DEEPWATER BRACHYURA (CRUSTACEA : DECAPODA) FROM SOUTHERN QUEENSLAND, AUSTRALIA WITH DESCRIPTIONS OF FOUR NEW SPECIES

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Davie, P.J.F. and Short, J.W. 1989 11 13: Deepwater Brachyura (Crustacea : Decapoda) from southern Queensland, Australia with descriptions of four new species. *Mem. Qd Mus.* **27**(2): 157-187. Brisbane. ISSN 0079-8835.

Twenty-eight species of deepwater crabs are recorded from mid-and southeastern Queensland taking the number now known to 33. Nine species have not previously been recorded from Australia, *viz Dicranodromia baffini* Alcock and Anderson, *Latreillopsis bispinosa* Henderson, *Paromola japonica* Parisi, *Paromotopsis boasi* Wood-Mason, *Notopoides latus* Henderson, *Cyrtomaia horrida* Rathbun, *Pleistacantha oryx* Ortmann, *Benthochascon hemingi* Alcock and Anderson, *Intesius pilosus* Guinot and Richer de Forges. Four new species are described. *Ranilia tenuiocellus* sp. nov. resembles *R. horikoshi* Takeda in having degenerated eyes but differs in the lack of orbital teeth. *Ranilia triruſomaculata* sp. nov. is described from Western Australia and Queensland. It is distinguished from *R. misakiensis* Sakai by the three dorsal red spots, the sharp distal spine on the superior border of the palm, the lack of a raised ridge on the wrist, and carapace proportions. A key to Indo-west Pacific *Ranilia* H. Milne Edwards species is given. *Mursia microspina* sp. nov. differs from its closest congener *M. hawaiiensis* Rathbun by having shorter postero-lateral borders, a smaller length to breadth ratio, and by the shape of the tubercles on the lower inferior border of the chela. *Rochinia griffini* sp. nov. is unique in the disposition and length of the carapace spines. *Carcinonectes pacificus* Stephenson is synonomised with *Benthochascon hemingi* Alcock and Anderson.

☐*Crustacea, Brachyura, Australia, new records, new species, Homolodromiidae, Dromiidae, Homolidae, Raninidae, Calappidae, Leucosiidae, Majidae, Portunidae, Geryonidae, Goneplacidae.*

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Collections of deepwater crustacea from Queensland have been few. Campbell (1971) reported on collections made by the trawler *Nimbus* off southern Queensland, and this appears to be the first account of any deepwater species. The *Nimbus* survey however, was not specifically deepwater and although some shots were made as deep as 204 fm (373 m), most were in quite shallow water. Only five stations were from depths of 100 fm (183 m) or more, and from these only seven species were recorded. The F.I.S. *Endeavour* undertook exploratory offshore dredging and trawling but deepwater work seems to have been confined to southern Australia (see Rathbun, 1923). The work of most direct relevance was that done on collections made by the crew of the *Kapala* and reported on by Griffin and Brown (1976). They found fourteen species of crab from deep water off the coast of New South Wales.

Between 1980 and 1984 the Queensland Fisheries Service undertook a number of exploratory cruises to investigate the potential of fish and crustacean fisheries in the deeper waters of the lower continental shelf and slope. All trawls were using Siebenhausen prawn nets, so in general the smaller faunal components were not brought to the surface.

The first expedition was the *Craigmin* survey. This was conducted between 21°30'S and 26°31'S in September-October 1980. This was a combined Queensland and Commonwealth Government survey but unfortunately much of the material was poorly preserved. The next survey was aboard the *Iron Summer* between July 1982 and June 1983 (see Potter, 1984). This covered the area between 26°20'S and 28°10'S (i.e. between Noosa and Point Danger, SEQ) The *Southern Intruder* operated out of Bundaberg between August 1983 and April 1984 (see Dredge and Gardiner, 1984) sampling the Saumarez Plateau (22°-24°30'S) in depths between 150 m and 750 m. This was in many ways a resample of the earlier *Craigmin* survey.

