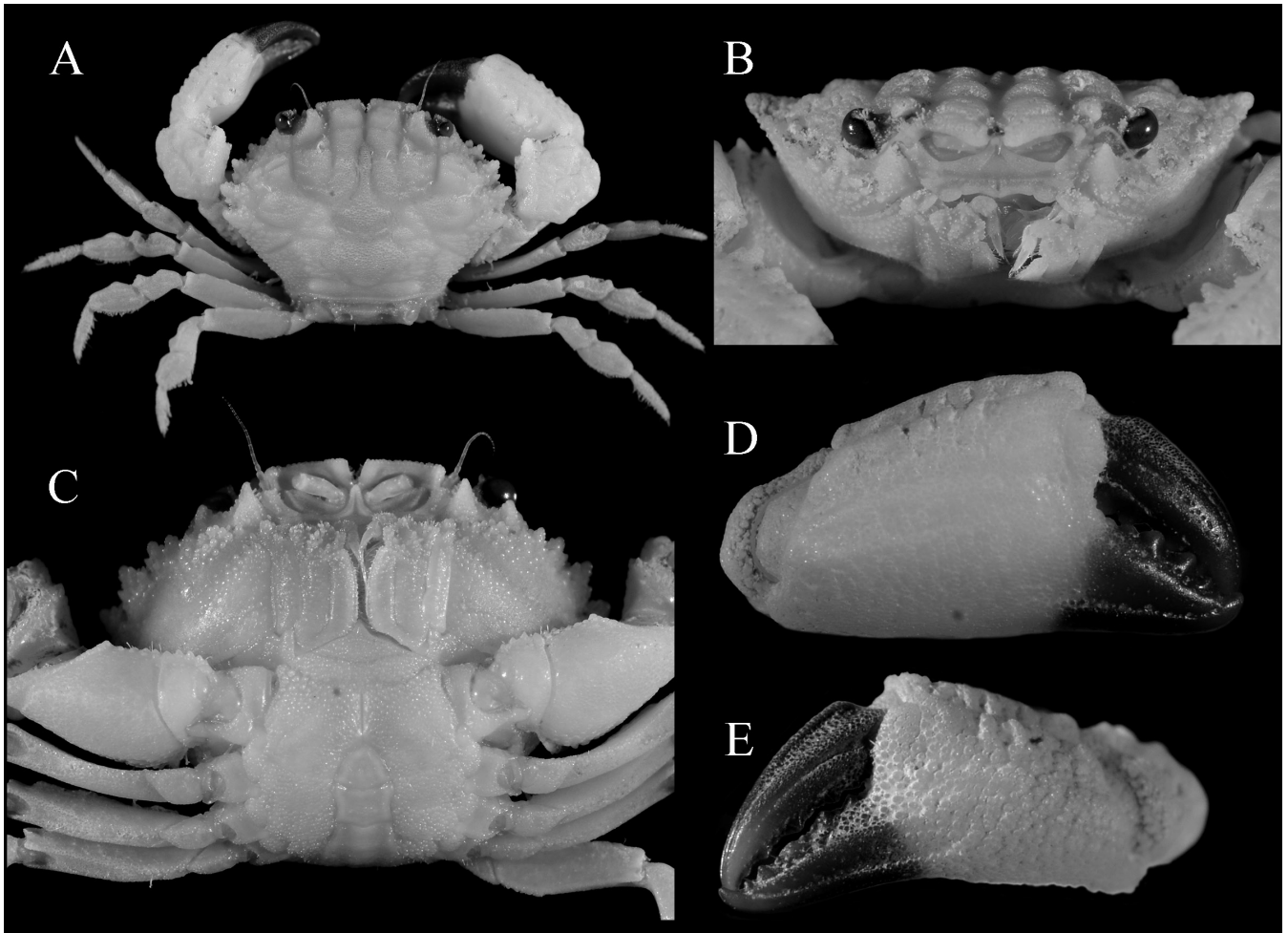


Fig. 16. *Paraxanthodes cumatodes* (MacGilchrist, 1905), male (7.3 × 5.1 mm) (ZRC) DW16. A, dorsal habitus; B, cephalothorax, anterior view; C, cephalothorax and pleon, ventral view; D, major chela, external view; E, minor chela, external view.

posterior margins of the meri (Fig. 15A) (vs. shorter legs, smooth merus margins, cf. Komatsu & Takeda, 2011: fig. 3C); a more extended epistome, and granular orbital margins (Fig. 15C) (vs. thinner epistome, entire orbital margins, cf. Komatsu & Takeda, 2011: fig. 3A). Notably, the tubercle on the merus of the third maxilliped, which is diagnostic for the genus *Meractaea* (cf. Serène, 1984; Davie, 1993, 1997; Komatsu & Takeda, 2011), is absent.

