

## Caridean shrimps (Crustacea, Decapoda) from Hansa Bay, Papua New Guinea: Palaemonidae and Gnathophyllidae

by S. DE GRAVE

### Abstract

59 species of palaemonoid shrimps (Crustacea, Decapoda) are recorded from Hansa Bay, along the northern coastline of Papua New Guinea. The present study raises the total number of marine palaemonoid shrimp species from Hansa Bay to 76, of which 71 species belong to the subfamily Pontoniinae. The total number for Papua New Guinea is now raised from 13 at the beginning of the century and 20 prior to the start of studies in Hansa Bay to a total of 82 species.

**Key words:** Caridea, Palaemonidae, Pontoniinae, Palaemoninae, Gnathophyllidae, Papua New Guinea.

### Resume

59 espèces de crevettes palaemonoides (Crustacea, Décapoda) ont été enregistrées à Hansa Bay, le long de la côte nord de la Papouasie Nouvelle Guinée. La présente étude lève le nombre total d'espèces de crevettes palaemonoides marines de Hansa Bay à 76, dont 71 espèces appartenant à la sous-famille des Pontoniinae. Le nombre total d'espèces pour la Papouasie Nouvelle Guinée est passé de 13 au début du siècle, à 20 au commencement des études menées à Hansa Bay, pour finalement aboutir à un total de 82 espèces.

**Mots clés:** Caridea, Palaemonidae, Pontoniinae, Palaemoninae, Gnathophyllidae, Papouasie Nouvelle Guinée.

### Introduction

The earliest marine palaemonoid shrimp species recorded from the Papua New Guinean region was *Pontonia armata* H. MILNE EDWARDS, 1837 (now *Paranchistus armatus*), described from New Ireland. This was followed by six species recorded by BORRADAILE (1898) either from British New Guinea (further specified as the Milne Bay region by BORRADAILE, 1900) or from New Britain: *Periclimenes parvus* BORRADAILE, 1898; *Periclimenes parasiticus* BORRADAILE, 1898 (now regarded as a synonym of *Periclimenes soror* NOBILI, 1904); *Periclimenes tenuipes* BORRADAILE, 1898; *Conchodytes meleagrinea* PETERS, 1852; *Anchistus miersi* (DE MAN, 1888); *Anchistus biunguiculatus* BORRADAILE, 1898 (now considered a synonym of *Paranchistus armatus*); and *Pontonia ascidicola* BORRADAILE, 1898. During this period, NOBILI (1899) also recorded the following six species from Beagle Bay, along the south coast of mainland Papua New Guinea:

*Periclimenes ensifrons* (DANA, 1852); *Periclimenes vitiensis* BORRADAILE, 1898; *Periclimenes rotumanus* BORRADAILE, 1898; *Periclimenes parasiticus*; *Periclimenes tenuipes*; and *Palaemonella tridentata* BORRADAILE, 1899. Re-identification of NOBILI's material by HOLTHUIS (1952) proved that the single specimen referred to *P. vitiensis* was a *Palaemonella rotumana* (as *Palaemonella vestigialis* KEMP, 1922); the specimen referred to *P. rotumana* was a *Periclimenes longirostris* BORRADAILE, 1915 (as *Periclimenes proximus* KEMP, 1922); the three specimens referred to *P. tenuipes* were a female of *Periclimenes seychellensis* BORRADAILE, 1915 and two specimens of *Leander tenuicornis* (SAY, 1818); whilst the specimen referred to *P. parasiticus* was an aberrant, juvenile *L. tenuicornis*. The single specimen referred to *P. tridentata* proved to be a *Periclimenella spinifera* (DE MAN, 1902) (as *Periclimenes spiniferus*).

Remarkably, the next specimens collected in Papua New Guinea were the description of *Periclimenes attenuatus* BRUCE, 1971 from the Duke of York Islands, close to New Ireland and the records of *Periclimenes holthuisi* BRUCE, 1969 from Madang by BRUCE (1977a) and *P. soror* from New Britain and Bougainville Island by BRUCE (1978a). In more recent years, MORGAN (1988) recorded six species of marine palaemonoid shrimps from Madang: *Coralliocaris viridis* BRUCE, 1974; *Harpiliopsis depressa* (STIMPSON, 1860); *Periclimenes brevicarpalis* (SCHENKEL, 1902); *Periclimenes* sp.; *Gnathophyllum americanum* GUÉRIN-MENEVILLE, 1856; and *Phylognathia ceratophthalma* (BALSS, 1913). More recently, DE GRAVE (1998, 1999a-c) recorded 18 species of palaemonoid shrimps from Hansa Bay, Madang Province, not surprisingly 13 of which were considered new records for the Papua New Guinean fauna. In addition, BRUCE (1998a) recorded *Brachycarpus crosnieri* BRUCE, 1998 from Madang, based on a photograph in ALLEN & STEENE, 1994 (as *Rhynchocinetes* sp.).

The present report deals with the palaemonoid shrimp species collected during two expeditions (1992, 1993) to the Hansa Bay region, based at the King Leopold III Biological Station at Laing Island. Some material collected during these two expeditions has already been dealt with by DE GRAVE & WILKINS (1997) and DE GRAVE (1998, 1999a-c), only additional material and/or species are reported herein. Locations details can be found in CLAEREBOUDT *et al.* (1989). The majority of material was collected by means of

SCUBA diving, with shrimps either observed and collected *in situ*, and from potential hosts, coral rubble or coral rock removed underwater and examined in the laboratory. Intertidal collections were from manually searched substrate and pools, broken up coral rock or from quinaldine poisoning of rock pools. Baited traps, light traps, dredges and hand nets were also deployed, these yielded however few individuals. Post-orbital carapace lengths (cl) are given in mm. All specimens have been deposited in the collections of the 'Koninklijk Belgisch Instituut voor Natuurwetenschappen', Brussels, Belgium; registration numbers IG 27951 and IG 28056.

### Systematic account

Family **Gnathophyllidae** DANA, 1852

*Gnathophylloides* SCHMITT, 1933

*Gnathophylloides mineri* SCHMITT, 1933

*Gnathophylloides mineri* SCHMITT, 1933: 7; Fig. 3. – BRUCE, 1988: 97-99; Figs. 1-2.

### MATERIAL

KBIN IG 2728056/NAT69; 1 male cl 1.15; Laing Island lagoon, 1-2 m depth, from *Toxopneustes pileolus* (LAMARCK) (Echinoidea), leg. S. DE GRAVE & H. WILKINS, 3 October 1993, field no. S93/53. KBIN IG 28056/NAT70; 2 females cl 0.80-1.25, 1 male cl 1.02; Hansa Bay, seagrass bed near Sisimangum village, 5 m depth, from *Tripneustes gratilla* (L.) (Echinoidea), collected by dredge, leg. S. DE GRAVE & M. MAGAP, 19 October 1993, field no. S93/122.

### DISTRIBUTION

Circumtropical; Indo-Pacific locations include Zanzibar, Seychelles, Australia (New South Wales), South China Sea, Tonga, Hawaii and Colombia. Associated with echinoids of the family Toxopneustidae, the association with *Toxopneustes pileolus* is a new host record (see BRUCE, 1988). Not previously recorded from Papua New Guinea.

*Gnathophyllum* LATREILLE, 1819

*Gnathophyllum americanum* GUÉRIN-MÉNEVILLE, 1856

*Gnathophyllum americanum* GUÉRIN-MÉNEVILLE, 1856: viii; Plate 2, fig. 14. – MANNING, 1963: 58-62; Figs. 5-6. – CHACE & BRUCE, 1993: 136 (full synonymy).

### MATERIAL

KBIN IG 28056/NAT71; 1 female cl 1.95; Awar Point, intertidal rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 12 October 1993, field no. S93/105.

### DISTRIBUTION

Circumtropical, associated with echinoderms. Previously recorded from the northern coast of Papua New Guinea (MORGAN, 1988).

Family **Palaemonidae** RAFINESQUE, 1815

Subfamily **Palaemoninae** RAFINESQUE, 1815

*Palaemon* WEBER, 1795

*Palaemon debilis* DANA, 1852

*Palaemon debilis* DANA, 1852a: 26. – DANA, 1852b: 585. – DANA, 1855: 12; Plate 38, fig. 6. – HOLTHUIS, 1950: 66-70; Fig. 13.

### MATERIAL

KBIN IG 28056/NAT72; 1 ov. female cl 4.5, 14 females cl 2.1-5.1, 3 males cl 2.0-3.0; Laing Island jetty, collected by hand net, leg. S. DE GRAVE & H. WILKINS, 25 September 1993, field no. S93/14.

### DISTRIBUTION

Widespread in the Indo-Pacific; occurring in shallow marine waters, as well as brackish and freshwater. The closely related *Palaemon concinnus* DANA, 1852 has been noted from the estuarine reaches of several rivers entering Hansa Bay (DE GRAVE, 1999b; unpubl. obs.).

*Urocaridella* BORRADAILE, 1915

*Urocaridella antonbruunii* (BRUCE, 1967)

*Periclimenes antonbruunii* BRUCE, 1967: 45-53; Figs. 19-22. *Leandrites cyrtorhynchus* FUJINO & MIYAKE, 1969: 143-149, Figs. 1-3. – MONOD, 1976: 11-14; Figs. 42-45, 53-57. – BRUCE, 1991: 223; Figs. 1c, 3d. *Urocaridella antonbruunii*. – CHACE & BRUCE, 1993: 42.

### MATERIAL

KBIN IG 27951/NAT73; 1 female cl 2.1, 3 males cl 2.75-4.00; Mast wreck, 8 m depth, free living inside wreck, leg. J.-M. OUIN, 19 September 1992, field no. S92/77. KBIN IG 27951/NAT74; 1 ov. female cl 3.85; Wanginam Reef, 10 m depth, free living among coral rubble, leg. S. DE GRAVE, 20 September 1992, field no. S92/88. KBIN IG 27951/NAT75; 4 females cl 1.65-2.55, 2 males cl 2.70-2.85; Laing Island lagoon, 15 m depth, free living in small cave in bommy, leg. S. DE GRAVE, 26 September 1992, field no. S92/100. KBIN IG 28053/NAT76; 1 female cl 1.75; Laing Island eastern side, 30 m depth, from atrial cavity of *Stelletinopsis isis* LAUBENFELS (Porifera), leg. S. DE GRAVE, 3 October 1993, field no. S93/48.

## DISTRIBUTION

Known from the Comores, Kenya, Red Sea, Japan, Indonesia, Australia, Palau Islands and New Caledonia. Not previously recorded from Papua New Guinea.

## Subfamily Pontoniinae KINGSLEY, 1878

*Apopontonia* BRUCE, 1976*Apopontonia dubia* BRUCE, 1981

*Apopontonia dubia* BRUCE, 1981a: 225-231; Figs. 1-3. – BRUCE, 1983a: 210-212; Fig. 1. – BRUCE, 1991: 258.

## MATERIAL

KBIN IG 28056/NAT77; 1 ov. female cl 1.56; Hansa Bay, Davit Wreck, 10 m depth, from coral rocks/rubble encrusted with sponges, bryozoans and soft corals, leg. S. De Grave, 23 September 1993, field no. S93/4.

Remarks. The single specimen has a rostral dentition of 4/1, with the ventral tooth being relatively larger than shown in the illustrations in the type description (BRUCE, 1981a). The major second chelae is missing.

## DISTRIBUTION

Previously only known from Queensland (North Stradbroke Isl., Heron Isl.) and New Caledonia.

*Apopontonia falcistrostris* BRUCE, 1976

(Fig. 1)

*Apopontonia falcistrostris* BRUCE, 1976a: 303-311; Figs. 1-5.

## MATERIAL

KBIN IG 27951/NAT78; 1 ov. female cl 1.75, 1 male cl 1.25; Laing Island lagoon, unnamed wreck, 5 m depth, from unidentified sponge, leg. S. DE GRAVE, 7 September 1992, field no. S92/45. KBIN IG 27951/NAT79; 1 ov. female cl 1.75, 1 male cl 1.50; Laing Island lagoon, NW side, 8 m depth, from unidentified sponge, leg. S. De Grave, 8 October 1992, field no. S92/141. KBIN IG 28056/NAT80; 1 ov. female cl 1.35; Laing Island lagoon entrance, 25 m depth, from *Xestospongia testudinaria* (LAMARCK) (Porifera), leg. S. DE GRAVE, 27 September 1993, field no. S93/20.

## REMARKS

The present female specimens agree closely with the type description (BRUCE, 1976a), although in addition to a single ventral tooth and a pointed rostral apex, five dorsal teeth are present on the rostrum, as opposed to four in the type specimen. The teeth along the ventral margin of the corpus of the

dactylus of the third pereopod are graduated in length, as opposed to the arrangement shown in the type description (BRUCE, 1976a). Males are generally similar to the females, especially in regards of the characteristic rostral and frontal region morphology, the disto-lateral spines on the exopod of the uropod, and the armament of the dactyli of the ambulatory pereopods (Fig. 1d). In one male specimen the rostrum is more elongate and overreaches the antennular peduncle. Differences noted between the sexes were the less developed second pereopods in males, with non-tuberculate, non-denticulate chelae (Fig. 1f). The endopod of the first pleopod in males reaches about 0.46x of the exopod; is provided with five non-plumose setae along its medial margin and a single, non-plumose apical seta (Fig. 1a-b). Second pleopod of males provided with appendix masculina and interna; appendix masculina reaching to about 0.36x of the appendix interna. The appendix masculina is provided with a single apical and a single sub-apical, non-plumose seta (Fig. 1c).

## DISTRIBUTION

Previously only known from Madagascar (NW coast), Australia (Heron Isl., One Tree Isl.) and the Maldives; *Xestospongia testudinaria* is a new host record.

*Conchodytes* PETERS, 1852*Conchodytes biunguiculatus* (PAUL'SON, 1875)

*Pontonia biunguiculata* PAUL'SON, 1875: 111; Plate 15, figs. 1-1n.  
*Conchodytes biunguiculatus*. – KEMP, 1922: 280-282; Fig. 103. – FRANSEN, 1994: 88-96; Figs. 3-7, 12-15, 23, 27, 30-31, 35.  
*Conchodytes kempii* BRUCE, 1989: 183-184; Figs. 3b-e.

## MATERIAL

KBIN 28056/NAT81; 1 female cl 2.0; Hansa Bay, Purar I Reef, 10 m depth, from coral rubble, leg. S. DE GRAVE, 11 October 1993, field no. S93/97. KBIN 28056/NAT82; 1 female cl 1.9; Hansa bay, Duangit Reef, 45 m depth, from coral rock encrusted with sponges and soft coral, leg. H. WILKINS, 12 October 1993, field no. S93/104. KBIN 28056/NAT83; 1 female cl 1.2; Potsdam Isl., 27 m depth, from coral rubble encrusted with sponges, leg. S. DE GRAVE, 14 October 1993, field no. S93/114.

## REMARKS

The present specimens are assigned to *C. biunguiculatus* on the basis of the shape of the rostrum, the shape of the dactylus of the third pereopod and the distinct notch between the basal and ischiomeral segment of the third maxilliped (see FRANSEN, 1994). One specimen has the preterminal pair of telson spines situated like in the illustration of *C. nipponensis* (DE HAAN) by FRANSEN (1994), and also harbours a small basal tooth, proximal to the large tooth on the protuberance of the third dactylus.

