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New genera, new species and new records of Indo-West Pacific spider crabs (Crustacea: Brachyura: Epialtidae: Majoidea)

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Abstract

Three new genera and five new species of epialtid majoid crabs are described from deep water in the western Pacific. Two new species of *Oxypleurodon* Miers, 1886: *O. sanctaeclausi* **n. sp.** and *O. annulatum* **n. sp.** are described from the Philippines. New specimens of the rare *Oxypleurodon carbunculum* (Rathbun, 1906) from the Hawaiian Islands are also recorded. Three new genera are established: *Garthinia* **n. gen.** for *G. disica* **n. sp.** from the Solomon Islands; *Guinotinia* **n. gen.** for *G. cordis* **n. sp.** from New Caledonia and *G. lehouarnoi* **n. sp.** from Fiji and Tonga; and *Laubierinia* **n. gen.** for *Sphenocarcinus nodosus* Rathbun, 1916, and *Rochinia carinata* Griffin & Tranter, 1986.

Key words: New genera, new species, western Pacific, deep sea, Brachyura, Epialtidae

Introduction

Recent expeditions to the Philippines, Solomon Islands, New Caledonia, Fiji and Tonga by various cruises have uncovered a wealth of brachyuran material from the deep sea. Several reports have already been published (Ng & Richer de Forges 2007; Richer de Forges & Ng 2007a–c, 2008, Richer de Forges & Poore 2008; Richer de Forges *et al.* in press) on the Majoidea. We here report on three new genera and five new species of Epialtidae collected from the upper bathyal zone habitats of these regions.

Two new species of *Oxypleurodon* Miers, 1886, are described from the Philippines: *Oxypleurodon sanctaeclausi* **n. sp.** from the Bohol Sea, which had been confused with *O. luzonicum* Rathbun, 1916, and *O. annulatum* **n. sp.** from the Pacific coast of Luzon. The taxonomy of the poorly known *O. carbunculum* (Rathbun, 1906) from the Hawaiian Is. is also discussed as a result of the discovery of more specimens. Another new genus and new species, *Garthinia disica* **n. sp.**, is described from the Solomon Islands. A new genus, *Guinotinia*, with two new species, *G. cordis* **n. sp.** and *G. lehouarnoi* **n. sp.**, is established for specimens from New Caledonia, Tonga and Fiji. The generic placements of two species, *Oxypleurodon nodosum* (Rathbun, 1916), and *Rochinia carinata* Griffin & Tranter, 1986, are reappraised and found to be congeneric; they are both referred to a new genus, *Laubierinia* **n. gen.**

The terminology used essentially follows that of Griffin & Tranter (1986) and the classification of the families that in Ng *et al.* (2008). The abbreviations G1 and G2 refer to the male first and second pleopods respectively, while P2–P5 are used for the first to fourth ambulatory legs, respectively. Measurements, in millimeters, are of the carapace length followed by carapace width, and are only provided for holotypes, largest specimens and/or when they are of taxonomic interest. Material examined is deposited in the Crustacean Collection, Philippine National Museum, Manila (NMCR); Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC); Bernice P. Bishop Museum, Honolulu (BPBM); and Muséum national d'Histoire naturelle, Paris (MNHN).

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Systematic account

Family Epialtidae MacLeay, 1838

Pisinae Dana, 1851

Oxypleurodon Miers, 1886

Remarks. The genus *Oxypleurodon* Miers, 1886, was recently reviewed and redefined by Richer de Forges and Ng (in press). In this paper, two new genera and several new species were described, and the differences as well as relationship with *Sphenocarcinus* A. Milne-Edwards, 1875, were treated at length. There have been many discussions during the last 20 years about the relationship between *Oxypleurodon* Miers, 1886, and *Rochinia* Milne-Edwards, 1875 (see Guinot & Richer de Forges 1986; Griffin & Tranter 1986; Tavares 1991; Richer de Forges 1995, Webber & Richer de Forges 1995; Ng & Richer de Forges 2007; Richer de Forges & Ng in press), but the current consensus is that they are separate genera (see Ng *et al.* 2008; Richer de Forges & Ng in press). Garth (1958: 282), with his usual insight, had already identified one key character in separating *Rochinia* from *Oxypleurodon*: the hepatic and branchial spines are always prominent and very conspicuous in *Rochinia*, while in *Oxypleurodon*, the hepatic and branchial regions bear plates.

Oxypleurodon sanctaeclausi n. sp.

Figs. 1A–C, 3A, B, 11A

Sphenocarcinus luzonicus — Griffin 1976: 211 (only specimen from Jolo Is.). – Serène & Vadon 1981: 124, pl. 4E. – Guinot & Richer de Forges 1986a: 138, fig. 21C–D, pl. 8 fig. E, F. – Guinot & Richer de Forges 1986b: 29. – Richer de Forges 1992: 4.

Rochinia luzonica — Griffin & Tranter 1986: 180. – Tavares 1991: 161. – Webber & Richer de Forges 1995: 514.

Oxypleurodon luzonicus — Richer de Forges 1995: 48, fig. 1B, pl. 2A.

Not *Sphenocarcinus luzonicus* Rathbun, 1916, from the east coast of Luzon = *Oxypleurodon luzonicum* (Rathbun, 1916).

Material examined. ***Philippines***. PANGLAO 2005: Stn. CA 2337, 22 May 2007: 1 ovigerous female (18.7 x 16.8 mm, photographed) (ZRC 2009.0018). – Stn. CP 2344, 9°28.4'N 123°49.6'E, 142–211 m, 23 May 2005: 1 ovigerous female (12.7 x 10.0 mm) (NMCR). – Stn. CP 2362, 8°55.6'N 23°33.1'E, 700–740 m, 26 May 2005: male holotype (15.1 x 14.4 mm) (NMCR, ex ZRC 2008.0828) (14.3 x 14.0 mm) (MNHN B31852), 1 ovigerous female (18.4 x 16.6 mm) (ZRC 2008.0829). MUSORSTOM 3: stn. CP 105, 13°52'N 120°30'E, 398–417 m, 1 June 1985: 1 male (20.4 x 20.6 mm), 1 ovigerous female (20.6 x 20.0 mm), 1 female (12.2 x 10.7 mm) (MNHN-B 27487). – Stn. CP 133, 11°58'N 121°52'E, 334–390 m, 5 June 1985: 1 male (17.8 x 17.1 mm), 2 ovigerous females (14.2 x 14.1 mm, 16.3 x 15.0 mm), 2 females (13.0 x 12.1 mm, 12.0 x 11.8 mm) (MNHN-B 27488).

Diagnosis. Small-size species (ovigerous female 10–20 mm carapace length). Carapace pyriform. Bifid rostrum with long, sharp spines diverging, curving outwards, prominently V-shaped. Carapace with raised plates: 2 semicircular supraocular plates; 2 subhepatic plates fused with postocular, L-shaped plates; elongated mesogastric plate with large epigastric granule; rounded cardiac plate; 2 branchial plates laterally elongated ending as sharp point; 2 triangular epibranchial plates directed obliquely; long ridge adjacent to posterior border of carapace medially forming point; rounded, small plate below epibranchial plate on lateral border of carapace; small ovoid plate under subhepatic region. Pterygostomian region with raised ovoid plate. Antennae shorter than rostral spines. Antennules deeply inserted in cavity forming sharp angle distally. Buccal frame rectangular with operculiform third maxillipeds. Chelipeds shorter than P2: merus cylindrical; carpus carinated on outer border; propodus slightly inflated, carinated on both borders; dactylus with rounded tooth on proximal third; interior border of fingers distally serrulated. Ambulatory legs with cylindrical articles; P2

longest; dactyli curved, claw-like. Deep grooves of male thoracic sternal sutures. Male abdomen with 7 free somites including telson. G1 relatively straight, distal portion dilated (Fig. 3A, B). Females with plates having denser tomentum than in males, long setae on interior border of rostrum. Epigastric tubercle more developed than in male, with 2 smaller tubercles on each side of mesogastric plate. Each side of cardiac plate with 2 small tubercles covered by thick setae.

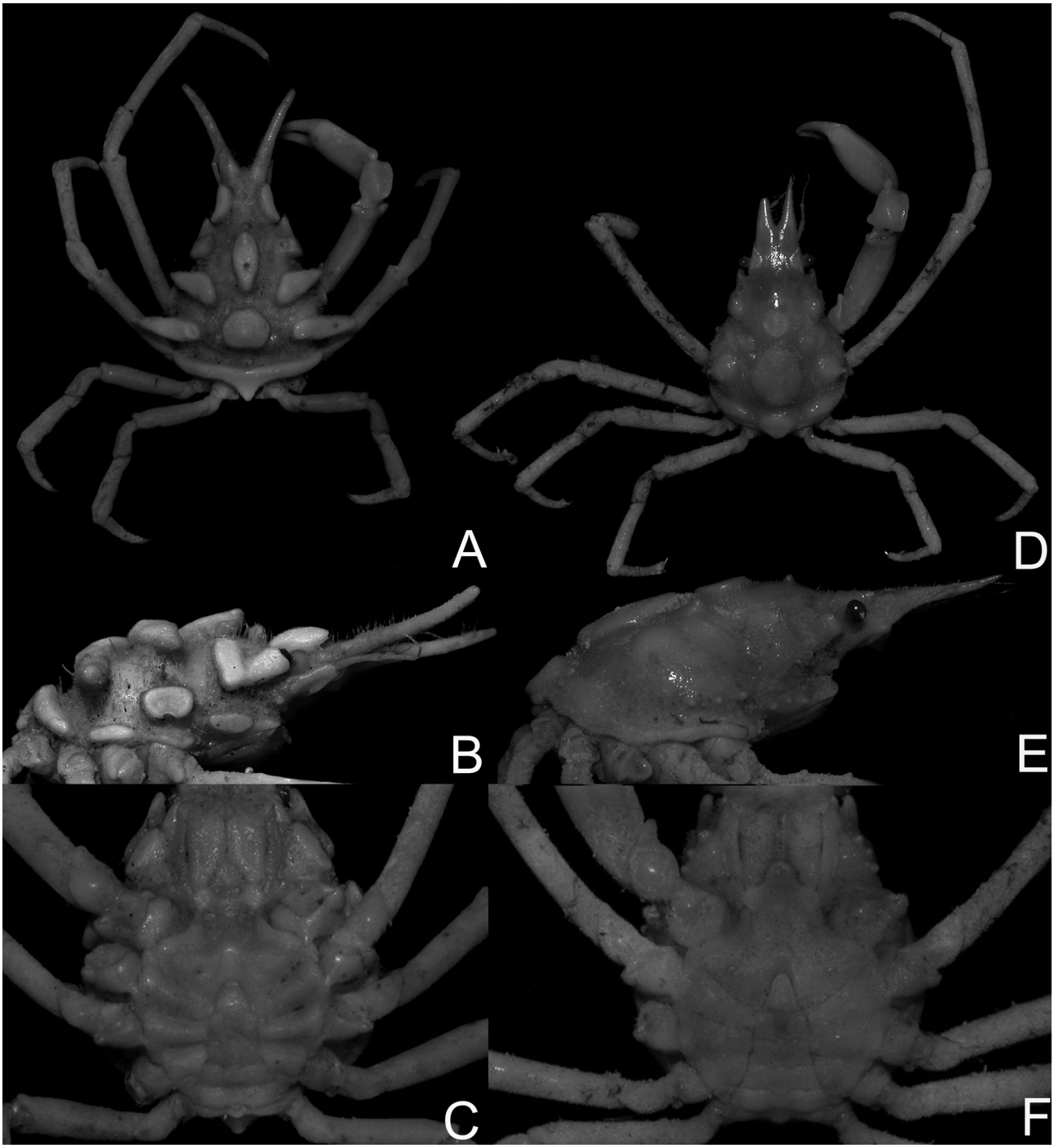

FIGURE 1. A–C, *Oxypleurodon sanctaeclausi* **n. sp.**, holotype male (15.1 x 14.4 mm) (NMCR, ex ZRC 2008.0828); D–F, *Oxypleurodon annulatum* **n. sp.**, holotype male (11.1 x 6.5 mm) (NMCR). A, D, overall dorsal views; B, E, lateral views of carapace; C, F, thoracic sternum and abdomen.