The present specimen is also rather similar to *Forestiana lucius* Ng, 2015 (type locality: Taiwan), another deep water actaeine and an unusual member of the genus *Forestiana*, in the fresh colouration, setation, general form, and third maxillipeds. However, they differ in the shape of the frontal lobe margin, which is evenly convex (Fig. 15A) (vs. lateral portion much more recessed compared to mesial portion in *F. lucius*, cf. Ng, 2015: fig. 2A); the shape of the individual teeth, which are more acute, with the first tooth distinct (Fig. 15A) (vs. wider and more obtuse, with first tooth very low in *F. lucius*, cf. Ng, 2015: fig. 2A); and the condition of the ambulatory legs, which are more slender and have the peculiar granulation on the margins of the meri (Fig. 15A) (vs. stouter and only anterior margin is granulate in *F. lucius*, cf. Ng, 2015: fig. 3E). It is very likely that the present specimen is an undescribed species of *Forestiana*, and perhaps it even deserves to be placed in its own genus. We forego taking

any formal action, however, because there are not enough morphological characters with which to compare it to other related species of Actaeinae, and provisionally place this species in the genus *Forestiana* for now.

Paraxanthodes Guinot, 1968

Paraxanthodes cumatodes (MacGilchrist, 1905) (Figs. 6D, E, 16, 18L–N)

Material examined. 2 males (6.5 × 4.5 mm, 7.3 × 5.1 mm) (ZRC), 1 female (6.1 × 4.4 mm) (ZRC), station DW16, gravel, sand and some mud, sea mount reef, Sunda Strait, Indonesia, Indian Ocean, 6°09.803'S 104°57.976'E – 6°09.606'S 104°58.208'E, 103–92 m, coll. SJADES cruise, *Baruna Jaya VIII*, 26 March 2018.

Remarks. *Xanthodes cumatodes* was described by MacGilchrist (1905) based on one male and six female specimens collected by the *Investigator* from the Persian Gulf. It was transferred to a new genus, *Paraxanthodes*, by Guinot (1968) together with the type species, *Micropanope obtusidens* Sakai (type locality: Japan). It has subsequently been reported from the Red Sea (Balss, 1929), New Caledonia (Davie, 1997), the Philippines (Mendoza & Ng, 2010), Pakistan (Mendoza et al., 2012), and India (Ng et al.,

