RAFFLES BULLETIN OF ZOOLOGY Supplement No. **36**: 265–276
Date of publication: 6 August 2021
DOI: 10.26107/RBZ-2021-0040
http://zoobank.org/urn:lsid:zoobank.org:pub:57DA9453-D8AE-4886-98CB-E2F8146AA9D5

On the Pilumnidae (Crustacea: Brachyura: Pilumnoidea) collected during the SJADES 2018 biodiversity cruise in Indonesia, with description of a new species of *Pilumnus*

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Abstract. Seven species of pilumnid crabs are reported from the Sunda Strait and southern Java, Indonesia. The material was collected during the 2018 South Java Deep-Sea (SJADES) Biodiversity Expedition and includes a new species of *Pilumnus* with unusual carapace features. The taxonomic compositions of the genera *Nanopilumnus* Takeda, 1974, and *Serenepilumnus* Türkay & Schuhmacher, 1985, are also discussed. *Typhlocarcinops arcuatus* (Miers, 1884), previously known only from the type male from northern Australia, is reported again from a female and represents a new record for Indonesia. *Heteropilumnus trichophoroides* (De Man, 1895) and *Peleianus suluensis* Serène, 1971, are also new records for Indonesia.

Key words. Crustacea, Pilumnidae, new species, Indonesia

INTRODUCTION

The present note reports on the pilumnid crabs collected during the South Java Deep-Sea (SJADES) Biodiversity Expedition, carried out in 2018 in Indonesia, a collaborative study between the Indonesian Institute of Sciences and National University of Singapore. While the collection is small with only seven species, it contains a new species of *Pilumnus* as well as three rarely reported species of *Heteropilumnus*, *Typhlocarcinops*, and *Peleianus*, all of which are new records for Indonesia. Two species, *Typhlocarcinops transversus* Tesch, 1918, and *T. hadrotes* Ng & Rahayu, 2020, have already been described by Ng & Rahayu (2020a) as part of a revision of the genus.

MATERIAL AND METHODS

The material for this study came from the South Java Deep-Sea (SJADES) Biodiversity Expedition, carried out in 2018 in Indonesia, a collaborative study between Indonesian Institute of Sciences and National University of Singapore. The specimens will be deposited in the Museum Zoologicum Bogor (MZB), Indonesian Institute of Sciences; and the Zoological Reference Collection (ZRC) of Lee Kong Chian Natural History Museum, National University of Singapore, once the study of the cruise material is complete.

Measurements provided, in millimetres, are of the maximum carapace width and length (including spines), respectively. The terminology used follows Ng et al. (2008) and Davie et al. (2015). The following abbreviations are used: CP = otter trawl; DW = Warren Dredge; G1 = male first gonopod; and G2 = male second gonopods.

SYSTEMATICS

Family Pilumnidae Samouelle, 1819

Pilumnus Leach, 1816

Type species. *Cancer hirtellus* Linnaeus, 1761, by monotypy.

Pilumnus swajayai, new species
(Figs. 1–4)

Material examined. Holotype male (6.4 × 4.6 mm) (MZB Cru 5241), station DW16, on edge of seamount, bottom mostly gravel 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. 26 March 2018. Paratypes: 1 male (6.0 × 4.2 mm) (ZRC 2020.0396), same data as holotype; 1 female (5.8 × 3.9 mm) (ZRC 2021.0033), station CP37, substrate fine mud with pieces of small branches, south of Cilacap, southern Java, Indonesia, SJADES 8°07.462′S 109°05.639′E–8°07.864′S 109°06.470′E, 163–166 m, coll. 30 March 2018.

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ISSN 2345-7600 (electronic) | ISSN 0217-2445 (print)