Etymology. As this species was described and discovered over the Christmas period, naming it after Santa Claus seems appropriate. This is especially in view of its beautiful red and white colours.

Remarks. This species was formerly identified as *O. luzonicum*, which was described from the *Albatross* material collected from the Pacific coast (eastern Luzon) of the Philippines by Rathbun (1916: 539). The material recorded in the Philippines by the MUSORSTOM cruises and in Indonesia by the KARUBAR expedition (Richer de Forges 1995: fig. 1B, Pl. 2 A) was also originally attributed to *O. luzonicum*. Fresh specimens from the Bohol Sea (PANGLAO 2005 expedition) forced us to reappraise its taxonomy, especially since there were marked differences with the holotype of *O. luzonicum*. *Oxypleurodon luzonicum* was redescribed and figured in some detail by Griffin (1976: 211, fig. 11a) and Guinot & Richer de Forges (1986: 136, pl. VIII, fig. A–D). We regard the present material as belonging to *O. sanctaeclausi* **n. sp.**

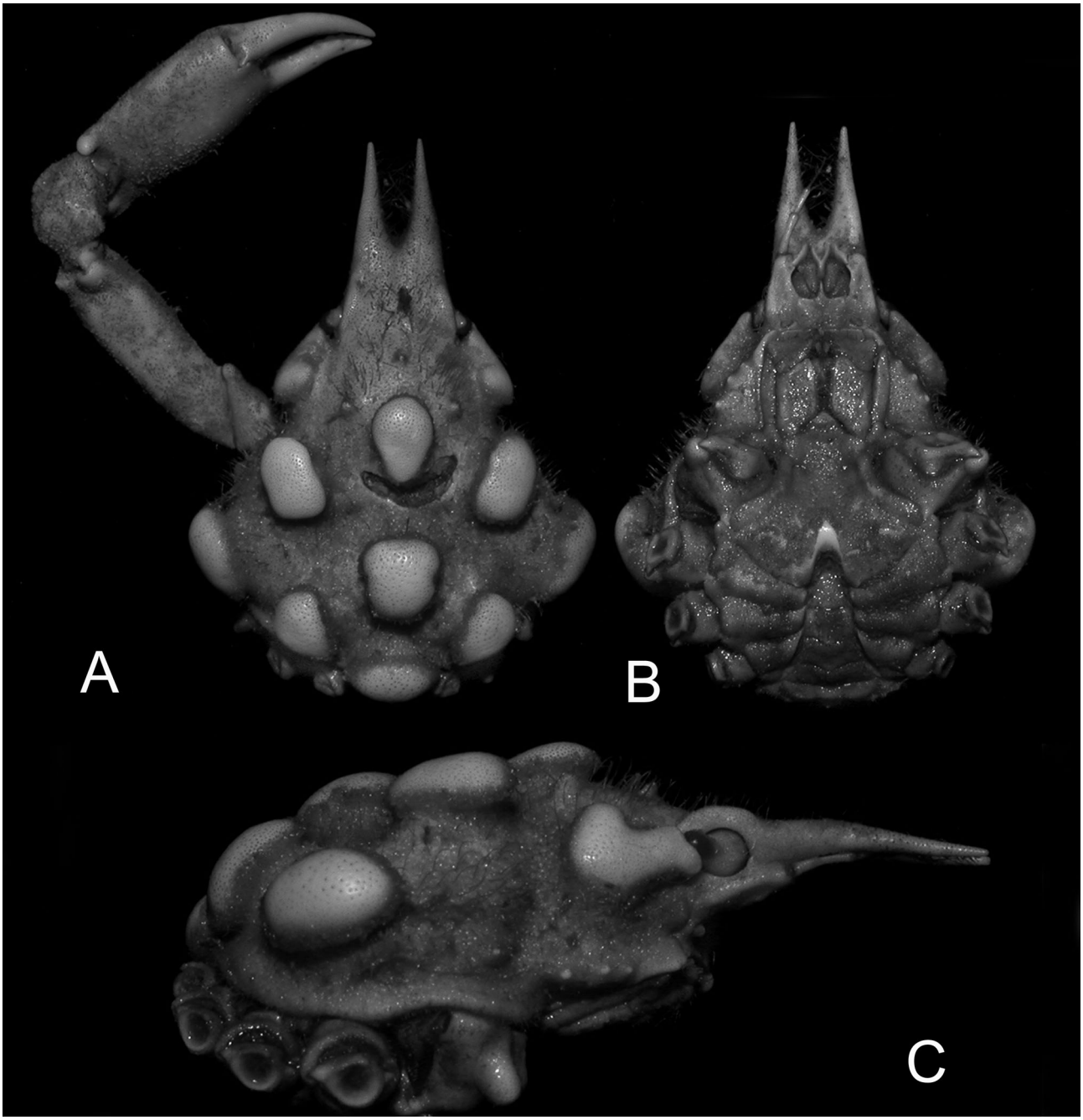

FIGURE 2. *Oxypleurodon carbunculum* (Rathbun, 1906), male (19.9 x 14.4 mm) (BPBM Acc. N°1981.136). A, overall dorsal view; B, thoracic sternum and abdomen; C, lateral view of carapace.

Oxypleurodon luzonicum sensu stricto differs from the present specimens from PANGLAO 2005 (Balicasag) and the older material from MUSORSTOM (Lubang) in that the rostral spines are straight and slightly diverging (curved and more prominently diverging in *O. sanctaeclausi* **n. sp.**); the mesogastric plate is large and shaped like a lozenge (thin and ovoid in *O. sanctaeclausi* **n. sp.**); the cardiac plate is rounded (laterally elongated in *O. sanctaeclausi* **n. sp.**); and the fused subhepatic and postocular plates is large (smaller, L-shaped in *O. sanctaeclausi* **n. sp.**). These and other differences had already been observed by Guinot and Richer de Forges (1995) but they considered it as individual variation. Their material from station 15 of the MUSORSTOM 2 expedition is not from southeast Luzon as reported but from the north of Lubang in western Philippines. The good series of present specimens indicates it should be regarded as new. The specimen from Indonesia recorded and illustrated by Richer de Forges (1995: fig. 1 B, Pl. 2 A) as "*O. luzonicum*" closely matches *O. sanctaeclausi* **n. sp.** and should be referred to the new species.

The new species is found in muddy bottoms from 142 to 740 m (PANGLAO 2005 stations).

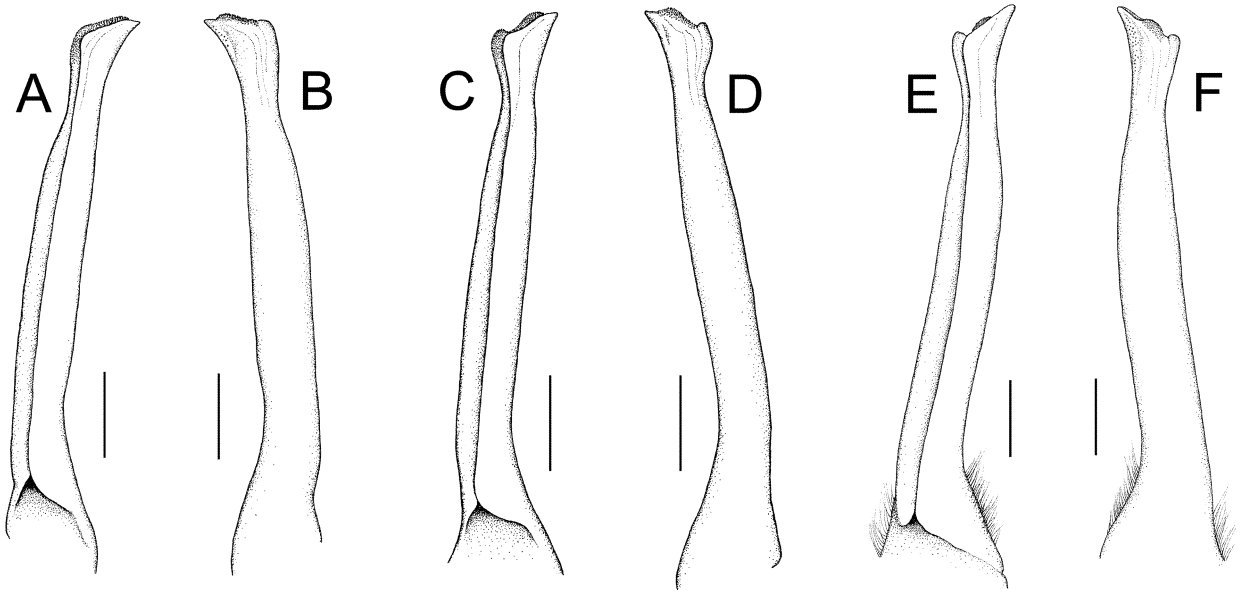

FIGURE 3. G1s. A, B, *Oxypleurodon sanctaeclausi* **n. sp.**, holotype male (15.1 x 14.4 mm) (NMCR, ex ZRC 2008.0828); C, D. *Oxypleurodon annulatum* **n. sp.**, holotype male (11.1 x 6.5 mm) (NMCR); E, F. *Oxypleurodon carbunculum* (Rathbun, 1906), male (19.9 x 14.4 mm) (BPBM Acc. N°1981.136). Scales = 0.5 mm.

***Oxypleurodon annulatum* n. sp.**
Figs. 1D–F, 3C, D

Material examined. ***Philippines***. AURORA 2007: Stn. CP 2657, 16°00.41'N 121°54.37'E, 358–359 m, 20 May 2007: male holotype (11.1 x 6.5 mm, photographed) (NMCR). – Stn. CP 2695, 14°45.28'N 123°38.36'E, 367–377 m, 26 May 2007: 2 ovigerous females (10.7 x 6.7 mm, photographed, 10.2 x 6.2 mm) (NMCR). – Stn. CP 2696, 14°46.90'N 123°40.7'E, 363–367 m, 26 May 2007: 2 females (6.7 x 3.8 mm, 7.8 x 4.3 mm) (ZRC 2009.0019). – Stn. CP 2727, 15°20.83'N 121°34.03'E, 318–353 m, 31 May 2007: 1 male paratype (14.5 x 9.2 mm) (MNHN B31853). – Stn. CP 2731, 15°21.92'N 121°33.45'E, 353–376 m, 31 May 2007: 1 male (12.2 x 7.3 mm), 1 ovigerous female (11.5 x 7.1 mm) (ZRC 2009.0020). – CP 2737, 16°01.88'N 121°52.53'E, 272 m, 1 June 2007: 1 male paratype (14.1 x 8.3 mm) (MNHN B31854).

