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# Deep-sea majoid crabs of the genera *Oxypleurodon* and *Rochinia* (Crustacea: Decapoda: Brachyura: Epialtidae) mostly from the continental margin of Western Australia

BERTRAND RICHER DE FORGES<sup>1</sup> AND GARY C.B. POORE<sup>2</sup>

 <sup>1</sup> UMR 7138/UR R148 "Systématique, Adaptation, Evolution", Institut de Recherche pour le Développement, B.P. A5, 98848, Nouméa Cedex, New Caledonia (bertrand.richer-de-forges@noumea.ird.nc)
<sup>2</sup> Museum Victoria, GPO Box 666, Melbourne, Victoria, 3001, Australia (gpoore@museum.vic.gov.au)
Abstract Richer de Forges, B., and Poore, G.C.B. 2008. Deep-sea majoid crabs of the genera *Oxypleurodon* and *Rochinia* (Crustacea: Decapoda: Brachyura: Epialtidae) mostly from the continental margin of Western Australia. *Memoirs of Museum Victoria* 65: 63–70. Two species are newly described from the continental margin of Western Australia: *Oxypleurodon wilsoni* and *Rochinia annae. Oxypleurodon luzonicum, Rochinia carinata, R. pulchra, R. sibogae* and *R. strangeri* are newly reported from Western Australia. *Rochinia fultoni* and *R. mosaica* from south-eastern Australia are refigured.
Keywords Decapoda, Brachyura, Epialtidae, new species, Indian Ocean, Australia

# Introduction

The decapod crustacean fauna along the south-western and central continental margin of Western Australia has been recently revealed to be highly diverse and novel (Poore et al., 2008). These discoveries result from recent sampling, part of a project mounted by CSIRO Marine and Atmospheric Research (CMAR) and Museum Victoria entitled "Mapping benthic ecosystems on the deep continental shelf and slope in Australia's South West Region".

This contribution on majoid crabs is based on the collections made during the southern phase of this project (cruise SS10-2005) and on those taken during a second phase along the northern Western Australian continental margin (cruise SS05-2007).

Our classification of the Majoidea follows Ng et al. (2008). Poore et al. (2008) reported on 14 species of Epialtidae (3 probably new species), two species of Hymenosomatidae (one new), 20 species of Inachidae (two new) and 13 species of Majidae (three new). Of these 49 species, nine were reckoned to be new records of Indo-West Pacific species for Australia. This paper reports only on the epialtid genera *Oxypleurodon* Miers, 1886, and *Rochinia* Milne Edwards, 1875, other members of this family from these collections being relatively well known.

We remark on other species of *Rochinia* in the collections of Museum Victoria (NMV). Types are lodged in the Western Australian Museum (WAM) and Museum Victoria. Measurements are given as greatest length (without pseudorostrum) and greatest width.

# Epialtidae MacLeay, 1838

*Remarks.* Poore et al. (2008) listed 14 species in this family from the south-western Australian collections. Of these, *Austrolibinia gracilipes* (Miers, 1879), *Hyastenus convexus* Miers, 1884, *Naxioides robillardi* (Miers, 1882), *N. taurus* (Pocock, 1890), *N. tenuirostris* (Haswell, 1880), *Phalangipus filiformis* Rathbun, 1916, and *P. hystrix* (Miers, 1884) were new records for southern or all Western Australia. They also reported *Griffinia lappacea* (Rathbun, 1918) and *Lahaina agassizii* (Rathbun, 1902) which were previously known. One specimen, which could not be identified at the time, belongs to a species of *Thacanophrys*.

## Oxypleurodon Miers, 1886

*Remarks. Oxypleurodon* was redefined and separated from other similar genera by Tavares (1991) and several species from the Indo-West Pacific were reviewed by Richer de Forges (1995). Ng and Richer de Forges (2007) listed the 17 species known. Davie (2002) included the genus in the subfamily Pisinae of family Majidae. Following Ng et al. (2008) it is now in the family Epialtidae MacLeay, 1838, included inside the superfamily Majoidea. One species has been previously recorded from Australia, *O. stimpsoni* Miers, 1886, from Queensland (Davie, 2002). Here, a second species is newly recorded for Australia and a third species is described as new from Western Australia.

## Oxypleurodon luzonicum (Rathbun, 1916)

Figure 1a

Sphenocarcinus luzonicus Rathbun, 1916: 539.—Estampador, 1937: 552.—Estampador, 1959: 112.—Griffin, 1976: 211, fig. 11a.— Serène and Vadon, 1981: 124, pl. 4E.—Guinot and Richer de Forges, 1986a: 138, fig. 19A, B, 21C, D, pl. 8 figs A–F.—Guinot and Richer de Forges, 1986b: 29.—Richer de Forges, 1992: 4.

Rochinia luzonica.-Griffin and Tranter, 1986a: 180.-Tavares, 1991: 161.-Webber and Richer de Forges, 1995: 514.