This paper reports on these recent collections and summarises the deepwater brachyuran crab fauna currently known from southern Queensland. As there is a further paper projected on collections from deep water off northern Queensland, discussion on biogeographic aspects will be reserved for that paper. The material has been collected largely by the Queensland Fisheries Service (Q.F.S.). The bulk of the material is housed at the Queensland Museum (QM) although some material in the collections of the Australian

Museum, Sydney (AM) has also been examined. Synonomies are not necessarily complete. Measurements are given as carapace length (cl.) or width (cw.), but unless otherwise stated, measurements are of carapace width. All drawings were made with the aid of a *camera lucida.*

SPECIES LIST OF DEEPWATER BRACHYURA TRAWLED OFF SOUTHEAST AND MID-EASTERN QUEENSLAND

* Denotes species reported by Campbell (1971) from SEQ and not found during the present study.

Section PODOTREMATA
Family HOMOLODROMIIDAE
Dicranodromia baffini (Alcock and Anderson, 1899)

Family DROMIIDAE
Petalomera wilsoni (Fulton and Grant, 1902)
* *Cryptodromia areolata* Ihle, 1913

Family HOMOLIDAE
Homola orientalis Henderson, 1888
Homolochunia kullar Griffin and Brown, 1976
Latreillopsis bispinosa Henderson, 1888
Latreillopsis petterdi Grant, 1905
Paromola japonica Parisi, 1915
Paromolopsis boasi Wood-Mason, 1891

Family RANINIDAE
Notopoides latus Henderson, 1888
Ranilia tenuiocellus sp. nov.
Ranilia trirufomaculata sp. nov.

Section HETEROTREMATA
Family CALAPPIDAE
Mursia microspina sp. nov.

Family LEUCOSIIDAE
Arcania undecemspinosa de Haan, 1841
* *Ebalia brevimana* Campbell, 1971
* *Ebalia longimana* Ortmann, 1892
* *Merocryptus lambriformis* A. Milne Edwards, 1873
* *Crytocnemus hemispheroides* Campbell, 1971

Family MAJIDAE
Cyrtomaia horrida Rathbun, 1916
Cyrtomaia suhmii Miers, 1886
Leptomithrax waitei (Whitelegge, 1900)
Platymaia fimbriata Rathbun, 1916
Platymaia maoria Dell, 1963
Platymaia remifera Rathbun, 1916
Pleistacantha orxy Ortmann, 1893
Rochinia griffini sp. nov.

Family PORTUNIDAE
Benthochascon hemingi Alcock and Anderson, 1899
Charybdis (Charybdis) miles (de Haan, 1835)
Charybdis (Gonioneptunus) bimaculata (Miers, 1886)
Ovalipes molleri (Ward, 1933)
Parathranites orientalis Miers, 1886

Family GERYONIDAE
Geryon affinis A. Milne Edwards and Bouvier, 1894

Family GONEPLACIDAE
Intesius pilosus Guinot and Richer de Forges, 1981

Family HOMOLODROMIIDAE

Dicranodromia baffini (Alcock and Anderson, 1899)

Arachnodromia Baffini Alcock and Anderson, 1899, pp.7,8; Alcock, 1899a, p.19, pl.2, figs 1, 1a–c; 1899b, p.132; 1901, p.33, pl.1, figs 1, 1a–c.
Dicranodromia baffini: Ihle, 1913, pp.86,89; Gordon, 1950, pp.204–5, text-figs 1A, 1B.

MATERIAL EXAMINED

QM W10801, ♂ (16.3 mm), trawled M.V. 'Iron-Summer', 27°59.37'S, 154°00.12'E, 590 m, 31.iii.1983, R. Morton (Q.F.S.).

