

## A small collection of mysids (Crustacea: Mysidacea) from the Dampier Archipelago, Western Australia

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**Abstract** – During the faunal survey in the Dampier Archipelago, Western Australia, from 1998–2002, two species of mysid crustaceans, *Siriella hansenii* W. M. Tattersall, 1922 and *Heteromysis harpaxoides* Băcescu and Bruce, 1980, were collected from the shallow coastal waters of the archipelago. The present collections of *S. hansenii* and *H. harpaxoides* are the fifth and the third records of their occurrences, respectively.

### INTRODUCTION

The faunal survey of the Dampier Archipelago, Western Australia, was conducted by the Western Australian Museum from 1998–2002. The survey produced several mysid specimens from the shallow coastal waters of the archipelago, which were identified to the following two species: *Siriella hansenii* W. M. Tattersall, 1922 and *Heteromysis harpaxoides* Băcescu and Bruce, 1980. *Siriella hansenii* has been recorded from the tropical coastal waters of the Indo-West Pacific, based mostly on damaged or juvenile specimens. Its occurrence in the Dampier Archipelago is the fifth record of this species and is also a new Western Australian record. The original description of *H. harpaxoides* was based on five specimens from Wistari Reef in the Great Barrier Reef, Queensland, and an additional single male specimen was collected from Ashmore Reef in Western Australia. *Heteromysis harpaxoides* has been found in association with the hermit crab genus *Dardanus*. The present collection is the third record of occurrence of this species and also provides a new habitat record.

### MATERIALS AND METHODS

Total length (tl in millimeters) measured from the rostral plate to the posterior end of the telson, excluding apical spines, is used to represent the body size; ovig. for ovigerous; stn for station. Specimens treated in this study are deposited in the Western Australian Museum, Perth (WAM).

### SYSTEMATICS

*Siriella hansenii* W. M. Tattersall, 1922  
Figure 1

*Siriella hansenii* W. M. Tattersall, 1922: 448, figs 1, 2.  
– O. Tattersall, 1960: 167. – Ii, 1964: 577. – Pillai, 1965: 1689, fig. 11. – Băcescu, 1986: 19. – Müller, 1993, 47. – Murano, 1998: 46. – Keable *et al.*, 2003: 467.

### Material examined

**Western Australia, Dampier Archipelago.** WAM C 29369 (2 males, tl ~ 7.5 mm [damaged]; 2 ovig. females, tl ~ 7.5 mm [damaged]), stn DA3/99/51, Enderby I. (20°35.20'S, 116°30.91'E), intertidal, off seaweed, coll. M. Hewitt, 01.09.1999.