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

Oxypleurodon luzonicum.-Ng and Richer de Forges, 2007: 63.

*Material examined.* Australia. WA. Leveque L27 transect (15°00.52'S–14°59.05'S, 121°38.08'E –121°39°10'E), 205–211 m, 25 Jun 2007 (stn SS05/2007 099), NMV J58221 (2 females 11.7 x 9.7 mm, 11.8 x 10.1 mm; juvenile 5 x 3.9 mm).

*Remarks.* These specimens from the northern part of the Western Australian continental slope fit well with the description of *O. luzonicum* from the Philippines. These records extend the distribution of the species considerably south, to 15°S in the western Indian Ocean. The species' distribution does not overlap with that of another *Oxypleurodon* from the southern part of the Western Australian slope which is described below as a new species.

## Oxypleurodon wilsoni sp. nov.

Figure 1b

#### Rochinia aff. luzonica.-Poore et al., 2008: 56 (colour fig.).

*Material examined.* Holotype: Australia. WA. Off Two Rocks (31°36.32'S–31°37.02'S, 114°58.52'E–114°58 16'E), 329–370 m, 19 Nov 2005 (stn SS10/2005 006), WAM C400529 (ovigerous female 15.7 x 15.4 mm).

Paratypes. Collected with holotype, WAM C400530 (ovigerous female, 16.4 x 14.0 mm). WA. Off Abrolhos (29°00.46'S–29°01.23'S, 113°46.44'E –113°47.06'E), 419–439 m, 03 Dec 2005 (stn SS10/2005 088), NMV J54070 (male, 18.5 x 19.6 mm). Off Two Rocks (31°37.05'S–31°37.23'S, 114°58.19'E –115°14.39'E), 364–404 m, 19 Nov 2005 (stn SS10/2005 004), NMV J54069 (3 males, 14.4 x 13.5 mm, 13.9 x 13.4 mm, 9.6 x 8.8 mm).

*Diagnosis.* Carapace to 18.5 mm, long, pyriform. Carapace, including pseudorostral spines, covered with short setae. Carapace bearing several elevated plates and tubercles arranged as follows: 1 cardiac plate, round and forming a conical point in its middle; 2 branchial plates, thin, sharp and pointing laterally; 2 epibranchial plates, thin, sharp and oriented obliquely; 1 ovoid mesogastric plate; 2 hepatic plates touching the postocular plates forming together a L-shape; 1 small subbranchial oblong plate on the lateral border; 2 supraocular plates, sharp anteriorly; 1 anterogastric tubercle; 1 tubercle on each side of mesogastric plate; posterior border of the carapace thick, forming medially a large tooth pointing backward. Pseudorostral spines long and sharp, diverging in a V. Eyes small, completely inserted in the orbits, the postocular

plate forming a cup. Basal antennal article fused with carapace. Cheliped shorter than percopod 2. Articles of ambulatory legs cylindrical. Female abdomen of 7 segments.

*Distribution.* South-western WA slope (29°–31.5°S), 329–439 m depth.

*Etymology*. Dedicated to Dr Robin Wilson in recognition of his enthusiasm and hard work during the cruise when this species was collected, and at all times.

*Remarks. Oxypleurodon wilsoni* sp. nov. belongs in the group of species of *Oxypleurodon* having long and sharp branchial plates: *O. luzonicum* (Rathbun, 1916), *O. stuckiae* (Guinot and Richer de Forges, 1986b), *O. karubar* Richer de Forges, 1995, and *O. lowryi* (Richer de Forges, 1992).

In *O. wilsoni* the supraocular plate is sharp anteriorly whereas it is rounded in *O. luzonicum*. The cardiac plate is small, round and elevated in the middle (round and flat in *O. luzonicum*). The epibranchial plates are oblong, pointing externally in *O. wilsoni* but small and triangular in *O. luzonicum*. The mesogastric plate is ovoid but lozenge-shaped in *O. luzonicum*. Between the mesogastric spine and the hepatic spine lies a small tubercle absent in *O. luzonicum*.

*O. wilsoni* is distinguishable from *O. stuckiae* by the presence of a supraocular spine. The pseudorostral spines are longer and less diverging in *O. wilsoni* than in *O. stuckiae*. An anterior gastric tubercle in *O. wilsoni* is not seen in *O. stuckiae*.

*O. wilsoni* differs from *O. karubar* in the following characters: the epibranchial plate is straight but curved in *O. karubar*; the pseudorostral spines are straight but enlarged basally in *O. karubar*; the anterior part of the supraocular plate is spiniform in *O. wilsoni* but rounded in *O. karubar*; the hepatic plate touches the postocular plate forming together an L-shape in *O. wilsoni* but these are several disjointed pieces in *O. karubar*.

The shape of the carapace is pyriform in *O. wilsoni* while it is large and rounded posteriorly in *O. lowryi*. The supraocular plate points forward in *O. wilsoni* but laterally in *O. lowryi*. The branchial spines are straight in *O. wilsoni* while they are curved in *O. lowryi*.