REMARKS

Only two species of *Dicranodromia* have been reported from the Indo-West Pacific — *D. baffini* (Alcock and Anderson, 1899) and *D. doderleini* (Ortmann, 1892). These species are apparently closely related and it seems that characters for their separation are still poorly defined. *D. doderleini* has been considered endemic to Japan, although Serène and Vadon (1981) have recorded it from the Philippines without commenting on the features which distinguish their specimens from *D. baffini.*

Our specimen agrees with Alcock and Anderson's (1899) description of *D. baffini* in most respects. On the hepatic regions are a few spinules which are distinctly shown in the figures of Alcock

(1899a, pl.1, fig.1; 1901, pl.1, fig. 1), but Sakai (1976) remarks that the hepatic regions of *D. baffini* are unarmed, and conversely that *D. doderleini* has a few spinules in this region. Sakai (1976) also claims that the posterior carapace border is straight in *D. baffini* but invaginated in *D. doderleini* — it is clearly invaginated on our specimen and in the figure of *D. baffini* provided by Alcock (1899a, pl.1, fig.1). This character is probably of dubious status.

The outer surface of the palm of the chelipeds is uniformly covered with tubercles as Sakai describes for *D. baffini* and the length to breadth ratio of the telson is very close to that figured by Alcock (1901, pl.1, fig. 1b). Sakai (1976) states that the telson of *D. doderleini* is distinctly more elongate.

Points of difference with the original description are: the flagellum of antenna is about equal to the length of carapace (excluding rostral spines), not longer than the carapace; and the first leg (only one is intact) is less than twice the length of the carapace (*c.* 1.7×).

We feel that there is still some confusion in published accounts of these two species. However our specimen is closer to *D. baffini* than to *D. doderleini* and in our opinion the differences noted — considering the small amount of material which has apparently been reported on — are insufficient grounds for describing our specimen as new.

DISTRIBUTION

Andamans, Travancore Coast, Maldives, and southeast Queensland, Australia.

Family DROMIIDAE

Petalomera wilsoni (Fulton and Grant, 1902)

Cryptodromia wilsoni Fulton and Grant, 1902, p.61, pl.9.

Cryptodromia lateralis: Chilton, 1911, pl.29 (not of Gray).

Dromia pseudogibbosa Parisi, 1915, p.102, pl.2, figs 1,2; Balss, 1922, p.106; Yokoya, 1933, p.97.

Petalomera lateralis: Richardson, 1949, p.60, fig. 61 (not of Gray).

Petalomera wilsoni: Rathbun, 1923, p.154, pl.42, fig. 1; Hale, 1927, pp.111 (key), 113–4, fig. 111; Sakai, 1935, p.33, pl.1, fig. 3; 1936, p.34, pl.1, fig. 4, text-fig. 9; 1965, p.9, pl.4, fig. 2; 1976, p.24–5, pl.6, fig. 1; Dell, 1968, p.14, pl.2.

MATERIAL EXAMINED

QM W10744, ♀ ovig. (23.8 mm), trawled M.V. 'Iron Summer', 27°24'S, 153°51'E, ?260m, 25.ix.1982, G. Smith (Q.F.S.).

DISTRIBUTION

Japan, New Zealand and within Australia from southeast Queensland to South Australia and Tasmania.

Family HOMOLIDAE

Homola orientalis Henderson, 1888 (Fig. 1A)

Homola orientalis Henderson, 1888, p.19, pl.2, fig. 1, 1a; Rathbun, 1923, pp.143–4, pl.37; Sakai, 1936, pp.46–7, pl.9, fig. 1; 1976, p.39, pl.8, fig. 4; Campbell, 1971, p.30; Serène and Lohavanijaya, 1973, p.24 (key), figs 19–22, pl.3A,B; Yaldwyn and Dawson, 1976, pp. 92–94, fig. 1.

Homola andamanica Alcock, 1899a, p.7; 1901, p.61, pl.4, fig. 20.

Homola barbata orientalis: Doflein, 1904, pp.14–15 (in part).

Thelxiope orientalis: Sakai, 1965, p.15, pl.6, figs 3,4.

? *Homola orientalis*: Guinot and Richer de Forges, 1981a, pp.530–2, text-figs 1A, A1, B, B1, 2B, B1, C, C1, pl.1, figs 2, 2a, 3, 3a, 4, 4a.