Diagnosis. Relatively small-size species (ovigerous female 10.2–11.5 mm carapace length). Carapace pyriform. Bifid rostrum with slightly diverging sharp spines, flattened, depressed on ventral side. Carapace covered by tomentum of thick setae, with white coloured circular, not prominently raised flattened plates: 2 semicircular supraocular plates slightly pointing at superior angle; round mesogastric plate with small granule

dorsally, laterally with 2 large granules between branchial, gastric areas; large circular cardiac plate, finely punctulated; 2 small rounded branchial plates, forming sharp, laterally directed point; 2 postocular plates protecting eyes; large granule at upper part of subhepatic region; 3 white tubercles under subhepatic region;, row of 3 white tubercles under branchial region, posterior border of carapace outlined by thick ridge running from subranchial area; intestinal area forming rounded median plate. Buccal frame rectangular with operculifom maxillipeds. Antennae slightly longer than rostral spines. Chelipeds shorter than P2, surface smooth; merus triangular, slightly carinated; carpus short with 2 carinae on external side; propodus inflated, carinated on both borders; fingers curved, serrulated on inner border. Ambulatory legs thin, cylindrical; P2 longest. Anterior part of male thoracic sternal surface with 2 depressed areas. Ventral surfaces covered by tomentum of thick setae. G1 relatively straight, distal part dilated (Fig. 3C, D).

Etymology. From *annulatum*, Latin for "ringed" or "circular," alluding to the several rounded plates that spot the carapace.

Remarks. *Oxypleurodon annulatum* **n. sp.** is similar to some other species of this genus having rounded plates like *O. carbunculum* (Rathbun, 1906), *O. bidens* (Sakai, 1969) and especially *O. mammatum* (Guinot & Richer de Forges, 1986).

Oxypleurodon mammatum was described from north New Caledonia and later recorded from the Chesterfield Is. and Vanuatu (Richer de Forges & Ng in press). Its carapace has the same pattern of rounded plates as *O. annulatum* **n. sp.**, but the two species can easily be separated by the carapace plates being prominently raised in *O. mammatum*, with a nipple-like tubercle at each peak (relatively flatter in *O. annulatum* **n. sp.**, Fig. 1D); the subhepatic region is inflated (relatively flatter in *O. annulatum*, Fig. 1D); the presence of several large granules below the mesogastric plate (only a small granule in *O. annulatum* **n. sp.**, Fig. 1D); and the supraocular plate forming a sharp point anteriorly (gentle angle in *O. annulatum* **n. sp.**, Fig. 1D). Compared with *O. bidens*, described from Japan, *O. annulatum* **n. sp.** has a similar carapace shape, but is easily differentiated by the plates being more elongated and having a very characteristic branchial plate pointing anteriorly (see Fig. 1D; Richer de Forges & Ng in press). The unusually rounded carapace of *O. carbunculum* (see below) easily distinguishes it from *O. annulatum* **n. sp.**

***Oxypleurodon carbunculum* (Rathbun, 1906)**
Figs. 2A–C, 3E, F

Sphenocarcinus carbunculus Rathbun, 1906: 879, Pl. 14 fig. 6. – Rathbun 1916: 542. – Guinot & Richer de Forges 1986: 33, fig. 1E.
Oxypleurodon carbunculus — Richer de Forges 1995: 54, Pl. 1B, figs. 1E, 4G, H.
Oxypleurodon carbunculum — Ng *et al.* 2008: 104.

Material examined. ***Hawaiian Islands***. Hawaii, *Albatross*, stn. 38, TC 33, 2 males (19.9 x 16.5 mm, 12.6 x 10.9 mm), 1 ovigerous female (13.3 x 16.6 mm) (BPBM Acc. N° 1981.136).

Remarks. This species was originally described by Rathbun (1906) as a species of *Sphenocarcinus*. Collected by the *Albatross*, this is a species which is rarely mentioned and apparently never recorded since its original description. The discovery of the three BPBM specimens is thus important. The morphology of this species is very different from all congeners. Its carapace is distinctively more rounded; the rostrum very short with two subparallel sharp spines; the plates are small, rounded and raised; and, most significantly, the two plates situated below the cardiac plate are uniquely structured.

***Garthinia* n. gen.**

Diagnosis. Carapace triangular. Very long bifid rostrum formed by 2 parallel cylindrical spines, adjoined along entire length. Antennae shorter than half length of rostral spines. Supraocular eave narrow, rounded on

extremities. Carapace, legs covered by tomentum of cone-shaped setae giving spiny appearance. Carapace border divided in 2 lobes, 1 hepatic, 1 branchial. Branchial region enlarged, forming blunt point laterally. Surface of carapace relatively flat, with several tubercles; several tubercles present on border of pterygostomian region. Cheliped longer than P2. Male anterior thoracic sternal sutures interrupted. Male abdomen with 7 free somites including telson.

Etymology. The genus is established to honor the late John S. Garth, Allan Hancock Foundation, University of Southern California, U.S.A., who spent a large part of his life working on the spider crabs of America, and whose contributions have been instrumental in the taxonomy of majoids. The gender of the genus is feminine. The type species is *Garthinia disica* **n. sp.** by monotypy.

Remarks. The new genus is related to the Pisinae. The closest genera appear to be *Sphenocarcinus* Milne-Edwards, 1875, *Rochinia* A. Milne-Edwards, 1875, and *Oxypleurodon* Miers, 1886. The shape of the carapace and the absence of plates easily separate it from *Sphenocarcinus* and *Oxypleurodon*. The G1 is also quite different from these genera, being curved and flattened in the third distal part. In the other two genera, the G1 is almost straight and sharp.

In *Rochinia* the carapace is pyriform (triangular in *Garthinia*); the hepatic and branchial spines are always prominent and very conspicuous (no spines at all in these area in *Garthinia*); the supraocular eave terminates as a forwardly directed tooth (no tooth in *Garthinia*); and the first pair of ambulatory legs are clearly the longest (P2 shorter than cheliped in *Garthinia*).

The general shape of the carapace of *Garthinia* is superficially similar to that of *Sphenocarcinus*, notably in the triangular carapace with two long rostral spines. However, the two genera are very different. In *Garthinia*, the two rostral long spines are parallel along their entire length (parallel only on the proximal half and diverging after that in *Sphenocarcinus*); the border of the carapace is divided in two lobes (continuous in *Sphenocarcinus*); and the cheliped is longer than the P2 (shorter than the P2 in *Sphenocarcinus*).

***Garthinia disica* n. sp.**
Figs. 4, 5, 11B

Material examined. ***Solomon Islands***. SALOMONBOA: Stn. CP 2798, 8°44.85’S 160°58.76’E, 314–410 m, 16 September 2007: 1 ovigerous female holotype (32.6 x 18.8 mm) (MNHN B31855), 1 ovigerous female paratype (35.1 x 19.6 mm, one rostral spine broken) (ZRC 2009.0021), 1 male paratype (22.7 x 13.3 mm) (MNHN B31856).

Diagnosis. Relatively small-size species (ovigerous female 32.6–35.1 mm carapace length). Carapace triangular, with sharp branchial angles. Surface of carapace relatively flat, with numerous tubercles. Rostrum with 2 long, parallel rostral spines adjoining along entire length, nearly same length as carapace. Carapace completely covered by short tomentum of cone-shaped setae which resemble short spines. Gastric region elevated, with 4 large tubercles; cardiac region raised, highest point with 2 large granules, several smaller ones on posterior border; rounded intestinal granule close to posterior border of carapace; branchial region expanded laterally, forming blunt angle, surface of region with 3 granules; subhepatic region fused with postocular tooth, separated from branchial area by large gap. Eyes small, round, with short eyestalk. Supraocular eave poorly developed, separated from postocular tooth by deep fissure, anteriorly forming a blunt angle. Lateral border of carapace with row of sub-branchial granules, anterior one strongest; another group of granules under subhepatic region on border of pterygostomian region. Short antennae arriving at beginning of rostral spines. Basal antennal article stout, fused to carapace. Buccal frame quadrangular; third maxilliped operculiform. Cheliped slightly shorter than P2: merus short, rounded in cross section, with 2 blunt teeth on distal end; carpus short; propodus slightly inflated, compressed laterally, fingers curved with few teeth. Ambulatory legs short, covered with conical setae giving spiny appearance; dactylus curved, sharp, claw-like. Anterior thoracic sternal sutures interrupted medially. Abdomen with 7 somites including telson. G1 relatively slender, straight, slightly curved at tip (Fig. 5D, E); G2 relatively short (Fig. 5F, G).

Etymology. From *sica*, Latin for “dagger” or “sword,” and *di*, Latin for “double,” alluding to the two parallel rostral spines.

Remarks. *Garthinia disica* **n. sp.** has a very peculiar carapace shape, being relatively flattened, branchially enlarged and with a very long double rostrum (Fig. 4). The differences with allied genera have been discussed in the remarks for the genus.