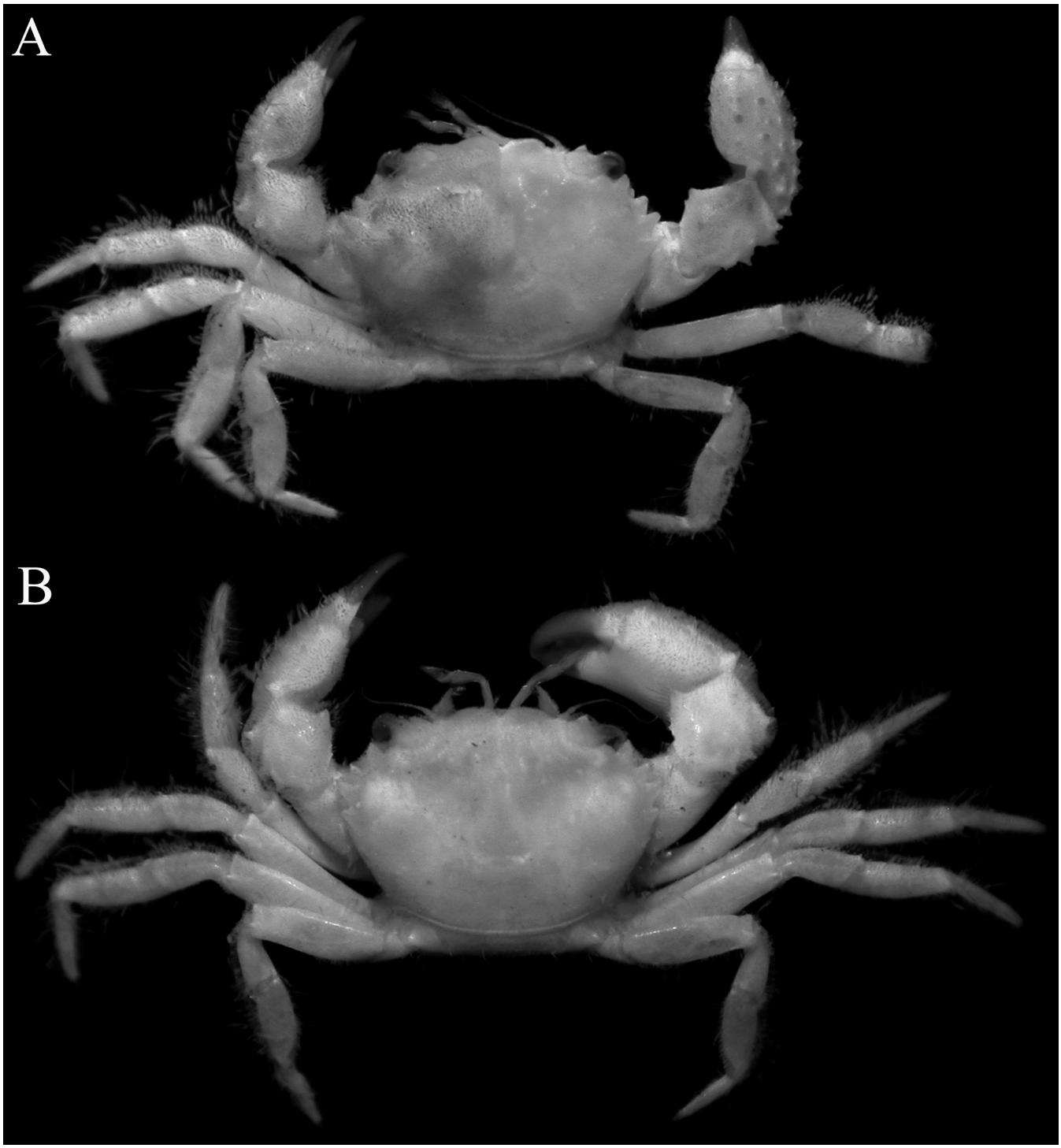

Fig. 1. *Pilumnus swajayai*, new species, overall dorsal view. A, holotype male (6.4 × 4.6 mm) (MZB Cru 5241), Java (right side denuded); B, paratype male (6.0 × 4.2 mm) (ZRC 2020.0396), Java.

Description of male. Carapace transversely hexagonal, 1.4 times wider than long, regions vaguely visible; dorsal surface gently convex, surfaces smooth; covered with short plumose setae and scattered long setae, partially obscuring surface, denser on anterior surfaces, especially along anterolateral margins (Fig. 1). Frontal margin with 2 prominent truncate lobes, separated by broad V-shaped notch medially, margin almost straight; frontal lobe separated from bilobed lateral tooth by distinct notch; supraorbital margin concave, outer third with prominent spine-tipped broad tooth before external orbital tooth, marked by distinct fissures (Fig. 2A, B). External orbital tooth acutely triangular with convex outer margin; rest of anterolateral margin with 3 lateral teeth, teeth progressively more slender and acute; hepatic region with low spine-tipped dentiform tubercle posterior to and between first and second anterolateral teeth; subhepatic region with distinct tooth visible in dorsal view (Fig. 2A, B). Posterolateral margin as long as anterolateral margin, gently convex, proximal part with several small sharp granules; converging towards gently convex posterior carapace margin (Fig. 1). Antennules folding transversely. Basal antennal article longitudinally rectangular, flagellum relatively

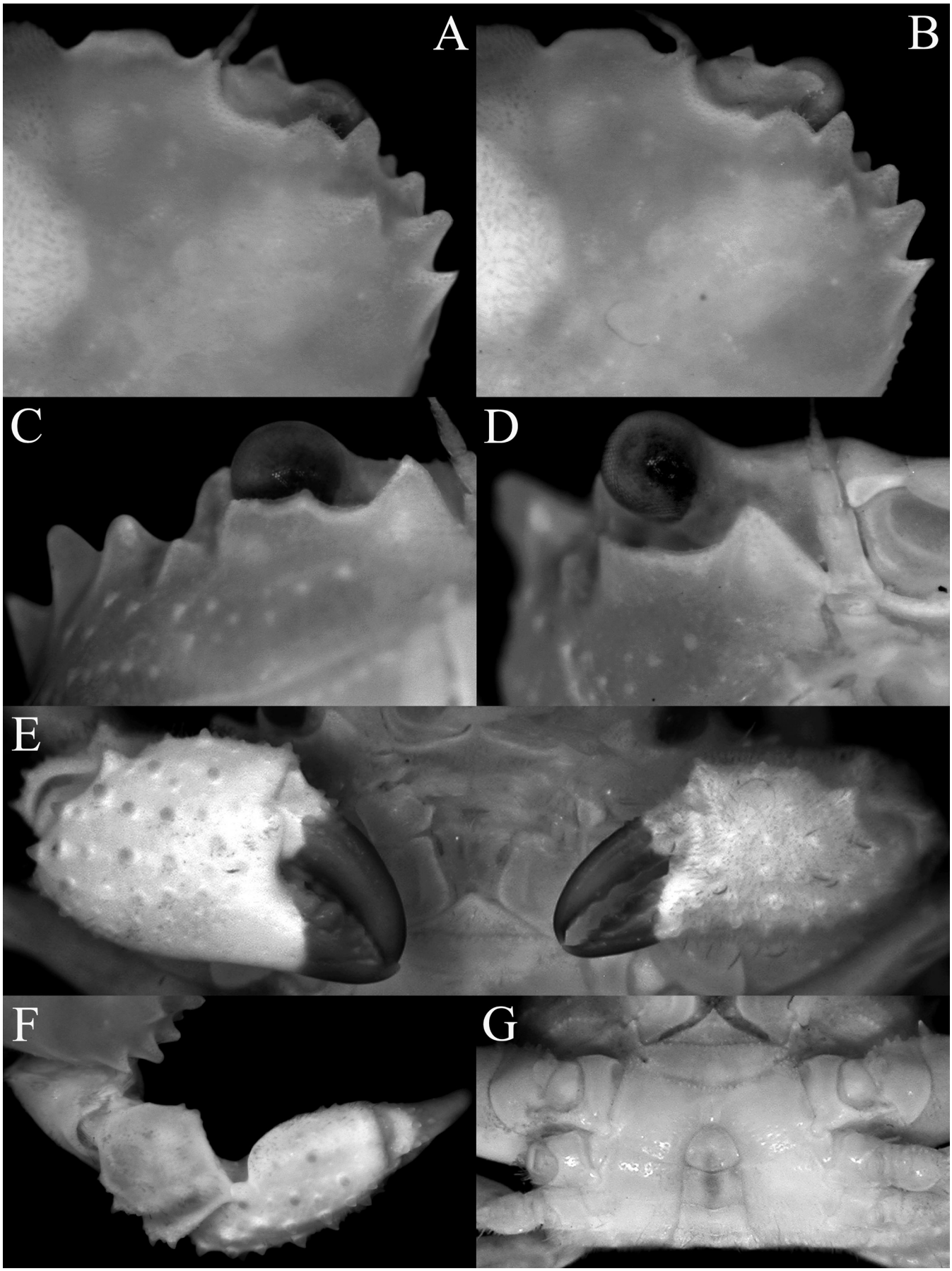

Fig. 2. *Pilumnus swajayai*, new species, holotype male (6.4 × 4.6 mm) (MZB Cru 5241), Java. A, B, right side of carapace (setae denuded); C, orbit, suborbital margin, suborbital and subhepatic regions; D, orbit, suborbital margin and region and antenna; E, outer view of chelae; F, dorsal view of right cheliped; G, anterior thoracic sternum and pleon.

