

Caridean shrimps (Crustacea, Decapoda) from Hansa Bay, Papua New Guinea: Bresiliidae, Hippolytidae, Pandalidae, Pasiphaeidae, Processidae, Rhynchocinetidae, Styrodactylidae and Thalassocarididae.

by S. DE GRAVE

Abstract

The present contribution deals with the caridean shrimp fauna of Hansa Bay of the families Bresiliidae, Hippolytidae, Pandalidae, Pasiphaeidae, Processidae, Rhynchocinetidae, Styrodactylidae and Thalassocarididae. Sixteen species are dealt with, of which 14 are new records for Papua New Guinea.

Key words: Caridea, Decapoda, Papua New Guinea.

Resumé

La présente contribution traite de la faune des crevettes caridés de Hansa Bay, appartenant aux familles des Bresiliidae, Hippolytidae, Pandalidae, Pasiphaeidae, Processidae, Rhynchocinetidae, Styrodactylidae et Thalassocarididae. Seize espèces sont signalées dont 14 sont nouvelles pour la Papouasie Nouvelle-Guinée.

Mots clés: Caridea, Decapoda, Papouasie Nouvelle-Guinée.

Introduction

The pontoniid shrimp fauna of Papua New Guinea is now reasonably well known, with 71 species known from one locality alone (DE GRAVE, 2000). In contrast, other shrimp families are still poorly recorded.

The present report deals with the non-palaemonoid, non-alpheoid shrimp species collected during two expeditions (1992, 1993) to the Hansa Bay region, based at the King Leopold III Biological Station at Laing Island. Although the prime focus of these expeditions was to document the pontoniid and alpheid fauna (DE GRAVE, 1998, 1999a, 1999b, 2000), other families were incidentally collected.

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

Leopold III Biological Station, Laing Island, Contribution n° 356.

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. The majority of specimens have been deposited in the collections of the 'Koninklijk Belgisch Instituut voor Natuurwetenschappen', Brussels, Belgium (acronym KBIN); registration numbers IG 27951 and IG 28056, whilst voucher specimens of some species have been deposited in the Oxford University Museum of Natural History (OUMNH).

Systematic account

Family **Bresiliidae** CALMAN, 1896

Discias RATHBUN, 1902

Discias atlanticus GURNEY, 1939

Discias atlanticus GURNEY, 1939: 388-393; Figs. 1-13. — BRUCE, 1975: 301-304; Figs. 1-3. — KENSLEY, 1983: 3-8; Figs. 4-5.

MATERIAL

KBIN 28056/NAT299; 1 ov. female cl 3.00; Laing Island eastern side, 40 m depth, from coral rubble, leg. S. DE GRAVE, 23 September 1993; field no. S93/8. KBIN IG 28056/NAT300; 1 male cl 1.85; 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.

REMARKS

Both specimens agree closely with the type description (GURNEY, 1939) and the re-descriptions by BRUCE (1975) and KENSLEY (1983). In common with other Indo-Pacific material, the present specimens harbour a biarticulate mandibular palp, raising further doubts if indeed the Indo-Pacific records belong to the same species as the Bermuda species, which harbours a single-articulated palp (KENSLEY, 1983).

DISTRIBUTION

Reported from scattered locations in the Indo-Pacific; and from Gabon, the Cape Verde Islands, Bermuda (type local-

ity), Gulf of Mexico and Florida in the Atlantic. Not previously recorded from Papua New Guinea.

Family **Hippolytidae** BATE, 1888

Lysmata RISSO, 1816

Lysmata kuekenthali (DE MAN, 1902)

Merhippolyte orientalis? DE MAN, 1902: 849-852; Plate 26, figs. 56-56e. (non *Merhippolyte orientalis* BATE, 1888).

Hippolyte kükenthali DE MAN, 1902: 850.

Hippolysmata kükenthali. — KEMP, 1914: 115117; Plate 6, fig. 11. — HOLTHUIS, 1947: 69-70.

Lysmata kuekenthali. — CHACE, 1997: 74-75.

MATERIAL

KBIN IG 28056/NAT301; 1 male cl 4.02; Awar Point, intertidal rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 12 October 1993, field no. S93/105.

DISTRIBUTION

Widespread in the Indo-Pacific, not previously recorded from Papua New Guinea.

Saron THALLWITZ, 1891

Saron marmoratus (OLIVIER, 1811)

Palæmon marmoratus OLIVIER, 1811: 665.

Saron marmoratus. — HOLTHUIS, 1947: 25-29 (full synonymy). — MIYAKE & HAYASHI, 1966: 143-146; Figs. 1, 3a-c. — CHACE, 1997: 89-90.