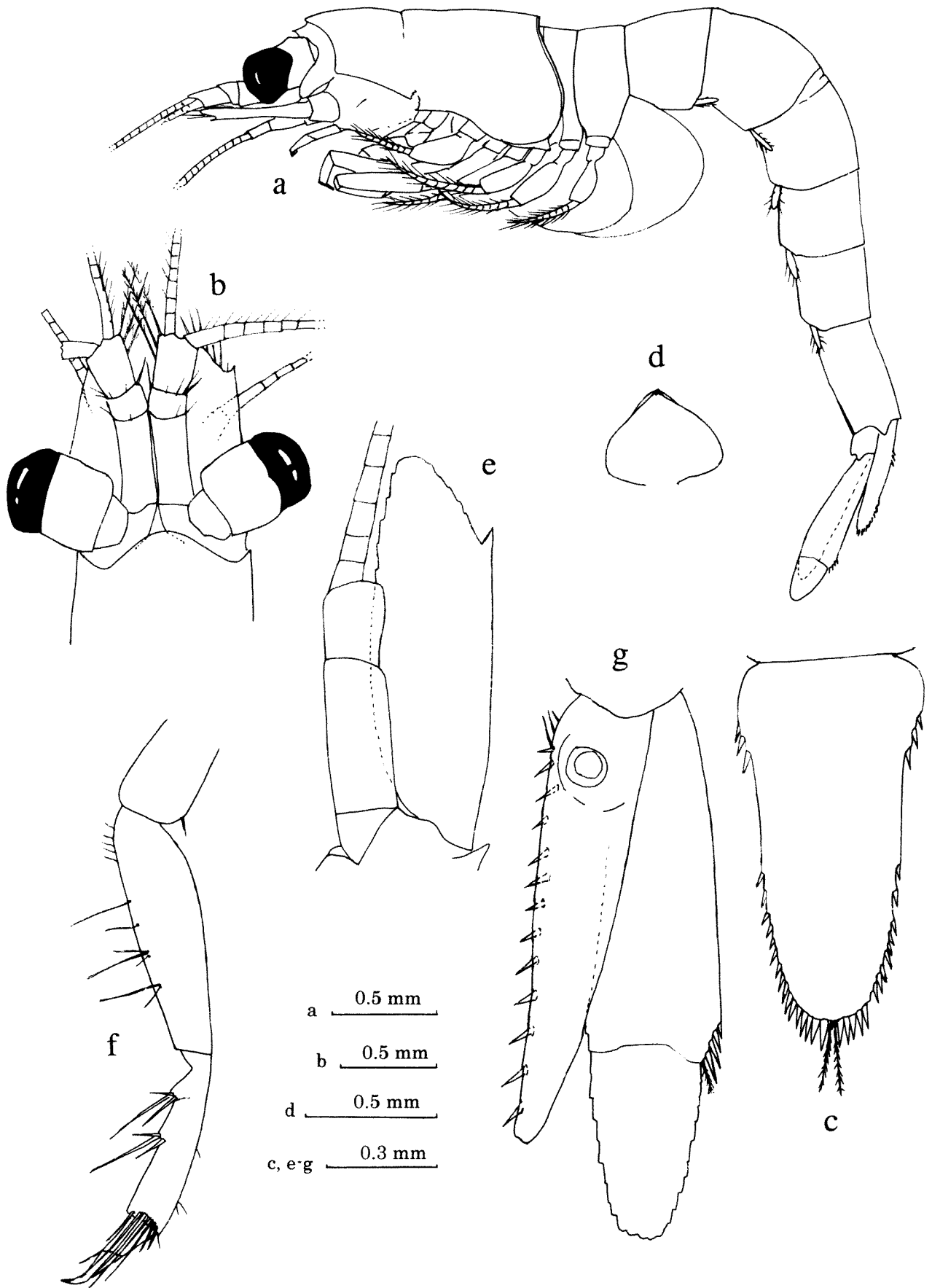
### Description

Carapace (Figure 1a) without process or tubercles on dorsal surface; posterior margin excavate, leaving last 2 thoracic somites uncovered in dorsal aspect; cervical sulcus distinct. Rostral plate (Figure 1b) broadly rounded; pseudorostral process sharp, extending beyond end of rostral plate.

Abdomen (Figure 1a) smooth, without folds or spines; first to fifth somites subequal in length, sixth somite about 1.5 times as long as fifth.

Telson (Figure 1c) short, falling far short of distal suture of uropodal exopod, subequal in length to sixth abdominal somites, twice or slightly less than 2 times as long as basal width; posterior margin broadly rounded, with 3 short spines and 1 pair of long plumose setae; lateral margin weakly concave at basal two-fifths, armed with 3 anterior spines, followed by unarmed part, and with 14–16 spines posteriorly, increasing in length distally.

Eyes (Figure 1a, b) normal, cornea nearly as broad as ocular peduncle. Antennular peduncle in females (Figure 1b) with first segment longest, 3.5 times as long as second, third segment about 0.6 times as long as first; antennular peduncle in male more robust than in female, first segment 3.5 times as long as second,



**Figure 1** *Siriella hanseni*, W. M. Tattersall, 1922. **a**, ovig. female (tl ~ 7.5 mm); **b**, **d**, **f**, female (tl ~ 7.5 mm); **c**, **e**, **g**, male (tl ~ 7.5 mm). **a**, entire body, lateral; **b**, anterior part of carapace and cephalic appendages, dorsal; **c**, telson, dorsal; **d**, labrum, external; **e**, right antenna, ventral; **f**, left 4th thoracic endopod, mesial; **g**, right uropod, dorsal.

third segment almost as long as combined length of basal 2 segments; male lobe well developed. Antennal scale (Figure 1b, e) falling slightly short of distal end of antennular peduncle, 3.0–3.5 times as long as wide, relatively wider in females than in males; lateral spine situated at distal one-fifth; distal lobe almost as long as broad; suture separating terminal lobe indistinct. Labrum (Figure 1d) subtriangular, with minute spine at anteromedian margin.