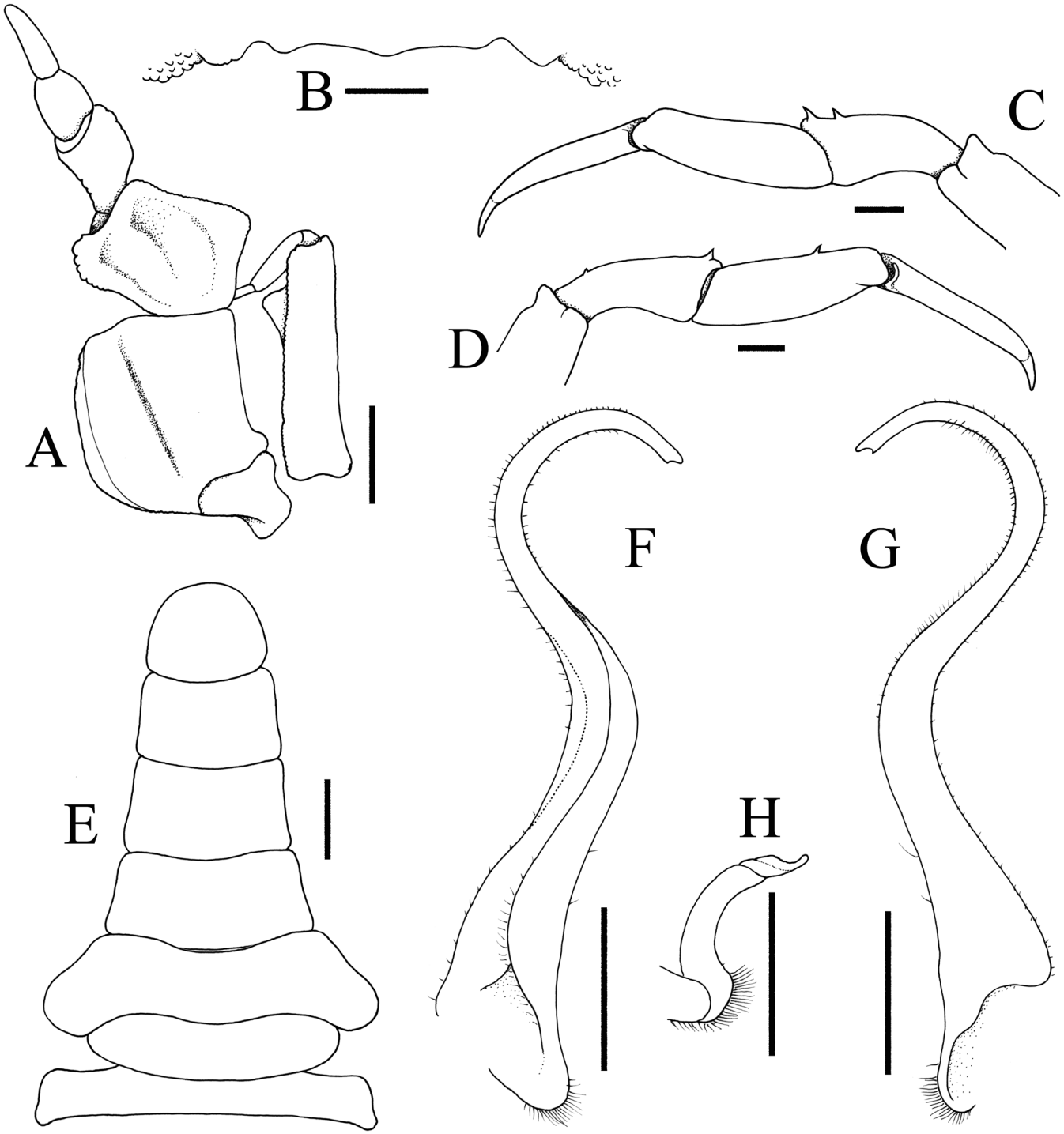

Fig. 3. *Pilumnus swajayai*, new species. A–C, E–H, holotype male (6.4 × 4.6 mm) (MZB Cru 5241), Java; D, paratype male (6.0 × 4.2 mm) (ZRC 2020.0396), Java. A, left third maxilliped (exopod detached); B, posterior margin of epistome; C, left P4 carpus, propodus, and dactylus (denuded); D, right P4 carpus, propodus, and dactylus (denuded); E, pleon (denuded); F, left G1 (ventral view); G, left G1 (dorsal view); H, left G2. Scales = 0.5 mm.

short, enters orbital hiatus (Fig. 2D). Epistome relatively narrow longitudinally, posterior margin with median part broadly triangular, separated by cleft from lateral margin; lateral margin with low triangular lobe (Fig. 3B). Orbits obliquely transverse; eyes large, filling entire orbital space; ocular peduncle smooth (Fig. 2A–D). Suborbital margin separated from external orbital tooth by fissure; outer margin carinate, forming truncate low shelf-like lobe with concave margin, joining large inner orbital tooth by gentle concavity, suborbital tooth distinctly visible in dorsal view (Fig. 2C, D). Suborbital and sub-branchial regions with well-spaced low granules; pterygostomial regions with low ridge of low granules, joining junction of buccal cavity as small spine (Fig. 2C, D). Endostomial ridge well-developed.

Third maxillipeds completely closing buccal cavity when closed (Figs. 2E, 3A). Merus quadrate, anterolateral margin angular, not auriculiform, margins granular; ischium subrectangular, with shallow submedian sulcus; exopod relatively stout, distal edge not reaching anterior edge of

Fig. 4. *Pilumnus swajayai*, new species, paratype female (5.8 × 3.9 mm) (ZRC 2021.0033), Java. A, overall dorsal view (right side denuded); B, right side of carapace (setae denuded).

merus, inner subdistal tooth distinct, with long flagellum which is longer than width of merus (Fig. 3A).