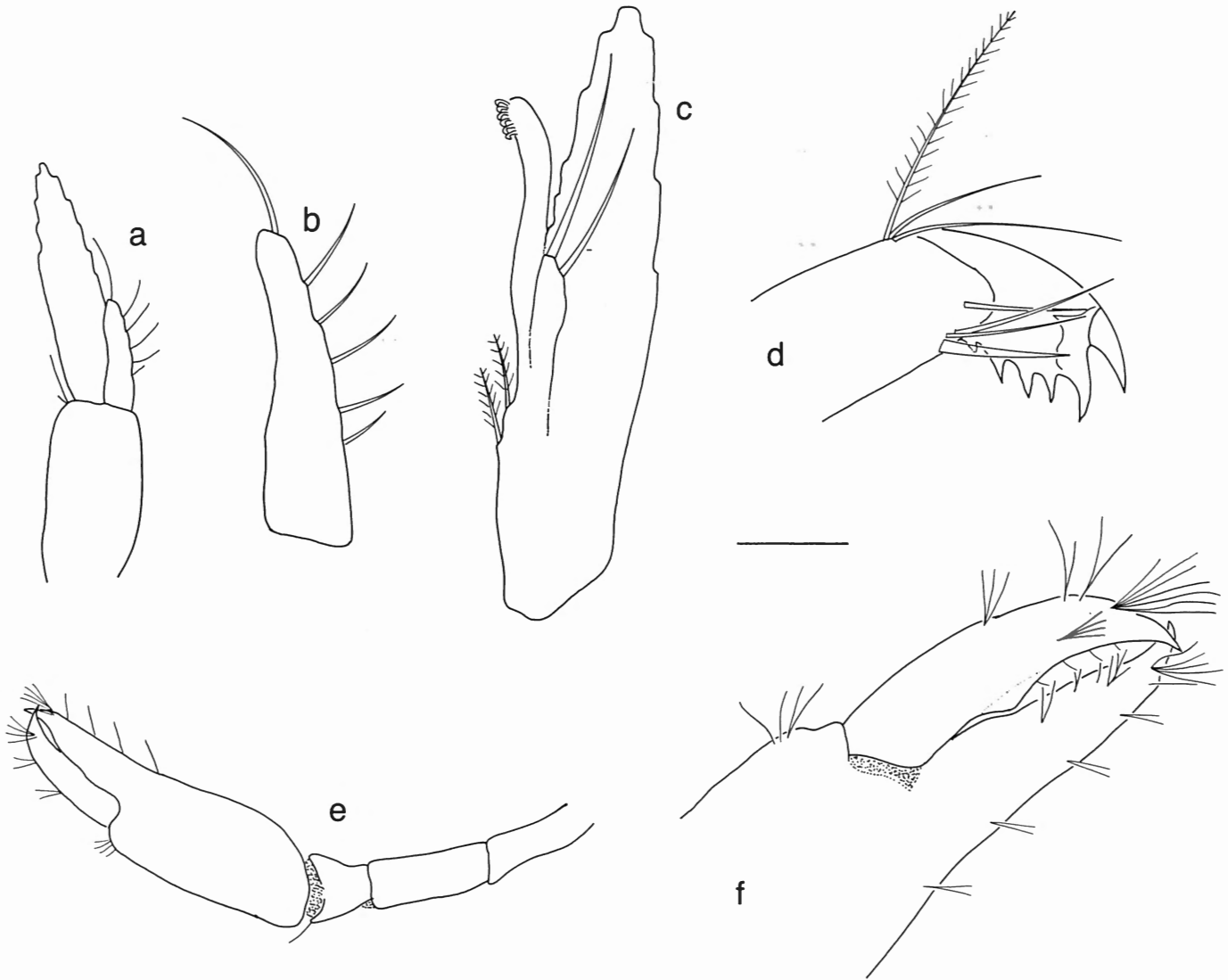


Fig. 1. – *Apopontonia falcistrotris*. KBIN IG 27951/NAT79, male. a: first pleopod; b: endopod of first pleopod; c: appendix masculina and interna; d: dactylus of third pereiopod; e: larger second pereiopod; f: fingers of second pereiopod. Scale bar indicates 0.5 mm (e), 0.2 mm (a, f), 0.05 mm (d) or 0.07 mm (b, c).

#### DISTRIBUTION

The distribution of this taxon is not clear, due to confusion regarding the identity of *C. biunguiculatus* versus *C. nipponensis*. With certainty, recorded from the Red Sea, Seychelles, Indonesia, southern Taiwan, Vietnam and the previous record from Hansa Bay (Papua New Guinea) by DE GRAVE (1999c). Although generally associated with *Bivalvia*, the present specimens were obtained from coral rubble collections, with no bivalves being noted.

#### *Coralliocaris* STIMPSON, 1860

##### *Coralliocaris superba* (DANA, 1852)

*Ædipus superbus* DANA, 1852a: 25. – DANA, 1852b: 572. – DANA, 1855: Plate 37, figs. 2-2f.

*Ædipus dentirostris* PAUL'SON, 1875: 112; Plate 14, fig. 7-7d.

*Coralliocaris superba*. – KEMP, 1922: 272-274; Figs. 98-99. – KUBO, 1940: 67-70; Figs. 30-32. – BRUCE, 1981b: 89-90; Fig. 9. – Bruce, 1991: 264-265; Fig. 26.

#### MATERIAL

KBIN IG 27951/NAT84; 1 female cl 2.15, 1 male cl 2.00; Hansa Bay, Mast wreck, 3 m depth, from *Acropora* sp.; leg. S. DE GRAVE, 7 October 1992; field no. S92/138.

## DISTRIBUTION

Widespread in the tropical Indo-West Pacific, associated with corals of the genus *Acropora*. Not previously recorded from Papua New Guinea.

*Coralliocaris venusta* KEMP, 1922

*Coralliocaris venusta* Kemp, 1922: 274-276; Figs. 100-101. – BRUCE, 1977b: 67-68; Fig. 12j-m. – Bruce, 1980a: 268; Fig. 2h-j.

## MATERIAL

KBIN IG 27951/NAT85; 1 ov. female cl 4.60, 1 male (bopyrised) cl 2.60; Laing Island, Outside Reef, 3 m depth, from *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 23 September 1992, field no. S92/93. KBIN IG 28053/NAT86; 1 ov. female cl 2.30; Laing Island, Outside Reef, 20 m depth, from *Acropora* sp., leg. H. WILKINS, 13 October 1993, field no. S93/107

## DISTRIBUTION

Widespread in the tropical Indo-West Pacific, associated with corals of the genus *Acropora*. Not previously recorded from Papua New Guinea.

*Exoclimenella* BRUCE, 1994*Exoclimenella maldivensis* DURIS & BRUCE, 1995

*Exoclimenella maldivensis* DURIS & BRUCE, 1995: 622-631; Figs. 1-5.

## MATERIAL

KBIN IG 28051/NAT87; 1 ov. female cl 2.30; Laing Island, eastern side, 15 m depth, from *Seriatopora hystrix* DANA, leg. S. DE GRAVE & H. WILKINS, 26 September 1993, field no. S93/18. KBIN IG 28051/NAT88; 1 non-ov. female cl 2.30, 1 male cl 3.10; Hansa Bay, Wanginam II Reef, from coral rock encrusted with sponges, leg. S. DE GRAVE & H. WILKINS, 10 October 1993, field no. S93/Wanginam.

## REMARKS

The present specimens agree closely with the type description (DURIŠ & BRUCE, 1995); two specimens have a rostral dentition of 1+6/5, whilst the ovigerous female harbours 1+7/4.

## DISTRIBUTION

Previously only known from the type material from the Maldives and the Timor Sea.

*Exoclimenella sibogae* (HOLTHUIS, 1952)

*Periclimenes sibogae* HOLTHUIS, 1952: 73-76; Figs. 28-29.

*Exoclimenella sibogae*. – DURIS & BRUCE, 1995: 643-645; Fig. 12.

## MATERIAL

KBIN IG 28051/NAT89; 1 male cl 2.30; Laing Island, eastern side, 15 m depth, from *Seriatopora hystrix* DANA, leg. S. DE GRAVE & H. WILKINS, 26 September 1993, field no. S93/18.

## REMARKS

The specimen has a rostral dentition of 1+7/3, with the sub-apical tooth being smaller than the rest of the dorsal series; the rostrum reaches to the end of the scaphocerite. The major second pereopod is missing. The chelae of the minor second pereopod is as described by HOLTHUIS (1952), although the crenulations on the fixed finger extend over nearly its entire length; the carpus harbours 3 distal teeth. A disto-lateral lamina is present on the chelae of the first pereopod, as noted by DURIS & BRUCE (1995).

## DISTRIBUTION

Previously only known from the holotype from Banda Anchorage, Indonesia (HOLTHUIS, 1952); the single specimen recorded by EDWARDS & EMBERTON (1980) from Sudan (Red Sea) has been referred to *Exoclimenella sudanensis* DURIS & BRUCE (see DURIŠ & BRUCE, 1995).

*Fennera* HOLTHUIS, 1951*Fennera chacei* HOLTHUIS, 1951

*Fennera chacei* HOLTHUIS, 1951: 171-174; Plate 54, figs. a-p.

## MATERIAL

KBIN IG 27951/NAT90; 8 specimens (1 bopyrised) cl 0.75-1.10; Hansa Bay, Awar wreck, 6 m depth, from *Acropora* sp., leg. S. DE GRAVE, 12 October 1992, field no. S92/151. KBIN IG 28051/NAT91; 1 female cl 0.87; Laing Island western Reef, 10 m depth, from *Pocillopora damicornis* (L.) (Scleractinia), leg. H. WILKINS, 18 October 1993, field no. POC93/6. KBIN IG 28051/NAT92; 1 female cl 0.84; Laing Island western Reef, 10 m depth, from *Pocillopora damicornis*, leg. H. WILKINS, 18 October 1993, field no. POC93/7. KBIN IG 28051/NAT93; 1 ov. female cl 1.19; Laing Island western Reef, 10 m depth, from *Pocillopora damicornis*, leg. H. WILKINS, 18 October 1993, field no. POC93/9. KBIN IG 28051/NAT94; 1 ov. female cl 1.22; Laing Island eastern side, 10 m depth, from *Pocillopora damicornis*, leg. S. DE GRAVE, 19 October 1993, field no. POC93/22. KBIN IG 28051/NAT95; 2 ov. females cl 1.10-1.20; Laing Island western Reef, 7 m depth, from *Pocillopora damicornis*, leg. H. WILKINS, 20 October 1993, field no. POC93/36.

## DISTRIBUTION

Widespread in the tropical Indo-Pacific, from East Africa to the East coast of the Americas; associated with several coral genera. Not previously recorded from Papua New Guinea.

*Hamodactylus* HOLTHUIS, 1952*Hamodactylus noumeae* BRUCE, 1970

*Hamodactylus boschmai* var.? HOLTHUIS, 1952: 212-213; Fig. 105.  
*Hamodactylus noumeae* BRUCE, 1970a: 539-541; Fig. 2.

## MATERIAL

KBIN IG 27951/NAT96; 6 specimens cl 0.60-1.20; Hansa Bay, Sushi Maru wreck, 19 m depth, from unidentified gorgonian, leg. S. DE GRAVE, 2 September 1992, field no. S92/26. KBIN IG 27951/NAT97; 3 females cl 1.00-1.25, 2 males cl 1.00-1.10; Hansa Bay, Davit wreck, 9 m depth, from unidentified gorgonian, leg. S. DE GRAVE, 5 October 1992, field no. S92/130.

## DISTRIBUTION

Known from Tanzania, Kenya, Indonesia, Australia (Heron Island) and New Caledonia, in association with Gorgonaria and Alcyonaria. Not previously recorded from Papua New Guinea.

*Harpiliopsis* BORRADAILE, 1917*Harpiliopsis beaupresii* (AUDOUIN, 1826)

*Palaemon Beaupresii* AUDOUIN, 1826: 91.  
*Harpiliopsis beaupresii*. – BORRADAILE, 1921: 379-380; Plate 55, fig. 21. – HOLTHUIS, 1952: 181-182; Fig. 89. – BRUCE, 1976b: 124-127; Figs. 21-22. – FRANSEN, 1987: 510; Fig. 6.

## MATERIAL

KBIN 28051/NAT98; 1 ov. female cl 2.85; Laing Island lagoon, 5 m depth, from *Pocillopora damicornis*, leg. H. Wilkins, 10 October 1993; field no. POC93/39.

## REMARKS

Numerous more specimens of this species were collected as part of an ecological study of the decapod community occurring with *Pocillopora damicornis* (Scleractinia) in Hansa Bay (DE GRAVE, unpublished).

## DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea and East Africa to Easter Island, Galapagos Islands and Chile; associ-

ated with several coral genera. Not previously recorded from Papua New Guinea.

*Harpiliopsis depressa* (STIMPSON, 1860)

*Harpilius depressus* STIMPSON, 1860: 38. – KEMP, 1922: 231-234; Figs. 69-70.  
? *Periclimenes pusillus* RATHBUN, 1906: 921; Fig. 71; Plate 24, fig. 7.  
*Harpiliopsis depressus*. – HOLTHUIS, 1951: 70-75; Plates 21-22.  
*Harpiliopsis depressa*. – BRUCE, 1977b: 65-67; Fig. 12a-c. – BRUCE, 1983b: 895-896; Fig. 10d-f. – CHACE & BRUCE, 1993: 82.

## MATERIAL

KBIN 27951/NAT99; 5 specimens cl 1.60-2.80; Laing Island, eastern side, from *Pocillopora damicornis*, 15 m depth; leg. S. DE GRAVE, 30 September 1992; field no. S92/113. KBIN 27951/NAT100; 7 specimens cl 1.15-2.85; Laing Island, eastern side, from *Seriatopora hystrix*, 5 m depth; leg. S. DE GRAVE, 4 October 1992; field no. S92/120.

## DISTRIBUTION

Distributed throughout the Indo-Pacific, from East Africa through to the East Pacific coast of the Americas; associated with various coral genera. Previously recorded from the northern coast of Papua New Guinea (Morgan, 1988).

*Harpiliopsis spinigera* (ORTMANN, 1890)

*Anchistia spinigera* ORTMANN, 1890: 511; Plate 36, figs. 23-23a.  
*Harpilius depressus* var. *gracilis* KEMP, 1922: 234-235; Fig. 71.  
*Harpiliopsis spinigerus*. – BRUCE, 1976b: 127-128.  
*Harpiliopsis spinigera*. – CHACE & BRUCE, 1993: 82-83.

## MATERIAL

KBIN 27951/NAT100; 1 ov. female cl 2.80, 1 male cl 2.85; Laing Island eastern side, from *Stylophora pistillata* ESPER (Scleractinia), 5 m depth; leg. S. DE GRAVE & H. WILKINS, 4 October 1992, field no. S92/118. KBIN 27951/NAT101; 26 specimens cl 1.25-3.00; Hansa Bay, Mast wreck, from *Stylophora pistillata*, 3 m depth; leg. S. DE GRAVE & H. WILKINS, 7 October 1992, field no. S92/137. KBIN 28053/NAT102; 1 male cl 1.85; Laing Island eastern side, from *Stylophora pistillata*, 5 m depth; leg. P. VAN DER WALLE, 3 October 1993, field no. S93/44. KBIN 28053/NAT103; 1 male cl 2.75; Potsdam Island eastern side, from *Pocillopora damicornis*, 10 m depth; leg. J. M. THEATE, 14 October 1993, field no. S93/110.

## DISTRIBUTION

Distributed throughout the Indo-West Pacific, precise distribution uncertain due to confusion with *H. depressa*. Not previously recorded from Papua New Guinea.

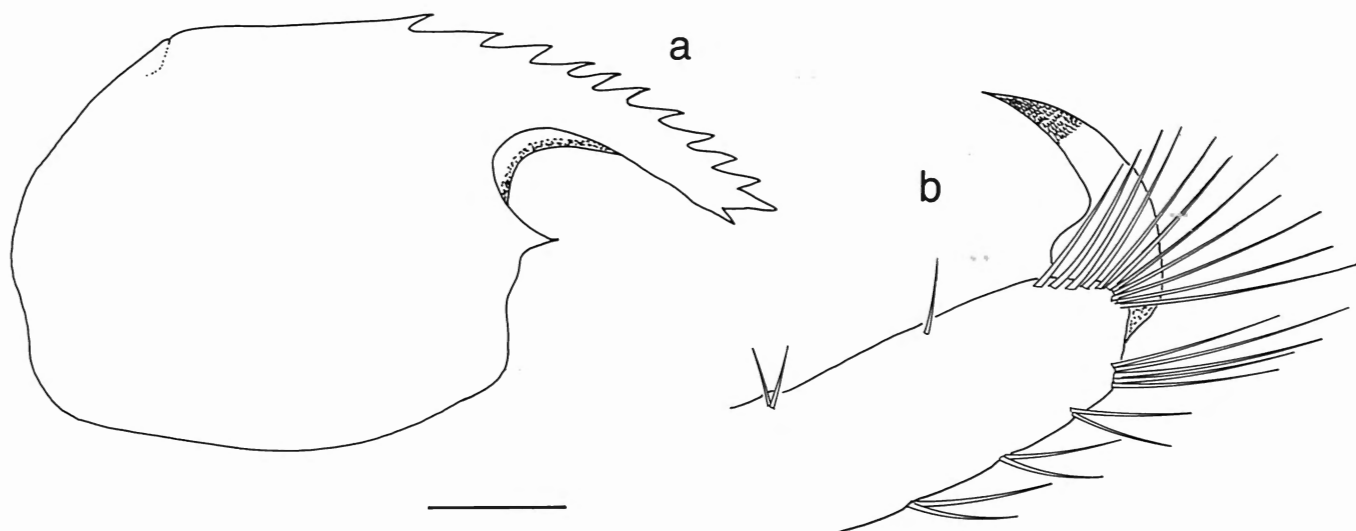


Fig. 2. — *Ischnopontonia lophos*. KBIN IG 28056/NAT106, ov. female. a: carapace; b: dactylus of third pereopod. Scale bar indicates 0.7 mm (A) or 0.2 mm (B).

*Ischnopontonia* BRUCE, 1966

*Ischnopontonia lophos* (BARNARD, 1962)

(Fig. 2)

*Philarius lophos* BARNARD, 1962: 242-243; Fig. 2.

*Ischnopontonia lophos*. — BRUCE, 1966: 584-589; Figs. 1-5. — BRUCE, 1985: 1-5; Figs. 1-3.

MATERIAL

KBIN IG 27951/NAT104; 1 ov. female cl 2.00, 1 male cl 1.90; Laing Island lagoon, NW side, 7 m depth, from *Galaxea fascicularis* (L.) (Scleractinia), leg. S. DE GRAVE, 12 October 1992, field no. S92/147. KBIN IG 27951/NAT105; 21 specimens cl 0.75-2.75; Laing Island lagoon, NW side, 7 m depth, from *Acrhelia horrescens* (DANA) (Scleractinia), leg. S. DE GRAVE, 12 October 1992, field no. S92/148. KBIN IG 28056/NAT106; 1 ov. female cl 1.80; Laing Island eastern side, 15 m depth, from *Galaxea fascicularis* (L.) (Scleractinia), leg. H. WILKINS, 26 September 1993, field no. S93/17. KBIN IG 28056/NAT107; 2 ov. females cl 1.75-1.85, 1 female cl 1.10; Laing Island eastern side, 20 m depth, from *Galaxea fascicularis* (L.) (Scleractinia), leg. S. DE GRAVE, 30 September 1993, field no. S93/37.