Third thoracic endopod with ischium undivided, without distinct articulation; carpopropodus undivided into subsegments by distinct articulation, but with shallow, discontinuous suture near proximoventral setae running towards obliquely dorsal; dactylus strong, longer than tuft of terminal setae of carpopropodus. Dactylus of posterior 5 thoracic endopods (Figure 1f) small, nail with sharp terminal bend.

Pleopods in male biramous; pseudobranchial lobe on first and fifth pleopods straight; pseudobranchial lobes on second to fourth pleopods spirally-coiled, neither ramous with modified terminal setae. Female pleopods (Figure 1a) rudimentary, unsegmented lobe.

Exopod of uropod (Figure 1g) distinctly longer than endopod, proximal segment with 3 or 4 lateral spines near distal articulation and no plumose setae except for apical pair; endopod with 12 or 13 widely placed stout spines along mesioventral margin.

### Remarks

*Siriella hansenii* is similar to the following five Indo-West Pacific species, which are characterized in having a proportionately short telson: *S. brevicaudata* Paulson, 1875, from the Indian Ocean; *S. vincentii* W. M. Tattersall, 1927, from southern Australia; *S. lingvula* Ii, 1964, from the northwestern Pacific; *S. intermedia* Panampunnayil, 1981, from the Laccadive Archipelago, Indian Ocean; and *S. spinula* Panampunnayil, 1995, from the southwest coast of Australia.

*Siriella brevicaudata* is distinguished from the aforementioned species by the possession of a subquadrate telson bearing a truncated or weakly concave apex. *Siriella vincentii* and *S. spinula* have a slightly pronounced, sub-triangular rostrum, opposed to an evenly rounded one in *S. hansenii*. The Pacific congener, *S. lingvula*, differs from *S. hansenii* in having the antennal scale with a distinct suture separating the terminal lobe, as opposed to having no suture in this species. *Siriella intermedia* possesses as many as 12 spines on the lateral margin of the uropodal exopod instead of having at most five in all other species.

Murano (1998) noted a minor discrepancy between a specimen of *Siriella hansenii* from the Arabian Gulf and the type specimen(s) from India. The telson of the former specimen has a longer un-

naked part and also the distal end is more broadly rounded with a weak apical concavity, as well as a greater number of spines in the uropod. Specimens from the Dampier Archipelago possess a greater number of spines in the telson as compared with those of the type material as well as the specimen from the Arabian Gulf. In most other respects, however, the present specimens showed general agreement with the original description.

Băcescu (1986) reported the occurrence of several adult specimens of *Siriella hansenii* from northern Australia, but no account on their morphology was presented. Although there remains some uncertainty for the taxonomy of some local populations, future study may clarify their taxonomic status.

The majority of species belonging to the genus *Siriella* have a long frontal process on the labrum. The present specimens referred to *Siriella hansenii* are remarkable in having no such prominent process but have a microscopically small projection, a feature shared by *S. lingvula* and *S. spinula*. Panampunnayil (1995, Table 2) pointed out that *S. hansenii* and *S. vincentii* possess a long spine on the labrum. As far as I am aware, however, no reliable evidence that supports this account could be found in published documents (see also Ii, 1964). From their general morphological resemblance, it is highly possible that *S. brevicaudata*, *S. vincentii*, and *S. intermedia* have a similar frontal process on the labrum. Further studies are required and the taxonomic significance of the character states of these species should be re-evaluated.

### Habitat

Shallow coastal waters, occurring often in association with sea grasses.