Chelipeds short, subequal, right palm gently swollen; outer surfaces of chela and carpus covered with dense, short plumose setae and scattered long setae that partially obscure the surface (Figs. 1, 2E, F). Inner margin of fused basis-ichium with small sharp granules. Merus short, trigonal in cross-section; dorsal margin with 3 short, sharp tubercles; inner ventral margin with 1 large subdistal spine and 2 smaller proximal ones; outer ventral margin with 2 sharp tubercles (Fig. 2F). Carpus subtriangular, inner distal angle with low sharp spine directed inwards, with 2 sharp granules or tubercles posterior to it; dorsal surface with oblique row of 2 or 3 sharp granules; dorsal and outer surface with deep transverse groove, proximal part outer part with short stout spine, distal part with 3 sharp tubercles and row of granules anterior to it (Figs. 1, 2F). Palm of major chela covered with well-spaced, short, sharp tubercles on most of outer and dorsal surface, not covering base of pollex, rest of surface; fingers shorter than palm, pigmented black; dorsal proximal part of dactylus with small granules, with longitudinal submarginal sulcus, cutting edge with large rounded teeth proximally and wider low teeth distally; pollex stouter than dactylus, with distinct longitudinal sulcus, cutting edge with large teeth proximally and smaller teeth distally; tips of fingers curved, not forming gape when closed (Fig. 2E, F). Minor chela similar to major chela in general armature but relatively more slender, with sharp tubercles on outer surface reaching base of pollex; teeth on cutting edges relatively sharper (Fig. 2E).

Fourth ambulatory leg shortest, first and second legs longest, covered with dense plumose setae and scattered long setae (simple and plumose) (denser on propodus and carpus) that partially obscure surfaces and margins (Fig. 1). Basis-ischium unarmed. Dorsal margin of merus unarmed, dorsal subdistal with angle but not sharp or projecting (Fig. 1). Dorsal margin of carpus usually with 1 or 2 spinules, sometimes (Fig. 3C, D). Propodus dorsal margin usually unarmed, sometimes with 1 submedian spinule (Fig. 3C, D). Dactylo-propodal lock distinct on all legs (Fig. 3C, D). Dactylus almost straight except for gently curved distal corneous tip (Fig. 3C, D).

Anterior thoracic sternites transversely narrow, smooth; sternites 1, 2 triangular, completely fused, with deep groove separating it from sternite 3; sternite 3 separated from sternite 4 by shallow groove lined with low granules, medially interrupted (Fig. 2G). Sternopleonal cavity narrow, reaching to imaginary line connecting proximal edge of coxae of chelipeds (Fig. 2G); small, rounded tubercle of pleonal locking mechanism on anterior edge of sternite 5, near margin with sternite 4. Sternites 4, 5 medially interrupted; sternites 6–8 joining median longitudinal groove. Penis relatively large, opening at proximal base of condyle of coxa of fourth ambulatory leg.

Male pleon triangular; all somites and telson freely articulating; surfaces smooth; somite 1 transversely subrectangular, narrow; somite 2 subovate, less wide than somites 1 or 3; somite 3 widest, subtrapezoidal with rounded lateral margins; somites 4 and 5 trapezoidal; somite 6 subquadrate; telson semicircular, as long as broad, subequal to somite 6 (Figs. 2G, 3E).

G1 strongly sinuous, slender, median part twisted; distal part distinctly gently curved, with tip subtruncate, tip slightly bifurcate (Fig. 3F, G). G2 short, about one fifth length of G1, sigmoid, spatuliform distal part with very short distal segment (Fig. 3H).

Female. The female agrees with the male in all major non-sexual aspects (Fig. 4).

Etymology. The species is named after the then Indonesian Ambassador to Singapore, Mr Ngurah Swajaya, who was integral in facilitating the expedition.

Remarks. With its hexagonal carapace, relatively dense setae on the carapace, chelipeds, and legs, clearly demarcated lateral lobe on the junction of the frontal-supraorbital margin,

and presence of three anterolateral teeth (excluding the external orbital tooth), *Pilumnus swajayai*, new species, has the typical appearance of many Indo-West Pacific *Pilumnus* species (cf. Takeda & Miyake, 1968). It is distinct however, in possessing a hepatic dentiform lobe on the carapace, the presence of a distinct suprabital tooth, and that the suborbital margin is carinate and appears lobiform. There is a prominent transverse sulcus on the carpus of the cheliped, and at least some of the carpi and/or propodi of the ambulatory legs are armed with one or two dorsal spinules each.

The relatively small adult size of *Pilumnus swajayai* (carapace width only about 6 mm) suggests an affinity with species of *Nanopilumnus*, described by Takeda (1974) for *Medaeus rouxi* Balss, 1936, but has since been expanded to include five other Indo-West Pacific taxa: *N. barbatus* (A. Milne-Edwards, 1873), *N. coralliophilus* (Takeda & Miyake, 1969), *N. heterodon* (Sakai, 1934), *N. hondai* (Takeda & Miyake, 1969), and *N. modestus* Takeda & Komatsu, 2018 (Ng et al., 2008; Takeda & Komatsu, 2018). While all of them share the common characters of a relatively small adult size (carapace width usually less than 6 mm), have three distinct teeth on the anterolateral margins and relatively dense setation in the carapace and legs, indications are that the genus needs to be redefined. *Nanopilumnus rouxi* is the most distinct in its more quadrate carapace, the carapace regions are distinct, the anterolateral teeth have accessory spinules, the inner supraorbital tooth is well developed, the dorsal surface of the chela and cheliped carpus have prominent granulated tubercles, the ambulatory legs are short, the male pleon is evenly triangular, and the G1 is gently sinuous with a short and subtruncate distal part (cf. Balss, 1936: pl. 2 figs. 1, 2; Takeda, 1974: figs. 1–9). *Nanopilumnus barbatus* and *N. heterodon* also have the supraorbital tooth distinctly demarcated and the G1 is of a similar form, but the carapace is more rectangular, the carapace regions poorly defined, the anterolateral teeth are more acute and rounded without assessor spinules, and the dorsal surface of the chela and cheliped carpus have sharp tubercles (see A. Milne-Edwards, 1873: pl. 9 fig. 7; Sakai, 1934: text-fig. 19; Sakai, 1976: text-fig. 262, pl. 174 fig. 3). *Nanopilumnus coralliophilus* and *N. hondai* share the same carapace and cheliped features of *N. barbatus* and *N. heterodon* but differ from the above species in having the frontal and supraorbital margins almost confluent, or with only a small fissure separating them, with no obvious lateral lobe or supraorbital tooth (cf. Takeda & Miyake, 1969: figs. 17, 18). Like *N. coralliophilus* and *N. hondai*, the frontal and supraorbital margins of *N. modestus* are almost confluent but this species has proportionately longer ambulatory legs and the distal part of the G1 is elongate and slender (cf. Takeda & Komatsu, 2018: fig. 9). *Nanopilumnus modestus* is unlikely to be a species of *Nanopilumnus* but is retained there until the genus can be revised.