REMARKS

The number of dorsal rostral teeth in the present material varies from 7 to 12; whilst in approximately 50% of specimens a single ventral tooth was present (Fig. 2a). Previously, the presence of ventral teeth has only been noted in two specimens from the Ryukyu Islands (BRUCE, 1985). As in all other features, these specimens agree closely with the description of BRUCE (1966), the presence or absence of ventral

rostral teeth is merely considered to be a variable character. The dactylar unguis of the ambulatory pereopods is distinctly marked off from the corpus and is densely covered with minute scales (Fig. 2b), a feature not noted in previous descriptions.

DISTRIBUTION

Widely distributed in the tropical parts of the Indo-West Pacific Ocean, not previously reported from Papua New Guinea. Usually associated with the coral *Galaxea fascicularis* (L.), the association with *Acrhelia horrescens* presents a new host record.

*Jocaste* HOLTHUIS, 1952

*Jocaste japonica* (ORTMANN, 1890)

*Coralliocaris superba* var. *japonica* ORTMANN, 1890: 509.

*Coralliocaris japonica*. — BORRADAILE, 1917: 384; Plate 56, fig. 23a', b', f, i, l, l', m.

*Jocaste japonica*. — BRUCE, 1976b: 128-131; Figs. 23-24. — BRUCE, 1980b: 395; Fig. 3c. — BRUCE, 1981b: 87; Fig. 8.

MATERIAL

KBIN IG 27951/NAT108; 1 ov. female cl 2.35, 1 male cl 1.40; Laing island, eastern side, 15 m depth, from *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 27 September 1992, field no. S92/105. KBIN IG 27951/NAT109; 6 specimens cl 1.25-2.15; Hansa Bay, Mast wreck, 3 m depth, from *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 7 October 1992, field no. S92/139. KBIN IG 27951/NAT110; 1 male cl 2.70; Laing Island, eastern side, 3 m depth, from plate-like *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 16 October 1992, field no. S92/170. KBIN IG 28053/NAT111; 1 ov. fe-

male cl 1.90, 1 male cl 1.20; Laing Island, eastern side, 5 m depth, from dead base of *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 19 October 1993, field no. S93/124.

#### DISTRIBUTION

Widespread in the tropical Indo-West Pacific, associated with corals of the genus *Acropora*. Previously mentioned as occurring in Papua New Guinea without collection and location details by BRUCE (1998b).

#### *Jocaste lucina* (NOBILI, 1901)

*Coralliocaris lucina* NOBILI, 1901: 5. – KEMP, 1922: 276-278.

?*Coralliocaris lamellirostris* STIMPSON, 1860: 38.

*Jocaste lucina*. – BRUCE, 1974a: 199-200; Fig. 8. – BRUCE, 1976b: 131; Fig. 23c-d. – CHACE & BRUCE, 1993: 84.

#### MATERIAL

KBIN IG 27951/NAT112; 1 ov. female cl 2.15, 1 male cl 2.25; Laing Island lagoon, NW side, 5 m depth, from *Pocillopora damicornis*, leg. S. DE GRAVE & H. WILKINS, 2 October 1992, field no. S93/117. KBIN IG 28053/NAT113; 2 females cl 2.75-2.95, 2 males cl 3.00-3.05; Laing Island, eastern side, 10 m depth, from plate-like *Acropora* sp., leg. H. WILKINS, 24 October 1993, field no. S93/125.

#### DISTRIBUTION

Widespread in the tropical Indo-West Pacific, usually associated with corals of the genus *Acropora*, rarely with *Pocillopora* and *Stylophora*. Previously mentioned as occurring in Papua New Guinea without collection and location details by BRUCE (1998b).

#### *Onycocaridella* BRUCE, 1981

##### *Onycocaridella monodoa* (FUJINO & MIYAKE, 1969)

(Fig. 3)

*Onycocaris monodoa* FUJINO & MIYAKE, 1969: 405-413; Figs. 1-5.

*Onycocaridella monodoa*. – BRUCE, 1981c: 249.

#### MATERIAL

KBIN 28053/NAT114; 1 ov. female cl 1.65; Laing Island eastern side, 10 m depth, from coral rubble, encrusted with live corals, sponges and ascidians, leg. S. DE GRAVE & H. WILKINS, 7 October 1993; field no. S93/75.

#### REMARKS

The single specimen agrees well with the type description, although the rostrum reaches to the end of the first segment of the antennular peduncle and is furnished with two dorsal

teeth (Fig. 3a). The bidentate tips of the chelae of the first pereopod (Fig. 3d) were not noted in the type description. The genus *Onycocaridella* was erected by BRUCE (1981c) to accommodate three species, two of which were previously placed in *Onycocaris* NOBILI, 1904; but which differ from that genus in the structure of the first and second pereopods, the unarmed dactyls of the ambulatory pereopods (Fig. 3g), and the presence of a well developed epipod on the second maxilliped (Fig. 3b).

#### DISTRIBUTION

Previously recorded from the Ryukyu Islands, Great Barrier Reef (Australia) and La Réunion; associated with Porifera.

#### *Orthopontonia* BRUCE, 1982

##### *Orthopontonia ornata* (BRUCE, 1970)

*Periclimenaeus ornatus* BRUCE, 1970b: 313-314.

*Orthopontonia ornata*. – BRUCE, 1982a: 165-175; Figs. 1-5; Plate 1.

#### MATERIAL

KBIN IG 27951/NAT115; 6 specimens cl 1.60-2.60; Hansa Bay, Davit wreck, 9 m depth, from unidentified sponge, leg. S. DE GRAVE, 1 September 1992, field no. S92/15. KBIN IG 27951/NAT116; 1 ov. female cl 3.15, 1 male cl 2.50; Hansa Bay, Sushi Maru wreck, 12 m depth, from unidentified sponge, leg. S. DE GRAVE, 2 September 1992, field no. S92/27. KBIN IG 27951/NAT117; 2 females cl 2.40-2.45; Hansa Bay, Mast wreck, 8 m depth, from unidentified sponge, leg. S. DE GRAVE, 19 September 1992, field no. S92/82. KBIN IG 27951/NAT118; 1 ov. female cl 1.85; Laing Island, eastern side, from small sponge at base of *Pocillopora damicornis*, 8 m depth, leg. S. DE GRAVE, 30 September 1992, field no. S92/113. KBIN IG 27951/NAT119; 1 ov. female 3.60, 2 females cl 1.75-2.05; Hansa Bay, Davit wreck, 9 m depth, from *Stelletinopsis isis* LAUBENFELS, leg. S. DE GRAVE, 6 October 1992, field no. S92/133(bis). KBIN IG 27951/NAT120; 1 ov. female cl 3.60; Laing Island lagoon, NW side, 8 m depth, from unidentified sponge, leg. S. DE GRAVE, 11 October 1992, field no. S92/142. KBIN IG 27951/NAT121; 1 ov. female cl 3.75, 1 female cl 2.25, 2 males cl 2.70-3.70; Laing Island lagoon, 8 m depth, from unidentified sponge, leg. S. DE GRAVE, 13 October 1992, field no. S92/146. KBIN IG 27951/NAT122; 6 specimens cl 6.00-2.15; Laing Island lagoon, NW side, 7 m depth, from unidentified sponge, leg. S. DE GRAVE, 13 October 1992, field no. S92/149.

#### DISTRIBUTION

Previously only known from Tanzania, Zanzibar, Australia (Heron Isl.). Not previously recorded from Papua New Guinea, the association with *Stelletinopsis isis* presents a new host record.



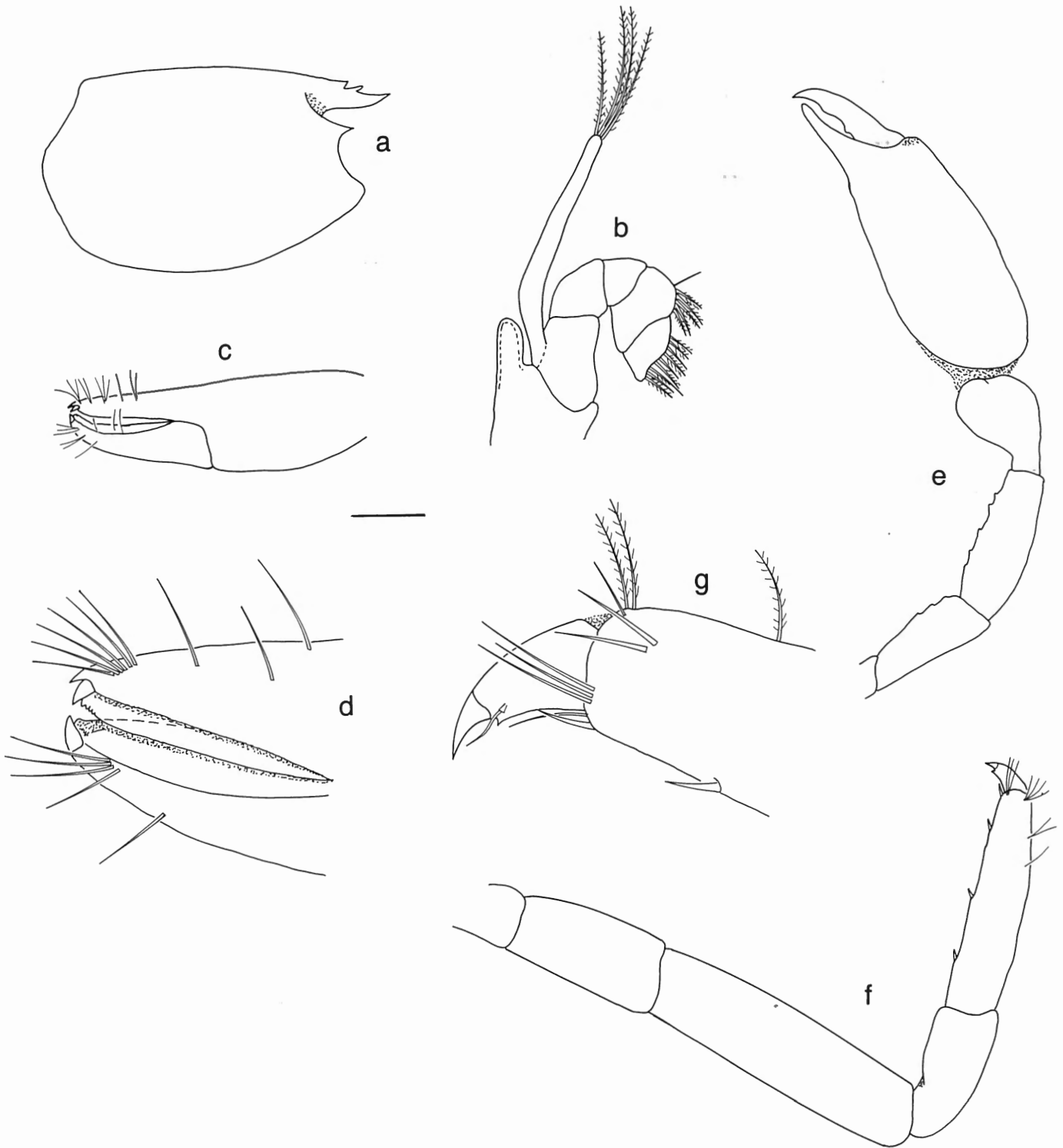


Fig. 3. – *Onycocaridella monodoa*. KBIN 28053/NAT114. a: carapace; b: second maxilliped; c: chelae of first pereiopod; d: detail; e: second pereiopod; f: third pereiopod; g: dactylus of third pereiopod. Scale bar indicates 0.5 mm (a), 0.4 mm (e), 0.2 mm (b, c, f) or 0.05 mm (d, g).

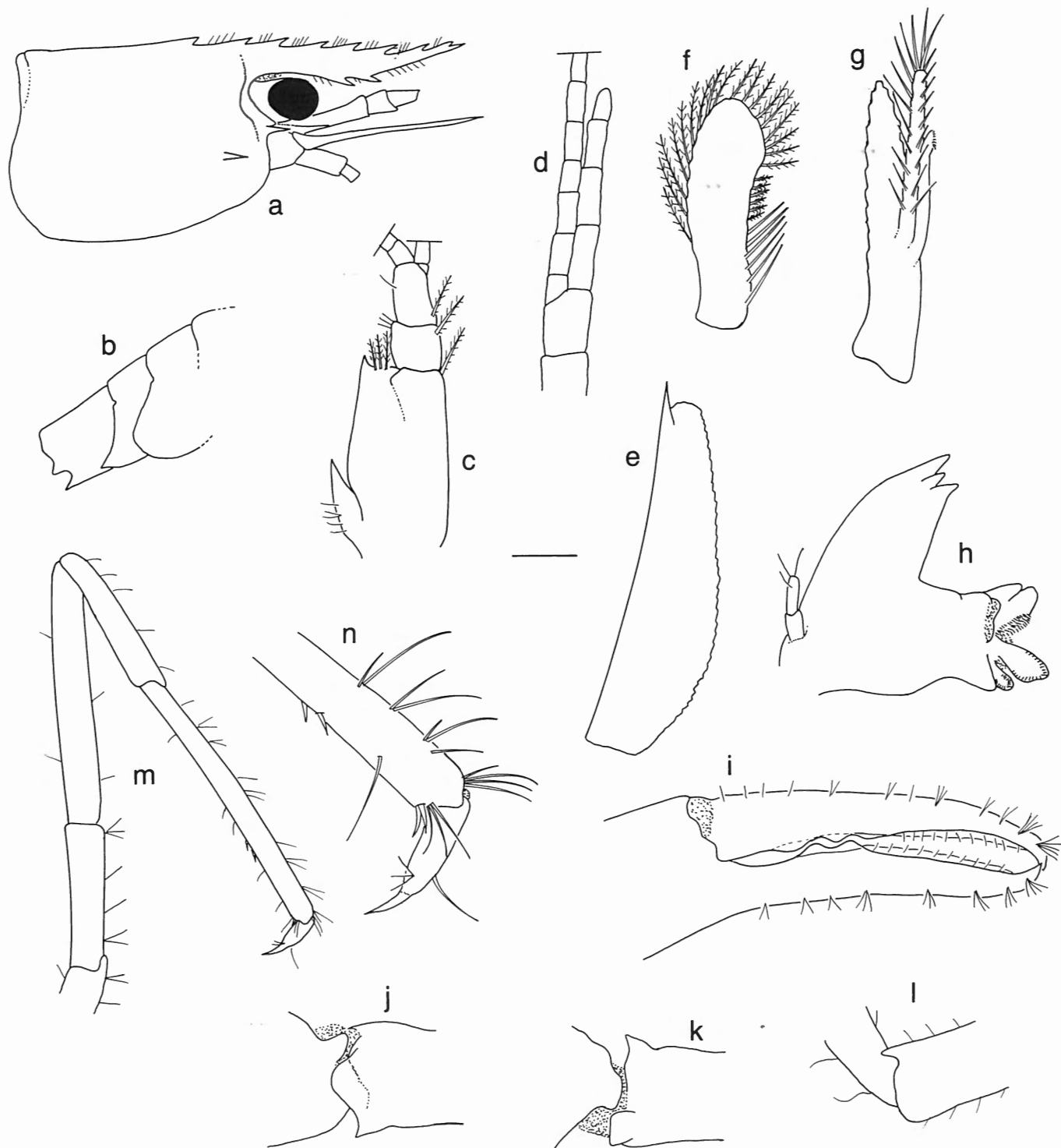


Fig. 4. – *Palaemonella pottsii*. KBIN 28053/NAT133. a: carapace; b: fourth to sixth abdominal segments; c: antennular peduncle; d: detail of flagellum; e: scaphocerite; f: endopod of first pleopod; g: appendices masculina and interna; h: mandible; i: chelae of second pereopod; j: carpus (medial); k: carpus (lateral); l: distal part of merus; m: third pereopod; n: dactylus. Scale bar indicates 1 mm (a, b), 0.5 mm (c, e, m) or 0.2 mm (d, f-g, h-l). All from ov. female (cl 3.25), except f-g from male (cl 3.20).

*Palaemonella* DANA, 1852*Palaemonella pottsi* (BORRADAILE, 1915)

(Fig. 4)

*Periclimenes (Falciger) pottsi* BORRADAILE, 1915: 212.*Periclimenes pottsi*. – POTTS, 1915: 82.*Palaemonella pottsi*. – BRUCE, 1970c: 279-284; Figs. 3-7.