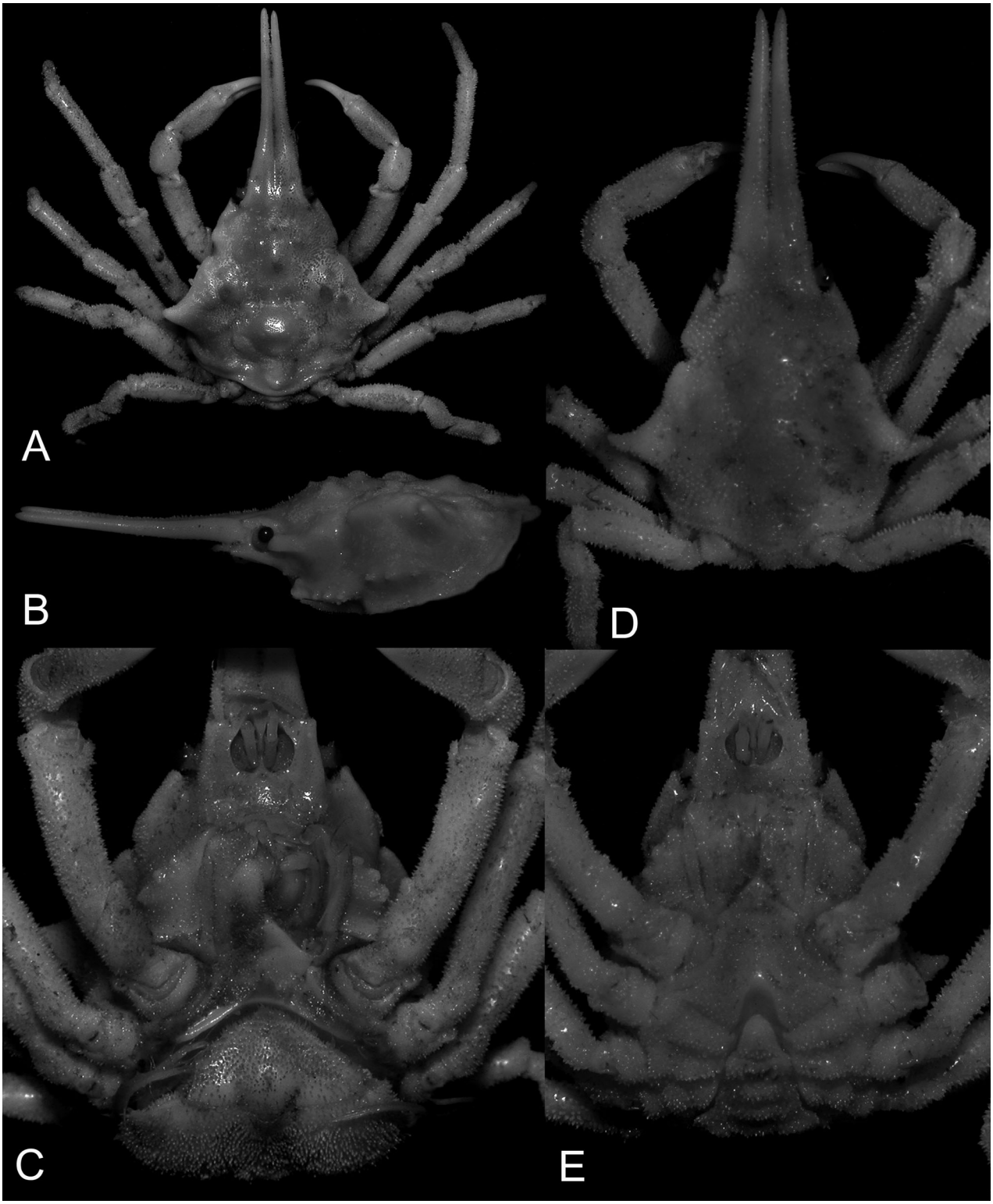

FIGURE 4. *Garthinia disica* **n. sp.** A–C, holotype ovigerous female (32.6 x 18.8 mm) (MNHN- B31855); D, E, paratype male (22.7 x 13.3 mm) (MNHN-B). A, overall dorsal view; B, lateral view of carapace; D, dorsal view of carapace; C, E, thoracic sternum and abdomen.

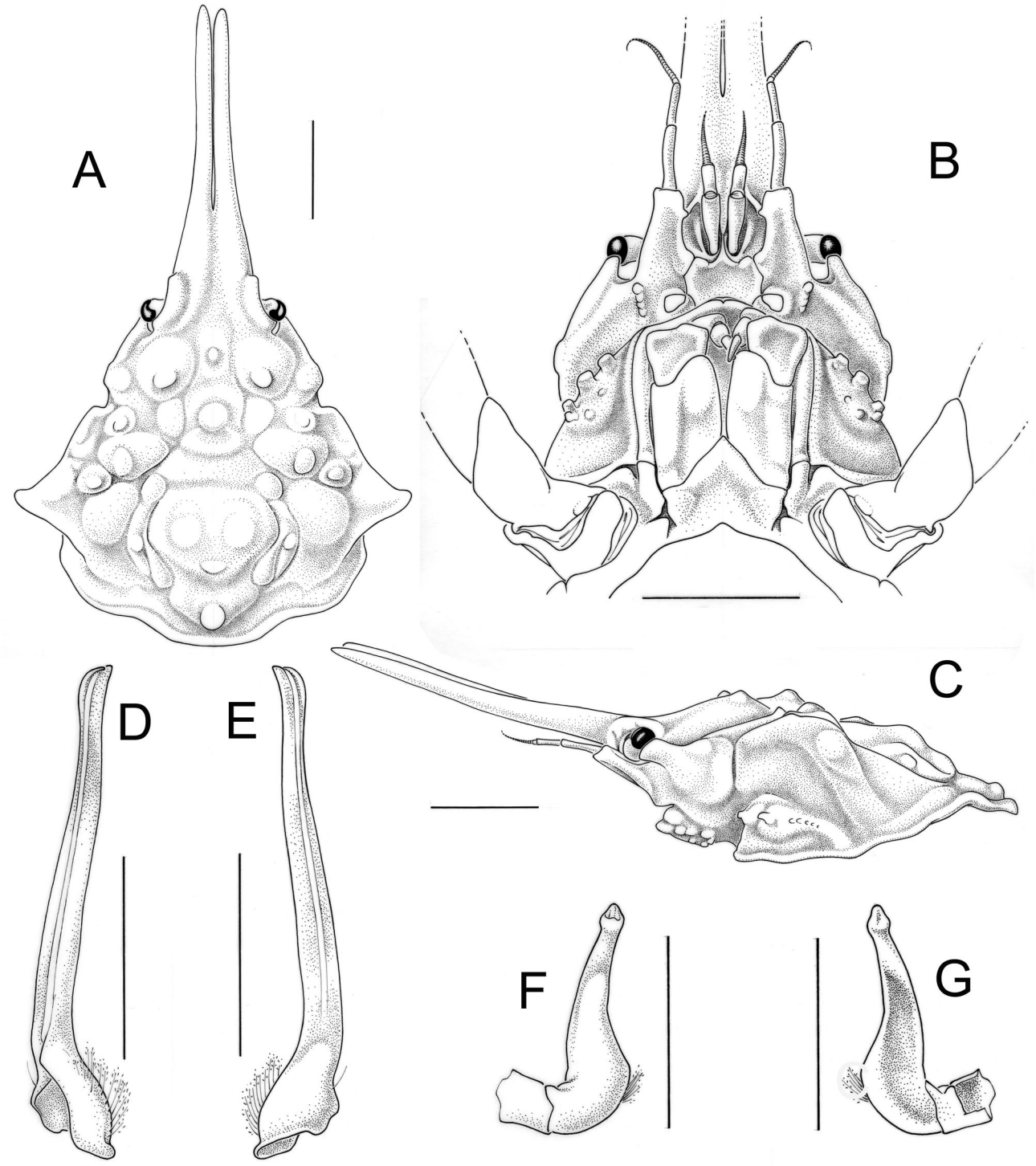

FIGURE 5. *Garthinia disica* **n. sp.**, paratype male (22.7 x 13.3 mm) (MNHN-B31856). A, dorsal view of carapace; B, face, showing antennae, antennules and third maxillipeds; C, lateral view of carapace; D, E, G1; F, G, G2. Scales: A–C = 5.0 mm; D, E = 2.0 mm; F, G = 1.0 mm.

***Guinotinia* n. gen.**

Diagnosis. Carapace pyriform. Rostrum bifid composed of 2 short flattened subparallel spines. Dorsal face of carapace with several raised plates with rounded surfaces. Supraocular eave forming sharp tooth anteriorly.

Antennae shorter than rostral spines, not visible from dorsal view. Carapace, ambulatory legs covered by short tomentum of cone-shaped setae. Gastric area with 4 plates touching each other or fused; cardiac plate distinctively heart-shaped; branchial plate elongated, separated into branchial, epibranchial portions. Cheliped shorter than P2. Propodi, dactyli of P3-P5 modified to form pseudochelae. Male abdomen with 7 free somites including telson. Male anterior thoracic sternal sutures incomplete.

Etymology. The genus honors the "queen" of modern carcinology, Danièle Guinot, Muséum national d'Histoire naturelle, Paris, for her outstanding influence on brachyuran taxonomy. The gender of the genus is feminine. The type species is *Guinotinia cordis* **n. sp.**, by present designation.

Remarks. Superficially, *Guinotinia* **n. gen.** is similar to *Rochinia*, especially with regards to the pyriform carapace. The two genera, however, differ in the following characters: hepatic and branchial spines always prominent and very conspicuous in *Rochinia* (bearing only a plate on the carapace in *Guinotinia* **n. gen.**); the rostrum consisting of two long, slender and cylindrical spines in *Rochinia* (two short flat spines in *Guinotinia* **n. gen.**); the first pair of ambulatory legs are the longest in *Rochinia* (first pair of ambulatory legs shorter than the cheliped in *Guinotinia* **n. gen.**); and the propodi and dactyli of P3-P5 are normal in *Rochinia* (modified to form pseudochelae in *Guinotinia* **n. gen.**).

The characteristic shape of the extremity of the ambulatory legs of the two new species of *Guinotinia* **n. gen.** is probably an adaptation to its most common habitat, clinging onto and moving about the long and slender gorgonian branches growing on the hard bottom on seamounts (Fig. 11C). The very long claw-like of the P3-P5 dactyli fold against the setose swelling on the propodus, forming pseudochelae similar to those of the P5 of Homolidae. Similar pseudochelae have been described in majoids of the genus *Acanthonyx* Latreille, 1828 (Epialtidae, Epialtinae), which live on large seaweeds (see Wu *et al.* 1999; Emparanza *et al.* 2007).

***Guinotinia cordis* n. sp.**
Figs. 6A, B, 7, 11C

Material examined. ***New Caledonia***. NORFOLK 1: Stn. DW 1701, 24°40.23'S 168°39.30'E, 564–586 m, 24 June 2001: 1 male holotype (23.0 x 16.3 mm) (MNHN B31857), 1 ovigerous female paratype (25.1 x 17.6 mm) (MNHN B31858).

Diagnosis. Relatively small-size species (largest specimen: ovigerous female 25.1 mm carapace length carapace length). Carapace pyriform with several raised plates. Carapace covered with club-shaped setae denser on surface of plates. Bifid rostrum with short flattened sharp, rostral spines; rostral spines very close to each other, outer border straight, giving triangular aspect to anterior part; ventral side of rostral spines depressed. Eyes small, with round cornea. Orbit formed by reduced supraocular eave, forming sharp tooth anteriorly, postocular plate cupped; narrow fissure present between 2 plates. Carapace plates arranged as follows: gastric area with 3 fused plates, 1 mesogastric, 2 lateral; round plate under mesogastric plate; cardiac region with large, rounded plate indented anteriorly, nearly heart-shaped, on each side of medial plate with 2 small oblique plates; branchial region with 4 plates on each side, small oblong plate directed laterally, large oblique ovoid plate with anterior indentation; hepatic plate rounded, fused with flatter postocular plate. Pterygostomian region with row of rounded tubercles on external border. Epistome narrow. Antennae shorter than short rostral spines. Buccal frame quadrangular; third maxillipeds operculiform. Chelipeds longer than P2, inflated, smooth; merus triangular in cross section, with 2 blunt teeth on distal border; carpus short, with 2 external carinae; propodus enlarged, flattened, with carinate borders, lower proximal angle expanded to form right-angled corner; fingers curved, touching each other only distally, with serrulated inner border. Ambulatory legs short, with short curved articles; dactylus as long as propodus, sharp, claw-shaped; proximal inferior border of propodus of P3-P5 with unusual swelling covered with dense setae. Anterior part of male thoracic sternum depressed; sternal sutures well defined, interrupted medially. Male abdomen with 7 free somites including telson. G1 relatively straight, slender, distally flattened, enlarged on distal part (Fig. 7D, E).