The ambulatory legs of the holotype and paratype from the same sample are mixed and it is not possible to be precise about the relative lengths of percopods.

The species was collected over narrow latitudinal and depth ranges.

## Rochinia Milne-Edwards, 1875

*Remarks. Rochinia* was redefined by Tavares (1991) updating the extensive revision by Griffin and Tranter (1986a) who provided a key to 29 species of a more inclusive genus. Davie (2002) included the genus in the subfamily Pisinae of family Majidae. Five species have been previously recorded from Australia (Davie, 2002). Ng and Richer de Forges (2007) listed the 24 species known from the Indo-West Pacific and ten from the north-western and western Atlantic and eastern Pacific Oceans. Here, we add three species described originally from the Indo-West Pacific to the Australian fauna, comment briefly on three

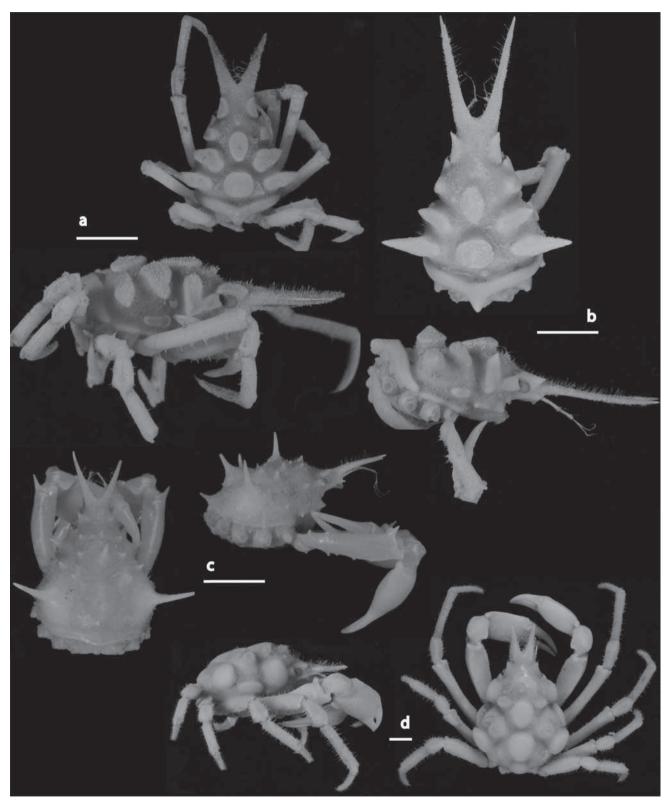


Figure 1. Lateral and dorsal views, scale = 5 mm. a, *Oxypleurodon luzonicum* (female, NMV J58221). b, *Oxypleurodon wilsoni* sp. nov. (holotype, WAM C400259). c, *Rochinia annae* sp. nov. (holotype, WAM C400531). d, *Rochinia carinata* (male, NMV J58872).

others, and describe a new species from Western Australia.

#### Rochinia annae sp. nov.

Figures 1c, 3

Rochinia sp. MoV5119.—Poore et al., 2008: 56. Rochinia fultoni.—Poore et al., 2008: 56 (colour fig.).

*Material examined.* Holotype: Australia, WA. Off Two Rocks (31°37.05'S–31°37.23'S, 114°58.19'E–115°14.39'E), 364–404 m, 19 Nov 2005 (SS10/2005 004), WAM C400531 (male, 11.9 x 8.6 mm).

Paratypes. Same data as holotype. WAM C400532 (11 specimens), NMV J54179 (87 specimens, smallest is a male of 7.3 x 4.6 mm).

Othermaterial. Australia. WA. OffKalbarri (27°55.43'S-27°56.01'S, 113°08.17'E-113°08.38'E), 252-253 m, 04 Dec 2005 (stn SS10/2005 099), NMV J54058 (1 male). Off Two Rocks (31°36.32'S-31°37.02'S, 114°58.52'E-114°58.16'E), 329-370 m, 19 Nov 2005 (stn SS10/2005 006), NMV J54178 (2 ovigerous females 10.5 x 8.2 mm, 8.6 x 6.9 mm). Jurien Bay (29°52.04'S-29°52.26'S, 114°23.13'E-114°23.53'E), 414-401 m, 02 Dec 2005 (stn SS10/2005 078), NMV J54253 (7 iuveniles). Off Lancelin (31°00.45'S-31°00.17'S, 114°49.30'E-114°49.23'E), 394-393 m, 01 Dec 2005 (stn SS10/2005 075), NMV J54238 (1 male). Off Bunbury (33°00.30'S-33°00.07'S, 114°34.16'E-114°34.30'E), 421-414 m, 20 Nov 2005 (stn SS10/2005 013), NMV J54073 (male 8.3 x 5.7 mm), J54238 (1 female 6.0 x 4.6 Off D'Entrecasteaux (35°04.11'S-35°04.14'S, mm). 115°20.10'E-115°20.53'E), 378-379 m, 21 Nov 2005 (stn SS10/2005 017), NMV J54916 (1 male 9.5 x 10.7 mm, 2 ovigerous females 8.4 x 6.1 mm, 10.5 x 7.4 mm, 2 females 7.6 x 4.7 mm, 7.2 x 5.2 mm).