MATERIAL

KBIN 27951/NAT302; 1 female cl 4.05; Laing Island reef flat, intertidal, free-living, leg. S. DE GRAVE & H. WILKINS, 7 September 1992, field no. S92/47. KBIN 27951/NAT303; 1 ov. female cl 6.15; Laing Island reef flat, intertidal, free-living, leg. S. DE GRAVE & H. WILKINS, 30 September 1992, field no. S92/112. KBIN 28056/NAT304; 2 ov. females cl 6.95-7.10; Hansa Bay, Dunagit Reef, 10 m depth, free-living, leg. S. DE GRAVE, 25 September 1993, field no. S93/13. KBIN 28056/NAT305; 1 female cl 4.15; Laing Island lagoon, 5 m depth, from loose coral rubble, leg. S. DE GRAVE, 28 September 1993, field no. S93/27. KBIN 28056/NAT306; 2 females cl 2.15, 3.35; Hansa Bay, Purar I Reef, 10 m depth, from coral rubble, leg. S. DE GRAVE, 11 October 1993, field no. S93/97. KBIN IG 28051/NAT307; 1 female cl 3.15; Hansa Bay, Wanginam II Reef, from coral rock encrusted with sponges, leg. S. DE GRAVE & H. WILKINS, 10 October 1993, field no. S93/Wanginam.

DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea through to the Marquesas and Hawaii. Previously recorded from the Louisiades (Milne Bay) by BORRADAILE (1900) and the northern coast of Papua New Guinea by MORGAN (1988).

Saron neglectus DE MAN, 1902

Saron neglectus DE MAN, 1902: 854-856; Plate 26, figs. 58-58b. — HOLTHUIS, 1947: 30-31 (full synonymy). — MIYAKE & HAYASHI, 1966: 146-150; Figs. 2, 3d-f. — CHACE, 1997: 90.

MATERIAL

KBIN IG 28056/NAT308; 1 female cl 2.75; Hansa Bay, Wanginam II Reef, 20 m depth, from *Galaxea fascicularis* (L.) (Scleractinia), leg. S. DE GRAVE, 10 October 1993, field no. S93/88. OUMNH 21847/1 1 female cl 9.95; Laing Island eastern side, reef flat, leg. P. VAN DE WALLE, 27 October 1992.

DISTRIBUTION

Widespread in the Indo-Pacific, from the Red Sea through to Enewetak. Not previously recorded from Papua New Guinea.

Thinora BRUCE, 1998

Thinora maldivensis (BORRADAILE, 1915)

Thor maldivensis BORRADAILE, 1915: 208-209. — BORRADAILE, 1917: 401-402; Plate 56, fig. 6.

Thorina maldivensis. — BRUCE, 1997: 14-23; Figs. 1-6.

Thinora maldivensis. — BRUCE, 1998: 398.

MATERIAL

KBIN 28056/NAT309; 1 juvenile cl 0.80; 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.

DISTRIBUTION

Widespread in the Indo-Pacific, previously recorded from Motupore Island (Papua New Guinea) by BRUCE (1997).

Thor KINGSLEY, 1878

Thor amboinensis (DE MAN, 1888)

Hippolyte amboinensis DE MAN, 1888: 535.

Thor amboinensis. — HOLTHUIS, 1947: 50-51.

MATERIAL

KBIN 27951/NAT310; 2 specimens cl 0.65; Laing Island reef flat, intertidal, free-living, leg. S. DE GRAVE & H. WILKINS, 30 September 1992, field no. S92/112. KBIN IG 27951/NAT311; 1 female cl 1.15; Laing Isl. lagoon, NW side, 7 m depth, from *Acrhelia horrescens* (DANA) (Scleractinia), leg. S. DE GRAVE, 12 October 1992, field no. S92/148. KBIN 28056/NAT312; 1 female cl 2.08; Hansa Bay, Duangit reef, western side, from coral rubble, 5 m depth, leg. S. DE GRAVE, 25 September 1993; field no. S93/16. KBIN 28056/NAT313; 1 male cl 1.20; Hansa Bay, Dunagit Reef, 10 m depth, from unidentified soft coral; leg. S. DE GRAVE, 5 October 1993, field no. S93/58. KBIN 28056/NAT314; 1 female cl 1.35; 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 28056/NAT315; 1 female cl 1.35; Hansa Bay, Purar I Reef, 20 m depth, from coral rubble, leg. S. DE GRAVE, 11 October 1993, field no. S93/98.

DISTRIBUTION

Widespread in the Indo-Pacific. Not previously recorded from Papua New Guinea.

Family **Pandalidae** HAWORTH, 1825

Chlorocurtis KEMP, 1925

Chlorocurtis jactans (NOBILI, 1904)

Virbius (?) *jactans* NOBILI, 1904: 230. — NOBILI 1906: 37; Plate 2, fig. 2.

Chlorocurtis miser KEMP, 1925: 280-282.

Chlorocurtis jactans. — LEDOYER 1969:67; Plate 1, figs. 1A-4A; Plate 14B. — LEDOYER, 1984: 33; Fig. 15.

MATERIAL

KBIN 28056/NAT316; 2 juveniles cl 0.80-1.00; Hansa Bay, Purar I Reef, 10 m depth, from coral rubble, leg. S. DE GRAVE, 11 October 1993, field no. S93/97. KBIN 28056/NAT317; 1 juvenile cl 0.80; Hansa Bay, Duangit Reef, 3 m depth, from base of unidentified soft coral, leg. S. DE GRAVE, 12 October 1993, field no. S93/103.

REMARKS

The specimens agree with the description by KEMP (1925, as *C. miser*) and the figures by LEDOYER (1969, 1984), especially in the absence of a supra-orbital spine, 3 carpal segments on the second pereopod and the characteristically shaped propodus of pereopods 3-5. In the present specimens the rostrum reaches just past the eyestalks, with the upper margin being strongly convex and harbouring 4-5 teeth. The post-orbital tooth is mobile and separated by a larger gap from the next tooth, than between all other teeth. Tip of the rostrum is upturned. Lower margin is straight, unarmed. These rostral differences are presumably due to the juvenile status of the present specimens.