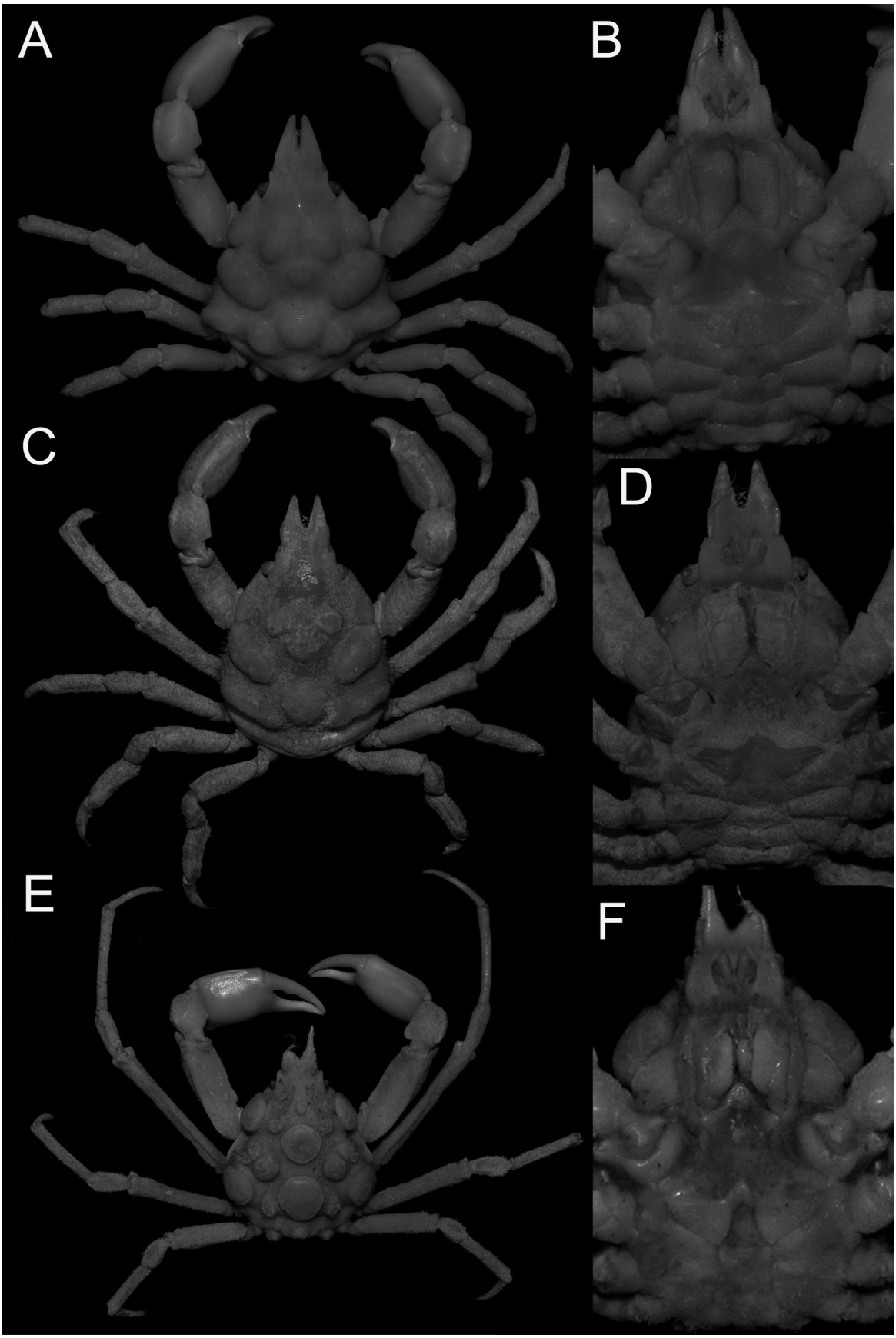

FIGURE 6. A, B, *Guinotinia cordis* **n. sp.**, holotype male (23.0 x 16.3 mm) (MNHN-B B31857); C, D, *Guinotinia lehouarnoi* **n. sp.**, holotype male (16.2 x 10.8 mm) (MNHN- B31859); E, F, *Laubierinia carinata* (Griffin & Tranter, 1986), male (19.1 x 14.8 mm) (MNHN-B31863). A, C, E, overall dorsal views; B, D, F, thoracic sternum and abdomen.

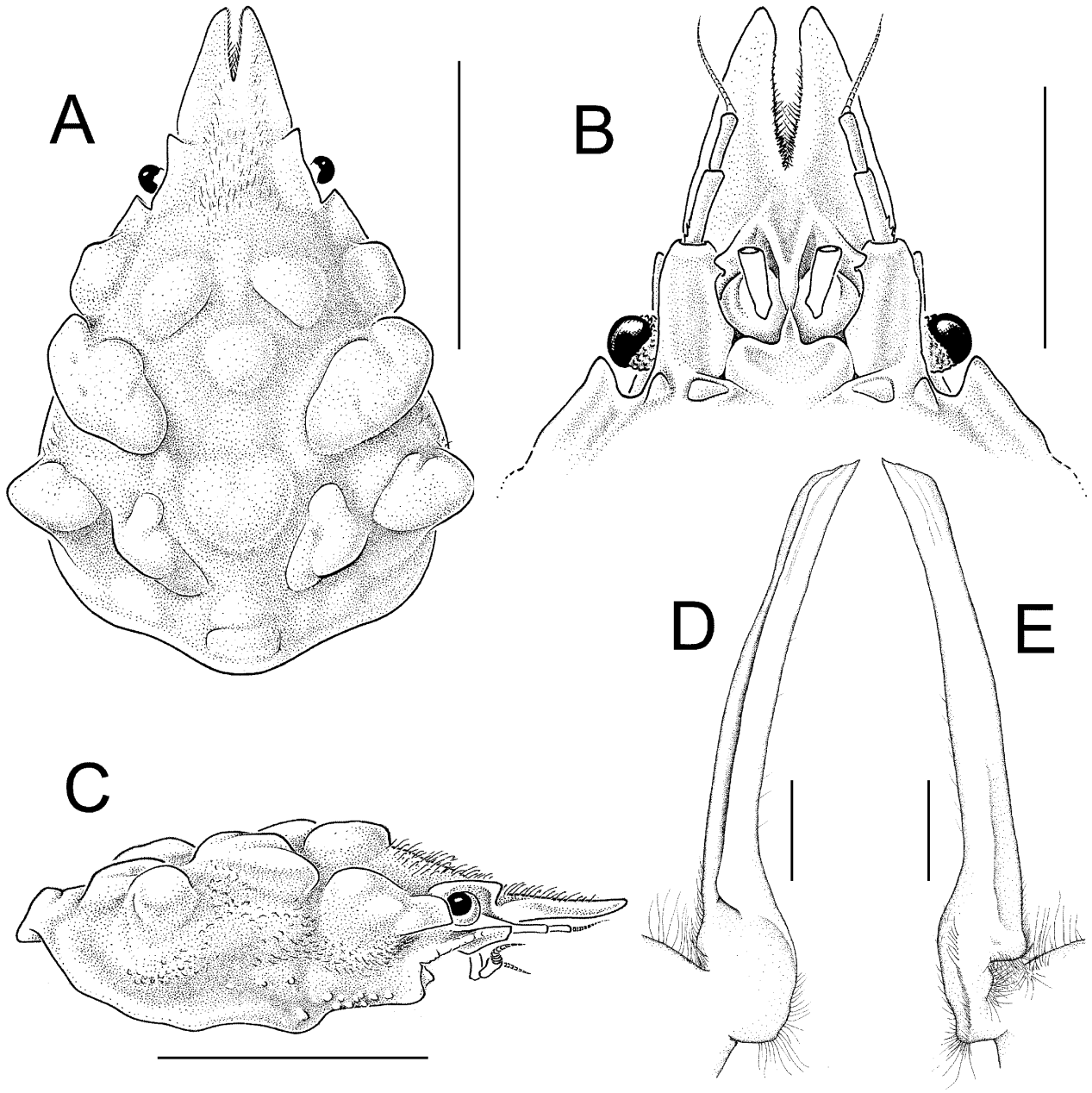

FIGURE 7. *Guinotinia cordis* **n. sp.**, holotype male (23.0 x 16.3 mm) (MNHN-B31857). A, dorsal view of carapace; B, face, showing antennae, antennules and third maxillipeds; C, lateral view of carapace; D, E, G1s. Scales: A, C =10.0 mm; B = 5.0 mm; D, E = 1.0 mm.

Etymology. From the *cordis*, Latin for "heart," alluding to the shape of the cardiac plate.

Remarks. *Guinotinia cordis* **n. sp.** is so different from the other species of Pisinae that it is rather difficult to compare it with allied species. The closest species appears to be *Laubierinia carinata* (Griffin & Tranter, 1986). The two species have a similar size and a carapace with prominently swelled regions. However, they are easily separated by the following characters: the presence of laminated plates on the lateral branchial border of the carapace in *L. carinata* (absent in *G. cordis* **n. sp.**); the carapace swellings are circular and flattened in *L. carinata* (elongated with a rounded surface in *G. cordis* **n. sp.**); in *L. carinata*, the short rostral spines are divergent, forming a V-shape (spines parallel and adjoined to each other in *G. cordis* **n. sp.**); the ambulatory legs have a carinated merus in *L. carinata* (uniformly cylindrical in *G. cordis* **n. sp.**); and the propodi and dactyli of P3-P5 are not highly modified in *L. carinata* (adapted as pseudochelae in *G. cordis* **n. sp.**).

Although the general pattern of the plates is similar in the two species, there is only one gastric plate vaguely resembling a cross in *G. lehouarnoi* **n. sp.** while the same plate is more elongated and rounded in *G. cordis* **n. sp.**, and the epibranchial plate touches the hepatic plate in *G. lehouarnoi* **n. sp.** but these two plates are clearly separated in *G. cordis* **n. sp.**.

Guinotinia cordis **n. sp.** apparently lives on gorgonians on hard substrates on the summit of seamounts. Its colour in life is rose brown, very similar to the gorgonians on which they were found (Fig. 11C). It was obtained in the same trawl as *Oxypleurodon orbiculatum* Guinot & Richer de Forges, 1986.