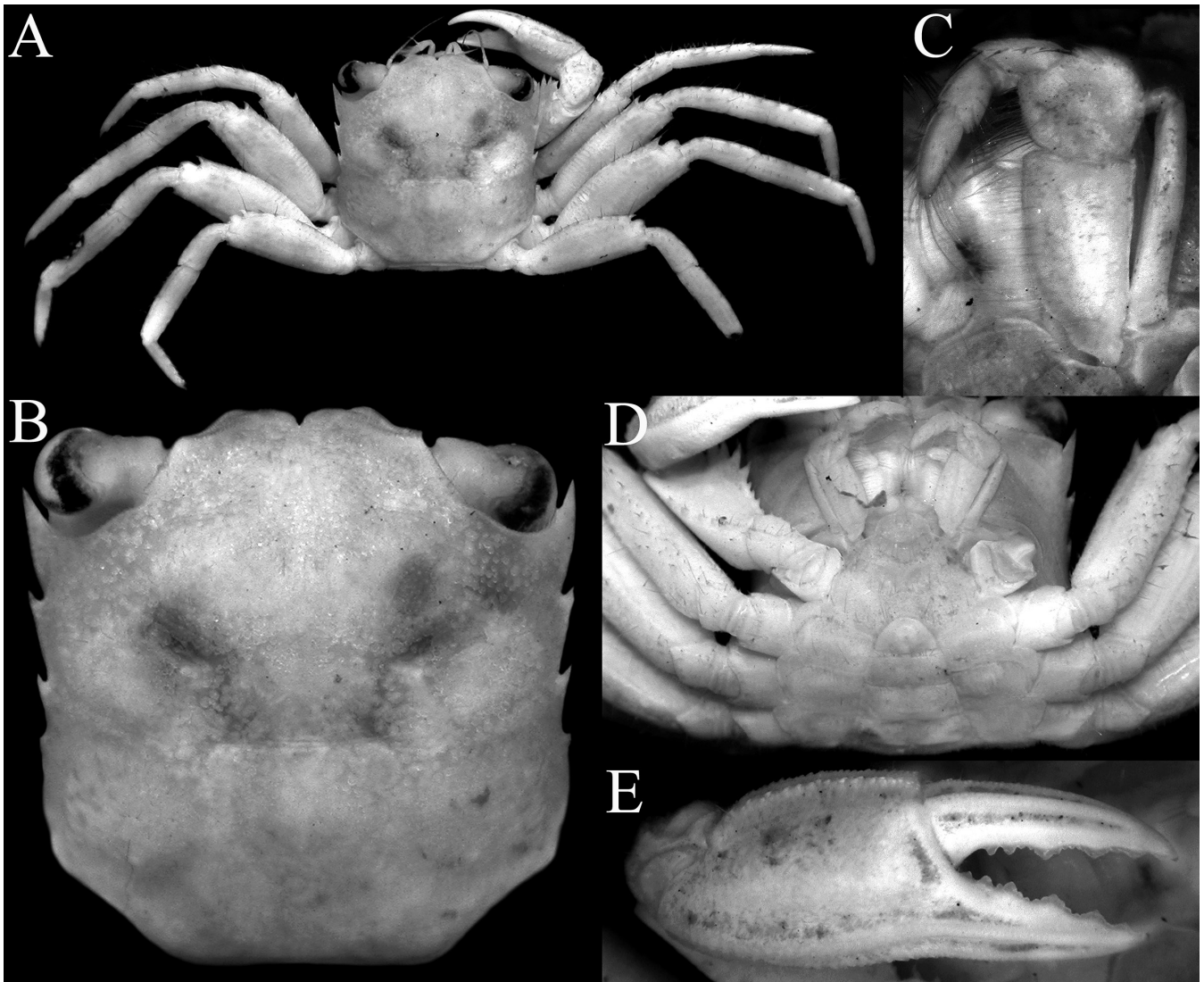


Fig. 17. *Euchirograpsus timorensis* Türkay, 1975, female (10.0 × 10.8 mm) (ZRC 2020.0392). A, overall dorsal view; B, dorsal view of carapace; C, left third maxilliped; D, buccal cavity, anterior thoracic sternum and pleon; E, outer view of right chela.

2019). Mendoza et al. (2012) remarked that the records of Davie (1997) and Mendoza & Ng (2010) from the Pacific are probably a different species. The present specimens (Figs. 16, 18L–N) from the Sunda Strait agree closely with the description and illustrations of *P. cumatodes* (cf. MacGilchrist, 1905: 258; Alcock et al., 1907: pl. 79, fig. 1, 1a; Guinot, 1968: fig. 60; Mendoza et al., 2012: figs. 1D–F, 2E–I; Ng et al., 2019: figs. 6G, H, 7N–P). This species occurs at a depth range of 92–168 m, and on muddy to sandy-gravelly substrates. This comprises the first record of this species in Indonesia, and the first record of the live colouration for this species (Fig. 6D, E).

Family Varunidae H. Milne Edwards, 1853

Euchirograpsus H. Milne Edwards, 1853

Euchirograpsus timorensis Türkay, 1975 (Figs. 6I, 17)

Material examined. 1 female (10.0 × 10.8 mm) (ZRC

2020.0392), station CP34, gravel bottom with some wood, south of Tg. Boyongkareuceng, southern Java, Indonesia, Indian Ocean, 7°44.464'S 107°39.018'E – 7°44.575'S 107°39.447'E, 234–243 m, coll. SJADES cruises, *Baruna Jaya VIII*, 29 March 2018.

Remarks. Ten species of *Euchirograpsus* H. Milne Edwards, 1853, are known from both the Atlantic and Indo-West Pacific (Türkay, 1975, 1978; Crosnier, 2001; Ng et al., 2008; Ng & Martin, 2010), but none have been reported from Indonesia thus far. The present specimen is a subadult female and the diagnostic G1 structure, which is important to differentiate many of the species is not available. Based on the external features and where it was collected, it agrees well with what is currently defined as *E. timorensis* Türkay, 1975, known thus far only from the Timor Sea to the east.