DISTRIBUTION

Recorded from the Red Sea, Kenya, Andaman Islands, Singapore, New Caledonia and the Gilbert Islands. Not previously recorded from Papua New Guinea.

Family **Pasiphaeidae** DANA, 1852

Leptochela STIMPSON, 1860

Leptochela (Leptochela) sydniensis DAKIN & COLEFAX, 1940

Leptochela sydniensis DAKIN & COLEFAX, 1940: 153; Figs. 245-246.

Leptochela (Leptochela) sydniensis. — CHACE, 1976: 40-44; Figs. 32-34.

MATERIAL

KBIN IG 28056/NAT318; 1 female cl 2.65; Laing Isl. eastern side, 30-35 m depth, from light-trap, leg. S. DE GRAVE, 13 October 1993, field no. S93/106.

DISTRIBUTION

Sparsely recorded from the Indo-Pacific, ranging from the Arabian Sea to Australia and Japan. Not previously recorded from Papua New Guinea.

Family **Processidae** ORTMANN, 1896

Clytomanningus CHACE, 1997

Clytomanningus coutierei (NOBILI, 1904)

Processa Coutierei NOBILI, 1904: 234. — NOBILI, 1906: 78-79; Plate 4, figs. 3-3a

Processa coutierei. — NOUVEL, 1945: 395-398; Figs. 1-8. — HAYASHI, 1975: 95-98; Figs. 17-18. — LEDOYER, 1984: 40; Fig. 19.

Clytomanningus coutierei. — CHACE, 1997: 34 (key).

MATERIAL

KBIN 28056/NAT319; 1 ov. female cl 2.00; 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 28056/NAT320; 1 ov. female cl 1.85; Laing Island eastern side, 7 m depth, from coral rubble, leg. S. DE GRAVE & H. WILKINS, 24 October 1993; field no. S93/127.

REMARKS

The specimens agree closely with previous descriptions, especially the non-bifid, triangular rostrum and the large molar process of the mandible, characteristic of the genus.

DISTRIBUTION

A rare species, previously recorded from Gulf of Aden (NOBILI, 1904), Mombassa (HAYASHI, 1975), New Caledonia (LEDOYER, 1984) and Hawaii (TITGEN, 1987). Not previously recorded from Papua New Guinea.

Nikoides PAUL'SON, 1875

Nikoides maldivensis BORRADAILE, 1915

Nikoides maldivensis BORRADAILE, 1915: 209. — BORRADAILE, 1917: 411; Plate 58, fig. 11. — GURNEY, 1937: 91; Plate 2, figs. 30-32. — HAYASHI, 1975: 62-65; Fig. 5. — CHACE, 1997: 36.

MATERIAL

KBIN 28056/NAT321; 1 female cl 2.80; Hansa Bay, Duangit Reef, 25 m depth, from coral rubble; leg. S. DE GRAVE & H. WILKINS, 25 September 1993; field no. S93/15. KBIN 28056/NAT322; 1 female cl 2.00; 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.

DISTRIBUTION

A rare species, sparsely recorded throughout the Indo-Pacific. Not previously recorded from Papua New Guinea.

Nikoides sibogae DE MAN, 1918

Nikoides Sibogae DE MAN, 1918: 160. — DE MAN, 1920: 193-197; Plate 16, figs. 50-50j (pro parte).

Nikoides sibogae. — HAYASHI, 1975: 65-69; Figs. 6-7. — CHACE, 1997: 37.

MATERIAL

KBIN 28056/NAT323; 1 male cl 2.80; Hansa Bay, Duangit Reef, 25 m depth, from coral rubble; leg. S. DE GRAVE & H. WILKINS, 25 September 1993; field no. S93/15. KBIN 28056/NAT324; 1 female cl 2.35; Laing Island eastern side, 20 m depth, from coral rubble, leg. S. DE GRAVE, 30 September 1993; field no. S93/41. KBIN IG 28051/NAT325; 1 female cl 2.35, 1 male cl 2.10; Hansa bay, Duangit Reef, 35 m depth, from dead base of *Dendronephthya* sp. (Alcyonaria), leg. S. DE GRAVE, 4 October 1993, field no. S93/54. KBIN 28056/NAT326; 6 spec. cl 1.20-4.65; 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. OUMNH 21847/2; 1 female cl 2.28, 1 male cl 3.80; 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.

DISTRIBUTION

Widespread in the Indo-Pacific, recorded from the littoral to considerable depths. Not previously recorded from Papua New Guinea.

Nikoides steinii (EDMONDSON, 1935)

Processa steinii EDMONDSON, 1935: 3-5; Fig. 1.

Nikoides steinii. — HAYASHI, 1975: 69-73; Figs. 8-9. — CHACE, 1997: 37.