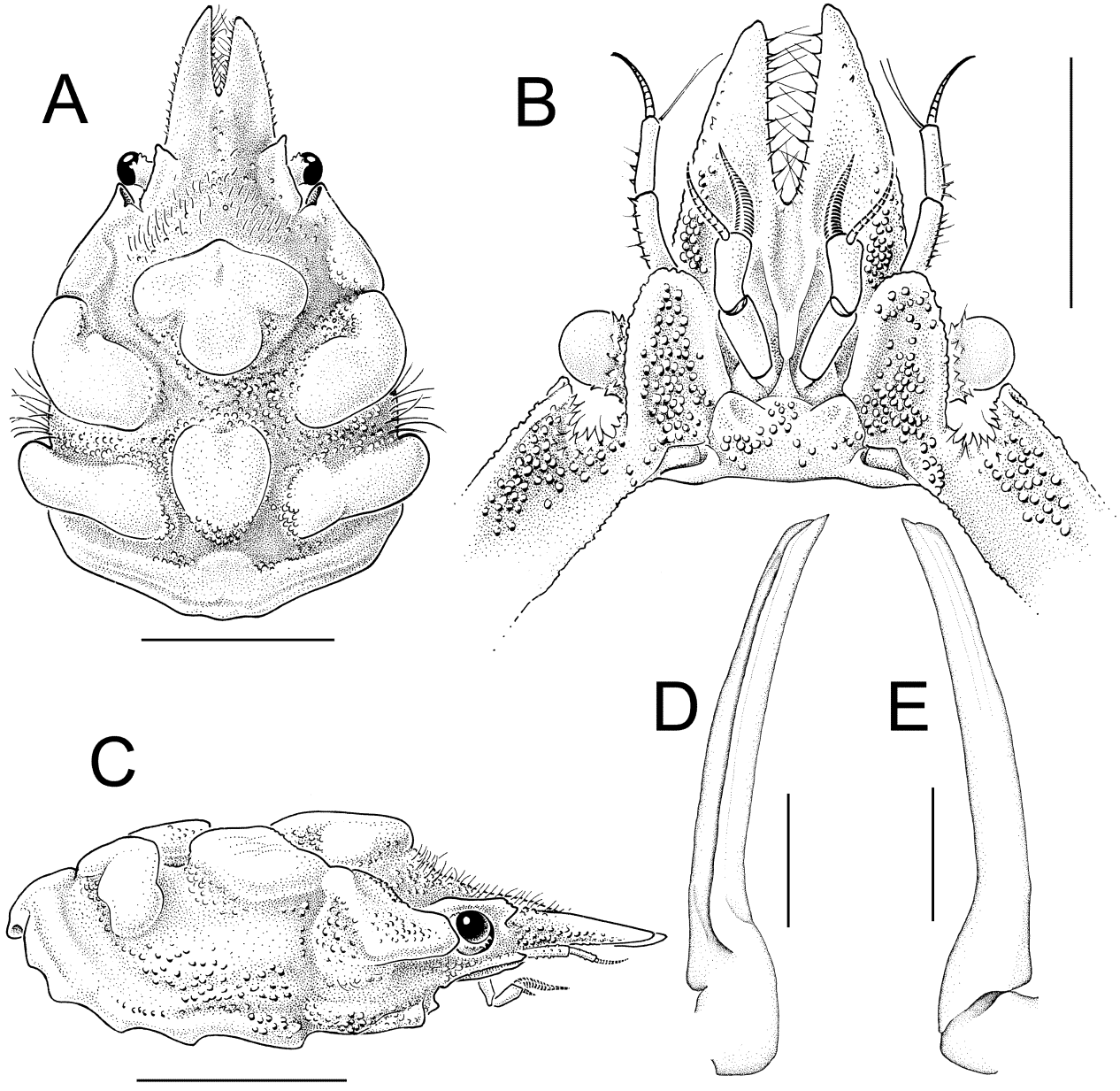

FIGURE 8. *Guinotinia lehouarnoi* **n. sp.**, holotype male (16.2 x 10.8 mm) (MNHN-B31859). A, dorsal view of carapace; B, face, showing antennae, antennules and third maxillipeds; lateral view of carapace; D, E, G1s. Scales: A, C = 5.0 mm; B = 2.5 mm; D, E = 1.0 mm.

***Guinotinia lehouarnoi* n. sp.**
Figs. 6C, D, 8

Material examined. ***Fiji***. MUSORSTOM 10: Stn. CP 1341, 16°52.51'S 177°43.66'E, 500–614 m, 10 August 1998: 1 male holotype (16.2 x 10.8 mm) (MNHN B31859), 1 ovigerous female paratype (16.1 x 10.4 mm) (MNHN B31860). – ***Tonga***. BORDAU 2: stn. CP 1539, 21°36.75'S 175°19.37'E, 558–586 m, 4 June 2000: 1 male (15.4 x 10.2 mm) (MNHN B31861).

Diagnosis. Relatively small-size species (ovigerous female 16.1 mm carapace length). Carapace pyriform showing numerous surelevated rounded plates. Bifid rostrum with short, sharp, flattened spines; ventral face of rostral spines concave. Carapace covered with short tomentum of cone-shaped setae. Raised plates of carapace arranged as follow: large mesogastric plate with 4 cross-shaped lobes; heart-shaped cardiac plate; 2 long horizontal branchial plates; 2 oblique epibranchial plates touching hepatic plates; hepatic plates fused with postocular teeth; small number of distinct intestinal plates connected to posterior border of carapace. Supraocular eave narrow, forming sharp point anteriorly. Eyes small, round. Postocular tooth cupped. Antennae as long as rostral teeth, visible from dorsal view; basal antennal article large. Buccal frame quadrangular; third maxillipeds operculiform. Anterior portion of thoracic sternum depressed. Chelipeds same length as P2: merus short, curved, enlarged distally; carpus short, rounded; propodus slightly inflated, covered with setae; fingers short, with 4 developed teeth. Ambulatory legs short, with curved articles covered by short tomentum; P3-P5 dactyli long, curved, claw-like; inferior proximal portion of propodus with distinct swelling covered with dense, long setae. Male abdomen with 7 free somites including telson. G1 gently curved outwards, relatively slender, distally flattened (Fig. 8D, E).

Etymology. The name honors Captain Hervé Le Houarno, whose expertise at trawling onboard the *Vauban* and *Alis* collected a large part of the MUSORSTOM Crustacea collections. He is the only person to have captured two new species of Glypheidae, in 1976 and 2005.

Remarks. The specimen from Tonga differs from the Fiji holotype in that the four portions of the gastric plate are completely fused, roughly forming a cross, and the branchial plates are also relatively larger and rounder. Tonga is about 1000 km from Fiji, but the few specimens available suggest that these differences are not significant at the species level and can easily be accounted for by variation.

For comparisons between *G. lehouarnoi* **n. sp.** and *G. cordis* **n. sp.**, see remarks for the latter species.

***Laubierinia* n. gen.**

Diagnosis. Carapace rounded. Rostrum bifid with 2 short, divergent, flat, sharp spines. Carapace, legs covered by thick tomentum, masking swellings. Carapace with several strong elevated swellings, sometimes flattened on top; hepatic region particularly elevated. Diagnostic flat plate present on lateral carapace border of branchial region, forming a groove with the rest of carapace. Cheliped shorter than P2.

Etymology. The genus is in memory of the late Dr. Lucien Laubier, a famous French marine zoologist. He will be remembered, among many other things, as one who promoted the exploration of the deep-sea by trawling and submersibles. The gender of the genus is feminine. Type species *Rochinia carinata* Griffin & Tranter, 1986, by present designation.

Remarks. *Laubierinia* **n. gen.** is closest to *Rochinia*, but differs in having a rounded carapace (pyriform in *Rochinia*) only having prominent tubercles on the hepatic and branchial regions (spines on the same regions in *Rochinia*) and the rostrum consists of two short and flattened spines (usually long and slender spines in *Rochinia*).

Laubierinia **n. gen.** can be differentiated from *Guinotinia* **n. gen.** in that the lateral border bears a flat branchial plate (without any plate in *Guinotinia* **n. gen.**), the rostrum spines are cylindrical (short and flattened in *Guinotinia* **n. gen.**); the legs have carinated articles (cylindrical in *Guinotinia* **n. gen.**); and the propodi and dactyli of P3-P5 are normal (modified into pseudochelae in *Guinotinia* **n. gen.**).

***Laubierinia carinata* (Griffin & Tranter, 1986) comb. nov.**
Figs. 6E, F, 9A–F, 11D

Rochinia carinata Griffin & Tranter 1986: 178, figs. 56, 64e, f, pl. 12. – Ng *et al.* 2008: 105. – Richer de Forges & Poore 2008: 66, fig. 1d.

Material examined. ***Solomon Islands*.** SALOMONBOA: stn. 2798, 8°44.85'S 160°58.76'E, 314–410 m, 16 September 2007: 1 female (13.6 x 10.3 mm), 5 females ovigerous (18.6 x 14.2 mm, 16.3 x 13.1 mm, 15.9 x 12.0 mm, 16.1 x 12.5 mm, 15.5 x 11.9 mm) (MNHN B31862). – Stn. CP 2828, 10°27.40'S 161°58.76 E, 173–379 m, 20 September 2007: 1 ovigerous female (16.9 x 12.5 mm) (ZRC 2009.0022). – Stn. CP 2812, 9°39.77'S 161°29.97'E, 280–326 m, 18 September 2007: 1 male (19.1 x 14.8 mm), 4 ovigerous females (18.6 x 14.6 mm, 19.9 x 16.1 mm, 20.4 x 15.8 mm), 2 females (18.6 x 15.8 mm, 16.4 x 12.7 mm) (MNHN B31863). ***Vanuatu***, Espiritu Santo I., SANTO2006: stn. AT 121, 19 October 2006: 1 male 26.7 x 22.5 mm (MNHN B31864).

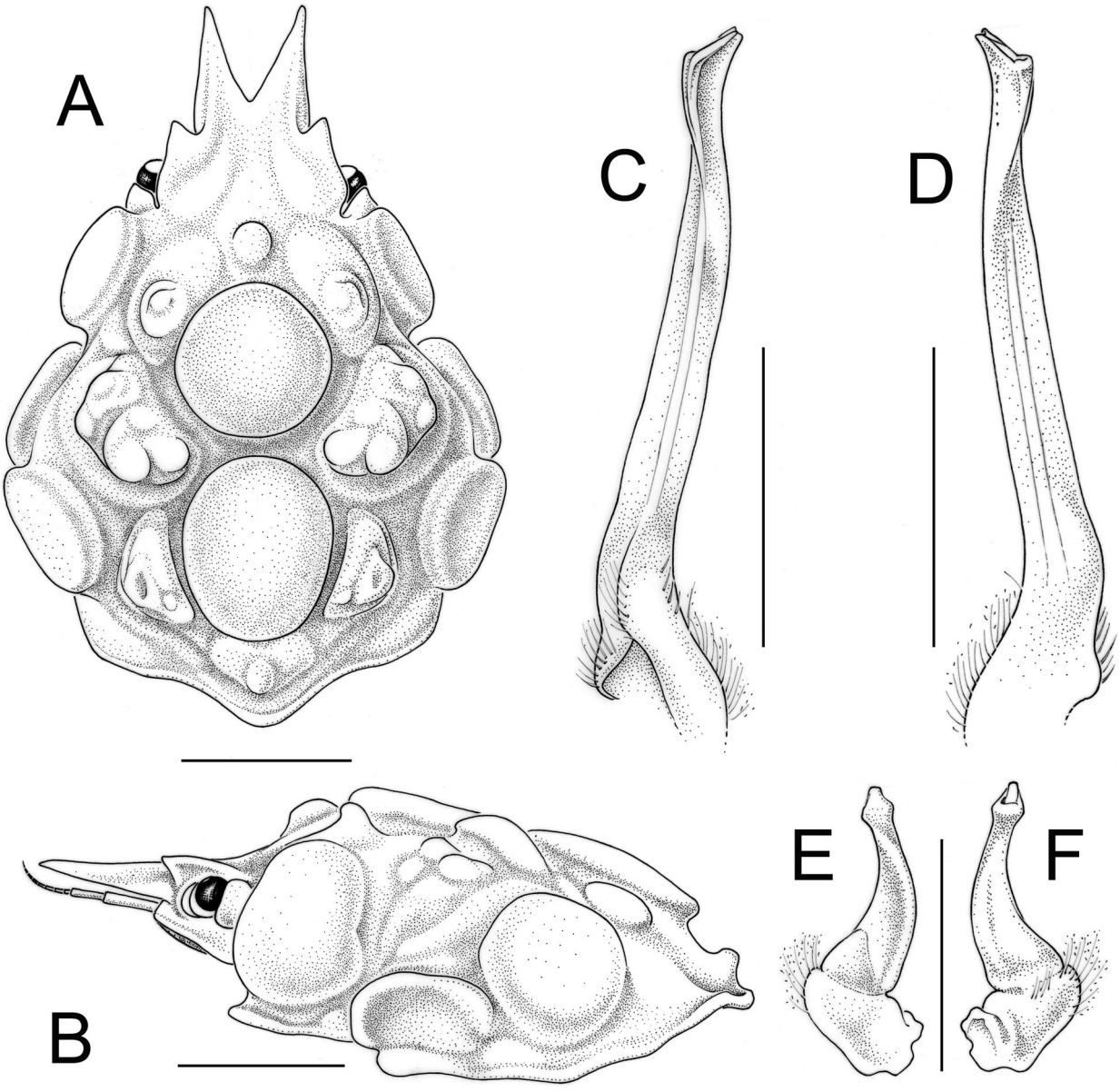

FIGURE 9. *Laubierinia carinata* (Griffin & Tranter, 1986), male (19.1 x 14.8 mm) (MNHN-B31863). A, dorsal view of carapace; B, lateral view of carapace; C, D, G1; E, F, G2. Scales: A, B = 5.0 mm; C, D = 2.0 mm; E, F = 1.0 mm.