MATERIAL EXAMINED

QM W10593, ♀ (13.7 mm), trawled M.V. 'Iron Summer', 27°24'S, 153°51'E, 260 m, 25.ix.1982, G. Smith (Q.F.S.); QM W10594, ♀ ovig. (18.7 mm), trawled M.V. 'Iron Summer', 27°44'S, 153°52'E, 220 m (Est.), 30.vii.1982, P. Dutton (Q.F.S.); QM W11234, ♂ (23.9 mm), ♀ ovig. (13.1 mm), trawled M.V. 'Southern Intruder', 23°33'S, 152°23'E, 240 m, 30.xi.1983, P. Davie.

REMARKS

Guinot and Richer de Forges (1981a) distinguished two forms of *Homola orientalis*, a 'Pacific' and an 'Indian Ocean' form. The principle differences they described were — the proportions of the cephalothorax, the form of the merus of ambulatory legs 2–4, and the relative number of spinules on the sub-hepatic area. However the specimens we examined showed a considerable amount of variation in the above characters, especially in the spinules of the subhepatic area which typically varied from 8–12 and on one specimen from 5–14 on opposite sides. Further, the subhepatic regions were usually obviously defined as in Guinot and Richer de Forges' (1981a) figure for the 'Indian Ocean' form (fig. 1 B1).