MATERIAL

KBIN IG 28056/NAT327; 1 non-ov. female cl 2.00; 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. KBIN 28056/NAT328; 9 specimens cl 2.00-3.35; Laing Island lagoon, 5 m depth, from floating dead wood, leg. S. DE GRAVE, 24 September 1993; field no. S93/10. KBIN 28056/NAT329; 1 male cl 2.15; 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. KBIN 28056/NAT330; 1 non-ov. female cl 2.00; Laing Island eastern side, 3 m depth, from broken coral rubble, leg. S. DE GRAVE, 27 September 1993, field no. S93/21. KBIN 28056/NAT331; 1 non-ov. female cl 1.85; Laing Island, lagoon entrance, 15-25 m depth, from coral rubble, leg. S. DE GRAVE, 27 September 1993; field no. S93/22. KBIN 28056/NAT332; 5 specimens cl 1.45-3.65; Laing Island lagoon, 4 m depth, from holes in dead wood, leg. S. DE GRAVE, 5 October 1993; field no. S93/61. KBIN 28056/

NAT333; 1 ov. female cl 3.80, 1 female cl 1.40; Laing Island lagoon, 5 m depth, from base of dead *Porites* sp.; leg. S. DE GRAVE, 6 October 1993; field no. S93/64. KBIN 28056/NAT334; 2 ov. females cl 2.80, 3.35; Laing Island eastern side, 5 m depth, from coral rubble encrusted with sponges, ascidians and algae; leg. S. De Grave, 6 October 1993; field no. S93/65. KBIN 28056/NAT335; 4 specimens cl 1.20-1.35; Laing Island eastern side, 10 m depth, from dead *Acropora* colony, leg. S. DE GRAVE, 7 October 1993; field no. S93/74. KBIN 28056/NAT336; 2 ov. females cl 3.35-4.80, 1 female cl 2.45; Laing Island eastern side, intertidal reef flat, rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 9 October 1993; field no. S93/81. KBIN 28056/NAT337; 8 specimens cl 1.45-3.85; Hansa Point, intertidal rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 11 October 1993; field no. S93/93. KBIN 28056/NAT338; 1 non-ov. female cl 3.00, 1 male cl 2.00; Hansa Bay, Purar I Reef, 10 m depth, from coral rubble, leg. S. DE GRAVE, 11 October 1993, field no. S93/97. KBIN IG 28056/NAT339; 1 ov. female cl 3.90; 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. KBIN IG 28051/NAT340; 1 non-ov. female cl 3.20; Hansa Bay, Wanginam II Reef, from coral rock encrusted with sponges, leg. S. DE GRAVE & H. WILKINS, 10 October 1993, field no. S93/Wanginam. OUMNH 21847/3; 13 specimens cl 1.75-3.35; Laing Island lagoon, 5 m depth, from loose coral rubble; leg. S. DE GRAVE, 28 September 1993; field no. S93/27.

DISTRIBUTION

Widespread in the Indo-Pacific, a common coral reef species. Not previously recorded from Papua New Guinea.

Processa LEACH, 1815*Processa hawaiiensis* (DANA, 1852)

Nika hawaiiensis DANA, 1852a: 20. — DANA, 1852b: 538. — DANA, 1855: Plate 33, figs. 7a-7h.

Processa hawaiiensis. — HAYASHI, 1975: 106-110; Figs. 22-23.

MATERIAL

KBIN 28056/NAT341; 1 female cl 1.35; Hansa Bay, Davit Wreck, 10 m depth, from coral rubble, leg. S. DE GRAVE, 23 September 1993; field no. S93/5. KBIN 28056/NAT342; 1 female cl 1.25; Laing Island eastern side, 3 m depth, from coral rocks, leg. S. DE GRAVE & H. WILKINS, 3 October 1993; field no. S93/52. KBIN 28056/NAT343; 8 spec. cl 1.65-3.15; Laing Island eastern side, intertidal reef flat, rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 9 October 1993; field no. S93/81. KBIN IG 28056/NAT344; 16 spec. cl 1.65-3.60; Awar Point, intertidal rock pool, quinaldine poisoning, leg. S. DE GRAVE & H. WILKINS, 12 October 1993, field no. S93/105.

REMARKS

The specimens agree closely with previous descriptions, especially the rudimentary exopod on the third maxilliped and the short, simple rostrum.

DISTRIBUTION

Previously only known from Hawaii (DANA, 1852b; RATHBUN, 1906), Clipperton Island (CHACE, 1962), the Pacific coast of Mexico (ALVAREZ et al., 1996) and East Africa (Tanzania, Kenya) (HAYASHI, 1975). The present record bridges a considerable distribution gap.

Family *Rhynchocinetidae* ORTMANN, 1890*Rhynchocinetes* H. MILNE EDWARDS, 1837*Rhynchocinetes durbanensis* GORDON, 1936

Rhynchocinetes durbanensis GORDON, 1936: 83-85; Figs. 5a-d, 6b-c. — OKUNO & TAKEDA, 1992: 85-89; Figs. 1, 3-7.

MATERIAL

KBIN 28053/NAT345; 5 specimens cl 7.00-9.75; Laing Island eastern side, free living, 33 m depth, leg. J.-M. OUIIN, 2 July 1993.

DISTRIBUTION

Precise distribution unclear due to confusion with other members of the genus; reliably reported from South Africa, Ryukyus, Philippine and Indonesia. Not previously reported from Papua New Guinea.