## MATERIAL

KBIN 27951/NAT123; 1 male cl 1.20; Laing Island lagoon, 10 m depth, from unidentified crinoid, leg. S. DE GRAVE, 14 September 1992; field no. SCR92/5. KBIN 27951/NAT124; 1 female cl 1.50, 1 male cl 3.00; Laing Island lagoon, 10 m depth, from unidentified crinoid, leg. S. DE GRAVE, 14 September 1992; field no. SCR92/6. KBIN 27951/NAT125; 1 ov. female cl 3.45, 1 male cl 1.50; Laing Island, exposed side, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 24 September 1992; field no. SCR92/35. KBIN 28053/NAT126; 1 female cl 1.50; Laing Island, eastern side, night dive, 10 m depth, from unidentified crinoid, leg. S. DE GRAVE, 27 September 1993; field no. SCR93/2. KBIN 28053/NAT127; 3 specimens cl 1.10-1.90; Laing Island, eastern side, night dive, 10 m depth, from unidentified crinoid, leg. S. DE GRAVE, 27 September 1993; field no. SCR93/7. KBIN 28053/NAT128; 1 female cl 1.85, 1 male cl 1.30; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/11. KBIN 28053/NAT129; 1 ov. female cl 2.90, 1 male cl 3.05; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/12. KBIN 28053/NAT130; 3 specimens cl 1.25-1.70; Hansa Bay, Duangit Reef, 1 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/14. KBIN 28053/NAT131; 1 ov. female cl 2.25; Hansa Bay, Duangit Reef, 6 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/15. KBIN 28053/NAT132; 1 ov. female cl 3.50, 1 male cl 2.75; Hansa Bay, Duangit Reef, 6 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/16. KBIN 28053/NAT133; 1 ov. female cl 3.25, 1 male cl 3.20; Hansa Bay, Duangit Reef, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 5 October 1993; field no. SCR93/21. KBIN 28053/NAT134; 5 specimens (incl. 1 ov. female) cl 2.10-3.10; Laing Island, eastern side, 15 m depth, from unidentified crinoid, leg. P. VAN DER WALLE & J.-M. THEATE, 5 October 1993; field no. SCR93/22. KBIN 28053/NAT134; 1 female cl 2.00, 1 male cl 1.60; Laing Island, eastern side, 15 m depth, from unidentified crinoid, leg. P. VAN DER WALLE & J.-M. THEATE, 5 October 1993; field no. SCR93/24.

## REMARKS

The present species is closely allied to *Palaemonella rotumana* (BORRADAILE), to the extent that its separate status has been questioned by several authors (Kemp, 1922; Holthuis, 1952; Johnson, 1961). However, as already pointed out by Bruce (1970c), the dactylus and propodus of

the ambulatory pereopods are highly characteristic in this species, with the dactylar unguis being clearly demarcated (Fig. 4n), the ventral margin of the corpus of the dactylus being sinuous (Fig. 4n), and the propodal spines being small (Fig. 4m). In *P. rotumana* the unguis is not demarcated, the ventral margin is smoothly concave (Fig. 5g) and the propodal spines are long, reaching 0.4-0.5x length of the dactylus (Fig. 5f). In all other characteristics both species are very similar. In the present specimens, considerable variation was noted in the development of the post-orbital ridge, which in some large specimens terminates in a supra-orbital tubercle, in small specimens the ridge appears to be completely absent or very poorly developed.

## DISTRIBUTION

Widespread in the Indo-Pacific, from east Africa to the Marshall Islands; associated with crinoids. Not previously recorded from Papua New Guinea.

*Palaemonella rotumana* (BORRADAILE, 1898)

(Fig. 5)

*Periclimenes rotumanus* BORRADAILE, 1898: 383. – BORRADAILE, 1899: 1005; Plate 63, figs. 5-5b.*Palaemonella vestigialis* KEMP, 1922: 123-126; Figs. 1-2; Plate 3, fig. 2. – HOLTHUIS, 1952: 24-27; Figs. 2a-b, 3.*Palaemonella rotumana*. – BRUCE, 1970c: 276-279; Plate 1e-f. – BRUCE, 1991: 229-232; Figs. 5, 6e.

## MATERIAL

KBIN 27951/NAT135; 2 females cl 0.90-1.10; Laing Island eastern side, 15 m depth, from *Acropora* sp. (Scleractinia), leg. S. DE GRAVE, 27 September 1992; field no. S92/105. KBIN 27951/NAT136; 1 ov. female cl 1.80, 2 juveniles cl 0.75-0.85; Laing Island lagoon, NW side, 10 m depth, from *Acropora* sp. (Scleractinia), leg. S. DE GRAVE, 4 October 1992; field no. S92/108. KBIN 27951/NAT137; 1 male cl 1.85; Laing Island lagoon, NW side, 10 m depth, collected by diver-operated suction sampler on gravel substrate, leg. S. DE GRAVE & H. WILKINS, 2 October 1992; field no. S92/114. KBIN IG 27951/NAT138; 1 female cl 2.10; Laing Island lagoon, NW side, 5 m depth, from muddy substrate, collected by yabby pump, leg. H. WILKINS, 2 October 1992, field no. S92/115. KBIN 27951/NAT139; 2 ov. females cl 1.25-1.40, 1 female cl 1.10; Laing Island lagoon, NW side, 10 m depth, from *Acropora* cf. *echinata* (Scleractinia), leg. S. DE GRAVE, 4 October 1992; field no. S92/122. KBIN 27951/NAT140; 1 female cl 2.35; Hansa Bay, Davit Wreck, 10 m depth, from sediment around wreck, suction sampler, leg. S. DE GRAVE & H. WILKINS, 5 October 1992; field no. S92/125. KBIN 27951/NAT141; 1 male cl 1.80; Hansa Bay, Davit Wreck, 11 m depth, from sediment around wreck, suction sampler, leg. S. DE GRAVE & H. WILKINS, 6 October 1992; field no. S92/131. KBIN IG 27951/NAT142; 6 specimens cl 1.00-2.35; Laing Island lagoon, NW side, 7 m depth, from *Galaxea fascicularis* (L.) (Scleractinia), leg. S. DE GRAVE, 12 October

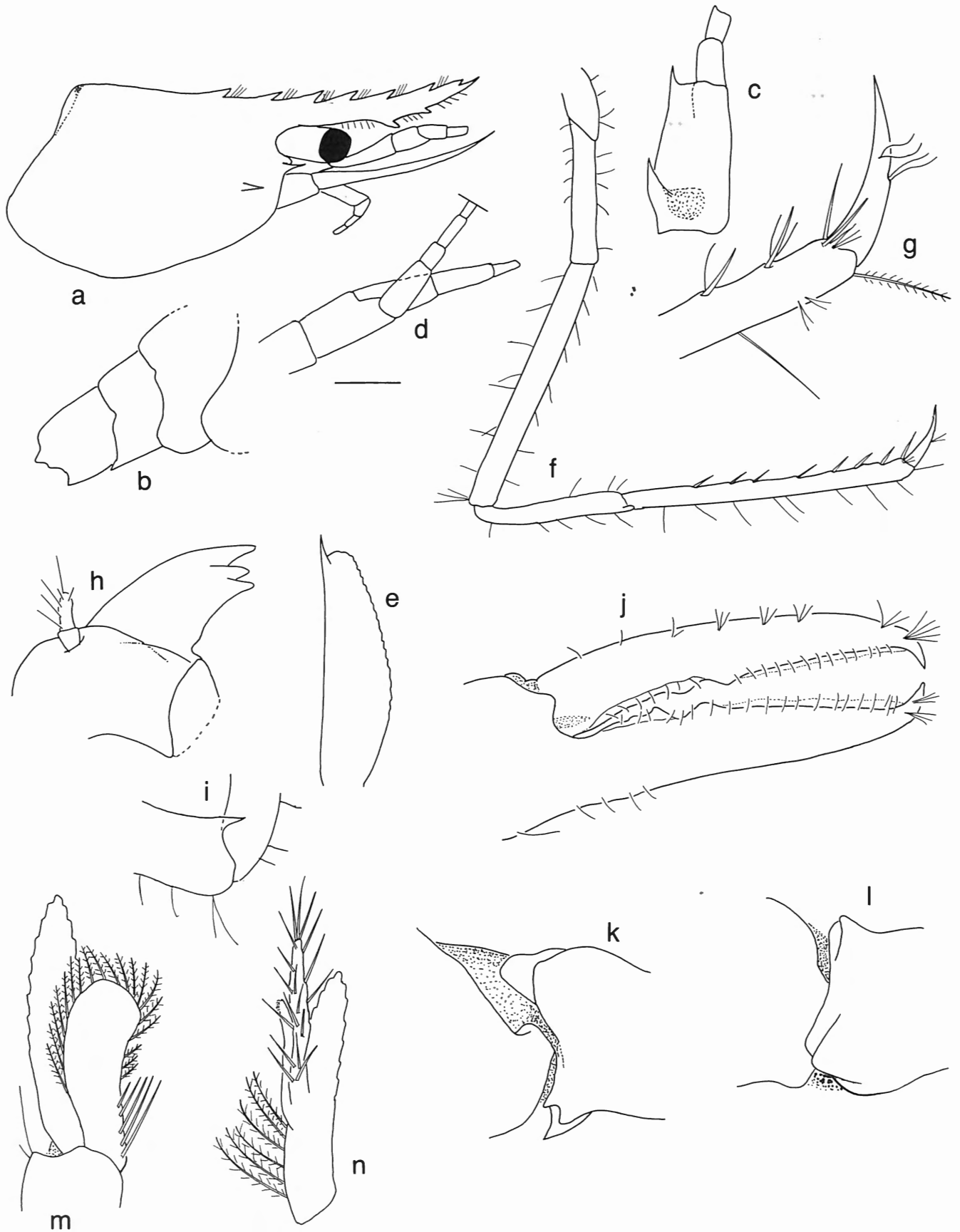


Fig. 5. – *Palaemonella rotumana*. KBIN 28053/NAT155. a: carapace; b: fourth to sixth abdominal segments; c: antennular peduncle; d: detail of flagellum; e: scaphocerite; f: third pereiopod; g: dactylus; h: mandible; i: distal part of merus of second pereiopod; j: chelae of second pereiopod; k: carpus (medial); l: carpus (lateral); m: male first pleopod; n: endopod of second pleopod. Scale bar indicates 1 mm (a, b), 0.5 mm (c, e, f) or 0.2 mm (d, g-n). All from ov. female (cl 2.25), except m-n from male (cl 3.05).

1992, field no. S92/148. KBIN IG 27951/NAT143; 1 female cl 1.80; Laing Island lagoon, NW side, 6 m depth, from muddy substrate, collected by suction sampler, leg. H. WILKINS, 15 October 1992, field no. S92/161. KBIN 28053/NAT144; 3 specimens cl 1.50-1.60; Hansa Bay, Davit Wreck, 10 m depth, from coral rubble, leg. S. DE GRAVE, 23 September 1993; field no. S93/5. KBIN 28053/NAT145; 7 specimens (incl. 2 ov. females) cl 2.50-2.95; Laing Island eastern side, 40 m depth, from coral rubble, leg. S. DE GRAVE, 23 September 1993; field no. S93/8. KBIN 28053/NAT146; 4 specimens cl 1.05-2.10; Hansa Bay, Davit Wreck, 10 m depth, from cavities on outside of *Hytissa hyotis* (Bivalvia), leg. S. DE GRAVE, 29 September 1993; field no. S93/29. KBIN 28053/NAT147; 4 specimens cl 1.50-1.80; Laing Island eastern side, 15 m depth, from coral rubble, leg. S. DE GRAVE, 30 September 1993; field no. S93/40. KBIN 28053/NAT148; 1 female cl 2.60, 1 male cl 1.50; Laing Island eastern side, 30 m depth, from coral rubble, leg. S. DE GRAVE & H. WILKINS, 3 October 1993; field no. S93/51. KBIN 28053/NAT149; 1 female cl 1.55; Laing Island eastern side, 3 m depth, from coral rocks, leg. S. DE GRAVE & H. WILKINS, 3 October 1993; field no. S93/52. KBIN 28053/NAT150; 11 specimens cl 1.00-3.25; Hansa Bay Duangit Reef, 35 m depth, from coral rocks, leg. S. DE GRAVE & H. WILKINS, 4 October 1993; field no. S93/57. KBIN 28053/NAT151; 3 specimens cl 1.80-2.50; Laing Island lagoon, 4 m depth, from holes in dead wood, leg. S. DE GRAVE, 5 October 1993; field no. S93/61. KBIN 28053/NAT152; 2 specimens cl 1.60-1.80; Laing Island eastern side, 10 m depth, from dead *Acropora* colony, leg. S. DE GRAVE, 7 October 1993; field no. S93/74. KBIN 28053/NAT153; 5 specimens cl 1.05-1.60; Laing Island eastern side, 10 m depth, from coral rubble, encrusted with live corals, sponges and ascidians, leg. S. DE GRAVE & H. WILKINS, 7 October 1993; field no. S93/75. KBIN 28053/NAT154; 4 specimens cl 1.05-2.60; Hansa Bay, Purar I Reef, 10 m depth, from *Symphyllia agaricia* EDWARDS & HAIME (Scleractinia), leg. H. WILKINS, 11 October 1993; field no. S93/99. KBIN 28053/NAT155; 4 specimens cl 0.85-2.05; Hansa Bay, Duangit Reef, 45 m depth, from coral rocks encrusted with small sponges and soft coral, leg. S. DE GRAVE & H. WILKINS, 12 October 1993; field no. S93/104. KBIN IG 28053/NAT156; 6 specimens cl 0.75-2.05; Laing Island eastern side, 6 m depth, from *Acropora* sp. (Scleractinia), leg. S. DE GRAVE, 13 October 1993, field no. S93/107. KBIN 28053/NAT157; 1 female cl 1.75; Laing Island eastern side, 10 m depth, from dead *Acropora* plates, encrusted with sponges, hydroids, soft corals and algae, leg. S. DE GRAVE & H. WILKINS, 13 October 1993; field no. S93/109. KBIN 28053/NAT158; 1 male cl 1.65; Potsdam Island, exposed side, 15 m depth, from coral rocks encrusted with algae, sponges and bryozoans, leg. S. DE GRAVE & H. WILKINS, 14 October 1993; field no. S93/112. KBIN 28053/NAT159; 1 male cl 1.75; Potsdam Island, exposed side, 10 m depth, from coral rocks encrusted with small live corals, sponges and ascidians, leg. S. DE GRAVE & H. WILKINS, 14 October 1993; field no. S93/113. KBIN 28053/NAT160; 1 male cl 1.40; Potsdam Island, 27 m depth, from coral rocks encrusted with algae and sponges, leg. S. DE GRAVE & H. WILKINS, 14 October 1993; field no. S93/114. KBIN 28053/NAT161; 1 ov. female cl 2.25, 1 female cl 2.15, 1 male cl

1.75; Laing Island eastern side, 10 m depth, from *Lobophyllia* cf. *corymbosa* (FORSKÅL) (Scleractinia), leg. S. DE GRAVE, 17 October 1993; field no. S93/120. KBIN 27951/NAT162; 2 ov. females cl 1.25-1.40, 1 female cl 1.10; Laing Island lagoon, NW side, 10 m depth, from *Acropora echinata* (Scleractinia), leg. S. DE GRAVE, 4 October 1992; field no. S92/122.

#### REMARKS

The characteristics which distinguish *P. rotumana* from *P. pottsi* are discussed under that species. Considerable variation was noted in the development of the post-orbital ridge and the presence of a supra-orbital tubercle. In many specimens the ridge and tubercle were completely absent, in others a ridge is present but no tubercle (Fig. 5a). Variation was also noted in several other characters: development of the mandibular palp, presence or absence of the distal tooth on the merus of the second pereopod and in the development of the spines along the ventral border of the propodus of the ambulatory pereopods.

#### DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea and East Africa to the Marshall Islands and Hawaii; generally considered a free-living species, although frequently found on various coral genera. Previously recorded from Beagle Bay by Nobili (1899, as *Periclimenes vitiensis* and *Periclimenes rotumanus*, see Holthuis, 1952).

#### *Periclimenaeus* BORRADAILE, 1915

#### *Periclimenaeus bidentatus* BRUCE, 1970

*Periclimenaeus bidentatus* BRUCE, 1970b: 305-307. – BRUCE, 1991: 254; Fig. 18.

#### MATERIAL

KBIN 27951/NAT163; 1 female cl 1.55; Hansa Bay, Mast Wreck, 8 m depth, from unidentified small sponge, leg. H. Wilkins, 19 September 1992; field no. S92/81. KBIN 28053/NAT164; 2 females cl 1.05-1.85, 1 ov. female cl 2.00; Hansa Bay, Mast Wreck, 8 m depth, from unidentified small sponge encrusting large dead *Acropora* plates, leg. S. DE GRAVE, 13 October 1993; field no. S93/109.

#### REMARKS

The specimens agree closely with the descriptions by BRUCE (1970b; 1991); with the bidentate tips of the chelae and the large lateral tooth on the scaphocerite being diagnostic for the species. Two specimens have a rostral dentition of 5/0, whilst two other specimens have 7/0. As in the material of BRUCE (1991) one specimen has a blunt, non-bidentate dactylus on the major second pereopod, whilst the minor chela is clearly bidentate. Compared to the illustration in BRUCE

(1991), the corpus of the carpus of the third pereopod has fewer teeth.

#### DISTRIBUTION

Known from East Africa, the Great Barrier Reef and New Caledonia; associated with sponges. Not previously recorded from Papua New Guinea.

#### *Periclimenaeus nobilii* BRUCE, 1974

*Periclimenaeus nobilii* BRUCE, 1974b: 1577-1581; Figs. 13f, 14. – BRUCE, 1991: 254-256; Fig. 19.