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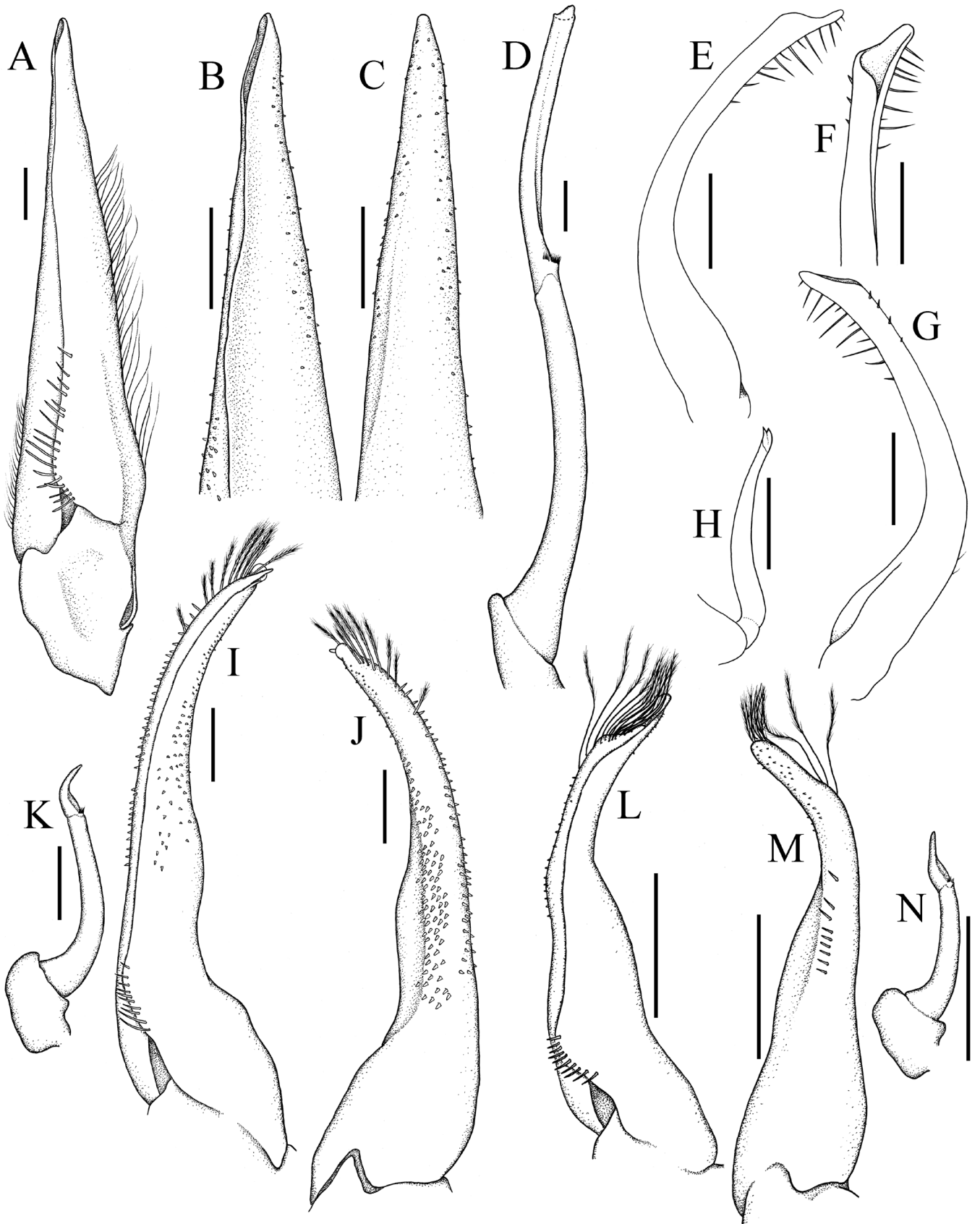


Fig. 18. Gonopods. A–D, *Romaleon luzonense* (Sakai, 1983), (31.9 × 23.7 mm) (ZRC) CP07; E–H, *Thalamita spinicarpa* Borradaile, 1902, male (10.8 × 7.7 mm) (ZRC 2020.0395); I–K, *Euryxanthops flexidentatus* Garth & Kim, 1983, male (17.2 × 12.0 mm) (ZRC) CP34; L–N, *Paraxanthodes cumatodes* (MacGilchrist, 1905), male, (7.3 × 5.1 mm) (ZRC) DW16. A, E, I, L, left G1, pleonal view; B, distal tip of left G1, pleonal view; C, distal tip of left G1, sternal view; F, distal tip of left G1, inner mesial view; G, J, M, left G1, sternal view; D, K, N, left G2, pleonal view; H, left G2, sternal view. Scale bars: A–N = 0.5 mm.

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