Family *Stylodactylidae* BATE, 1888*Neostylodactylus* HAYASHI & MIYAKE, 1968*Neostylodactylus amarynthus* (DE MAN, 1902)

Stylodactylus sp. DE MAN, 1902: 897-902; Plate 27, figs. 64a-b.

Stylodactylus amarynthus DE MAN, 1902: 897.

Neostylodactylus amarynthus. — HAYASHI & MIYAKE, 1968: 603-605; Fig. 6. — CHACE, 1983: 4-8; Figs. 1-3.

MATERIAL

28056/NAT346; 1 female cl 4.45; Hansa Bay Duangit Reef, 35 m depth, from broken coral rocks, leg. S. DE GRAVE & H. WILKINS, 4 October 1993; field no. S93/57.

DISTRIBUTION

Recorded from the Andaman Islands, Indonesia, Philippines and Japan (CHACE, 1983), not previously recorded from Papua New Guinea.

Family *Thalassocarididae* BATE, 1888*Thalassocaris* STIMPSON, 1860*Thalassocaris crinita* (DANA, 1852)

Regulus crinitus DANA, 1852a: 27. — DANA, 1852b: 599. — DANA, 1855: Plate 39, figs. 6a-h.

Thalassocaris crinita. — GOPALA MENON & WILLIAMSON, 1971: 33-36; Figs. 1b, 3-5b, 6c-d. — CHACE, 1985: 7-8; Figs. 3-5.

MATERIAL

KBIN 28056/NAT347; 1 female cl 2.35; Hansa Bay, Duangit Reef, 25 m depth, from coral rubble; leg. S. DE GRAVE & H. WILKINS, 25 September 1993; field no. S93/15. KBIN IG 28056/NAT348; 1 female cl 2.15; Laing Isl. eastern side, 15 m depth, from *Galaxea fascicularis* (L.) (Scleractinia), leg. H. WILKINS, 26 September 1993, field no. S93/17. KBIN 28056/NAT349; 1 ov. female cl 4.15, 1 male cl 3.75; Laing Island eastern side, 15 m depth, from *Seriatopora hystrix*, leg. S. DE GRAVE, 26 September 1993; field no. S93/18. KBIN 28056/NAT350; 2 females cl 2.15-3.50; Laing Island eastern side, 3 m depth, from broken coral rubble, leg. S. DE GRAVE, 27 September 1993, field no. S93/21. KBIN 28056/NAT351; 8 spec. cl 2.15-3.40; Laing Island, lagoon entrance, 15-25 m depth, from coral rubble, leg. S. DE GRAVE, 27 September 1993; field no. S93/22. KBIN 28056/NAT352; 1 female cl 2.30; Laing Island lagoon, 5 m depth, from loose coral rubble; leg. S. DE GRAVE, 28 September 1993; field no. S93/27. KBIN IG 28056/NAT353; 1 female cl 2.25; Laing Isl. eastern side, 20 m depth, from *Galaxea fascicularis* (L.) (Scleractinia), leg. S. DE GRAVE, 30 September 1993, field no. S93/37. KBIN IG 28056/NAT354; 1 ov. female cl 4.75; Laing Isl. aquarium, possibly from sample S93/37, leg. S. DE GRAVE, 30 September 1993, field no. S93/38. KBIN 28056/NAT355; 14 spec. cl 2.35-4.15; Laing Island eastern side, 15 m depth, from coral rubble, leg. S. DE GRAVE, 30 September 1993; field no. S93/40. KBIN 28056/NAT356; 16 spec. cl 2.45-4.15; Laing Island eastern side, 20 m depth, from coral rubble, leg. S. DE GRAVE, 30 September 1993; field no. S93/41. KBIN IG 28056/NAT357; 7 spec. cl 2.15-3.60; Laing Island lagoon, 5 m depth, from light-trap, leg. S. DE GRAVE, 4 October 1993, field no. S93/55. KBIN 28056/NAT358; 1 male cl 3.15; Hansa Bay Duangit Reef, 35 m depth, from coral rocks, leg. S. DE GRAVE & H. WILKINS, 4 October 1993; field no. S93/57. KBIN 28056/NAT359; 1 female cl 2.50; Laing Island lagoon, 5 m depth, from base of dead *Porites* sp.; leg. S. DE GRAVE, 6 October 1993; field no. S93/64. KBIN 28056/NAT360; 1 male cl 6.15; 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 28056/NAT361; 1 female cl 2.85; Laing Isl. eastern side, 30-35 m depth, from light-trap, leg. S. DE GRAVE, 13 October 1993, field no. S93/106. KBIN IG 28056/NAT362; 4 spec. cl 2.35-3.70; Laing Isl. eastern side, from coral rock fragments encrusted with ascidians and sponges, leg. S. DE GRAVE, 13 October 1993, field no. S93/108. KBIN 28056/NAT363; 4 spec. cl 2.00-3.40; 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 IG 28056/NAT364; 3 spec. cl 2.15-4.80; 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. KBIN IG 28051/NAT365; 3 spec. cl 3.15-4.70; Hansa Bay, Wanginam II Reef, from coral rock encrusted with sponges, leg. S. DE GRAVE & H. WILKINS, 10 October 1993, field no. S93/Wanginam. OUMNH 21847/4; 3 spec. cl 3.00-3.80; Laing Island eastern side, 40 m depth, from coral rubble, leg.