*Diagnosis.* Carapace to 11.9 mm long, pyriform with long diverging pseudorostral spines (one-third length of carapace). Dorsal surface spiny, longest spines as follows: 2 longest and thin branchial spines twice as long as other spines; 1 intestinal spine; 1 long cardiac spine; 1 long mesogastric spine; 2 hepatic spines; in protogastric area, a line of 3 short blunt spines, 2 other spines alongside mesogastric spine; 2 short spines on epigastric area; 2 short spines on lower side of cardiac area.

Cheliped of male short with chelae inflated; merus cylindrical, smooth, with 5 blunt teeth on inferior border, upper anterior angle forming 2 teeth; carpus short and triangular, forming a carina at its interior border; propodus inflated and carinate on upper border; fingers thin with serrulated interior border; dactylus border forming a bump in its first third. Ambulatory legs long and thin; articles cylindrical, pereopod 2 longer than pereopod 1 (pereopod 2 merus reaching little beyond ridge on reflexed carpus of pereopod 1).

Eyes small, protected by cupped postocular tooth; large supraocular tooth. Basal antennal article with long tooth on its antero-external angle; article fused to carapace. Antenna flagellum longer than pseudorostrum; antennule fossae sharp anteriorly. Border of buccal frame expanded laterally. Abdomen of 7 segments. Pleopod 1 of pisid type, distally expanded to an oblique truncate spinose margin, 16 setae in groove (fig. 3).

*Distribution.* South-western WA slope (27°–35°S), 252–424 m depth.

*Etymology*. The species is named in honour of Anna McCallum, who sorted and made preliminary identifications of many of

the Decapoda of the Western Australian cruises.

Remarks. Of the 35 species described in the genus Rochinia few have long branchial spines. The only species comparable to R. annae sp. nov. are: R. pulchra (Miers, 1886), R. riversandersoni (Alcock, 1895), R. sibogae Griffin and Tranter, 1986, R. galathea Griffin and Tranter, 1986, R. griffini Davie and Short, 1989, and R. paulayi Ng and Richer de Forges, 2007. R. galathea has a long branchial spine but a long and flat hepatic spine, very different from the spine of R. annae. R. sibogae has two very long branchial spines pointing laterally but two other long spines, one intestinal and one cardiac (one long gastric spine in *R. annae*). Also, the postocular tooth is distinct from the hepatic spine in *R*. annae whereas it is a fused plate in *R*. sibogae. R. pulchra has long branchial spines but a different pattern in the other long spines of the carapace: four spines in the median line (three in R. annae). R. pulchra possesses pseudorostral spines about three-quarters as long as the carapace but these are one third as long in R. annae. R. riversandersoni is a large species with long branchial spines and long epibranchial spines. R. annae has only a granule at this place. R. paulayi and R. griffini are also large species, very spiny and showing a totally different arrangement of spines from that in *R. annae*.

Although there is abundant material no specimen is intact and it is not possible to be precise about the relative lengths of pereopods.

The species occurs over a wide geographic range along the south-western WA coast.

# Rochinia carinata Griffin and Tranter, 1986

# Figure 1d

*Rochinia carinata* Griffin and Tranter, 1986a: 178, figs 56, 64e, f, pl. 12.—Ng and Richer de Forges, 2007: 62.

Rochinia sp. MoV 5136.—Poore et al., 2008: 56.

*Material examined.* Australia. WA. Off Barrow Island (21°00.24'S–21°00.02'S, 114°22.52'E–114°22.30'E), 399–408 m, 13 Dec 2005 (stn SS10/2005 172), NMV J53872 (1 male 28.2 x 20.7 mm). Off Ningaloo North (21°58.13'S–21°58.45'S, 113°47.35'E–113°47.28'E), 356–324 m, 11 Dec 2005 (stn SS10/2005 157), NMV J53873 (1 female juvenile 14.2 x 9.9 mm). Off Red Bluff (23°59.12'S–23°59.43'S, 112°32.02'E–112°31.44'E), 411 m, 08 Dec 2005 (stn SS10/2005 130), NMV J54067 (1 juvenile 10.5 x 6.5 mm).

*Remarks. Rochinia carinata* was described from the Kei (Kai) Islands in Indonesia and has not been recorded anywhere else since. The specimens from the south-western Australian coast differ from the typical material from Indonesia (Griffin and Tranter, 1986a: pl. 12). The merus of pereopods 2 and 3 is cylindrical in cross section vs carinate in the Indonesian specimens. The mesogastric plate (islet) looks more ovoid in *R. carinata* from Western Australia whereas it is more rounded in the typical material. The pseudorostrum spines are more elongated in the specimens from South-western Australia than in the specimens from Indonesia.