The frontal and supraorbital margins of *Pilumnus swajayai*, new species (Figs. 2A, B, 4B) approach those of *N. rouxi*, but the general features of the anterolateral teeth and chela (Figs. 2A, B, E, 4B) are closer to the other *Nanopilumnus* species. The relatively longer ambulatory legs and G1 structure of *P. swajayai* (Figs. 1, 4A) are similar to that of *N. modestus* (cf. Takeda & Komatsu, 2018: fig. 9). The G1 of *P. swajayai*, however, is distinct in that it is strongly twisted, with the groove for the G2 medially twisted to the inner margin (Fig. 3F). The G1s of *Nanopilumnus* species are normal, with the proximal part of the groove ventral in position (Takeda & Miyake, 1969: fig. 18f; Sakai, 1974: text-fig. 19c; Takeda, 1974: figs. 8, 9; Takeda & Komatsu, 2018: fig. 9D). The presence of a hepatic dentiform lobe, a well-developed subhepatic tooth and deep transverse groove on the carpus of the cheliped, however, argue against its inclusion in *Nanopilumnus* for the time being.

The slightly carinate suborbital margin of *P. swajayai* (Fig. 2C, D) superficially resembles that of *Colerolumnus fuscus* (Balss, 1933) but in the latter, the feature is more prominent and is fused with the suborbital tooth as well to form one large shelf-like structure (Ng, 2010: fig. 17B). Compared to *P. swajayai*, in *Colerolumnus fuscus*, the setae on the carapace, chelipeds, and ambulatory legs are coarser and much denser, completely obscuring the surface and margins in life. This species also does not have a supraorbital tooth, hepatic lobe, or subhepatic tooth, and the dorsal surface of the cheliped carpus is entire without any transverse groove (cf. Ng, 2010: figs. 13C, 14D, 17A, B).

Pilumnus swajayai, new species, also has a superficial resemblance to members of *Serenepilumnus* Türkay & Schuhmacher, 1985 (replacement name for preoccupied *Leopoldius* Serène, 1971; type species *Parapilumnus leopoldi* Gordon, 1934); the species all have a low supraorbital tooth, the hepatic region is gently swollen with tubercles, and the suborbital margin is partly carinate (see De Man, 1902: pl. 21 fig. 24, 24a; Gordon, 1934: fig. 31a, b, d). Five species are now known from this genus (Ng et al., 2008; Ghory et al., 2013). *Serenepilumnus* species, however, in general, are covered with a dense, soft tomentum which completely obscures the surfaces and margins, the carapace is prominently wider, the subhepatic region is unarmed, the carpus of the cheliped is without a groove, the cutting edges of the fingers of the chela are blade-like, and the ambulatory legs are very short. For these reasons, *P. swajayai* cannot be placed in *Serenepilumnus*.

The record of "*S. velasquezi*" from off southern Taiwan by Takeda (2019: 122, fig. 6) is not that species, differing in setation and carapace shape. In describing this species, Serène (1971: pl. 3A) only provided a simple photograph of the species without drawings so it is not easy to discern its characters. The holotype female, fortunately, is in the ZRC so we could re-examine it. *Leopoldius velasquezi* is in fact, very close to *Serenepilumnus leopoldi* (Gordon, 1934), and the two may even be conspecific (unpublished data).

As such, it seems best to refer the present new species to *Pilumnus* Leach, 1816, sensu lato, for the time being, even though the general consensus is that the genus is polyphyletic.

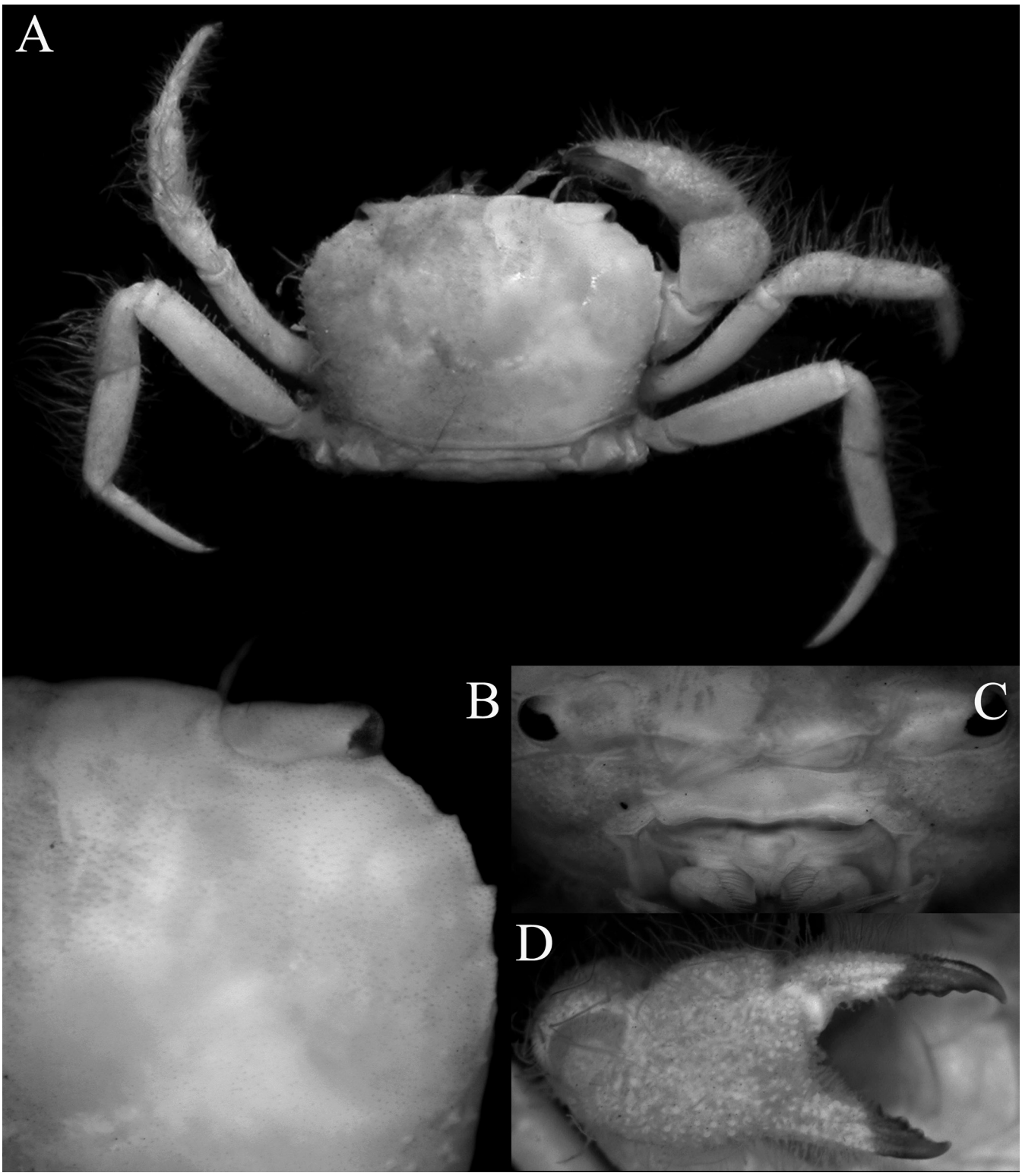

Fig. 5. *Heteropilumnus trichophoroides* De Man, 1895, female (6.1 × 4.5 mm) (ZRC 2020.0397), Java. A, overall dorsal view; B, right side of carapace (setae denuded); C, frontal view of cephalothorax showing orbits, antennules, and epistome; D, outer view of right chela.