S. DE GRAVE, 23 September 1993; field no. S93/8. OUMNH 21847/5; 14 spec. cl 2.35-4.00; Laing Isl. eastern side, from large fragment of coral rock encrusted with ascidians and sponges, leg. S. DE GRAVE, 9 October 1993, field no. S93/83.

REMARKS

The specimens agree closely with previous descriptions, although as already noted by CHACE (1985) the species does exhibit a large degree of variation in taxonomically important characters, such as rostral armature, meral spination of the second pereopod and secondary sexual characteristics. This species has previously been encountered in pelagic samples and dredge samples, and was the most frequently encountered species in coral rubble samples in Hansa Bay. As such it appears probable that the species undergoes diurnal migrations, similar to those reported for Processidae.

DISTRIBUTION

Widely recorded from the Red Sea to Indonesia, Japan and the Marshall Islands, usually in depths less than 100 m. Not previously recorded from Papua New Guinea.

Acknowledgements

H. WILKINS, J.-M. QUIN and P. VAN DE WALLE, are acknowledged for collecting specimens. K. WOUTERS is gratefully acknowledged for allowing to deposit some of the present material in the OUMNH. V. GHENNE kindly translated the abstract into French. Part of this research was supported by the F.K.F.O. (Belgian Fund for Joint Basic Research) and the King Leopold II Fund.

References

- ALVAREZ, F., CAMACHO, M. E. & VILLALOBOS, J. L., 1996. The first species of *Prionolpheus* from the eastern Pacific, and new records of caridean shrimp (Crustacea: Decapoda: Caridea) from the western coast of Mexico. *Proceedings of the Biological Society of Washington*, 109: 715-724.
- BATE, C. S., 1888. Report on the Crustacea Macrura dredged by H.M.S. Challenger during the years 1873-1876. *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the Years 1873-1876*, 24: 1-942, Plates 1-157.
- BORRADAILE, L. A., 1900. On the Stomatopoda and Macrura brought by Dr. WILLEY from the South Seas. In: WILLEY (ed.) *Zoological Results Based on Material from New Britain, New Guinea, Loyalty islands, and Elsewhere, Collected During the Years 1895, 1896 and 1897*, volume 4: 395-428, plates 36-39.
- BORRADAILE, L. A., 1915. Notes on Carides. *The Annals and Magazine of Natural History*, 8(15): 205-213.
- BORRADAILE, L. A., 1917. The Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the Leadership of Mr. J. STANLEY GARDINER, M.A.. No. IX.- On Carides from the Western Indian Ocean. *The Transactions of the Linnean Society of London*, 17(1): 397-412, Plates 58-59.
- BRUCE, A. J., 1975. On the occurrence of *Discias atlanticus* GURNEY, 1939 in the western Indian Ocean. *Crustaceana*, 29: 301-305.
- BRUCE, A. J., 1997. A new genus of hippolytid shrimp (Crustacea: Decapoda: Hippolytidae) for *Thor maldivensis* BORRADAILE. *Memoirs of the Queensland Museum*, 42: 13-23.
- BRUCE, A. J., 1998. A new name *Thinora*, proposed for the preoccupied name *Thorina* BRUCE (Crustacea: Decapoda: Hippolytidae). *Memoirs of the Queensland Museum*, 42: 398.
- CALMAN, W. T., 1896. On deep-sea Crustacea from the South West of Ireland. *Transactions of the Royal Irish Academy*, 31: 1-20.
- CHACE, F. A. Jr., 1962. The non-brachyuran decapod crustaceans of Clipperton Island. *Proceedings of the United States National Museum*, 113: 605-635.
- CHACE, F. A. Jr., 1976. Shrimps of the pasiphaeid genus *Leptochela* with descriptions of three new species (Crustacea: Decapoda: Caridea). *Smithsonian Contributions to Zoology*, 222: 1-51.
- CHACE, F. A. Jr., 1983. The caridean shrimps (Crustacea: Decapoda) of the *Albatross* Philippine expedition, 1907-1910, Part 1: Family Stylodactylidae. *Smithsonian Contributions to Zoology*, 381: 1-21.
- CHACE, F. A. Jr., 1985. The caridean shrimps (Crustacea: Decapoda) of the *Albatross* Philippine expedition, 1907-1910, Part 3: Families Thalassocarididae and Pandalidae. *Smithsonian Contributions to Zoology*, 411: 1-143.
- CHACE, F. A. Jr., 1997. The caridean shrimps (Crustacea: Decapoda) of the *Albatross* Philippine expedition, 1907-1910, Part 7: Families Atyidae, Eugonatonotidae, Rhynchocinetidae, Bathypalaemonellidae, Processidae, and Hippolytidae. *Smithsonian Contributions to Zoology*, 587: 1-106.
- CLAERBOUDT, M., MASSIN, C. & BOUILLON, J., 1989. A general survey of Laing Island environment (Papua New Guinea). *Indo-Malayan Zoology*, 6: 1-23.
- DAKIN, W. J. & COLEFAX, A. N., 1940. The plankton of the Australian coastal waters of New South Wales, Part no. 1: With special reference to the seasonal distribution, the phtoplankton, and the planktonic Crustacea, and in particular, the Copepoda and crustacean larvae, together with an account of the more frequent members of the groups Mysidacea, Euphausiacea, Amphipoda, Mollusca, Tunicata, Chaetognatha, and some reference to the fish eggs and fish larvae. *Publications of the University of Sydney Department of Zoology*, 1: 1-215.
- DANA, J. D., 1852a. Conspectus crustaceorum. Conspectus of the Crustacea of the exploring expedition under Capt. WILKES, U.S.N. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 1852, 10-28.
- DANA, J. D., 1852b. *United States Exploring expedition. During the Years 1838, 1839, 1840, 1841, 1842, under the Command of Charles WILKES, U. S. N.*, Vol. XIII. Crustacea. Part I., 685 pages. Philadelphia, C. Sherman.
- DANA, J. D., 1855. *United States Exploring expedition. During the Years 1838, 1839, 1840, 1841, 1842, under the Command of Charles WILKES, U. S. N.*, Atlas: 1-27, Plates I-96.. Philadelphia, C. Sherman.
- DE GRAVE, S., 1998. Pontoniinae (Decapoda, Caridea) associated with *Heliofungia actiniformis* (Scleractinia) from Hansa Bay, Papua New Guinea. *Belgian Journal of Zoology*, 128(1): 13-22.
- DE GRAVE, S., 1999a. Caridean shrimps (Crustacea, Decapoda) from seagrass habitats in Hansa Bay, Papua New Guinea. *Beaufortia*, 49(3): 19-27.