The carapace length to breadth ratio varied in

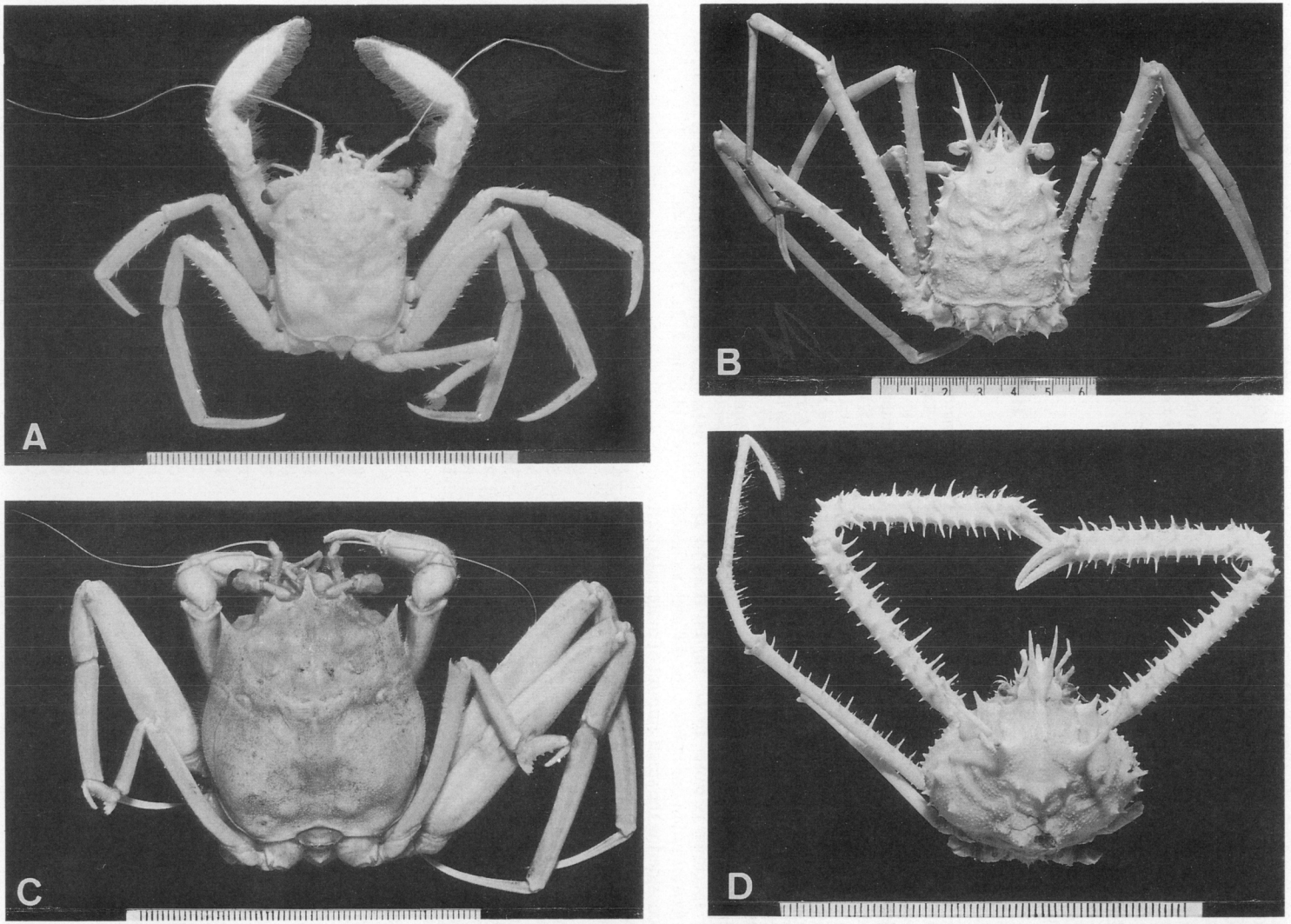

FIG. 1. A, *Homola orientalis* Henderson, 1888, ♂, QM W11234; B, *Latreillopsis petterdi* Grant, 1904, ♂, QM W10584; C, *Paromolopsis boasi* Wood-Mason, 1891, ♂, QM W11225; D, *Cyrtomaia horrida* Rathbun, 1916, ♂, QM W11228. Scale divisions 1 mm.

our specimens from 1.21 to 1.29 with an average of 1.25. Using the measurements given by Guinot and Richer de Forges (1981a) for their Pacific forms this range is extended to 1.14–1.29 with a mean of 1.22 (n = 19). The Indian Ocean form according to their measurements is generally of a smaller ratio, its range being 1.04–1.22 with a mean of 1.16 (n = 22). The ratios overlap markedly and therefore this character cannot be used with any certainty, although a tendency towards a more quadrate form is apparent in their Madagascar specimens.

DISTRIBUTION

Eastern Africa, Madagascar, Reunion Is., the Andamans, Indonesia, Japan, eastern Australia, New Zealand, New Caledonia and the Loyalty Isles.

Homolochunia kullar Griffin and Brown, 1976 (Fig. 3B)

Homolochunia kullar Griffin and Brown, 1976, pp.249–50, figs 1–3; Guinot and Richer de Forges, 1981a, fig. 4M.

MATERIAL EXAMINED

QM W10595, ♀ ovig. (29.6 mm), trawled M.V. 'Iron Summer', 27°53.90'S, 154°00.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W14913, ♀ ovig. (27.6 mm), trawled M.V. 'Iron Summer', 27°13.00'S, 153°52.53'E, 590 m, 9.v.1983; R. Morton (Q.F.S.).

DISTRIBUTION

Off southeast Queensland and central New South Wales, Australia; New Caledonia.

Latreillopsis bispinosa Henderson, 1886 (Figs 2a–b, 3A)

Latreillopsis bispinosa Henderson, 1888, p. 22, fig. 3; Alcock, 1899b, p. 166; 1901, p. 73, pl. 7, fig. 26; Ihle, 1913, p. 77; Balss, 1922, p. 115; Yokoya, 1933, p. 103; Sakai, 1936, p. 53, pl. 2, fig. 2; 1965a, p. 16, pl. 7, fig. 2; Barnard, 1950, p. 343, fig. 65g; Gordon, 1950, p. 244, fig. 22a; Serène and Lohavanijaya, 1973, pp. 31–2, figs 47–50, pl. 4B.

MATERIAL EXAMINED

QM W10804, ♂ (12.5 mm), trawled M.V. 'Iron Summer', 27°35'S, 153°50'E, 210 m, 15.xii.82, G. Smith (Q.F.S.).

REMARKS

Our specimen is considered conspecific with *L. bispinosa* Henderson, 1886, although there are some similarities with the very closely allied species *L. gracilipes* Guinot and Richer de Forges, 1981.