Remarks. This species was described from the *Siboga* material from Indonesia (Griffin & Tranter 1986: 178, figs. 56, 64e, f, pl. 12) and is characterised by a rounded carapace with a short, bifid rostrum and a series of large flattened swellings on the dorsal surface. The lateral border of the carapace has a thin, lamellated plate and the swellings are arranged as follow: one round and flat mesogastric plate, one ovoid and flat cardiac plate and two rounded and flat branchial plates. The border of the cheliped propodus is also carinated. The thin, flattened plate on the lateral border of the carapace is very similar to that of *Oxypleurodon nodosum* (Rathbun, 1906).

Laubierinia carinata was described from Indonesia (Kai Islands) and it was recently recorded from Western Australia (Richer de Forges & Poore 2008). It is recorded herein from the Solomon Islands, New Caledonia and the Norfolk Ridge seamounts, extending the range to the Pacific Ocean.

The live colour is bright red (Fig. 11D).

***Laubierinia nodosa* (Rathbun, 1916) comb. nov.**
Fig. 10A–C

Sphenocarcinus nodosus Rathbun, 1916: 541. – Griffin 1976: 213, fig. 10a. – Guinot & Richer de Forges 1986: 134, Pl. IX, H.
Rochinia nodosa — Griffin & Tranter 1986: 175.
Oxypleurodon nodosus — Richer de Forges 1995: 44.
Oxypleurodon nodosum — Ng *et al.* 2008: 105.

Material examined. ***Philippines***. Balicasag, November 2003: 1 female (11.2 x 8.3 mm) (ZRC 2009.0023). – Balicasag Island, February 2004: 2 males (15.3 x 12.3 mm, 13.0 x 10.0 mm), 2 ovigerous females (16.6 x 13.5 mm, 15.4 x 12.4 mm) (ZRC 2009.0024). – PANGLAO 2005: stn. CP 2392, 9°29.5'N 123°42.6'E, 242 m, 30 May 2005: 2 males (12.1 x 9.2 mm, 11.2 x 8.0 mm), 1 ovigerous female (19.2 x 15.1 mm) (NMCR). – Stn. CP 2393, 9°30.8'N 123°42.0 E, 356 m, 30 May 2005: 1 male (9.9 x 7.5 mm), 2 ovigerous females (17.9 x 14.3 mm, 14.6 x 11.1 mm), 3 females (12.1 x 8.5 mm, 12.4 x 9.6 mm, 11.6 x 9.4 mm, broken rostrum) (MNHN B31865). – Stn. CP 2394, 9°29.1'N 123°40.7'E, 470 m, 30 May 2005: 2 males (18.8 x 15.3 mm, 8.3 x 5.4 mm) (ZRC 2009.0025). – Stn. CP 2398, 9°33.2'N 123°41.0'E, 713 m, 31 May 2005: 1 male (19.4 x 15.8 mm) (NMCR). – Stn. CP 2399, 9°31.8'N 123°41.7'E, 342 m, 31 May 2005: 1 female (11.5 x 8.5 mm) (MNHN B31866).

Remarks. Griffin (1976: 213, fig. 10a, as *Rochinia nodosa*) provided a photograph of the holotype of *L. nodosa* from the Bohol Sea, which agrees very well with the series of specimens at hand, many from the type locality. The carapace of *L. nodosa* is covered by a very thick and dense tomentum masking the swollen regions, although the removal of the tomentum shows that the carapace has no plates but only tubercles at best. In this respect, it is very different from all other *Oxypleurodon* species. The raised regions are arranged as follow: a very inflated hepatic region, which is slightly directed dorsally; one larger cardiac tubercle surrounded by three sharp tubercles on each side and one above; one large epibranchial tubercle with a sharp point dorsally; one mesogastric tubercle and two tubercles on the epigastric region; one branchial swelling. The supraocular eave is elongated, forming a spine anteriorly and on the lateral border of the carapace, and there are two lamellar crests at the protobranchial position.

The G1 drawn by Griffin and Tranter (1986: 189, fig. 63g, h) shows the tip rounded, which is quite different from those of typical *Oxypleurodon* species (Fig. 3).

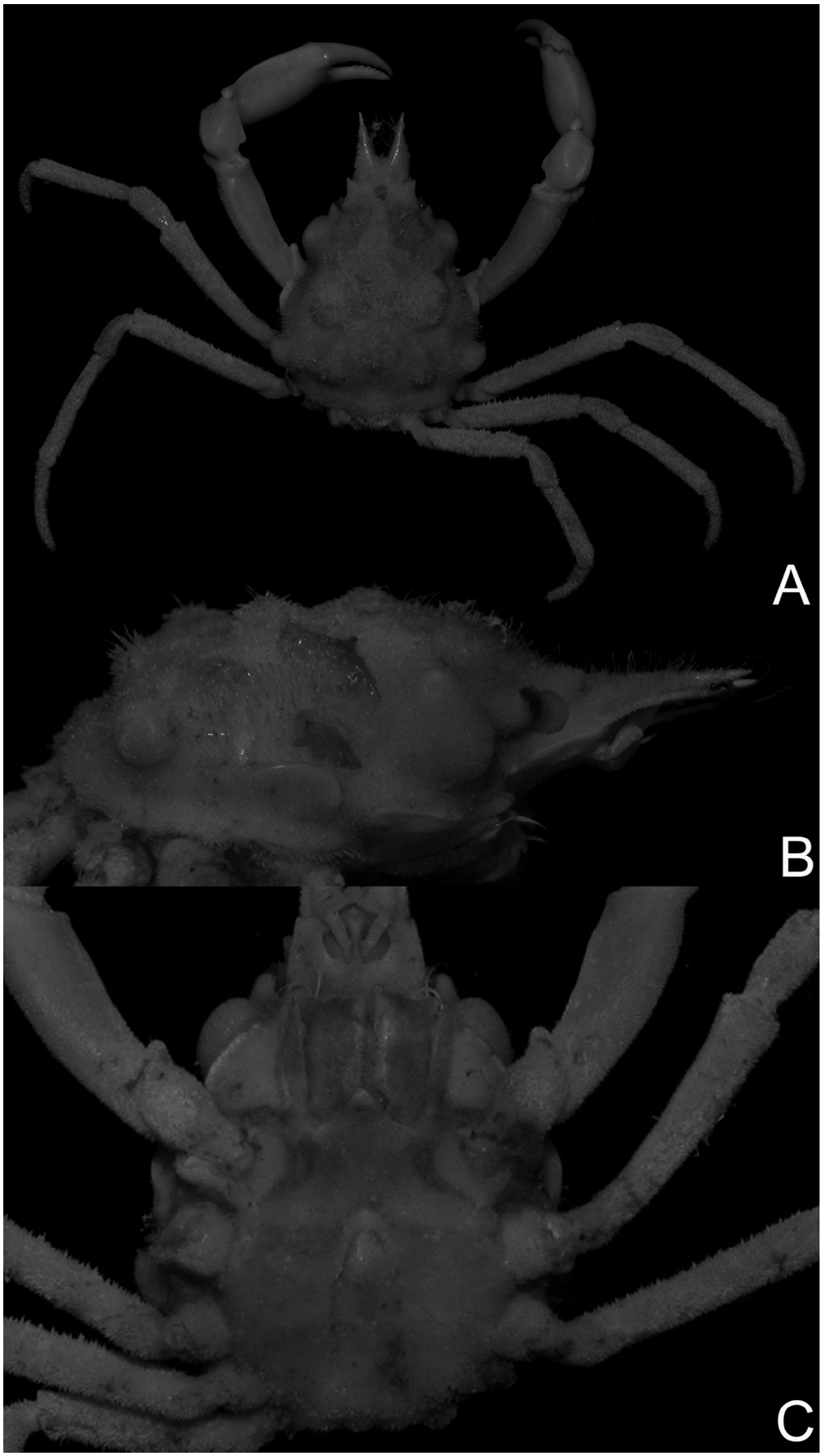

FIGURE 10. *Laubierinia nodosa* (Rathbun, 1916), male (18.8 x 15.3 mm) (ZRC 2009.0025). A, overall dorsal view; B, lateral view of carapace; C, thoracic sternum and abdomen.