- DE GRAVE, S., 1999b. Pontoniinae (Crustacea: Decapoda: Palaemonidae) associated with bivalve molluscs from Hansa Bay, Papua New Guinea. *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Biologie*, 69: 125-141.
- DE GRAVE, S., 2000. Caridean shrimps (Crustacea, Decapoda) from Hansa Bay, Papua New Guinea: Palaemonidae and Gnathophyllidae. *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Biologie*, 70: 119-148.
- EDMONDSON, C. H., 1935. New and rare Polynesian Crustacea. *Occasional Papers of Bernice P Bishop Museum*, 10: 1-40.
- GOPALA MENON, P. & WILLIAMSON, D. I., 1971. Decapod Crustacea from the International Indian Ocean Expedition; the species of *Thalassocaris* (Caridea) and their larvae. *Journal of Zoology (London)*, 165: 27-51.
- GORDON, I., 1936. On the macruran genus *Rhynchocinetes* with the description of a new species. *Proceedings of the Zoological Society of London*, 1936: 75-88.
- GURNEY, R., 1937. Notes on some decapod Crustacea from the Red Sea. I. The genus *Processa*. *Proceedings of the Zoological Society, London*, 1937: 85-101; Plates 1-6.
- GURNEY, R., 1939. A new species of the decapod genus *Discias* from Bermuda. *Annals and Magazine of Natural History*, series 11, 3: 388-393.
- HAWORTH, A. H., 1825. A new binary arrangement of the macrurous Crustacea. *Philosophical Magazine and Journal*, 65: 183-184.
- HAYASHI, K.-I., 1975. The Indo-West Pacific Processidae (Crustacea, Decapoda, Caridea). *Journal of the Shimonoseki University of Fisheries*, 24: 1-145.
- HAYASHI, K.-I. & MIYAKE, S., 1968. Notes on the family Styrodactylidae with the description of a new genus *Neostyrodactylus*. *Journal of the faculty of Agriculture, Kyushu University*, 14: 583-611.
- HOLTHUIS, L. B., 1947. The Hippolytidae and Rhynchocinetidae collected by the Siboga and Snellius expeditions with remarks on other species. *Siboga Expedition Reports*, 39(a8): 1-100.
- KEMP, S., 1914. Notes on Crustacea Decapoda in the Indian Museum, V: Hippolytidae. *Records of the Indian Museum*, 10: 81-129; Plates 1-7.
- KEMP, S., 1925. Notes on Crustacea Decapoda in the Indian Museum, XVII: On various Caridea. *Records of the Indian Museum*, 27: 249-343.
- KENSLEY, B., 1983. New records of bresiliid shrimp from Australia, South Africa, Caribbean, and Gulf of Mexico (Decapoda: Natantia: Caridea). *Smithsonian Contributions to Zoology*, 394: 1-31.
- KINGSLEY, J. S., 1878. Notes on the North American Caridea in the Museum of the Peabody Academy of Science at Salem, Mass. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 1878: 89-98.
- LEACH, W. E., 1815-1875. Malacostraca Podophthalmata Britanniae; or descriptions of such British species of the Linnaean genus *Cancer* as have their eyes elevated on footstalks. London, 124 pp., 45 Plates.
- LEDOYER, M., 1969. Les Caridea de la frondaison des herbiers de phanérogames de la région de Tuléar (République Malgache). Etude Systématique et Écologique. *Recueil des Travaux de la Station marine d'Endoume*, Supplement 8: 63-115; Plates 1-19.
- LEDOYER, M., 1984. Les Caridea (Crustacea: Decapoda) des herbiers de phanérogames marines de Nouvelle-Calédonie (région de Nouméa). *Zoologische Verhandelingen, Leiden*, 211: 1-58.
- MAN, J. G., DE, 1888. Bericht über die von Herrn Dr. J. Brock im Indischen Archipel gesammelten decapoden und stomatopoden. *Archiv für Naturgeschichte*, 53: 215-600; Plates 7-22a.
- MAN, J. G., DE, 1902. Die von Herrn Professor KÜKENTHAL im Indischen Archipel gesammelten Dekapoden und Stomatopoden. *Abhandlungen herausgegeben von der Senckenbergischen Naturforschenden Gesellschaft*, 25: 466-929, Plates 19-27.
- MAN, J. G., DE, 1918. Diagnoses of new species of macrurous decapod Crustacea from the Siboga-Expedition. *Zoologische Mededeelingen, Leiden*, 4: 159-166.
- MAN, J. G., DE, 1920. The Decapoda of the Siboga Expedition, IV: Families Pasiphaeidae, Styrodactylidae, Hoplophoridae, Nematocarcinidae, Thalassocarididae, Pandalidae, Psalodopodidae, Gnathophyllidae, Processidae, Glyphocrangonidae, and Crangonidae. *Siboga Expedition Reports*, 39(a3): 1-318; Plates 1-25.
- MILNE EDWARDS, H., 1837. Histoire naturelle des Crustacés, comprenant l'anatomie, la physiologie et la classification de ces animaux, volume 2 Paris, Librairie encyclopédique de Roret, 532 pp.
- MIYAKE, S. & HAYASHI, K.-I., 1966. Some hippolytid shrimps living in coral reefs of the West Pacific. *Journal of the faculty of Agriculture, Kyushu University*, 14: 143-160.
- MORGAN, G. J., 1988. A checklist of decapod Crustacea from the Madang region, Papua New Guinea. *Science in New Guinea*, 14(3): 124-139.
- NOBILI, G., 1904. Diagnoses préliminaires de vingt-huit espèces nouvelles de Stomatopodes et Décapodes Macrourous de la mer Rouge. *Bulletin du Muséum d'Histoire Naturelle, Paris*, 10(5): 228-238.
- NOBILI, G., 1906. Faune carcinologique de la Mer Rouge. Décapodes et Stomatopodes. *Annales de Sciences naturelles, Zoologie*, series 9, 4: 1-347, Plates 1-11.
- NOUVEL, H., 1945. Description du type de *Processa coutierei* Nobili, 1904 (Crust. Decap. Nat.). *Bulletin du Muséum d'Histoire Naturelle, Paris*, series 2, 17: 395-398.
- OKUNO, J. & TAKEDA, M., 1992. Distinction between two hinge-beak shrimps, *Rhynchocinetes durbanensis* Gordon and *R. uritai* KUBO (Family Rhynchocinetidae). *Revue française Aquariologie*, 19: 85-90.
- OLIVIER, A. C., 1811. Palaemon: Palaemon. In: OLIVIER, A. C. *Encyclopédie méthodique: Histoire Naturelle: Insectes*, volume 8: 652-667.
- ORTMANN, A., 1890. Die Decapoden-Krebse des Strassburger Museums, mit besonderer Berücksichtigung der von Herrn Dr. Döderlein bei Japan und bei den Liu-Kiu-Inseln gesammelten und z. Z. im Strassburger Museum aufbewahrten Formen. I. Theil. Die Unterordnung Natantia Boas. *Zoologische Jahrbücher*, 5: 437-542, Plates 36-37.
- ORTMANN, A., 1896. Das system der Decapoden Krebse. *Zoologische Jahrbücher*, 9: 409-453.
- PAUL'SON, O., 1875. Studies on Crustacea of the Red Sea, Part I. Podophthalmata I Edriophthalmata (Cumacea). 144 pages, Plates 1-21 (original in Russian, not seen, English translation 1961, Israel Program for Scientific Translations, Jerusalem).