#### MATERIAL

KBIN 28053/NAT165; 1 ov. female cl 1.41, 1 male cl 1.25; Laing Island, eastern side, from coral rubble with live *Seriatopora hystrix* and encrusting sponges, ascidians, 15 m depth, leg. S. DE GRAVE, 26 September 1993; field no. S93/18.

#### REMARKS

Both specimens agree closely with the type description, although some differences were noted. Also, both specimens differ from each other in a few characteristics. Both specimens have a well developed postorbital tubercle and the cutting edge of the chela of the minor second pereopod being sinuous and denticulate, with the denticles increasing in size distally. The propodus of the third pereopod is approx. 4.2x as long as wide, with the ventral border of the dactylar margin between the basal and distal teeth being straight. The female has a rostral dentition of 3/0, with the antero-lateral margin of the carapace produced into a membranous lobe, although less developed than in *Periclimenaeus storchi* BRUCE, 1989. The male specimen has a rostral dentition of 4/0, with no membranous lobe. The major second pereopod is lacking in the female, in the male the cutting edge of the dactylus appears entire, non-denticulate.

*Periclimenaeus nobilii* belongs to a group of closely related, ascidian inhabiting, species, consisting of: *P. nobilii* BRUCE, 1974; *P. diplosomatis* BRUCE, 1980c; *P. storchi* BRUCE, 1989; *P. zarenkovi* DURIS, 1990; and *P. myora* BRUCE, 1998c. As only minor differences separate the species, and with most species only known from a single or a few specimens, the status of some of these species appears doubtful.

#### DISTRIBUTION

Known only from the Red Sea, La Réunion and New Caledonia, although Bruce (1998c) considers that some of the material from New Caledonia may belong to an undescribed species.

#### *Periclimenaeus rastrifer* BRUCE, 1980

*Periclimenaeus rastrifer* BRUCE, 1980d: 27-33; Figs. 12, 13a-b. – BRUCE, 1982b: 267-268; Fig. 21. – BRUCE, 1991: 257-258; Fig. 20.

#### MATERIAL

KBIN 28053/NAT166; 1 female cl 1.16; Laing Island eastern side, 40 m depth, from coral rubble, leg. S. DE GRAVE, 23 September 1993; field no. S93/8. KBIN 28053/NAT167; 1 female cl 1.00; Laing Island eastern side, 20 m depth, from coral rubble, leg. S. DE GRAVE, 30 September 1993; field no. S93/41.

#### REMARKS

Both specimens agree closely with previous descriptions, with the spatulate chelae of the first pereopod, the tuberculation on the palm of the chelae of the second pereopod and the tuberculation on the ventral border of the ischium and merus of the second pereopod being characteristic for this species. Both specimens harbour a well developed post-orbital ridge, with terminates in a distinct post-orbital tubercle in the smaller specimen. The rostral dentition of the larger specimen is 6/0 and 5/1 for the smaller specimen. The fingers of the chela of the first pereopod are 0.45-0.55x length of the chelae, whilst the length-width ratio of the palm of the second pereopod is 1.91: 1 or 1.97: 1. The dactylus of the first pereopod terminates in two teeth in the larger specimen, but only a single teeth in the smaller specimen. Both specimens harbour four single spines on the propodus of the third pereopod, in addition the larger disto-ventral spines are dorsally denticulate. In addition to the biunguiculate tip of the dactylus, 4 large denticles are present along the ventral border.

#### DISTRIBUTION

Only known from New Caledonia, Heron Island and Hong Kong; associated with Porifera.

#### *Periclimenella* BRUCE, 1994

#### *Periclimenella spinifera* (DE MAN, 1902)

*Periclimenes petithouarsii* var. *spinifera* DE MAN, 1902: 824.  
*Periclimenes spiniferus*. – BRUCE, 1976b: 95-97; Figs. 5-6.  
*Periclimenella spinifera*. – DURIS & BRUCE, 1995: 656-661; Figs. 19-20.

#### MATERIAL

KBIN 27951/NAT168; 3 ov. females cl 1.95-2.50, 1 female cl 1.30, 2 males cl 1.50-2.50; Laing Island lagoon NW side, 10 m depth, from *Seriatopora hystrix* (Scleractinia), leg. S. De Grave, 4 October 1992; field no. S92/121. KBIN 27951/NAT169; 1 male cl 1.50; Laing Island Western Reef, 3 m depth, from *Seriatopora hystrix* (Scleractinia), leg. S. De Grave, 14 October 1992; field no. S92/157.

## DISTRIBUTION

Widespread in the Indo-West Pacific, excluding north-western Indian Ocean and Red Sea. Previously recorded from Papua New Guinea by NOBILI (1899) (as *Palaemonella tridentata*, see HOLTHUIS, 1952)

*Periclimenes* COSTA, 1844*Periclimenes affinis* (ZEHNTNER, 1894)

*Palaemonella affinis* ZEHNTNER, 1894: 206-208; Plate 9, fig. 27-27a.  
*Periclimenes (Harpilius) affinis* (non *Periclimenes (Falciger) affinis* BORRADAILE, 1915). – HOLTHUIS, 1958: 6-8; Fig. 2.  
*Periclimenes affinis* (non *Periclimenes (Falciger) affinis* BORRADAILE, 1915). – BRUCE, 1980d: 2-8; Figs. 1-3. – BRUCE, 1983b: 874; Fig. 7a.

## MATERIAL

KBIN 27951/NAT170; 9 specimens cl 1.00-2.40; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/21. KBIN 28053/NAT171; 1 female cl 1.85, 1 male cl 1.60; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/10. KBIN 28053/NAT172; 6 specimens cl 1.00-2.80; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/11. KBIN 28053/NAT173; 7 specimens cl 0.75-2.80; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/12. KBIN 28053/NAT174; 9 specimens cl 1.50-2.75; Hansa Bay, Duangit Reef, 6 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/15. KBIN 28053/NAT175; 1 ov. female cl 2.5, 2 males cl 1.00-1.25; Hansa Bay, Duangit Reef, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 5 October 1993; field no. SCR93/18. KBIN 28053/NAT176; 1 ov. female cl 2.95, 2 males cl 1.25-1.70; Laing Island, eastern side, 15 m depth, from unidentified crinoid, leg. P. VAN DER WALLE & J.-M. THEATE, 5 October 1993; SCR93/26.

## DISTRIBUTION

Known from Indonesia, Australia (Queensland, Cobourg Peninsula), New Caledonia, South China Sea and the Ryukyu Islands; associated with crinoids. Not previously recorded from Papua New Guinea.

*Periclimenes amboinensis* (DE MAN, 1888)

*Anchistia amboinensis* DE MAN, 1888: 546; Plate 22a, fig. 2.  
*Periclimenes amboinensis*. – BRUCE, 1983b: 874-875; Figs. 1-3, 7e. – BRUCE, 1992: 66-69; Figs. 17-18. – BRUCE, 1996: 231-232; Figs. 11h-i, 28f.

## MATERIAL

KBIN 27951/NAT177; 1 female cl 1.85; Laing Island lagoon, 10 m depth, from unidentified crinoid, leg. S. DE GRAVE, 14 September 1992; field no. SCR92/5. KBIN 27951/NAT178; 1 female cl 1.20, 1 male cl 0.75; Hansa Bay, Duangit Reef, 25 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 18 September 1992; field no. SCR92/16. KBIN 27951/NAT179; 1 ov. female cl 3.00, 1 male cl 1.50; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/22. KBIN 28053/NAT180; 1 ov. female cl 3.80, 1 male cl 4.00; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/9. KBIN 28053/NAT181; 1 ov. female cl 3.80, 1 male cl 3.20; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/13. KBIN 28053/NAT182; 4 specimens cl 0.75-1.55; Hansa Bay, Duangit Reef, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 5 October 1993; field no. SCR93/20.

## DISTRIBUTION

Known from Indonesia, Queensland, New Caledonia, the Marshall Islands and the Ryukyu Islands; associated with crinoids. Not previously recorded from Papua New Guinea.

*Periclimenes amymone* DE MAN, 1902

*Periclimenes amymone* DE MAN, 1902: 829; Plate 25, fig. 53. – BRUCE, 1980a: 262-264; fig. 1e-i. – BRUCE, 1983b: 875-879; Fig. 7c. – DE GRAVE, 1999a: 25.

## MATERIAL

KBIN 27951/NAT183; 17 specimens cl 2.40-3.30; Laing Island, eastern side, 3 m depth, from tabletop *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 16 October 1992; field no. S92/170. KBIN 27951/NAT184; 1 ov. female cl 2.55, 1 male cl 1.60; Hansa Bay Awar Wreck, 6 m depth, from *Pocillopora damicornis*, leg. S. DE GRAVE, 10 October 1992; field no. POC93/36. KBIN 28053/NAT185; 1 male cl 2.25; Laing Island eastern side, 15 m depth, from *Seriatopora hystrix*, leg. S. DE GRAVE, 26 September 1993; field no. S93/18. KBIN 28051/NAT186; 1 ov. female cl 2.85, 2 males cl 2.05-2.50, 2 juveniles cl 1.00-1.05; Laing Island lagoon, 5 m depth, from *Pocillopora damicornis*, leg. H. WILKINS, 10 October 1993; field no. POC93/39. KBIN 28051/NAT187; 21 specimens cl 1.80-4.00; Laing Island, eastern side, 10 m depth, from plate-like *Acropora* sp., leg. H. WILKINS, 24 October 1993, field no. S93/125.

## REMARKS

A few specimens lacked either the disto-ventral spine on the merus and/or the carpal spines of the second pereopod. Numerous more specimens of this species were collected as part

of an ecological study of the decapod community occurring with *Pocillopora damicornis* (Scleractinia) in Hansa Bay (DE GRAVE, unpublished).

#### DISTRIBUTION

Widespread in the Indo-Pacific, from the Nicobar Islands to Samoa and the Ryukyu Islands; associated with both acroporid and pocilloporid corals. Previously recorded from Hansa Bay, Papua New Guinea by DE GRAVE (1999a).

#### *Periclimenes attenuatus* BRUCE, 1971

*Periclimenes attenuatus* BRUCE, 1971: 533-543; Figs. 1-5. – BRUCE, 1992: 69; Fig. 19.

#### MATERIAL

KBIN 27951/NAT188; 1 female cl 2.05, 1 male cl 2.10; Laing Island lagoon, 10 m depth, from unidentified crinoid, leg. S. DE GRAVE, 14 September 1992; field no. SCR92/6. KBIN 27951/NAT189; 1 male cl 1.95; Laing Island, exposed side, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 24 September 1992; field no. SCR92/35. KBIN 28053/NAT190; 4 specimens cl 1.00-1.05; Hansa Bay, Duangit Reef, 1 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/14. KBIN 28053/NAT191; 1 female cl 1.85; Hansa Bay, Duangit Reef, 6 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/16. KBIN 28053/NAT192; 2 ov. females cl 2.40-3.00, 1 female cl 1.90, 1 male cl 1.40; Laing Island, eastern side, 15 m depth, from unidentified crinoid, leg. P. VAN DER WALLE & J.-M. THEATE, 5 October 1993; field no. SCR93/22.

#### DISTRIBUTION

Known from Queensland, Indonesia and the Duke of York Islands in Papua New Guinea; associated with crinoids.

#### *Periclimenes brevicarpalis* (SCHENKEL, 1902)

*Ancylcaris brevicarpalis* SCHENKEL, 1902: 653; Plate 13, fig. 21a-21m. *Periclimenes (Harpilius) brevicarpalis*. – HOLTHUIS, 1952: 69-73; Fig. 27. – MONOD, 1976: 24; Figs. 47-48. *Periclimenes brevicarpalis*. – BRUCE, 1983b: 879-880; Fig. 7d-e. – FRANSEN, 1989: 133-136; Fig. 1.

#### MATERIAL

KBIN 28053/NAT193; 4 specimens cl 0.60-2.00; Laing Island, lagoon, 5 m depth, from *Macrodactyla doreensis* (QUOY & GAIMARD), leg. S. DE GRAVE & H. WILKINS, 28 September 1993; field no. S93/23. KBIN 28053/NAT194; 4 ov. females cl 2.40-5.00, 1 male cl 4.5; Laing Island, lagoon, 1 m depth, from unidentified actinarian, leg. S. DE GRAVE & H. WILKINS, 3 October 1993; field no. S93/45

#### DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea and East Africa to Polynesia; associated with several species of giant anemones. Previously recorded from Madang (Papua New Guinea) by MORGAN (1988).

#### *Periclimenes ceratophthalmus* BORRADAILE, 1915

*Periclimenes (Corniger) ceratophthalmus* BORRADAILE, 1915: 211. – BORRADAILE, 1921: 365; Plate 54, fig. 9. *Periclimenes ceratophthalmus*. – BRUCE, 1980a: 264-265; Fig. 1j-n. – BRUCE, 1983b: 880-883; figs. 4e-d, 5, 6a-c, 7.

#### MATERIAL

KBIN 27951/NAT195; 1 female cl 1.50, 1 male cl 1.50; Hansa Bay, Mast wreck, 4 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 19 September 1992; field no. SCR92/17. KBIN 27951/NAT196; 1 female cl 1.60, 1 male cl 1.75; Hansa Bay, Mast wreck, 4 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 19 September 1992; field no. SCR92/18. KBIN 27951/NAT197; 1 female cl 1.25, 1 male cl 1.25; Hansa Bay, Mast wreck, 4 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 19 September 1992; field no. SCR92/19. KBIN 27951/NAT198; 4 specimens cl 1.25-3.00; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/21. KBIN 27951/NAT199; 3 specimens cl 1.00-2.10; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/23. KBIN 27951/NAT200; 1 female cl 1.20, 1 juvenile cl 0.60; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/28. KBIN 27951/NAT201; 2 females (bopyrised) cl 1.75-2.25; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/30. KBIN 27951/NAT202; 1 ov. female cl 3.00, 1 male cl 1.90; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/32.

#### DISTRIBUTION

Recorded from East Africa, Seychelles, Maldives, Indonesia, Great Barrier Reef, Solomon Isl. and the Palau Islands; associated with crinoids. Not previously recorded from Papua New Guinea.

#### *Periclimenes commensalis* BORRADAILE, 1915

*Periclimenes (Cristiger) commensalis* BORRADAILE, 1915: 211. – BORRADAILE, 1921: 364. *Periclimenes (Periclimenes) commensalis*. – HOLTHUIS, 1952: 53-56; Figs. 18-19. – MONOD, 1976: 145-147; Figs. 44-51. *Periclimenes commensalis*. – BRUCE, 1980a: 265; Figs. 1o-r. – BRUCE, 1996: 232; Figs. 12a-g.



## MATERIAL

KBIN 27951/NAT203; 7 specimens cl 1.10-1.95; Hansa Bay, Duangit Reef, 20 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 18 September 1992; field no. SCR92/10. KBIN 27951/NAT204; 1 ov. female cl 1.80; Hansa Bay, Duangit Reef, 20 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 18 September 1992; field no. SCR92/13. KBIN 27951/NAT205; 1 male cl 2.00; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/24. KBIN 27951/NAT206; 1 male cl 1.25; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/25. KBIN 27951/NAT207; 3 specimens cl 1.40-1.85; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/26. KBIN 27951/NAT208; 1 female cl 1.25, 2 males cl 1.25-1.75; Hansa Bay, Wanginam Reef, 15 m depth, from unidentified crinoid, leg. H. WILKINS, 20 September 1992; field no. SCR92/27. KBIN 28053/NAT209; 1 ov. female cl 1.80; Hansa Bay, Duangit Reef, exposed side, 3 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/8. KBIN 28053/NAT210; 1 ov. female cl 2.00; Hansa Bay, Duangit Reef, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 5 October 1993; field no. SCR93/19.

## DISTRIBUTION

Widespread in the Indo-West Pacific, from East Africa to Queensland and the Solomon Islands; associated with several crinoid genera and species. Not previously recorded from Papua New Guinea.

*Periclimenes elegans* (PAUL'SON, 1875)

*Anchistia elegans* PAUL'SON, 1875: 113; Plate 17, figs. 1a-h.  
*Periclimenes (Falciger) dubius* BORRADAILE, 1915: 211.  
*Periclimenes (Ancylocaris) elegans*. – KEMP, 1922: 215-219; Figs. 60-63.  
*Periclimenes (Harpilius) elegans*. – HOLTHUIS, 1952: 81-82; Fig. 31. – MIYAKE & FUJINO, 1968: 406-408; Fig. 3a-b.

## MATERIAL

KBIN 28053/NAT211; 17 specimens cl 2.25-4.10; Laing Island eastern side, intertidal Reef flat, rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 9 October 1993; field no. S93/81.

## REMARKS

Several of the smaller specimens only harboured a single tooth and a reduced tubercle on the carpus of the second pereopod, rather than two teeth.

## DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea and East Africa to the Marshall Islands.

*Periclimenes ensifrons* (DANA, 1852)

*Anchistia ensifrons* DANA, 1852a: 25. – DANA, 1852b: 580. – DANA, 1855: 580; Plate 38; figs. 1a-g.  
*Periclimenes (Ancylocaris) ensifrons*. – KEMP, 1922: 209-210.  
*Periclimenes ensifrons*. – CHACE & BRUCE, 1993: 111

## MATERIAL

KBIN 28053/NAT212; 1 ov. female cl 2.40; Laing Island eastern side, 3 m depth, from coral rubble, leg. S. DE GRAVE, 24 September 1993; field no. S93/9. KBIN 28053/NAT213; 1 ov. female cl 2.50; Laing Island lagoon, 5 m depth, from floating dead wood, leg. S. DE GRAVE, 24 September 1993; field no. S93/10. KBIN 28053/NAT214; 1 ov. female cl 2.50, 2 females cl 2.35-2.80; Hansa Bay, Duangit Reef, 35 m depth, from coral rock, leg. S. DE GRAVE, 24 September 1993; field no. S93/57. KBIN 28053/NAT215; 1 ov. female cl 3.50; Hansa Bay, near Awar village, intertidal rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 10 October 1993; field no. S93/87. KBIN 28053/NAT216; 3 ov. females cl 2.75-3.10, 2 females cl 2.50-3.10; Hansa Point, intertidal rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 11 October 1993; field no. S93/93.

## DISTRIBUTION

Sparsely recorded in the Indo-Pacific, from the Red Sea to French Polynesia. Previously recorded from Papua New Guinea by NOBILI (1899).

*Periclimenes grandis* (STIMPSON, 1860)

*Anchistia grandis* STIMPSON, 1860: 39.  
*Periclimenes vitiensis* BORRADAILE, 1898: 383. – BRUCE, 1978b: 266; Fig. 9.  
*Periclimenes (Ancylocaris) grandis*. – KEMP, 1922: 210-214; Figs. 58-59; Plate 7, fig. 10.

## MATERIAL

KBIN 27951/NAT217; 3 ov. females cl 2.15-4.00; Laing Island eastern side, intertidal reef flat, from broken coral rock, leg. S. DE GRAVE & H. WILKINS, 6 September 1992; field no. S92/38. KBIN 27951/NAT218; 2 females cl 1.60-2.50, 1 male cl 2.10; Laing Island eastern side, intertidal reef flat, from broken coral rock, leg. S. DE GRAVE & H. WILKINS, 23 September 1992; field no. S92/95. KBIN 28053/NAT219; 2 ov. females cl 3.00-3.25, 3 females cl 1.50-2.25; Hansa Bay, Duangit Reef, western side, from coral rubble, 5 m depth, leg. S. DE GRAVE, 25 September 1993; field no. S93/16. KBIN 28053/NAT220; 1 ov. female cl 1.85; Hansa Bay, Purar I Reef, from coral rubble, 15 m depth, leg. S. DE GRAVE, 12 October 1993; field no. S93/16.

## DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea and East Africa to Queensland and Japan.

*Periclimenes holthuisi* BRUCE, 1969

*Periclimenes holthuisi* BRUCE, 1969: 258-259. – MONOD, 1969: 216-220; Figs. 69-73. – FRANSEN, 1989: 139-143; Figs. 4a, 5a-b, 6a-f, 7a-g.

## MATERIAL

KBIN 28053/NAT221; 1 male cl 2.75; Hansa Bay, Duangit Reef, western side, 20 m depth, free living, leg. S. DE GRAVE, 25 September 1993; field no. S93/11.

## DISTRIBUTION

Widespread in the Indo-Pacific; associated with a range of Scleractinia and Actinaria. Previously reported from Madang (Papua New Guinea) by BRUCE (1977a).

*Periclimenes imperator* BRUCE, 1967

*Periclimenes imperator* BRUCE, 1967: 53-62; Figs. 23-25. – BRUCE, 1982c: 204.

## MATERIAL

KBIN IG 27951/NAT222; 1 female cl 2.60; Awar seagrass bed, Hansa Bay, 5m depth, from *Stichopus variegatus* SEMPER, leg. S. DE GRAVE, 1 October 1992, field no. S92/13. KBIN IG 27951/NAT223; 10 specimens cl 1.30-3.70, 1 ov. female cl 7.00; Laing Island Lagoon, 15 m depth, from *Euapta godeffroyi* (SEMPER), leg. D. Van Der Spiegel, 3 October 1992, field no. S92/30. KBIN IG 28053/NAT224; 1 female cl 2.85; Bisal Paap Reef, 30 m depth, from *Hexabranhus sanguineus* (RÜPPELL & LEUCKART), leg. S. DE GRAVE, 25 October 1993, field no. S93/133.

## DISTRIBUTION

Widespread in the Indo-West Pacific, associated with both Nudibranchia and Holothuroidea (various genera). Not previously recorded from Papua New Guinea.

*Periclimenes incertus* BORRADAILE, 1915

*Periclimenes (Cristiger) incertus* BORRADAILE, 1915: 210. – BORRADAILE, 1921: 364; Plate 53, fig. 7.

*Periclimenes impar* KEMP, 1922: 147-149; Figs. 16-17; Plate 3, fig. 1.

*Periclimenes (Periclimenes) incertus*. – HOLTHUIS, 1959: 193-194. – LEDOYER, 1984: 30; Fig. 13.

*Periclimenes incertus*. – BRUCE, 1977c: 268-269; Fig. 3. – BRUCE, 1980d: 10-13; Figs. 4f-k, 5a-c.

## MATERIAL

KBIN IG 27951/NAT225; 3 ov. females cl 1.50-1.75, 1 male cl 0.80; Hansa Bay, Davit Wreck, 9 m depth, from unidentified large sponge, leg. H. WILKINS, 1 September 1992, field no. S92/15. KBIN IG 27951/NAT226; 4 specimens cl 0.90-1.65; Hansa Bay, Sushi Maru Wreck, 11 m depth, from uni-

identified ball-shaped, yellow sponge at the base of *Pocillopora* sp., leg. H. WILKINS, 7 October 1992, field no. S92/134. KBIN IG 28053/NAT227; 5 specimens cl 1.20-2.35; Laing Island, eastern side, seagrass bed, 10 m depth, from unidentified large sponge, leg. S. DE GRAVE, 3 October 1993, field no. S93/47.

## DISTRIBUTION

Widespread in the Indo-Pacific, from the East Africa to New Caledonia; associated with several genera of Porifera, usually on the surface of the host. Not previously recorded from Papua New Guinea.

*Periclimenes inornatus* KEMP, 1922

*Periclimenes (Ancylocaris) inornatus* KEMP, 1922: 191-194; Figs. 43-46.

*Periclimenes inornatus*. – BRUCE, 1976b: 103-106; Figs. 10-11. – BRUCE, 1980b: 390. – Fransen, 1989: 136; Fig. 2

## MATERIAL

KBIN 27951/NAT228; 1 ov. female cl 7.00, 1 female cl 2.50; Laing Island, lagoon, 6 m depth, from *Actinodendron plumosum* HADDON, leg. S. DE GRAVE & H. WILKINS, 15 October 1992; field no. S92/160. KBIN 28053/NAT229; 6 specimens cl 1.10-2.20; Hansa Bay, Davit wreck, 10 m depth, from *Heteractis magnifica* (QUOY & GAIMARD), leg. S. DE GRAVE, 29 September 1993; field no. S93/32. KBIN 28053/NAT230; 3 specimens cl 1.40-2.00; Hansa Bay, Wanginam Reef, 5 m depth, from *HETERACTIS CRISPA* (EHRENBERG), leg. H. WILKINS, 10 October 1993; field no. S93/86. KBIN 28053/NAT231; 2 females (bopyrised) cl 1.50-2.00; Hansa Bay, Bisal Paap Reef, 30 m depth, from *Actinodendron plumosum*, leg. S. DE GRAVE, 20 October 1993; field no. S93/135.

## DISTRIBUTION

Known from several location in the Indo-West Pacific, from Kenya to Fiji and the Palau Islands. Not previously recorded from Papua New Guinea. The association with *Actinodendron plumosum* presents a new host record.

*Periclimenes kempii* BRUCE, 1969

*Periclimenes kempii* BRUCE, 1969: 260-262. – BRUCE, 1981b: 80-81; Fig. 2

## MATERIAL

KBIN 27951/NAT232; 7 specimens cl 0.40-1.10; Laing Island lagoon, unnamed wreck, 5 m depth, from unidentified soft coral, leg. S. DE GRAVE, 7 September 1992; field no. S92/40. KBIN 28053/NAT233; 2 specimens cl 1.10-1.25; Laing Island, eastern side, 10 m depth, from coral rubble encrusted with corals, sponges and soft corals, leg. S. DE GRAVE & H. WILKINS, 7 October 1993; field no. S93/75.

KBIN 28053/NAT234; 6 specimens (1 ov. female, 1 bopyrised) cl 0.85-1.75; Hansa Bay, Purar I Reef, 10 m depth, from unidentified soft coral, leg. S. DE GRAVE, 11 October 1993; field no. S93/96.

#### DISTRIBUTION

Known from the Red Sea, East Africa, Seychelles, Andaman Islands, Singapore, Australia (Heron Island, Cobourg Peninsula, Darwin Harbour) and Fiji; associated with alcyonarians and the coral genus *Alveopora*. Not previously reported from Papua New Guinea.

#### *Periclimenes lacertae* BRUCE, 1992

*Periclimenes lacertae* BRUCE, 1992: 46-53; Figs. 1-6.

#### MATERIAL

KBIN 28053/NAT235; 1 ov. female (damaged) cl 2.95; Laing Island, eastern side, from coral rubble with live *Seriatopora hystrix*, 15 m depth, leg. S. DE GRAVE, 26 September 1993; field no. S93/18.

#### REMARKS

The present specimen has a rostral dentition of 9/5, with a straight, horizontal rostrum overreaching the scaphocerite. A distinct median process is present on the fourth thoracic sternite. The third pereopod has a non-segmented, spinulate propodus. The second pereopods are similar and equal, with the chelae being subequal in length to the carpus; the fingers are approx. 0.39x total length of the chelae; both ischium and merus harbour a distinct distoventral tooth. The fixed finger of each chelae has 3 large denticles in its proximal part, whilst the movable finger has 2 large denticles. The male holotype of *P. lacertae* has non-equal, dis-similar second pereopods, with the fingers of the chelae exhibiting a different armament and also has a different rostral formula (BRUCE, 1992). Only two species of *Periclimenes* have distoventral teeth on the ischium of the second pereopod: *P. lacertae* and *Periclimenes ischiospinosus* BRUCE, 1991. Of these *P. ischiospinosus* does not harbour a median process on the fourth thoracic sternite (BRUCE, 1991; 1992), immediately distinguishing it from the present specimen. *Periclimenes tenuipes* BORRADAILE is closely related to *P. lacertae*, but can be immediately distinguished by the absence of the ischial tooth and by the presence of segmented, non-spinulate propodi of the ambulatory pereopods. Hence, the present specimen is referred to *P. lacertae*, although the differences with the type description may indicate this to be a different, unnamed taxon.

#### DISTRIBUTION

Previously only known from the type locality: Lizard Island, Great Barrier Reef.

#### *Periclimenes lutescens* (DANA, 1852)

*Harpilius lutescens* DANA, 1852a: 25. – DANA, 1852b: 576. – DANA, 1855: 12; Plate 37, figs. 4-4h.

*Periclimenes (Harpilius) lutescens*. – HOLTHUIS, 1952: 88-91; Fig. 35.

*Periclimenes lutescens*. – BRUCE, 1972a: 412; Fig. 1b. – BRUCE, 1980a: 261-262; Fig. 1a-d.

#### MATERIAL

KBIN 27951/NAT236; 1 female cl 1.70, 1 male cl 1.35; Laing Island lagoon, NW side, from *Pocillopora damicornis*, leg. S. DE GRAVE, 4 October 1992; field no. S92/117.

#### REMARKS

Although this species has only been found in association with corals of the genus *Acropora*, being replaced by the closely related *Periclimenes consobrinus* DE MAN, 1902 (see BRUCE, 1977a), the examination of the second maxilliped (see BRUCE, 1972a) confirms the identity of the present specimens.

#### DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea and East Africa to French Polynesia, Vietnam and the Ryukyu Islands; usually associated with corals of the genus *Acropora*. Not previously recorded from Papua New Guinea, the association with *Pocillopora damicornis* is a new host record.

#### *Periclimenes madreporae* BRUCE, 1969

*Periclimenes madreporae* BRUCE, 1969: 262-263. – BRUCE, 1980a: 265-267; Fig. 2a-f. – BRUCE, 1995: 132.

*Periclimenes (Harpilius) inornatus*. – PATTON, 1966: 274-275; Fig. 2 (non *Periclimenes inornatus* KEMP, 1922)

#### MATERIAL

KBIN 27951/NAT237; 2 ov. females cl 1.28-1.31, 1 male cl 1.00; Laing Island eastern side, 4 m depth, from *Pocillopora damicornis*, leg. S. DE GRAVE, 10 October 1993; field no. POC92/31. KBIN 28051/NAT238; 2 ov. females cl 1.25-1.30, 3 females cl 1.20-1.45; Hansa Bay Duangit Reef, 3 m depth, from *Pocillopora damicornis*, leg. H. WILKINS, 13 October 1993; field no. POC93/4. KBIN 28051/NAT239; 1 ov. female cl 1.00; Laing Island eastern side, 7 m depth, from *Pocillopora damicornis*, leg. S. De Grave, 15 October 1993; field no. POC93/36.

#### REMARKS

The present material agrees closely with the type description, with the only difference being the presence of a distinct ridge on the fourth thoracic sternite, similar in shape to the illustration in BRUCE (1976b) for the closely related *Periclimenes mahei* BRUCE, 1969, although more elevated. Although this ridge was not mentioned in the type description, it is present

(C. FRANSEN pers. comm.) in the holotype (RMNH D47758). The number of dorsal rostral teeth varied from 5-7, with a single ventral tooth always being present; a single specimen had a rostral formula of 7/3.

#### DISTRIBUTION

Previously known from Queensland, Cobourg Peninsula, Lord Howe Island (Australia), Solomon Islands, French Polynesia and La Réunion; associated with several coral genera. Not previously recorded from Papua New Guinea.

#### *Periclimenes ornatus* BRUCE, 1969

*Periclimenes ornatus* BRUCE, 1969: 266-267. – BRUCE, 1982b: 252-255; Figs. 11-12. – Fransen, 1989: 136-138; Fig. 3a-i.

#### MATERIAL

KBIN 28053/NAT240; 1 ov. female cl 3.75, 1 female cl 2.05; Laing Island lagoon, from *Entacmaea quadricolor* (RÜPPEL & LEUCKART), leg. S. DE GRAVE, 29 September 1993; field no. S93/33.

#### DISTRIBUTION

Sparsely recorded from the Red Sea to Japan and southern Great Barrier Reef (Australia); associated with several species of giant anemones. Not previously recorded from Papua New Guinea.

#### *Periclimenes perlucidus* BRUCE, 1969

*Periclimenes perlucidus* BRUCE, 1969: 268-270. – BRUCE, 1978c: 230-237; Figs. 12-15. – FRANSEN, 1994: 127; Figs. 93-95.

#### MATERIAL

KBIN IG 28051/NAT241; 4 ov. females cl 2.20-2.60, 1 male cl 2.10; Hansa bay, Duangit Reef, 35 m depth, from *Dendronephthya* sp. (Alcyonaria), leg. S. DE GRAVE, 4 October 1993, field no. S93/54.

#### REMARKS

Colour of specimens noted as transparent with a yellow hue, similar to the colouration of the host.

#### DISTRIBUTION

Known from South China Sea, Madagascar and the Seychelles; associated with Gorgonaria and Alcyonaria. Not previously recorded from Papua New Guinea.

#### *Periclimenes platycheles* HOLTHUIS, 1952

*Periclimenes (Harpilius) platycheles* HOLTHUIS, 1952: 85-87; Fig. 33. – MIYAKE & FUJINO, 1968: 409-410; Fig., 3c-f. ?*Periclimenes platycheles*. – BRUCE, 1983c: 196. – BRUCE, 1992: 62-64; Fig. 15.

#### MATERIAL

KBIN IG 28056/NAT299; 1 female cl 1.80; Laing Island, eastern side, 15 m depth, from *Seriatopora hystrix* DANA, leg. S. DE GRAVE & H. WILKINS, 26 September 1993, field no. S93/18.

#### REMARKS

The single female specimen has a long, upturned rostrum, overreaching the antennal scale by nearly 0.18 of its length. The rostral dentition is 1+6/5. The third maxilliped harbours a rudimentary arthrobranch and a well developed coxal lobe. The antennal scale is 4.3x as long as wide, with a highly concave lateral margin, a truncate distal margin with the teeth distinctly overreaching the lamella. The first pereopods are relatively short and robust, with the chelae being 0.70x length of the carpus, both ischium and merus also being shorter than the carpus (0.54 and 0.74 respectively). The fingers of the chelae are 0.37x the length of the palm, medially gaping, with the lateral margin denticulate and with bifid tips. Both second pereopods are present and closely resemble the type description, with both being similar in size and structure. The fourth thoracic sternite is armed with a slender, finger-like process, whilst the fifth bears a transverse ridge with a shallow median notch. The posterior dorsal margin of the third to fifth abdominal segments are finely denticulate, with this denticulation extending approximately halfway down the lateral margin.