The species' range is extended from  $5^{\circ}$ S in Indonesia to 24°S, near Shark Bay, WA. The depth range in Indonesia is 204–325 m and 324–411 m in WA.

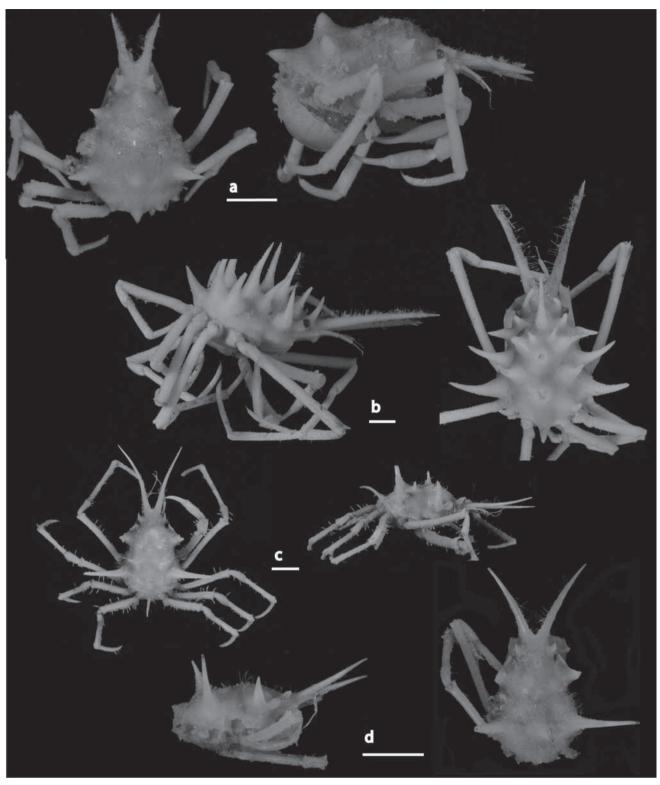


Figure 2. Lateral and dorsal views, scale = 5 mm. a, *Rochinia fultoni* (female, NMV J4730). b, *Rochinia pulchra* (female, NMV J55947). c, *Rochinia sibogae* (male, NMV J58142). d, *Rochinia strangeri* (female, NMV J55427).

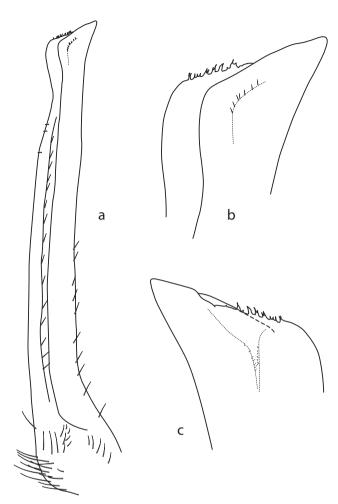


Figure 3. *Rochinia annae* sp. nov. Male left pleopod 1 (paratype WAM C400531). a, anterior view. b, detail of tip, anterior view. c, detail of tip, posterior view.

## Rochinia fultoni (Grant, 1905)

## Figure 2a

Hyastenus Fultoni Grant, 1905: 313, pl. 11 fig. 1.

*Rochinia fultoni.*—Griffin, 1966: 280.—Griffin and Tranter, 1986a: 176.—Poore, 2004: 387, fig. 118f.—Ng and Richer de Forges, 2007: 62.

*Material examined.* Australia. Tas. Eastern Bass Strait, 100 km NE of North Point, Flinders I., ( $38^{\circ}52.36'S$ ,  $148^{\circ}25.12'E$ ), 140 m, 15 Nov 1981 (stn BSS 170 S), NMV J4730 (2 ovigerous females 15.0 x 10.0 mm, 11.3 x 7.5 mm; male 11.7 x 7.0 mm). 70 km ENE of North Point, Flinders I. ( $39^{\circ}28.24'S$ ,  $148^{\circ}41.48'E$ ), 110 m, 28 Mar 1979 (stn BSS 35), NMV J23091 (juvenile). 37 km NE of Cape Tourville ( $41^{\circ}52.52'S-41^{\circ}59.34'S$ ,  $148^{\circ}37.56'E-148^{\circ}31$  08'E), 124 m, 30 Oct 1988 (stn SLOPE 85), NMV J16059 (male). Vic. W of Cape Nelson, 183 m, 06 Jun 1969, NMV J8610 (male, ovigerous female)

*Remarks*. This species has already been mentioned from the east and south coasts of Australia. Most records in Museum

Victoria are from the continental margin of eastern Bass Strait.

### Rochinia mosaica (Whitelegge, 1900)

Pugettia mosaica Whitelegge, 1900: 141, pl. 35 figs 5-7.

*Doclea profunda* Rathbun, 1918: 16, pl. 7 figs 1, 2.—Hale, 1927: 134, fig. 134.