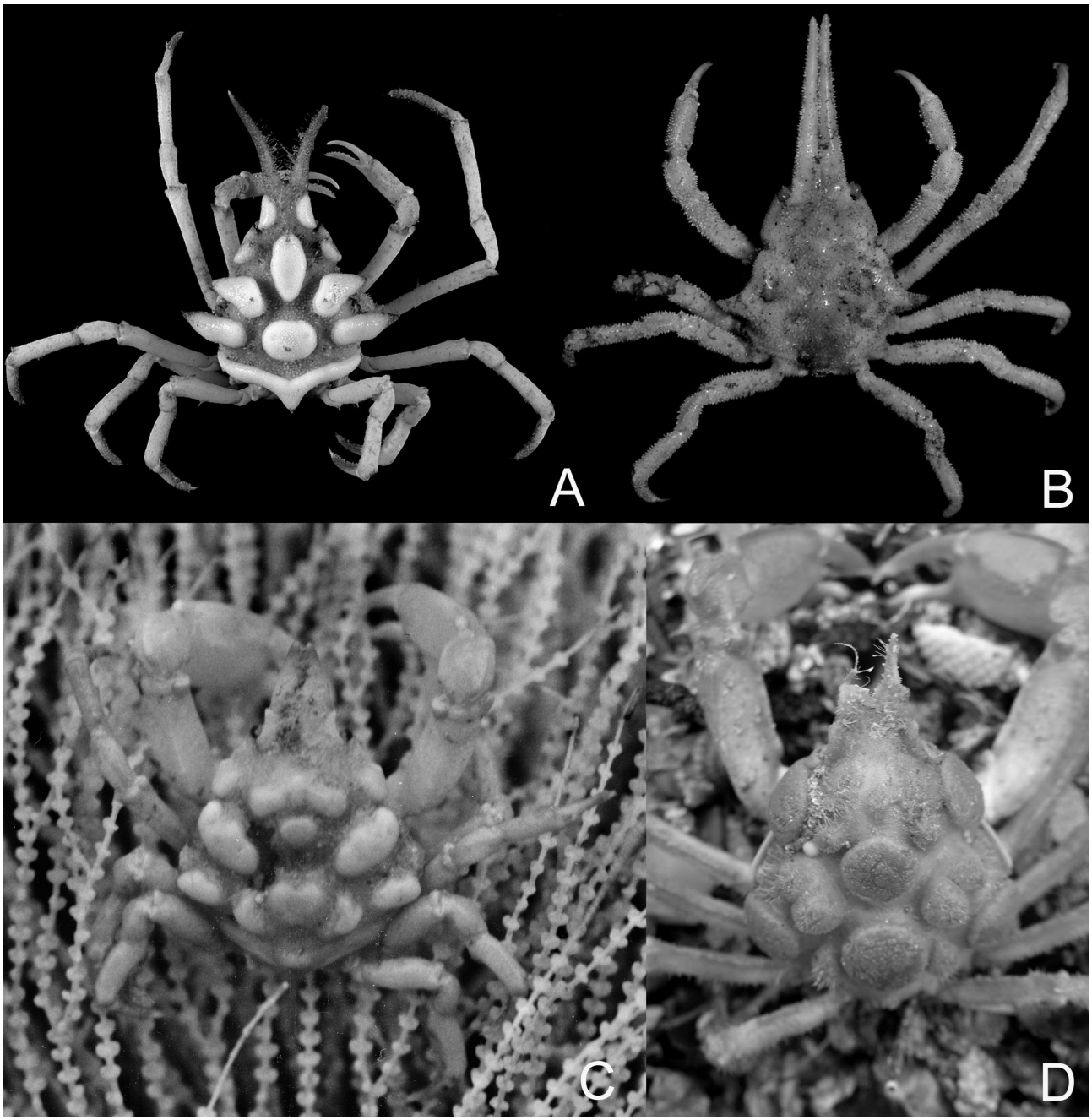

FIGURE 11. Colours in life. A, *Oxypleurodon sanctaeclausi* **n. sp.**, paratype ovigerous female (18.7 x 16.8 mm) (ZRC 2009.0018); B, *Garthinia disica* **n. sp.**, paratype male (22.7 x 13.3 mm) (MNHN-B31856); C, *Guinotinia cordis* **n. sp.**, holotype male (23.0 x 16.3 mm) (MNHN-B31857); D, *Laubierinia carinata* (Griffin & Tranter, 1986), male (26.7 x 22.5 mm) (MNHN-B31864).

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References

Dana, J. D., 1851. On the classification of the Maioid Crustacea or oxyrhyncha. *American Journal of Science*, series 2, 5(11), 425–434.

Emparanza, E. J. M., Guzmán, G. L. & Ng, P. K. L. (2007) A redescription of *Acanthonyx petiverii* H. Milne Edwards, 1834, and designation of a neotype for *Acanthonyx simplex* Dana, 1852 (Brachyura, Majidae). *Crustaceana*, 80(5): 533–543.

Estampador, E. P. (1937) A check list of Philippine Crustacean Decapods. *Philippine Journal of Sciences*, 62, 465–559.

Estampador, E. P. (1959) Revised Check List of Philippine Crustacean Decapods. *Natural and Applied Science Bulletin. University of the Philippines*, 17(1), 1–127.

Garth, J. S. (1958) Brachyura of the Pacific coast of America: Oxyrhyncha. *Allan Hancock Pacific Expedition*, 21, 854 p.

Griffin, D. J. G. & Tranter, H. A. (1986) The Decapoda Brachyura of the Siboga Expedition. Part VIII. Majidae. *Siboga-Expeditie*, 39C4, 1–335, 22 pls.

Griffin, D. J. G. (1976) Spider crabs of the family Majidae (Crustacea: Brachyura) from the Philippine Islands. *Journal of Natural History*, 10, 179–222.

Guinot, D. & B. Richer de Forges (1985) Revision of the Indo-Pacific *Sphenocarcinus* with a single rostrum and description of two new species (Crustacea, Decapoda, Brachyura, Majidae). *Marine Research in Indonesia*, 24, 1984: 49–71.

Guinot, D. & Richer de Forges, B. (1986a) Crustacés Décapodes: Majidae (genres *Platymaia, Cyrtomaia, Pleistacantha, Sphenocarcinus* et *Naxioides*). *In*: Résultats des Campagnes MUSORSTOM 1 et 2. Tome 2, *Mémoires du Muséum national d'Histoire naturelle*, Paris (1986) Zoologie, (A), 133, 83–178.

Guinot, D. & Richer de Forges, B. (1986b) Découverte d'une nouvelle espèce de *Sphenocarcinus* en Nouvelle-Calédonie, *S. mammatus* sp. nov. (Crustacea, Decapoda, Brachyura). *Indo-Malayan Zoology*, 3, 27–37.

Latreille, P. A. (1825–1828) *Encyclopédie Méthodique. Histoire Naturelle. Entomologie, ou Histoire naturelle des Crustacés, des Arachnides et des Insectes*. Paris. Vol. 10. Part 1 (1825b), 1–344; Part 2 (1828), 345–832.

MacLeay, W. S. (1838) *On the Brachyurous Decapod Crustacea. Brought from the Cape by Dr. Smith. In Smith, A., Illustrations of the Zoology of South Africa; consisting chiefly of figures and descriptions of the objects of natural history collected during an expedition into the interior of South Africa, in the years 1834, 1835, and 1836; fitted out by 'The Cape of Good Hope Association for Exploring Central Africa': together with a summary of African Zoology, and an inquiry into the geographical ranges of species in that quarter of the globe, published under the Authority of the Lords Commissioners of Her Majesty's Treasury, Invertebratae*. IV [1849]. pp. 53–71, pls. 2, 3. Smith, Elder & Co., London.

Miers, E. J. (1886) Part II. Report on the Brachyura collected by H.M.S. *Challenger* during the years 1873–76. In: *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873–1876 under the command of Captain George S. Nares, N.R., F.R.S. and the late Captain Frank Tourle Thomson, R.N. prepared under the Superintendence of the late Sir C. Wyville Thomson, Knt., F.R.S. &c. Regius Professor of Natural history in the University of Edinburgh of the civilian scientific staff on board and now of John Murray one of the naturalists of the Expedition. Zoology, Published by Order of Her Majesty's Government.* London, Edinburgh and Dublin, HMSO. 17, i–l+1–362, pls. 1–29.

Milne-Edwards, A. (1873–1881) Etudes sur les Xiphosures et les Crustacés de la région mexicaine. *In*: *Mission scientifique au Mexique et dans l'Amérique Centrale, Recherches Zoologique sur la Faune d'Amérique Centrale et du Mexique*, part 5, vol. 1. Paris, Imprimerie Nationale; 368 p.

Ng, P. K. L., Guinot, D. & Davie, P. J. F. (2008) Systema Brachyurorum: Part I. An annotated checklist of extant brachyuran crabs of the world. *Raffles Bulletin of Zoology*, Supplement 17, 1–286.

Ng, P. K. L. & Richer de Forges, B. (2007) A new species of deep-water spider crab of the genus *Rochinia* A. Milne-Edwards, 1875, from Guam (Crustacea: Brachyura: Majidae). *Zootaxa*, 1610: 61–68.

Rathbun, M. J. (1906) The Brachyura and Macrura of the Hawaiian Islands. *Bulletin of the United States Fish Commission*, 1903 23(3), 827–930, pls. 1–24.

Rathbun, M. J. (1916) New species of crabs of the family Inachidae and Parthenopidae. *In*: Scientific results of the Philippine cruise of the fisheries Steamer "Albatross", 1907–1910. N°34. *Proceedings of the United States National*

Museum, 50(2135), 527–559.
Richer de Forges, B. (1992) A new species of *Sphenocarcinus* A. Milne-Edwards, 1875 from tasmantid guyots, *S. lowryi* sp. nov. (Crustacea, Decapoda, Brachyura) with notes on the taxonomic status of the genus. *Records of the Australian Museum*, 44, 1–5.
Richer de Forges, B. (1995) Nouvelles récoltes et nouvelles espèces de Majidae de profondeur du genre *Oxypleurodon* Miers, 1886. *Crustaceana*, 68(1), 43–60.
Richer de Forges, B. & Ng, P. K. L. (2007a) A new species of *Cyrtomaia* Miers, 1886 (Crustacea: Decapoda: Brachyura: Majidae) from Micronesia. *Zootaxa*, 1409: 61–67.
Richer de Forges, B. & Ng, P. K. L. (2007b) On a new genus and new species of deep-water spider crab from the Philippines (Crustacea, Decapoda, Brachyura, Majidae). *Zootaxa*, 1644, 59–68.
Richer de Forges, B. & Ng, P. K. L. (2007c) Notes on deep-sea spider crabs of the genus *Cyrtomaia* Miers, 1886, from the Philippines (Crustacea: Decapoda: Brachyura: Majidae), with description of a new species. *Raffles Bulletin of Zoology*, Supplement 16, 55–65.
Richer de Forges, R. & Ng, P. K. L. (2008) New records of deep-sea spider crabs of the genus *Cyrtomaia* Miers, 1886, from the Pacific Ocean, with description of a new species (Crustacea: Decapoda: Brachyura: Majidae). *Zootaxa*, 1861, 17–28.
Richer De Forges & Ng, P. K. L. (in press) New records and new species of the deep-sea spider crab *Oxypleurodon* Miers, 1886, from the western Pacific, with remarks on *Sphenocarcinus* A. Milne-Edwards, 1875 (Crustacea: Brachyura: Majidae) and description of two new genera. *Raffles Bulletin of Zoology.*
Richer De Forges, B., Li, K. & Ng, P. K. L. (in press) *Cyrtomaia largoi* Richer de Forges & Ng, 2007 (Crustacea, Decapoda, Inachidae): a new record for Taiwan. *Crustaceana*.
Richer de Forges, B. & Poore, G. (2008) Deep-sea majoid crabs of the genera *Oxypleurodon* and *Rochinia* (Crustacea: Decapoda: Brachyura: Epialtidae) from the continental margin of Western Australia. *Memoirs of the Museum of Victoria*, 65, 63–70.
Sakai, T. (1969) Two new genera and twenty-two new species of crabs from Japan. *Proceedings of the Biological Society of Washington*, 82, 243–280, figs. 1–20, pls. 1, 2.
Serène, R. & Vadon. C. (1981) Crustacés Décapodes: Brachyoures. Liste préliminaire, description de formes nouvelles et remarques taxonomiques. *In*: Résultats des Campagnes MUSORSTOM, 1. Philippines (18–29 mars 1976). *Mémoires ORSTOM*, Paris, 91, 117–140.
Tavares, M. S. (1991) Redéfinition des genres *Rochinia* A. Milne Edwards, *Sphenocarcinus* A. Milne Edwards et *Oxypleurodon* Miers, et établissement du genre *Nasutocarcinus* gen. nov. (Crustacea, Brachyura, Majidae). *Bulletin du Muséum national d'Histoire naturelle*, Paris, 4e série, sect. A, 13(1–2), 159–179.
Webber, R. & Richer de Forges, B. (1995) Deep sea Majidae (Decapoda: Brachyura) new to New Zealand with a description of *Oxypleurodon wanganella* sp. nov. *Journal of the Royal Society of New Zealand*, 25(4), 501–516.
Wu, S.-H, Yu, H.-P. & Ng, P. K. L. (1999) *Acanthonyx formosa*, a new species of spider crab (Decapoda, Brachyura, Majidae) from seaweed beds in Taiwan. *Crustaceana*, 72(2), 193–202.