Heteropilumnus De Man, 1895

Type species. *Heteropilumnus stormi* De Man, 1895, by monotypy.

Heteropilumnus trichophoroides (De Man, 1895)

(Fig. 5)

Material examined. 1 female (6.1 × 4.5 mm) (ZRC 2020.0397), station DW16, on edge of seamount, bottom mostly gravel 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. 26 March 2018.

Remarks. The specimen on hand closely resembles material identified as this species from Pakistan and Iran, notably in the shape of the carapace and armature of the anterolateral margin (cf. Tirmizi & Ghani, 1996: 44, figs. 16, 17; Naderloo, 2017: 307, fig. 21.17). The present female is provisionally referred to *H. trichophoroides* for the time being.

The problem is that the identity of *H. trichophoroides* is still not clear. De Man (1895: 549, pl. 13 fig. 8) described the species (as a *Pilumnus*) from a 9.8 × 6.5 mm female from West Sulawesi. De Man (1895) did not figure the entire species, depicting only the front, left side of the anterolateral margin, left chela, and posterior margin of the epistome, and his description was more a detailed comparison with the other new species he recognised, *H. trichophorus* (as a *Pilumnus*). De Man (1895: 549–551) argued that *H. trichophoroides* was very close to *H. trichophorus* (described from one female from Malacca), differing only in the greater density and relatively thicker structure of the setae on the carapace and legs, as well as small details of the front and anterolateral margin. Balss (1933) transferred both species to *Heteropilumnus*, an action that has been followed ever since (see Ng, 1987; Ng et al., 2008). Balss (1933: 42) also synonymised *Pilumnus borradailei* Rathbun, 1909 (type locality Gulf of Thailand), with *H. trichophoroides*. Maenosono (2019: 27–29), in reporting *Pilumnus digitalis* Rathbun, 1923, from Japan, also discussed the taxonomy of *H. trichophoroides* and *P. borradailei*, casting doubt on the synonymy and suggesting the three taxa may be related.

As discussed by Ng et al. (2018), the genus *Heteropilumnus* is in urgent need of a revision as many of the now recognised species are poorly defined, and its affinities with *Ser* Rathbun, 1931, and *Pseudolitochira* Ward, 1942, are unclear. Even the type species, *H. stormi*, is poorly known and its external morphology is quite different from what has been recognised as *Heteropilumnus*, with a short dense tomentum covering the carapace and pereopods, without any long setae (De Man, 1895: pl. 13 fig. 5) (see Ng et al., 2018, 2021).

Heteropilumnus trichophorus is actually very close to *H. holthuisi* Ng & Tan, 1988 (type locality Singapore or Malacca), and the two taxa are probably synonymous (unpublished data). The description and figures of *H. trichophoroides*, notably De Man's comments about the density and structure of its setae, suggest this species is close to, if not synonymous with *H. hirsutior* Lanchester, 1900 (type locality Singapore). The structure of the anterolateral margin for *H. trichophoroides* figured by De Man (1895: pl. 13 fig. 8b) appears to be more entire and less serrate than what has been described for *H. hirsutior* (cf. Ng & Tan, 1988: fig. 3; Maenosono, 2019: figs. 1C, 4) but this may vary in the latter species in any case. The description and figure of *Pilumnus borradailei* by Rathbun (1910: 356, text-fig. 40, pl. 1 fig. 8), notably in the setation, anterolateral margin, and chela, actually also agree very well with *H. hirsutior*.

Typhlocarcinops Rathbun, 1909

Type species. *Typhlocarcinops canaliculata* Rathbun, 1909, by original designation.

Typhlocarcinops transversus Tesch, 1918

Typhlocarcinops transversa Tesch, 1918: 212; pl. 13 fig. 3; Ng & Rahayu, 2020a: 69, figs. 57–60. (see Ng & Rahayu, 2020a: 69 for complete synonymy)

Material examined. 1 female (7.3 × 5.0 mm) (ZRC 2018.0271), station DW16, sand and gravel substrate, 6°09.803′S 104°57.976′E–6°09.606′S 104°58.208′E, 92–103 m, Sunda Strait, Java, coll. 26 March 2018.

Remarks. The taxonomy of this species and its close affinities with *T. marginatus* Rathbun, 1914, from the Philippines, has been discussed at length in Ng & Rahayu (2020a).

Typhlocarcinops hadrotes Ng & Rahayu, 2020

Typhlocarcinops hadrotes Ng & Rahayu, 2020a: 61, figs. 2B, 50–52.

Material examined. Holotype: male (17.5 × 14.5 mm) (MZB Cru 4813), station CP56, Pelabuhan Ratu, 7°00.429′S 106°24.407′E–7°00.455′S 106°24.198′E, 269−233 m, coll. 3 April 2018. Paratypes: 1 male (16.2 × 12.8 mm), 1 female (18.3 × 14.3 mm) (ZRC 2018.0278), 1 male (15.6 × 12.2 mm), 1 female (16.8 × 13.4 mm) (MZB Cru 4814), same locality as holotype; 1 male (13.0 × 10.3 mm) (ZRC 2018.0279), station CP 37, south of Cilacap, 8°07.462′S 109°05.639′E–8°07.864′S 109°26.470′E, 163−166 m, coll. 30 March 2018.

Remarks. This species was described as part of a revision of the genus by Ng & Rahayu (2020a). The species had previously been reported from Java as "*Typhlocarcinops marginata*" by Serène (1964) (not *Typhlocarcinops marginatus* Rathbun, 1914) but Ng & Rahayu (2020a) showed that it is a separate species allied to *T. ocularius* Rathbun, 1914 (from Philippines), and *T. atimovatae* Ng & Rahayu, 2020 (from Madagascar) instead.