As several of these characters were not discussed or illustrated in the type description and as subsequent authors (MIYAKE & FUJINO, 1968; BRUCE 1992) discussed certain differences in the material at their disposal, the type material was re-examined; consisting of an ovigerous female holotype (ZMA De10285) and a male paratype (ZMA De102826, sex not recorded in the type description, partially dissected). The holotype (cl 2.65) has the left first pereopod missing, whilst the chelae of the right first pereopod is also lacking, only the left second pereopod is still present; most of the appendages of the paratype are dissected and preserved in a separate vial, although only the right second pereopod is present. The distinct thoracic armament on the fourth and fifth sterna is present in both the holo- and the paratype, as is the minute denticulation on the dorsal margin of the third to fifth abdominal segments. The dissected first pereopod of the male paratype is medially slightly gaping, with slender fingers (approx. 0.37 of the palm length), and bifid tips on both the fixed and mobile finger. Denticulations on the lateral margin of the chelae are barely visible and mostly worn down, although proximally they are more discernible. The second pereopods are sexually dimorphic, with the female holotype exhibiting the development of the

chela as illustrated and discussed by HOLTHUIS (1952), but with the male paratype exhibiting a less well-developed medial flange and with small teeth over the proximal 2/3 of its length, rather than the much larger teeth and a deep notch of the female holotype. As the type description did not discuss this sexual dimorphism, MIYAKE & FUJINO (1968) attributed the difference they observed in chela armature to biological variation, rather than sexual dimorphism. In all other features, the type material is highly similar to the presently recorded specimen, as is the description (males only) of MIYAKE & FUJINO (1968). In contrast, the material from Lizard Island (Australia), recorded by BRUCE (1983c, 1992) may belong to a closely related, as yet un-described taxon. Although in many characters the latter specimens are similar to the other material, the first pereopod are slender, not medially gaping and not pectinate.

#### DISTRIBUTION

Previously only known from Gebe Island (Indonesia), Atiatonin (Irian Jaya), Palau Islands, associated with *Acropora* sp. corals in Palau.

#### *Periclimenes psamathe* (DE MAN, 1902)

*Urocaris psamathe* DE MAN, 1902: 816-822; Plate 25, fig. 51-51j.

*Periclimenes (Harpilius) psamathe*. – HOLTHUIS, 1952: 61; Fig. 23. – MONOD, 1976: 14-22; Figs. 1-28.

*Periclimenes psamathe*. – BRUCE, 1978c: 218-221; Fig. 7. – BRUCE, 1991: 238; Figs. 1a, 3a.

#### MATERIAL

KBIN IG 27951/NAT242; 1 female cl 1.50; Sushi Maru wreck, 19 m depth, from unidentified soft coral, leg. S. DE GRAVE, 2 September 1992, field no. S92/25. KBIN IG 27951/NAT243; 2 females cl 1.50-1.75; Sushi Maru wreck, 19 m depth, from unidentified gorgonian, leg. S. DE GRAVE, 2 September 1992, field no. S92/26. KBIN IG 27951/NAT244; 1 female cl 1.70; Duangit Reef, outer side, 25 m depth, from unidentified soft coral, leg. S. DE GRAVE, 18 September 1992, field no. S92/72. KBIN IG 27951/NAT245; 10 specimens cl 1.60-2.50; Duangit Reef, outer side, 42 m depth, from unidentified soft coral, leg. S. DE GRAVE, 1 September 1992, field no. S92/73. KBIN IG 27951/NAT246; 7 specimens cl 1.40-2.50; Duangit Reef, outer side, 25 m depth, from unidentified soft coral, leg. S. DE GRAVE, 18 September 1992, field no. S92/74.

#### DISTRIBUTION

Widely distributed in the Indo-West Pacific, from East Africa to Micronesia; associated with range of Antipatharia, Hydrozoa and Gorgonacea.

#### *Periclimenes soror* NOBILI, 1904

*Periclimenes soror* NOBILI, 1904: 232. – NOBILI, 1906: 50; Pl. 2 fig. 6. – BRUCE, 1978a: 299-306; Figs. 1-6. – BRUCE, 1989: 176-177; Fig. 2. ?*Periclimenes parasiticus* BORRADAILE, 1898: 384.

#### MATERIAL

KBIN IG 27951/NAT247; 1 ov. female cl 1.95, 1 male cl 1.20; Awar seagrass bed, Hansa Bay, 5 m depth, from *Poraster superbus* (MOEBIUS), leg. S. DE GRAVE, 1 October 1992, field no. S92/12. KBIN IG 27951/NAT248; 1 female cl 1.15; Duangit Reef, from *Linckia guildingi* GRAY, leg. D. Van Der Spiegel, 7 October 1992, field no. S92/48. KBIN IG 27951/NAT249; 6 specimens cl 1.35-2.00; Duangit Reef, from *Choriaster granulatus* LÜTKEN, leg. D. Van Der Spiegel, 7 October 1992, field no. S92/49. KBIN IG 27951/NAT250; 1 ov. female cl 1.40; Laing Island Lagoon, 5 m depth, from *Culcita novaguineae* MÜLLER & TROSCHER, leg. S. DE GRAVE, 18 October 1992, field no. S92/69. KBIN IG 27951/NAT251; 2 ov. females cl 1.60-1.75, 1 male cl 1.15; Duangit Reef plateau, 3 m depth, from *Linckia guildingi* Gray, leg. S. DE GRAVE, 18 October 1992, field no. S92/70. KBIN IG 27951/NAT252; 19 specimens cl 1.35-2.15; Awar wreck, 6 m depth, from *Culcita novaguineae* MÜLLER & TROSCHER, leg. S. DE GRAVE, 23 October 1992, field no. S92/96. KBIN IG 28056/NAT252; 17 specimens cl 0.60-1.95; Laing Island Eastern side, 10 m depth, from *Culcita novaguineae* MÜLLER & TROSCHER, leg. S. DE GRAVE, field no. S93/118.

#### DISTRIBUTION

Widespread in the tropical Indo-Pacific Ocean, from East Africa to tropical Western America; associated with numerous starfish species. The association with *Linckia guildingi* is a new host record. Previously reported from Rabaul (New Britain) and Kieta (Bougainville Island) (BRUCE, 1978a). The status of *Periclimenes parasiticus*, which has as its type locality Milne Bay, is discussed by BRUCE (1975); the specimen recorded under that name by NOBILI (1899) from Beagle Bay on the south coast of Papua New Guinea was re-examined by HOLTHUIS (1952) and considered to be a juvenile male of *Leander tenuicornis*.

#### *Periclimenes tenuipes* BORRADAILE, 1898

*Periclimenes tenuipes* BORRADAILE, 1898: 384. – BORRADAILE, 1900: 406; Plate 36, fig. 2. – BRUCE, 1978b: 261-264; Figs. 6-7.

#### MATERIAL

KBIN 27951/NAT255; 1 male cl 4.10; Laing Island lagoon, baited trap, leg. S. De Grave, 28 August 1992; field no. S92/1. KBIN 27951/NAT256; 1 female cl 3.05, 1 male cl 2.60; Laing Island lagoon, 100 m depth, free-living on sandy substrate, leg. S. DE GRAVE, 17 September 1992; field no. S92/66. KBIN 27951/NAT257; 2 males cl 4.10; Hansa Bay,

Mast Wreck, 10 m depth, free-living, leg. S. DE GRAVE, 19 September 1992; field no. S92/83. KBIN 28053/NAT258; 1 female cl 3.05; Laing Island, lagoon entrance, 15-25 m depth, from coral rubble, leg. S. DE GRAVE, 27 September 1993; field no. S93/22. KBIN 28053/NAT259; 1 male cl 2.95; Laing Island lagoon, 10 m depth, collected by hand on muddy substrate, leg. S. DE GRAVE, 30 September 1993; field no. S93/42. KBIN 28053/NAT260; 1 male cl 4.10; Laing Island, eastern side, 30 m depth, from coral rubble, leg. S. DE GRAVE, 3 October 1993; field no. S93/51. KBIN 28053/NAT261; 1 female cl 2.25; Laing Island, western side, 30 m depth, from coral rubble, leg. S. DE GRAVE, 3 October 1993; field no. S93/73.

#### DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea and East Africa to the Marshall Islands; considered a free-living browser. The type locality of this species is Ralun (New Britain) (see BORRADAILE, 1900).

#### *Periclimenes tenuis* BRUCE, 1969

(Fig. 6)

*Periclimenes tenuis* BRUCE, 1969: 272-273. – BRUCE, 1982c: 197; Fig. 8c.

#### MATERIAL

KBIN 27951/NAT253; 1 ov. female cl 2.0, 1 male cl 1.25; Hansa Bay, Duangit Reef, 20 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 18 September 1992; field no. SCR92/11. KBIN 27951/NAT254; 4 specimens, cl 1.75-2.10; Hansa Bay, Duangit Reef, 20 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 18 September 1992; field no. SCR92/13.

#### REMARKS

The specimens agree closely with the type description. Rostral with six dorsal teeth, distinctly curved dorsal margin and ventral margin nearly straight (Fig. 6a). Chelae of first pereopod slightly smaller than carpus; fingers about 0.3x length of chelae, fingers with spatulate tips and curved medially (Fig. 6b-d). Second pereopods elongate, with fingers of chelae about 3-4.5x longer than palm (Fig. 6e), distal part of cutting edges of both fingers with minute recurved teeth, increasing in size distally (Fig. 6f-g). Third pereopod slender, with dactylus slender, curved, with clearly demarcated unguis (Fig. 6h-i); distal part of propodus with eight groups of serrulate and plumose setae (Fig. 6i). Male first pleopod with endopod reaching 0.4x of exopod length; endopod quadrate, medial margin with two plumose setae (Fig. 6j-k). Appendix masculina shorter than appendix interna, with two non-plumose setae at the tip and a single seta on the medial margin (Fig. 6l).

#### DISTRIBUTION

Known from East Africa, the Red Sea, Indonesia, Great Barrier Reef and the Marshall Islands; associated with crinoids. Not previously recorded from Papua New Guinea.

#### *Periclimenes venustus* BRUCE, 1990

*Periclimenes venustus* BRUCE, 1990: 229-243; Figs. 1-6. – DE GRAVE, 1998: 16; Fig. 1.

#### MATERIAL

KBIN 27951/NAT262; 1 female cl 4.20; Laing Island, lagoon, 5 m depth, from unidentified actinarian, leg. H. WILKINS, 29 September 1992; field no. S92/6. KBIN 28053/NAT263; 4 specimens cl 1.75-3.50; Laing Island, eastern side, seagrass bed, 30 m depth, from unidentified actinarian, leg. S. DE GRAVE, 3 October 1993; field no. S93/46.

#### DISTRIBUTION

Known from Australia, Philippines, Indonesia, Papua New Guinea and the Ryukyu Islands. Reported from Hansa Bay by DE GRAVE (1998).

#### *Periclimenes watamuae* BRUCE, 1976

*Periclimenes watamuae* BRUCE, 1976c: 16-20; Figs. 5-6. – FRANSEN, 1994: 130. – DE GRAVE, 1998: 18-21; Figs. 2-3.

#### MATERIAL

KBIN 27951/NAT264; 1 specimen cl 1.20; Laing Island, lagoon, NW side, 10 m depth, from *Porites* cf. *lobata* DANA (Scleractinia), leg. S. DE GRAVE, 16 September 1992; field no. S92/61. KBIN 27951/NAT265; 1 specimen cl 0.70; Laing Island, lagoon, NW side, 10 m depth, from *Lobophyllia hemprichii* (EHRENBERG) (Scleractinia), leg. S. DE GRAVE, 16 September 1992; field no. S92/62.

#### DISTRIBUTION

Known from Kenya, the Seychelles and the previous record from Hansa Bay, Papua New Guinea by DE GRAVE (1998); associated with *Alcyonaria*, *Gorgonaria* and *Scleractinia*. The association with *Porites* and *Lobophyllia* are new host records.

#### *Philarius* HOLTHUIS, 1952

#### *Philarius gerlachei* (NOBILI, 1905)

*Harpilius Gerlachei* NOBILI, 1905: 160. – NOBILI, 1906: 45-47; Plate 4, fig. 10-10a.

*Harpilius gerlachei*. – KEMP, 1922: 238-239; Figs. 74-75.

*Philarius gerlachei*. – BRUCE, 1976b: 118-120; Fig. 18. – BRUCE, 1977b: 62-65; Fig. 11. – CHACE & BRUCE, 1993: 127.

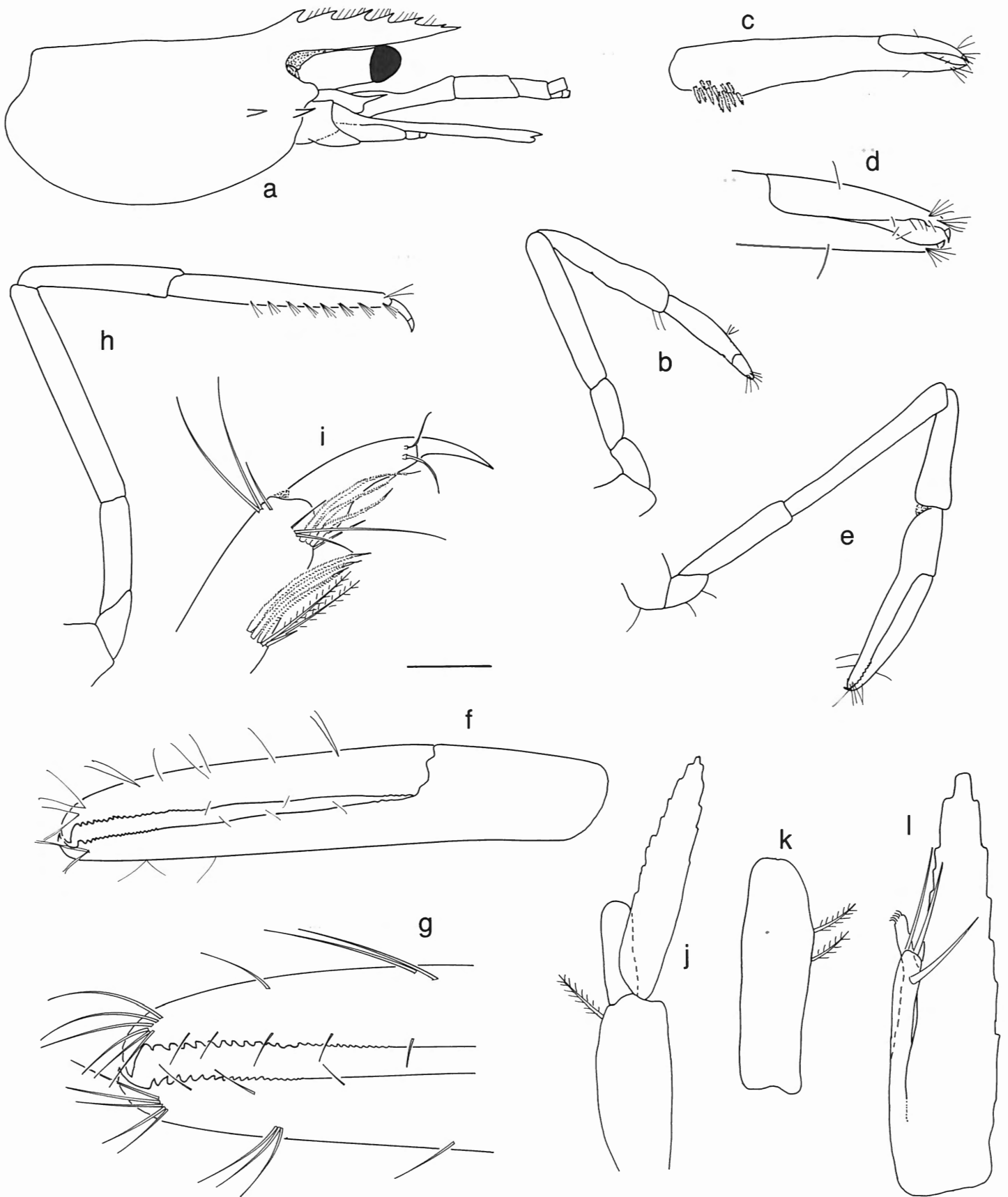


Fig. 6. – *Periclimenes tenuis* KBIN 27951/NAT253. a: carapace; b: first pereiopod; c: chela of first pereiopod; d: detail of same; e: second pereiopod; f: chela of second pereiopod; g: detail; h: third pereiopod; i: dactylus of same; j: first pleopod of male, k: endopod of first pleopod; l: appendix masculina and interna of second pleopod of male. Scale bar indicates 1.6 mm (a), 0.5 mm (b, e, h), 0.2 mm (c, f, j) or 0.1 mm (d, i, g, k, l). All from female (cl 2.00), except j-l from male (cl 1.25).

## MATERIAL

KBIN 27951/NAT266; 1 male cl 2.40; Laing Island eastern side, 15 m depth, from *Acropora* sp., leg S. DE GRAVE & H. WILKINS, 27 September 1992, field no. S92/104. KBIN 27951/NAT267; 1 ov. female cl 2.25; Hansa Bay, Sushi Maru wreck, 11 m depth, from *Acropora* sp., leg S. DE GRAVE, 8 October 1992, field no. S92/140.

## DISTRIBUTION

Widely distributed in the tropical Indo-West Pacific, associated with corals of the genus *Acropora*. Not previously recorded from Papua New Guinea.

*Philarius imperialis* (KUBO, 1940)

*Harpilius imperialis* KUBO, 1940: 1-4; Figs. 1-3

*Philarius imperialis*. – HOLTHUIS, 1952: 151. – MIYAKE & FUJINO, 1968: 420-423; Fig. 6. – CHACE & BRUCE, 1993: 127.