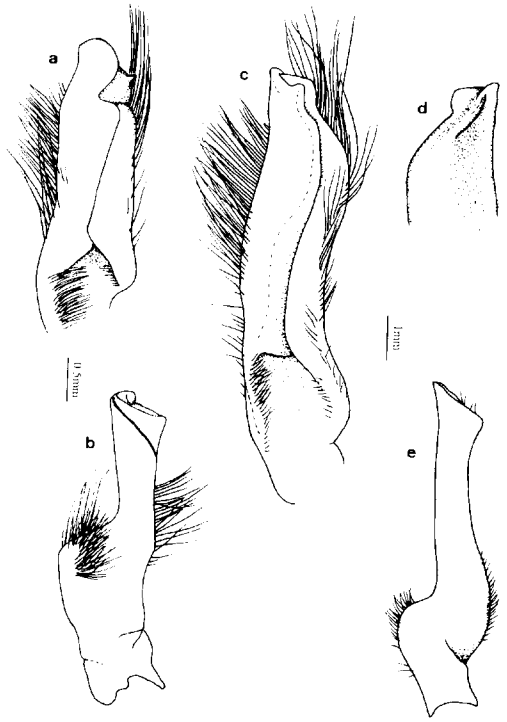

FIG. 2. *Latreillopsis bispinosa* Henderson, 1888, ♂, QM W10804; a — first male pleopod, abdominal view; b — second male pleopod, abdominal view; *Paromola japonica* Parisi, 1915, ♂, QM W10710; c — first male pleopod, abdominal view; d — sternal view of same (setae not shown); e — second male pleopod, abdominal view.

The characters which agree with *L. bispinosa* are:

1. There is an hepatic and sub-hepatic spine — the hepatic being longer and directed obliquely, and the sub-hepatic directed forwards. In *L. gracilipes* the two spines are of equal length and both are directed obliquely — there is also apparently a third, shorter spine below the line of the upper two and directed forwards.

2. Dorsal carapace surface lobulated but without spines (except for lateral branchials). *L. gracilipes* possesses a protogastric spine, a few spines on the cervical groove, and a small spine slightly below the homolian line halfway to the posterior margin.

3. Frontal region with three long acute spines, the median or rostral spine is directed forwards, and the two supraorbital spines placed at an angle of about 45° with the rostrum. The rostral spine