- RATHBUN, M. J., 1902. Papers from the Hopkins Stanford Galapagos Expedition. 1898-1899, VIII: Brachyura and Macrura. *Proceedings of the Washington Academy of Sciences*, 4: 275-292.
- RATHBUN, M. J., 1906. The Brachyura and Macrura of the Hawaiian Islands. *Bulletin of the United States Fish Commission*, 23: 827-930; Plates 1-24.
- RISSO, A., 1816. *Histoire naturelle des Crustacés des environs de Nice*. Librairie Grecque-Latine-Allemande. 175 pp.; 3 plates.
- STIMPSON, W., 1860. Prodomus descriptionis animalium evertebratum, quae in Expeditione ad Oceanum Pacificum Septemtrionalem, a Republica Federata missa, Cadwaladaro RINGGOLD et Johanne Rodgers DUCIBUS, observavit et descripsit. Pars VIII. Crustacea Macrura. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 1860: 22-47.
- THALLWITZ, J. 1891. Über einige neue indo-pacifische Crustaceen (Vorläufige Mitteilung). *Zoologischer Anzeiger*, 14: 96-103.
- TITGEN, R. H., 1987. New decapod records from the Hawaiian Islands (Crustacea, Decapoda). *Pacific Science*, 41: 141-147.

Sammy DE GRAVE
Department of Invertebrates
Koninklijk Belgisch Instituut voor Natuurwetenschappen
Brussels, Belgium.

Present address:
Oxford University Museum of Natural History
Parks Road, Oxford, OX1 3PW
United Kingdom.
E-mail: sammy.degrave@oum.ox.ac.uk