Rochinia mosaica.—Griffin and Tranter, 1986a: 185, figs 58, 62e, f.—Griffin and Tranter, 1986b: 363.—Poore, 2004: 387.—Ng and Richer de Forges, 2007: 62.

Material examined. Australia. Tas. Eastern Bass Strait, 100 km NE of North Point, Flinders I. (38°52.36'S, 148°25.12'E), 140 m, 15 Nov 1981 (stn BSS 170 S), NMV J4731 (female 9.3 x 6.6 mm). Vic. Eastern Bass Strait, S of Waratah Bay (38°59.54'S, 146°00'E), 64 m, 26 Nov 1973 (stn K7-73-63), NMV J12157 (2 males 13.2 x 9.4 mm, 12.7 x 8.7 mm). Central Bass Strait, 100 km SSE of Cape Liptrap (39°45.54'S, 145°33.18'E), 74 m, 13 Nov 1981 (stn BSS 156), NMV J10642 (juvenile); NMV J4732 (female 8.1 x 5.1 mm). SA. Great Australian Bight (33°15.52'S-33°16.03'S, 130°37.50'E-130°37 07'E), 139-141 m, 09 May 2000 (stn SS01/00 334), NMV J52198 (3 males 8.5 x 5.2 mm, 7.3 x 4.8 mm, 7.2 x 4.3 mm). Great Australian Bight (33°16.00'S-33°16.36'S, 130°43.09'E-130°48.38'E), 134-130 m, 10 May 2000 (stn SS01/00 351), NMV J52196 (2 ovigerous females 11.3 7.7 mm, 10.9 x 7.4 mm). Great Australian Bight х (33°16.00'S-33°16.01'S, 130°36.35'E-130°38.02'E), 143-140 m, 10 May 2000 (stn SS01/00 350), NMV J52197 (3 males 9.1 x 5.8 mm, 9.4 x 5.9 mm, 7.7 x 4.5 mm; ovigerous female 9.1 x 5.7 mm; female 7.1 x 4.5 mm; juvenile 4.8 x 3.3 mm).

*Remarks.* This material from south-eastern Australia fits well with the redescription of *R. mosaica* by Griffin and Tranter (1986a). Whitelegge described this species in the genus *Pugettia* in which the carapace has a similar pattern but the first pleopod of *Pugettia* is very different from that of *Rochinia*. The records are well within the reported distribution of the species from central Queensland, through Bass Strait to the Great Australian Bight. The most westerly is 130°W near the SA–WA border.

## Rochinia pulchra (Miers, 1886)

Figure 2b

Anamathia pulchra Miers, 1886: 26, pl. 4 figs 1a-c.

*Scyramathia pulchra*.—Alcock, 1895: 202.—Doflein, 1904: 84, pl. 27 fig. 12.

*Rochinia pulchra.*—Sakai, 1938: 278, fig. 35, pl. 37 fig. 4.—Sakai, 1976: 223, pl. 79 fig. 1.—Serène and Lohavanijaya, 1973: 56, figs 119–122, pl. 11A.—Takeda and Kurata, 1977: 144, fig. 4a, b.— Griffin, 1976: 210.—Griffin and Tranter, 1986b: 363.—Davie and Short, 1989: 181.—Ng and Richer de Forges, 2007: 62.

Not *Rochinia pulchra.*—Griffin and Tranter, 1986a: 187 (part, NSW specimen) (=*Rochinia griffini* Davie and Short, 1989)

*Material examined.* Australia. WA. Ashmore L30 transect (12°31.46'S–12°30.50'S, 123°25.38'E–123°25.22'E), 401–404 m, 07 Jul 2007 (stn SS05/2007 192), NMV J58172 (female 17.3 x 10.7 mm). Kulumburu L29 transect (13°15.54'S–13°16.21'S, 123°22.27'E–123°21.24'E), 394–390 m, 07 Jul 2007 (stn SS05/2007 180), NMV J58025 (female 31.5 x 20.1, male 34.5 x 21.7 mm). Leveque L27 transect (14°49.02'S–14°48.32'S, 121°27.33'E–121°29.34'E), 407–392 m, 27 Jun 2007 (stn SS05/2007 107), NMV J55947 (female 23.3 x 16.6 mm). Leveque L27 transect (14°51.12'S–14°50.43'S,

121°25.53'E–121°27.01'E), 403–396 m, 03 Jul 2007 (stn SS05/2007 144), NMV J58220 (ovigerous female 28.7 x 21.9 mm). Lacepede L26 transect (15°47.34'S–15°48.30'S, 121°03.30'E–121°02.53'E), 119–111 m, 01 Jul 2007 (stn SS05/2007 129), NMV J55681 (male 12.9 x 10.2 mm).

*Remarks.* This species, characterised by its very long and numerous spines, has already been recorded from the northwest slope of Australia. The other records are from Japan to the Philippines. All these specimens are from extreme north WA. Griffin and Tranter (1986a) tentatively identified a female from NSW as this species but it was described as *Rochinia griffini* Davie and Short, 1989.