### Distribution

Arabian Gulf (Murano, 1998), Gulf of Mannar, India (W. M. Tattersall, 1922), Singapore Strait (O. Tattersall, 1960), Darwin Harbour, northern Australia (Băcescu, 1986).

### *Heteromysis harpaxoides* Băcescu and Bruce, 1980 Figure 2

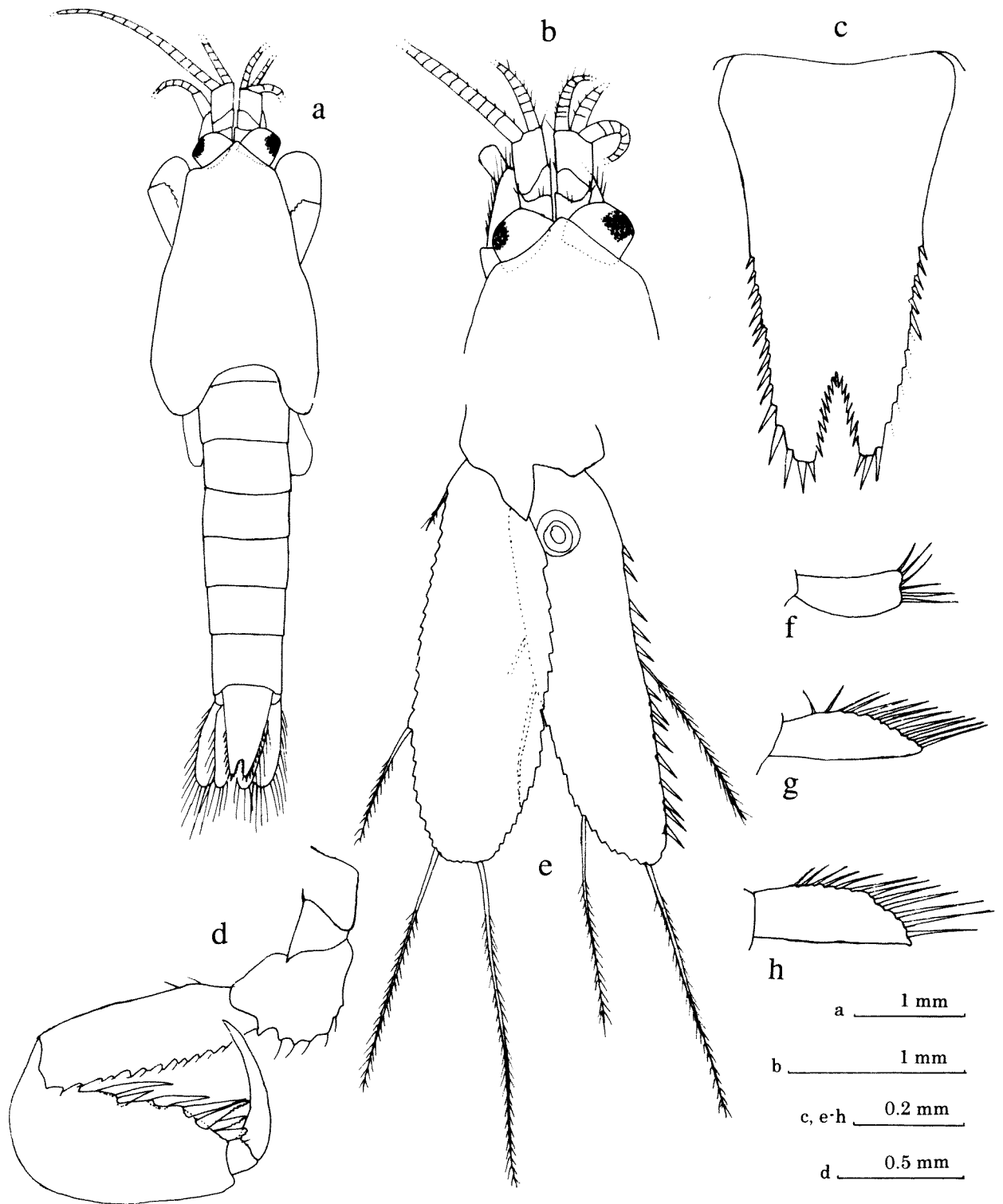
*Heteromysis harpaxoides* Băcescu and Bruce, 1980: 68, figs 2m–n, 3a–h. – Müller, 1993: 270.