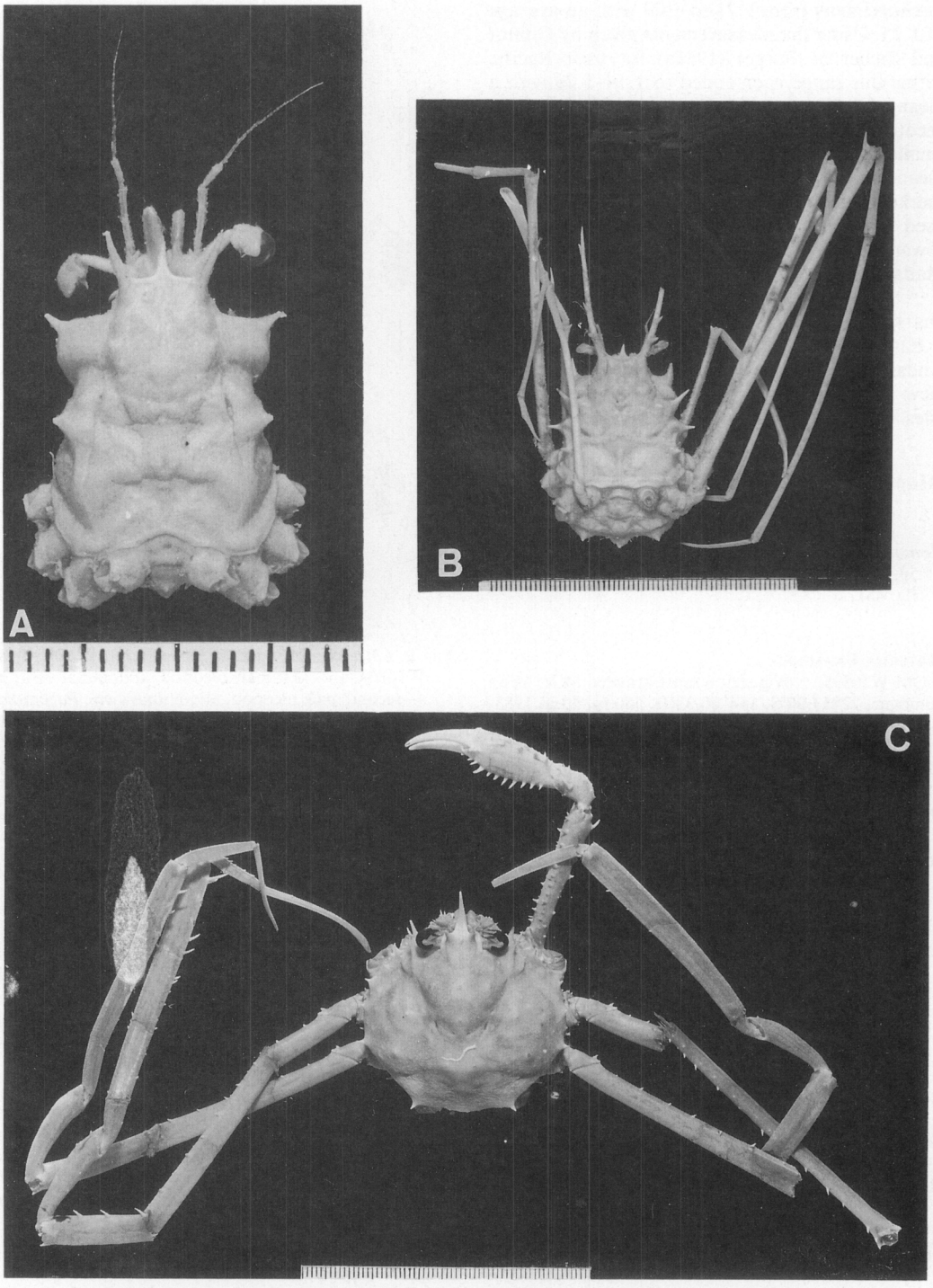

FIG. 3. A, *Latreillopsis bispinosa* Henderson, 1888, ♂, QM W10804; B, *Homolochunia kullar* Griffin and Brown, 1976, ♀ ovig., QM W10595; C, *Platymaia maoria* Dell, 1963, ♂, QM W10664. Scale divisions 1 mm.

is shorter than the supraorbitals but greater than half their length (the ratio described originally by Henderson for *L. bispinosa*). There appears to be variation in the length of the rostrum relative to the supraorbitals, with Barnard (1950) and Serène and Lohavanijaya (1973) figuring the rostrum at greater than half the length of the supraorbitals for *L. bispinosa*. Guinot and Richer de Forges (1981a) describe the length of the rostrum as a character for the separation of *L. gracilipes* from *L. bispinosa*. The rostrum is stated as being relatively longer in *L. gracilipes*. Considering the variation shown by *L. bispinosa* in rostrum length, this does not appear to be a strong character. The rostrum is also said to be orientated differently in *L. gracilipes*, but a comparison between *L. gracilipes* and *L. bispinosa* is difficult from Guinot and Richer de Forges' illustration (pl. VII, figs 1, 1a).

According to Guinot and Richer de Forges the homolian line of *L. gracilipes* differs from that of *L. bispinosa* by being clearly defined posteriorly and forming an angle in the mid-branchial region. The illustration of Barnard (1950, p. 339, fig. 65g) shows these same characters for an *L. bispinosa* specimen from South Africa, and therefore casts some doubt on their usefulness.

Anterior spination of the pterygostome and buccal frame appears to vary somewhat in prominence in *L. bispinosa* according to descriptions of specimens from different localities, and therefore is also of doubtful reliability in separating *L. gracilipes* from *L. bispinosa*.

As *L. gracilipes* was described from only two specimens it would be of interest to re-evaluate the characters which separate it from *L. bispinosa* when more material becomes available.

DISTRIBUTION

Japan, Philippines, Andamans, Kei Islands, east Africa and now Australia (SEQ).