### Rochinia sibogae Griffin and Tranter, 1986

Figure 2c

Rochinia sibogae Griffin and Tranter, 1986b: 363, fig. 12.

*Rochinia riversandersoni.*—Griffin, 1976: 211.—Griffin and Tranter, 1986a: 187.—Davie and Short, 1989: 181.—Ng and Richer de Forges, 2007: 62.

*Materialexamined*.WA.MermaidL24transect(16°38.04'S–16°38.46'S, 119°09.13'E–119°08.02'E), 990–987 m, 17 Jun 2007 (stn SS05/2007 068), NMV J58024 (ovigerous female 16.2 x 10.6 mm). Barrow L1 transect (20°57.09'S–20°57.34'S, 114°00.47'E–114°00.26'E), 1000 m, 09 Jun 2007 (stn SS05/2007 002), NMV J58142 (male 18.4 x 12.6 mm).

*Remarks.* This species was described by Griffin and Tranter (1986b) from specimens from Ceram Island, Indonesia. The authors drew attention to the common confusion between *R. sibogae* and *R. riversandersoni* (Alcock, 1895) from India. They gave a short key to species of this group of *Rochinia* where *R. sibogae* is clearly separated from the others by the hepatic plate fused with the postocular plate. This new locality for *R. sibogae* extends the range of the species far south of Indonesia, from  $3^{\circ}$ S to  $20^{\circ}$ S on the north-west slope at 1000 m, a similar depth to the type locality.

## Rochinia strangeri Serène and Lohavanijaya, 1973

Figure 2d

*Rochinia strangeri* Serène and Lohavanijaya, 1973: 57, figs 123–128, pl. 11B, C.— Griffin and Tranter, 1986a: 175 (key).—Ng and Richer de Forges, 2007: 62.—Poore et al., 2008: 56.

Rochinia aff. strangeri.-Serène and Vadon, 1981: 128, pl. 4D.

*Material examined*. Australia. WA. Abrolhos (29°03.39'S, 29°04.41'S, 113°38.10'E–113°37.48'E), 1000–1037 m, 02 Dec 2005 (stn SS10/2005 084), NMV J55427 (ovigerous female 11.0 x 6.8 mm).

*Remarks.* This species was described by Serène and Lohavanijaya (1973) from only two specimens from the South China Sea. The closest species is *R. riversandersoni* (Alcock, 1895) from India. Serène and Vadon (1981), in a preliminary list of Brachyura from the MUSORSTOM collection in the Philippines, mentioned a specimen as *Rochinia* aff. *strangeri*. The photograph of this specimen looks very similar to the specimen from south-western Australia (29°S).

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#### References

- Alcock, A. 1895. Materials for a carcinological fauna of India. No. 1. The Brachyura Oxyrhyncha. *Journal of the Asiatic Society of Bengal* 64: 157–291, pls 153–155.
- Davie, P.J.F. 2002. Crustacea: Malacostraca: Eucarida (Part 2): Decapoda - Anomura, Brachyura. Vol. 19.3B. CSIRO Publishing: Melbourne. xiv, 641 pp.
- Davie, P.J.F., and Short, J.W. 1989. Deepwater Brachyura (Crustacea: Decapoda) from southern Queensland, Australia with descriptions of four new species. *Memoirs of the Queensland Museum* 27: 157–87.
- Doflein, F. 1904. Brachyura. Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition auf dem Dampfer "Valdivia" 1898–1899 6: 1–314, pls 311–58.
- Estampador, P. 1937. A check list of Philippine crustacean decapods. *Philippine Journal of Science* 62: 465–559.
- Estampador, P. 1959. Revised check list of Philippine crustacean decapods. *National Applied Science Bulletin, University of the Philippines* 17: 1–127.
- Grant, F.E. 1905. Crustacea dredged off Port Jackson in deep water. Proceedings of the Linnean Society of New South Wales 1905: 312–24, pls 310–11.
- Griffin, D.J.G. 1966. A review of the Australian majid spider crabs (Crustacea, Brachyura). Australian Zoologist 13: 259-298, pls 215-217.
- Griffin, D.J.G. 1976. Spider crabs of the family Majidae (Crustacea: Brachyura) from the Philippine Islands. *Journal of Natural History* 10: 179–222.
- Griffin, D.J.G., and Tranter, H.A. 1986a. The Decapoda Brachyura of the Siboga Expedition. Part VIII Majidae. Siboga Expéditie 39: 1–335.
- Griffin, D.J.G., and Tranter, H.A. 1986b. Some majid spider crabs from the deep Indo-West Pacific. *Records of the Australian Museum* 38: 351–71.
- Guinot, D., and Richer de Forges, B. 1986a. Crustacés Décapodes : Majidae (genres Platymaia, Cyrtomaia, Pleistacantha, Sphenocarcinus et Naxioides). In: Résultats des Campagnes MUSORSTOM 1 and 2. Mémoires du Muséum National d'Histoire Naturelle, Paris, ser. A (Zoologie) 133: 83–178.
- Guinot, D., and 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.
- Hale, H.M. 1927. *The crustaceans of South Australia. Part 1.* South Australian Government Printer: Adelaide. 201 pp.