Typhlocarcinops arcuatus (Miers, 1884)
(Fig. 6)

Material examined. 1 female (3.1 × 3.8 mm) (ZRC 2020.0394), station DW16, 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. 26 March 2018.

Remarks. The specimen on hand agrees very well with *Ceratoplax arcuatus* Miers, 1884, described from northern Australia and known only from one male specimen. Ng & Rahayu (2020a: 92, figs. 78–80) redescribed the species and confirmed that it was a *Typhlocarcinops* (see Ng, 1987). The present female specimen is smaller than the type male but is already mature. It is figured, the pleon and vulvae (Fig. 6E, F) being typical for members of the genus. Ng & Rahayu

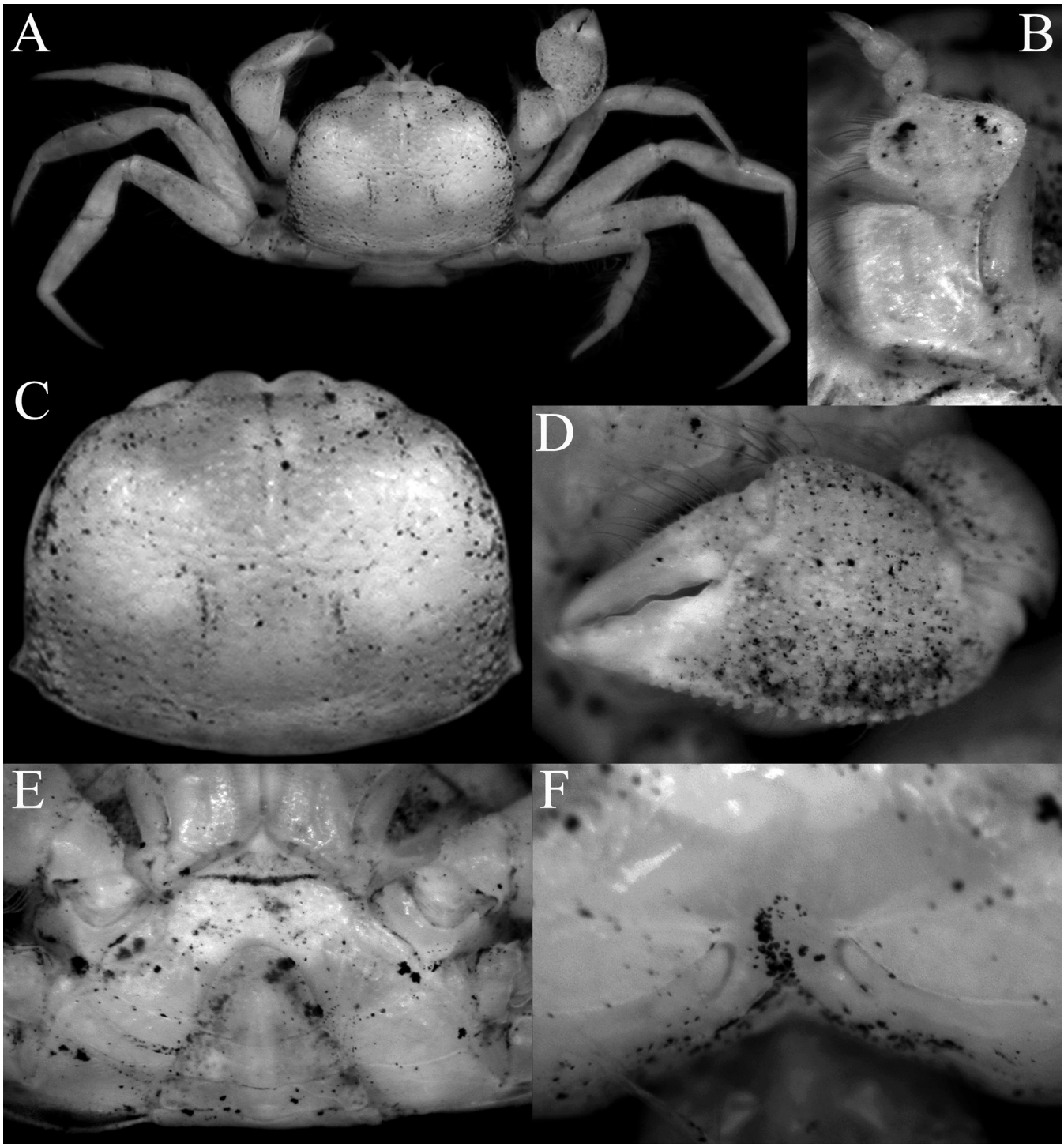

Fig. 6. *Typhlocarcinops arcuatus* (Miers, 1884), female (3.1 × 3.8 mm) (ZRC 2020.0394), Java. A, overall dorsal view; B, left third maxilliped; C, dorsal view of carapace; D, outer view of left chela; E, anterior thoracic sternum and pleon; F, sternopleonal cavity and vulvae.

(2020a: 94) noted that the record of a female "*Ceratoplax arcuata*" from Papua New Guinea by Miers (1886) was a species of *Heteropilumnus* De Man, 1895, instead (see also Ng et al., 2018).

Peleianus suluensis **Serène, 1971**
(Fig. 7)

Peleianus suluensis Serène, 1971: 907, pl. 2D; Serène & Umali, 1972: 76, text-figs. 64–67, pl. 8 figs. 5, 6; Ng et al., 2008: 144 (list).

Material examined. 1 female (5.6 × 3.8 mm, with bopyrid) (ZRC 2021.0034), 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. 26 March 2018; 1 male (4.2 × 3.2 mm) (ZRC 2021.0032), station B41, floor of large cave, Balicasag Island, Panglao, Bohol Sea, Philippines, 9°30.9′N 123°40.8′E, 17–19 m, coll. divers, Panglao 2004 Expedition, 4 July 2004.