Latreillopsis petterdi Grant, 1905
(Fig. 1B)

Latreillopsis petterdi Grant, 1905, pp.317-9, pl.10, figs 2,2a,2b; Rathbun, 1923, pp.140-3, pl.36; Dell, 1963, pp.224-5; Takeda and Miyake, 1969a, pp. 159-61, fig. 1, pl. 1; Griffin and Brown, 1976, pp.248-9.
Paromola petterdi: Serène and Lohavanijaya, 1973, pp.26-7.

MATERIAL EXAMINED

QM W10586, ♂ (61.2 mm), trawled M.V. 'Iron Summer', 27°35.54'S, 153°56.72'E, 520 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10585, ♀ ovig. (45.1 mm), trawled M.V. 'Iron Summer', 27°15.33'S, 153°54.01'E, 535 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10587, ♂ (47.4 mm), trawled M.V. 'Iron Summer', 27°54'S, 153°58'E, 490 m, 30.xi.1982, S. Hyland (Q.F.S.); QM W10588, 2 ♀ ovig. (45.6, 43.6 mm), trawled M.V. 'Iron Summer', 27°18'S, 153°54'E, 540 m, 13.viii.1982, G. Smith and J. Burke (Q.F.S.); QM W10581, ♀ ovig. (48.7 mm), ♀ (36.6 mm), trawled M.V. 'Iron Summer', 27°55'S, 154°01'E, 555 m, 30.xi.1982, (Q.F.S.); QM W10584, ♂ (52.8 mm), ♀ (38.6 mm), trawled M.V. 'Iron Summer', 27°35.04'S, 153°57.32'E, 545 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10583, ♂ (56.8 mm), trawled M.V. 'Iron Summer', 27°53.90'S, 154°0.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W10582, ♂ (61.6 mm), trawled M.V. 'Iron Summer', 27°13' to 27°22'S, 153°E, 500- 540 m, 2-3.x.1982, M. Holmes (Q.F.S.); QM W10131, ♂ (69.6 mm), trawled 'Craigmin' survey, 26°31'S, 153°48'E, 480 m, 13.ix.1980, (Q.F.S.); QM W10755, ♂ (17.3 mm), trawled M.V. 'Iron Summer', 26.0 nautical miles off Pt Danger, 400 m, 15.xii.1982, G. Smith (Q.F.S.); QM W14912, ♂ (65.8 mm), trawled M.V. 'Iron Summer', 27°13.00'S, 153°52.53'E, 590 m, 9.v.1983, R. Morton (Q.F.S.); QM W14917, ♂ (45.5 mm), trawled M.V. 'Iron Summer', 27°12.83'S, 153°52.87'E, 555 m, 10.v.1983, R. Morton (Q.F.S.).

DISTRIBUTION

From southeast Queensland to South Australia and Tasmania; New Zealand.

Paromola japonica Parisi, 1915
(Figs 2c-e, 4B)

Parhomola japonica Parisi, 1915, p.109, pl.3; Balss, 1921, p.111; Sakai, 1935, p.35, pl.2; 1936, p.47, pl.3.
Parhomola cuvieri: Balss, 1921, p.178 (not Risso, 1816).
Homola (Parahomola) japonica: Yokoya, 1933, p. 99.
Paromola japonica: Sakai, 1976, pp.39(key),40, pl.9.
? *Paromola japonica*: Guinot and Richer de Forges, 1981a, pp.538-40, figs 10, 26, pl.III, figs 2,2a,2b.

MATERIAL EXAMINED

QM W10710, ♂ (cl. 37.4 mm [excluding rostrum], cw. 32.8 mm), trawled M.V. 'Iron Summer', 27°45.6'S, 153°58'E, 540 m, 29.vii.1982, P. Dutton (Q.F.S.).

REMARKS

Our specimen agrees in major respects with the description and illustration of the type (Parisi, 1915). Some differences are:

1. The spinulation of the meri of the walking legs is more pronounced (more like that described by Guinot and Richer de Forges, 1981a, pl.3, figs 2, 2a).

2. The meri of the fifth legs are relatively longer in relation to carapace length than in the type.

3. The supraorbital spines and rostrum are relatively longer and appear a little more stout, the