## MATERIAL

KBIN 27951/NAT268; 1 female cl 2.70, 1 male cl 2.25; Hansa Bay, Awar wreck, 6 m depth, from *Pocillopora eydouxi* EDWARDS & HAIME, leg S. DE GRAVE, 13 October 1992, field no. S92/152. KBIN 27951/NAT269; 1 female cl 1.50; Hansa Bay, Awar wreck, 6 m depth, from *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 26 September 1992, field no. S92/99. KBIN 28053/NAT270; 1 ov. female cl 2.70; Laing Island, eastern side, 20 m depth, from *Acropora* sp., leg. H. WILKINS, 13 October 1993, field no. S93/107. KBIN 28053/NAT271; 1 ov. female cl 3.05; Potsdam Isl., eastern side, 10 m depth, from *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 14 October 1993, field no. S93/111.

## DISTRIBUTION

Widely distributed in the tropical Indo-West Pacific, mainly associated with corals of the genus *Acropora*. Not previously recorded from Papua New Guinea.

*Pontonia* LATREILLE, 1829*Pontonia ascidicola* BORRADAILE, 1898

*Pontonia ascidicola* BORRADAILE, 1898: 389. – HOLTHUIS, 1952: 165-169; Fig. 79-81.

## MATERIAL

KBIN IG 28056/NAT272; 1 male cl 2.30; Laing Island eastern side, from coral rock fragments encrusted with ascidians and sponges, leg. S. DE GRAVE, 13 October 1993, field no. S93/108.

## DISTRIBUTION

Known from the Red Sea, Madagascar, Indonesia, Papua New Guinea and New Caledonia, associated with ascidians. The type locality of this species is Ralun (New Britain).

*Pontonia sibogae* BRUCE, 1973

*Pontonia sibogae* BRUCE, 1973: 182-186; Fig. 1. – BRUCE, 1977d: 179; Fig. 10. – FRANSEN, 1994: 134; Fig. 106.

*Pontonia katoi*. – HOLTHUIS, 1952: 158 (partim); Figs. 73a-b, 74b, 75a-b, d-f, 76c, f-g, 77a, e-f (non *Pontonia katoi* KUBO, 1940).

## MATERIAL

KBIN IG 28056/NAT273; 1 female cl 1.10; Laing Island eastern side, from unidentified solitary ascidian, leg. S. DE GRAVE, 23 September 1993, field no. S93/3.

## REMARKS

The single individual agrees well with the type description of BRUCE (1973), although a well developed dorsal, median carina is present on the rostrum. Also, the proportions of the dactylus of the third pereopod agree more with the material of FRANSEN (1994) than either the type description or the illustration by BRUCE (1977d).

## DISTRIBUTION

Known from Australia (Queensland), Indonesia, Madagascar, the Seychelles and Oman. Associated with ascidians, although some specimens may have been free-living (BRUCE, 1978c; HOLTHUIS, 1986). Not previously recorded from Papua New Guinea.

*Pontonides* BORRADAILE, 1917*Pontonides unciger* CALMAN, 1939

*Pontonides unciger* CALMAN, 1939: 213-215; figs. 6-7. – FUJINO & MIYAKE, 1969: 87-92; Fig. 1 – MONOD, 1979: 10-19; Figs. 9-35.

## MATERIAL

KBIN IG 27951/NAT274; 2 specimens cl 1.09-1.10; Davit wreck, 9 m depth, from unidentified gorgonian, leg. S. DE GRAVE, 1 September 1992, field no. S92/14. KBIN IG 27951/NAT274; 1 female cl 2.15, 1 male cl 1.25; Laing Island lagoon, NW side, 5 m depth, from *Cirripathes* sp., leg. S. DE GRAVE, 4 October 1992, field no. S92/116.

## DISTRIBUTION

Known from Red Sea, Kenya, Madagascar, Seychelles, Indo-



nesia, Australia, Japan, Marquesas and Hawaii; precise distribution uncertain due to possible existence of species complex (see BRUCE, 1978c).

*Pontoniopsis* BORRADAILE, 1915

*Pontoniopsis comanthi* BORRADAILE, 1915

*Pontoniopsis comanthi* BORRADAILE, 1915: 377; Plate 57, fig. 27. – HOLTHUIS, 1952: 153-156; Figs. 70-71. – BRUCE, 1980b: 396-398; Figs. 3d, 4-5.

MATERIAL

KBIN 27951/NAT275; 1 male cl 0.75; Hansa Bay, Duangit Reef, 25 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 18 September 1992; field no. SCR92/16. KBIN 27951/NAT276; 4 specimens cl 0.50-0.65; Hansa Bay, Mast wreck, 4 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 19 September 1992; field no. SCR92/19. KBIN 27951/NAT277; 1 male cl 0.80; Hansa Bay, Mast wreck, 4 m depth, from unidentified crinoid, leg. S. DE GRAVE & H. WILKINS, 19 September 1992; field no. SCR92/20. KBIN 27951/NAT278; 2 specimens cl 0.60-0.65; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/28. KBIN 27951/NAT279; 1 male cl 0.70; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/29. KBIN 27951/NAT280; 1 female cl 0.65; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/31. KBIN 27951/NAT281; 1 female cl 0.75, 1 male cl 0.5; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/32. KBIN 27951/NAT282; 1 male cl 0.75; Hansa Bay, Awar wreck, 6 m depth, from unidentified crinoid, leg. H. WILKINS, 24 September 1992; field no. SCR92/33. KBIN 27951/NAT283; 5 specimens cl 0.75-1.25; Laing Island, exposed side, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 24 September 1992; field no. SCR92/34. KBIN 28053/NAT284; 1 ov. female cl 0.85, 1 male cl 0.70; Laing Island, eastern side, 10 m depth, night dive, from unidentified crinoid, leg. S. DE GRAVE, 27 September 1993; field no. SCR93/1. KBIN 28053/NAT285; 1 female cl 0.70, 1 male cl 0.65; Laing Island, eastern side, 10 m depth, night dive, from unidentified crinoid, leg. S. DE GRAVE, 27 September 1993; field no. SCR93/6. KBIN 28053/NAT286; 4 specimens cl 0.75-1.10; Hansa Bay, Duangit Reef, 30 m depth, from unidentified crinoid, leg. S. DE GRAVE, 4 October 1993; field no. SCR93/12. KBIN 28053/NAT287; 1 female cl 0.50, 1 male cl 0.55; Hansa Bay, Duangit Reef, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 5 October 1993; field no. SCR93/20. KBIN 28053/NAT288; 16 specimens cl 0.50-1.10; Hansa Bay, Duangit Reef, 15 m depth, from unidentified crinoid, leg. S. DE GRAVE, 5 October 1993; field no. SCR93/21.

DISTRIBUTION

Widespread in the Indo-West Pacific Ocean, associated with several crinoid genera. Not previously reported from Papua New Guinea.

*Stegopontonia* NOBILI, 1906

*Stegopontonia commensalis* NOBILI, 1906

*Stegopontonia commensalis* NOBILI, 1906: 258. – BRUCE, 1982c: 204; Figs. 1g, 6a, 8d.

MATERIAL

KBIN IG 27951/NAT289; 1 female cl 5.50; Laing Island eastern side, 10 m depth, from *Diadema setosum* (LESKE), leg. D. VAN DER SPIEGEL, 6 September 1992, field no. S92/41.

DISTRIBUTION

Known from French Polynesia, Hawaii, Australia (Queensland), New Caledonia, Mauritius, Seychelles, Kenya and the South China Sea. Associated with echinoids, mainly of the genus *Diadema*. Not previously recorded from Papua New Guinea.

*Thaumastocaris* KEMP, 1922

*Thaumastocaris streptopus* KEMP, 1922

(Fig. 7)

*Thaumastocaris streptopus* KEMP, 1922: 244-247; Figs. 78-80. – HOLTHUIS, 1952: 111-114; Figs. 46-47. – BRUCE, 1996: 250-251; Fig. 21.

MATERIAL

KBIN IG 27951/NAT290; 1 ov. female cl 12.8; Laing Island lagoon, NW side, 8 m depth, from unidentified large sponge, leg. S. DE GRAVE, 8 October 1992, field no. S92/142. KBIN IG 27951/NAT291; 1 ov. female cl 12.8, 1 male cl 9.6; Laing Island lagoon, NW side, 7 m depth, from unidentified large sponge, leg. S. DE GRAVE, 11 October 1992, field no. S92/146. KBIN IG 27951/NAT292; 5 juvenile specimens cl 1.55-2.75; Laing Island lagoon, NW side, 7 m depth, from unidentified sponge, leg. S. DE GRAVE, 13 October 1992, field no. S92/149. KBIN IG 28053/NAT293; 1 female cl 6.72, 1 male cl 10.40; Laing Island lagoon entrance, 25 m depth, from *Xestospongia testudinaria* (LAMARCK) (Porifera), leg. S. DE GRAVE, 8 October 1992, field no. S93/20. KBIN IG 28053/NAT294; 1 juvenile male cl 2.6; Laing Island Eastern side, small seagrass bed, 30 m depth, from unidentified sponge, leg. S. DE GRAVE, 8 October 1992, field no. S93/47.

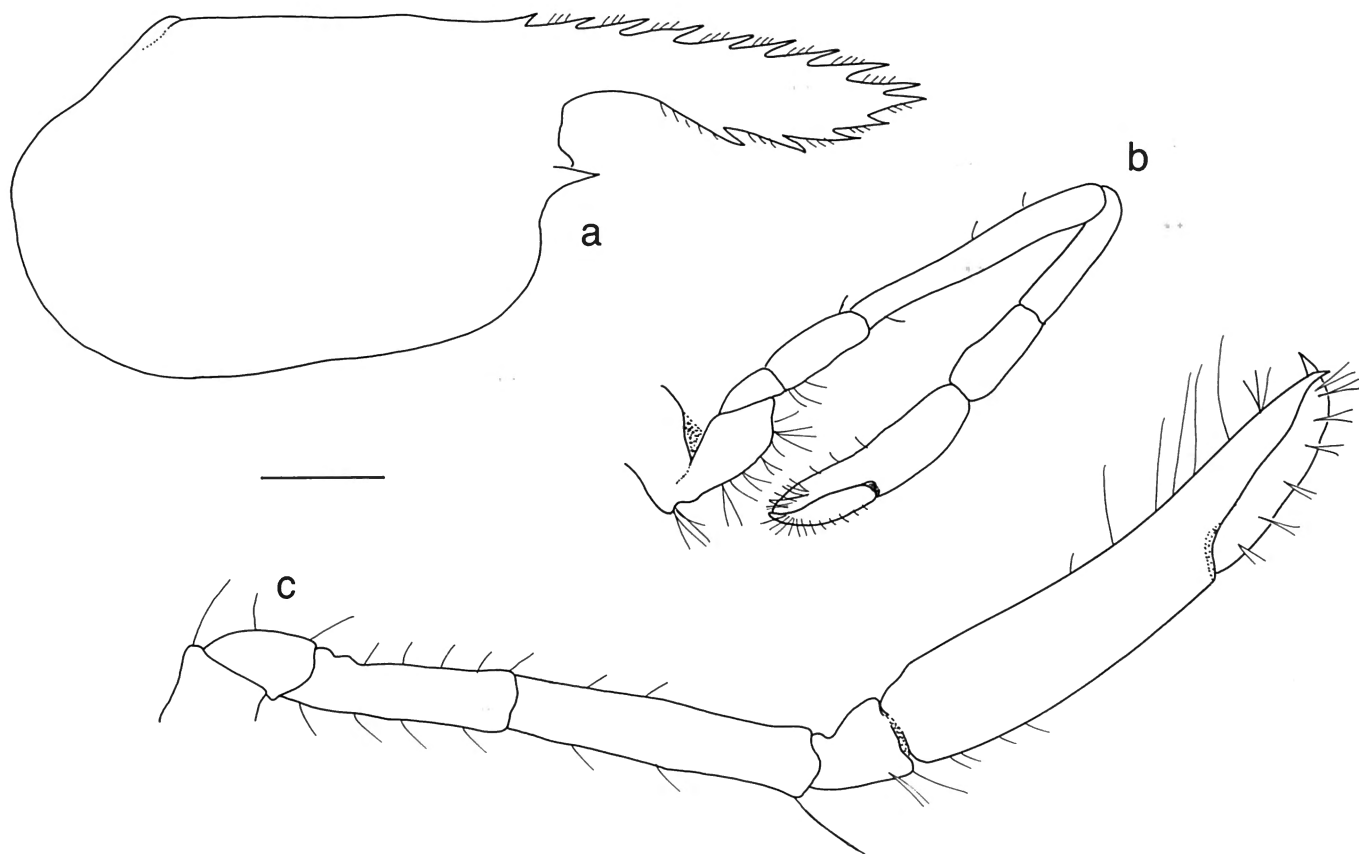


Fig. 7. – *Thaumastocaris streptopus*. KBIN IG 27951/NAT292, juvenile. a: carapace; b: first pereiopod; c: second pereiopod. Scale bar indicates 0.7 mm (a) or 0.5 mm (b, c).

#### REMARKS

In juvenile specimens the first pereiopods are relatively short and subequal, with the carpus only divided into two articles (Fig. 7b); the second pereiopods are subequal and similar, with the palm being smooth and the fingers unarmed (Fig. 7c). This is in contrast to the adult specimens described by KEMP (1922), but agrees with the description of a post-larval specimen by BRUCE (1996). In contrast to both these descriptions, the ventral rostral carina bears four teeth (Fig. 7a).

#### DISTRIBUTION

Widespread in the Indo-West Pacific region, from East Africa and the Red Sea through to the Marshall Islands; associated with several genera of Porifera. Not previously recorded from Papua New Guinea.

*Vir* HOLTHUIS, 1952

#### *Vir orientalis* (DANA, 1852)

*Palaemonella orientalis* DANA, 1852a: 26. – DANA, 1852b: 583. – DANA, 1855: Plate 38, figs. 4-4d. – KEMP, 1922: 131-134; Figs. 9-11.

*Vir orientalis*. – HOLTHUIS, 1952: 30. – BRUCE, 1972b: 65-67; Fig. 1. – BRUCE, 1981b: 79.

#### MATERIAL

KBIN IG 27951/NAT295; 1 ov. female cl 1.75, 1 female cl 1.50, 1 male cl 1.60; Laing Island eastern side, 7 m depth, from plate-like *Acropora* sp., leg. S. DE GRAVE & H. WILKINS, 16 October 1992, field no. S92/170. KBIN IG 28053/NAT296; 1 female cl 1.65, 1 male cl 2.00; Laing Island eastern side, 20 m depth, from *Acropora* sp., leg. S. DE GRAVE, 13 October 1993, field no. S93/107.

#### REMARKS

The specimens agree closely with previous descriptions, all specimens have a rostral dentition of 7/1. The characteristics which distinguish this species from *V. philippinensis* are discussed under that species.

## DISTRIBUTION

Distributed throughout the tropical Indo-West Pacific; associated with scleractinian corals, mainly of the genus *Pocillopora*, although a few records from *Acropora* and *Stylophora* exist. The specimens recorded from the Seychelles by FRANSEN (1994) as associated with *Physogyra lichtensteini* may belong to the following species. Not previously recorded from Papua New Guinea.

*Vir philippinensis* BRUCE & SVOBODA, 1984

*Vir philippinensis* BRUCE & SVOBODA, 1984: 87-94; Figs. 1-4. - CHACE & BRUCE, 1993: 132.

## MATERIAL

KBIN IG 27951/NAT297; 2 ov. females cl 2.75-3.00, 2 males cl 2.25-2.60; Laing Island Lagoon, NW side, 10 m depth, from *Euphyllia glabrescens* (CHAMISSO & EYSENHARDT), leg. S. De Grave, 16 September 1992, field no. S92/59. KBIN IG 27951/NAT298; 1 ov. female cl 2.50, 1 male cl 1.60; Hansa Bay, Mast Wreck, 7 m depth, from *Physogyra lichtensteini* EDWARDS & HAIME, leg. S. DE GRAVE, 19 September 1992, field no. S92/79.

## REMARKS

The present specimens agree closely with the type description, which distinguishes this species from *V. orientalis* primarily on the basis of the longer and more slender second pereopod and the ambulatory pereopods. The rostral dentition of the present specimens is 4/1, 5/1, 6/1, 6/3 and 7/2. In the present material the second pereopod of *V. philippinensis* has the palm about 3.40-4.00 times longer than deep and the carpus 0.64-0.90 of the palm length; in *V. orientalis* these proportions are 2.64-2.95 and 0.67-0.73 respectively. The propodus of the third pereopod in *V. philippinensis* is 8.28-9.35 longer than wide, as opposed to 5.78-8.75 in *V. orientalis*. In contrast to these proportions, both species can be distinguished with ease on the basis of the morphology of the propodus and the dactylus of the ambulatory pereopods. In *V. orientalis* dense long setae are present on the distal margin of the propodus, with the dactylus short and strongly curved; in contrast in *V. philippinensis* the propodus is feebly setose, and the dactylus is elongate and not curved.

## DISTRIBUTION

Previously known from the Philippines, Queensland and the Ryukyu Islands; associated with several coral genera. The association with *Euphyllia glabrescens* presents a new host record.

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