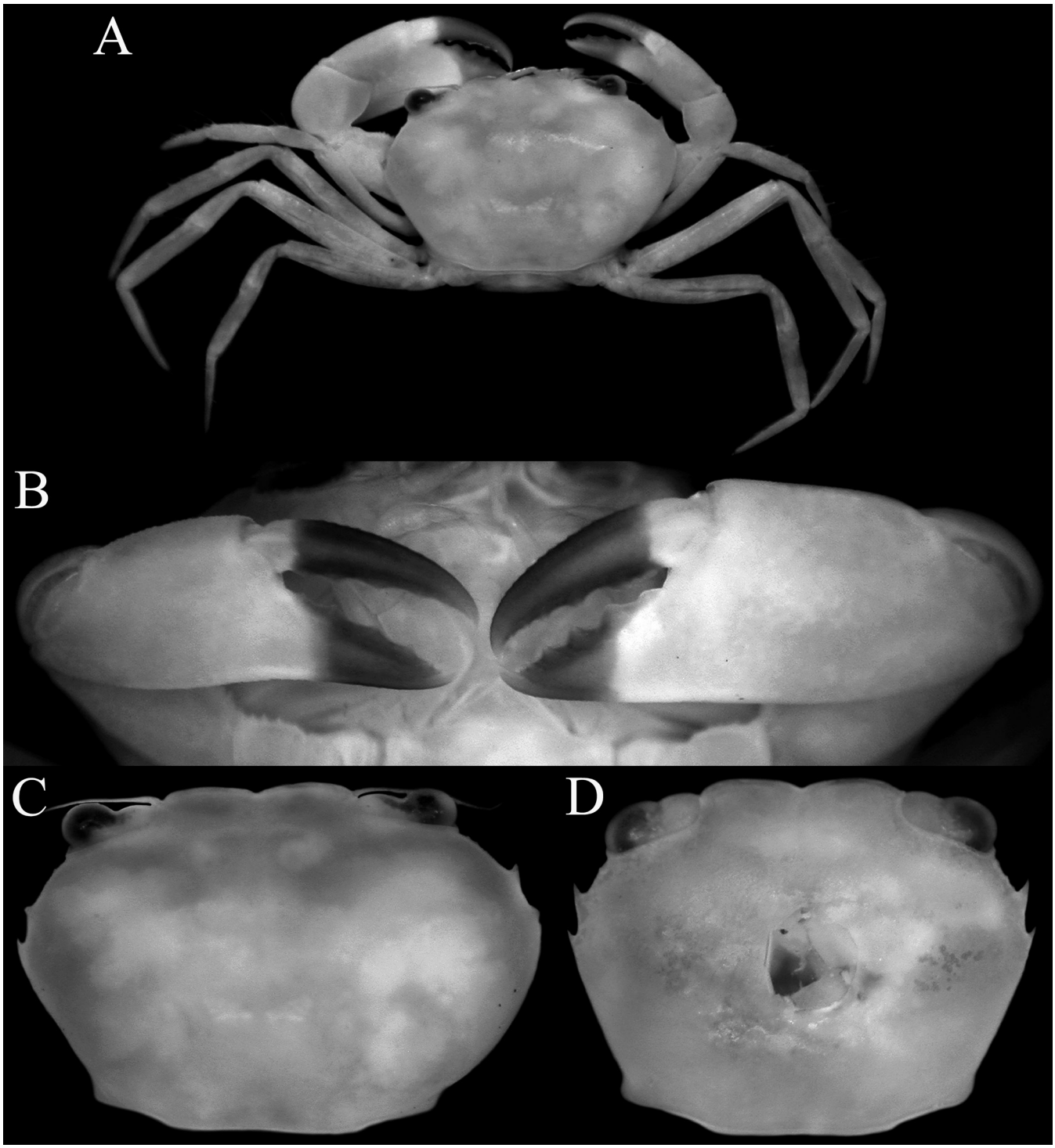

Fig. 7. *Peleianus suluensis* Serène, 1971. A–C, female (5.6 × 3.8 mm, with bopyrid) (ZRC 2021.0034), Java; D, male (4.2 × 3.2 mm) (ZRC 2021.0032), Philippines. A, overall dorsal view; B, outer view of chelae; C, D, dorsal view of carapace.

Colour. Orange-red overall in life.

Remarks. Serène (1971) described a new genus for one new species, *Peleianus suluensis*, from a single 6.5 × 5.0 mm male from the Sulu Sea. The present female specimen agrees well with the description as well as a specimen we have on hand from Panglao in the Philippines. In life, the species is bright orange overall with the fingers brown. The range extension to Indonesia is significant, but without a male, assigning the present specimen to this species is the best option.

The position of *Peleianus* in the Pilumnidae is questionable. Serène (1971) and Serène & Umali (1972) commented that despite its unusually short and stout G1, it seems closest to species in *Glabropilumnus* Balss, 1932, in its carapace features. Števčić (2005) argued that the genus needed to be placed in its own subfamily in the Pilumnidae, the Peleianinae. In actuality, *Peleianus* is quite different from *Glabropilumnus* and allied genera (see Ng & Rahayu, 2020a), with the anterolateral margin, third maxilliped, male pleon and general gonopod features more akin to those of the superfamily Pseudozioidea Alcock, 1898, in particular

members of the Christmaplacidae Naruse & Ng, 2014 (e.g., see Mendoza & Ng, 2017). With additional material, the first author and J. C. Mendoza will be revising the genus and its family placement at a later date.

Harrovia Adams & White, 1849

Type species. *Harrovia albolineata* Adams & White, 1849, by monotypy.

Harrovia longipes Lanchester, 1900

Material examined. 1 female (4.8 × 4.0 mm) (ZRC 2020.0393), station DW16, on edge of seamount, bottom mostly gravel with gorgonians, hard and soft corals, Sunda Strait, Java, Indonesia, Indian Ocean, 6°09.803′S–6°09.606′S 104°57.976′E–104°58.208′E, 92–103 m, coll. 26 March 2018.

Remarks. This is a species widely distributed in shallow reefs in the Sunda and Sahul Shelves, including the Philippines and southern Japan (Chia & Ng, 1998; Fujita & Shokita, 2003). In Indonesia, it has previously been reported from the Moluccas, Bali, and Sulawesi (Chia & Ng, 1998). Crinoid host records for the species have been summarised by Ng & Rahayu (2020b).

ACKNOWLEDGEMENTS

The SJADES cruise was a joint Indonesian–Singapore expedition to southern Java funded by the National University of Singapore and the Research Center for Oceanography, Indonesian Institute of Sciences (LIPI), and supported by their respective Ministries of Foreign Affairs under the RISING 50 programme to promote bilateral co-operation. We thank Bertrand Richer de Forges for his invaluable help with the cruise and trawling efforts, as well as Chan Tin-Yam and his team for their invaluable help in the trawling work and other support. We are also grateful to the Indonesian crew of *Baruna Jaya VIII* and especially Captain Jefri Juliansyah for their hard work; and to geologist Praditya Avianto (LIPI) for his invaluable help with the seabed geography. The authors thank Paul Clark, Masatsune Takeda, and J. C. Mendoza for their many helpful comments on the manuscript. Specimens were collected under the research permit RISTEKDIKTI 80/SIP/FRP/E5/Dit.KI/III/2018.

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