*Heteromysis (Gnathomysis) harpaxoides*. – Murano, 1988: 41. – Keable *et al.*, 2003: 446.

*Heteromysis harpaxoides*. – Müller, 1993: 270.

### Material examined

WAM C 26023 (1 ovig. female, tl 5.8 mm), stn DA2/99/76, Goodwyn I. (20°32.11'S, 116°31.55'E to 20°32.40'S, 116°31.22'E), 13–15 m, coll. S. Slack-Smith and M. Hewitt, 25.07.1999.



**Figure 2** *Heteromysis harpaxoides*, ovig. female (tl 5.8 mm). **a**, entire body dorsal; **b**, anterior part of carapace and cephalic appendages, dorsal; **c**, telson, dorsal; **d**, right 3rd thoracic endopod, mesial; **e**, right uropod, ventral; **f-h**, left 1st, 4th, and 5th pleopods.

### Description

Body (Figure 2a) somewhat fragile. Rostrum (Figure 2a, b) triangular, with slightly obtuse apex; lateral margin nearly straight. Carapace (Figure 2a) well developed, covering almost entire part of cephalothorax; dorsal surface without tubercles, cervical sulcus barely visible; posterior margin excavate in dorsal view.

Abdomen (Figure 2a) smooth, without folds, spines, or processes; ventral surface smooth: percent length ratio of abdominal somites from first to sixth; 19.7 : 17.9 : 15.3 : 15.3 : 14.8 : 17.0 (= 100).

Telson (Figure 2c) triangular with incised apex, 1.74 times as long as sixth abdominal somite, 1.83 times as long as broad; lateral margin basally naked, posterior half armed with 13 or 14 spines; posterior

lobe with 2 apical spines, outer spines longer than inner pair; distal incision 0.38 times length of telson, armed with about 15 spinules on entire margin.

Eyes (Figure 2b) slightly depressed, cornea small, narrower than eyestalk. Antennule (Figure 2b) moderately robust, first peduncular segment with distolateral prolongation bearing some short setae distally; second segment of peduncle shortest, obliquely articulated with third segment, long seta present at distomesial corner; third segment with 2 setae at distomesial corner near base of inner antennular flagellum. Antennal scale elliptical, long, reaching midlength of distal segment of antennular peduncle, setose all around margin; antennal peduncle slightly extending beyond end of antennular peduncle.

Third thoracopod (Figure 2d) with stout endopod; ischium triangular, with lamellate projection bearing several large, flagellate denticles on mesial margin; merus longest, ventromesial margin armed with numerous, moderately large flagellated denticles along entire margin, ventrolateral margin bearing numerous, small denticles along entire length and 1 seta near basal one-third (not seen in mesial view), dorsal margin with 2 setae near base; carpopropodus massive, ventrally armed with about 7 large spines, anterior 4 of which serrated anteriorly; dactylus sharp and strong.

Pleopods (Figure 2d-f) in female rudimentary, forming an unsegmented lobe; first pleopod with several setae on distal margin; second and third pleopods similar in shape, each with many setae along lateral margin. Uropod (Figure 2g) extending slightly beyond telson; endopod slightly longer than exopod, armed with about 14 spines along mesial margin.

### Remarks

The present specimens agree well with the original description by Băcescu and Bruce (1980). *Heteromysis harpaxoides* is similar to *H. stellata* Băcescu and Bruce, 1980, recorded from Heron Island, Queensland. The former species can be distinguished only by the absence of stellate tubercles on the anterior surface of the carapace.

### Habitat

Known to be commensal with pagurid hermit crabs, *Dardanus* sp. (?spp), but no evidence of association was obtained for the present specimen.

### Distribution

Recorded only in Australia: Wistari Reef, Great Barrier Reef, Queensland (Băcescu and Bruce 1980); Ashmore Reef, Western Australia (Murano, 1988).

### ACKNOWLEDGEMENTS

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