- MacLeay, W.S. 1838. On the brachyurous decaped Crustacea brought from the Cape by Dr Smith. Pp. 53–71. In: Smith, A. (ed.) *Illustrations of the Annulosa of South Africa, Illustrations of the Zoology of South Africa*. Smith, Elder and Co.: London.
- Miers, E.J. 1886. Report on the Brachyura collected by H.M.S. Challenger during the years 1873–76. Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873–76. Zoology 17: 1–362, pls 361–329.
- Milne-Edwards, A. 1875. Études sur les Xiphosures et les Crustacés podophthalmaires. Pp. 1-368, pls 361-361 in: *Mission scientifique au Mexique et dans l'Amerique centrale. Recherches Zoologiques pour servir à l'histoire de la faune de l'Amerique centrale et du Mexique. Part 5.* Imprimerie Nationale: Paris,.
- Ng, P.K.L., and Richer de Forges, B. 2007. A new species of deepwater spider crab of the genus *Rochinia* A. Milne-Edwards, 1875, from Guam (Crustacea: Brachyura: Majidae). *Zootaxa* 1610: 61–68.
- Ng, P.K.L., Guinot, D., and Davie, P.J.F. 2008. Systema Brachyurorum; Part I. An annotated checklist of extant brachyuran crabs of the world. *Raffles Bulletin of Zoology* 17: 1–286.
- Poore, G.C.B. 2004. Marine decapod Crustacea of southern Australia. A guide to identification (with chapter on Stomatopoda by Shane Ahyong). CSIRO Publishing: Melbourne. 574 pp.
- Poore, G.C.B., McCallum, A.W., and Taylor, J. 2008. Decapod Crustacea of the continental margin of south-western and central Western Australia: preliminary identifications of 524 species from FRV Southern Surveyor voyage SS10-2005. Museum Victoria Science Reports 11: 1–106.
- Rathbun, M.J. 1916. Scientific results of the Philippine cruise of the Fisheries Steamer 'Albatross', 1907–1910. No. 34. New species of crabs of the families Inachidae and Parthenopidae. *Proceedings* of the United States National Museum 50: 527–59.
- Rathbun, M.J. 1918. Report on the spider crabs obtained by the F.I.S. "Endeavour" on the coasts of Queensland, New South Wales, Victoria, South Australia and Tasmania. Biological Results of the Fishing Experiments carried out by the F.I.S. "Endeavour", 1909–14 5: 1–29, pls 21–15.

- Richer de Forges, B. 1992. A new species of *Sphenocarcinus* A. Milne Edwards, 1875 trom Tasmantid guyots, *S. lowryi* n. sp. (Crustacea, Decapoda, Brachyura). *Records of the Australian Museum* 44: 1–5.
- Richer de Forges, B. 1995. New findings and new species of deep-sea majids of the genus Oxypleurodon Miers, 1886. Crustaceana 68: 43–60.
- Sakai, T. 1938. Studies on the crabs of Japan. 3. Brachygnatha Oxyrhyncha. Yokendo: Tokyo. 193–364, pls 120–141.
- Sakai, T. 1976. *Crabs of Japan and adjacent seas*. Kodansha Ltd: Tokyo. 773 pp. plus volume of 251 plates.
- Serène, R., and Lohavanijaya, P. 1973. The Brachyura (Crustacea: Decapoda) collected by the Naga Expedition, including a review of the Homolidae. *Naga Report. Scientific Results of Marine Investigations of the South China Sea and the Gulf of Thailand* 4: 1–186, 186 figs, 121 pls.
- Serène, R., and Vadon, C. 1981. Crustacés Décapodes: Brachyoures. Liste préliminaire, description de formes nouvelles et remarques taxonomiques. Pp. 117–140 in *Résultats des Campagnes MUSORSTOM. 1. Philippines (18–28 mars 1976).* Vol. 1. ORSTOM – Muséum National d'Histoire Naturelle: Paris.
- Takeda, M., and Kurata, Y. 1977. Crabs of the Ogasawara Islands IV. A collection made of the new volcanic island, Nishino-shimashinto, in 1975. Bulletin of the National Science Museum, Tokyo, Ser. A (Zoology) 3: 91–111.
- Tavares, M. 1991. Rédefinition 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 13: 159–179.
- Webber, W.R., and 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: 501–516.
- Whitelegge, T. 1900. Scientific results of the trawling expedition of H.M.C.S. "Thetis" off the coast of New South Wales in February and March, 1898. Crustacea. Part I. Memoirs of the Australian Museum 4: 135–199, pls 132–135.