

HAPLOSTYLUS TATTERSALLI SP. NOV. FROM BASS STRAIT, AUSTRALIA
(CRUSTACEA: MYSIDAE: GASTROSACCINAE)

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Abstract

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Haplostylus tattersalli sp. nov. is described from material collected in Bass Strait, southern Australia. The current status of the genus *Haplostylus* is discussed with respect to its closely allied genus *Gastrosaccus*. A key for the identification of the Australian species of *Haplostylus* and *Gastrosaccus* is provided.

Introduction

The new species *Haplostylus tattersalli* sp. nov. described here was collected during the Bass Strait Survey conducted by the Museum of Victoria. *H. tattersalli* sp. nov. is apparently the same species which W.M. Tattersall (in Dakin and Colefax, 1940) had recognised as a new species of *Gastrosaccus* from plankton samples collected at Broken Bay, New South Wales. However, no description was ever published and the location of the specimens remains unknown despite considerable efforts to locate them. Consequently, the presence of this species at many sites in Bass Strait, has provided an opportunity to describe it, and in doing so honour the late Dr W.M. Tattersall.

Dakin and Colefax (1940) placed this species in the genus *Gastrosaccus* Norman, however, it should now be placed in the closely related genus *Haplostylus* Kossmann, which was reinstated in 1973 by Băcescu. In view of the similarity between these two genera, the status of *Haplostylus* is discussed in detail here.

Haplostylus Kossmann

Haplostylus Kossmann, 1880: 95.—Băcescu, 1973: 321.—Hatzakis, 1977: 271–273.

Type species. Gastrosaccus normani G.O. Sars, 1877 (present designation).

Diagnosis. “Gastrosaccini with male pleopods well-developed, pairs I, II and V with unisegmented endopodite, exopodite of pleopod III with a minute endopodite and the four long segments reaching the end of the abdomen. Two or three articulation girdles divided the thick basal segment in 2–5 short segments. Without any supplemental segment on the dorsal portion of

the junction between the last two pleonites.” (Băcescu, 1973: 321).

Remarks. Kossmann (1880) established the genus *Haplostylus* to accept those species in the subfamily Gastrosaccinae which lacked lobes on the posterior margin of the carapace. This was later found to be a poor character to distinguish *Haplostylus* from its closely allied genus *Gastrosaccus* (Tattersall and Tattersall, 1951) and all species were placed in *Gastrosaccus*. *Haplostylus* was abandoned. *Gastrosaccus*, however, clearly held diverse species as evidenced by its major divisions, i.e. the so-called “*spinifer*” and “*normani*” groups, depending on whether the endopod of the third male pleopod was multi-articulate or uni-articulate respectively.

Băcescu (1973) reinstated the generic name *Haplostylus* to accept those species in which the endopod of the third male pleopod was uni-articulate and added a new species *H. estafri-cana* from eastern African waters. He also added *H. erythraeus*, *H. parerythraeus* and *G. pusillus*, to the genus *Haplostylus*. Hatzakis (1977) followed up what Băcescu had started by suggesting the transfer of the following *Gastrosaccus* species to the genus *Haplostylus*: *G. normani* G.O. Sars, 1877, *G. lobatus* Nouvel, 1951, *G. magnilobatus* Băcescu and Schiecke, 1974, *G. pacificus* Hansen, 1912, *G. indicus* Hansen, 1910 and *G. dakini* W.M. Tattersall, 1940, as well as describing a new species, *H. bacescui*. In addition, according to Hatzakis (1977), *G. vulgaris* Nakazawa, 1910, *G. philippinensis* W.M. Tattersall, 1951 (which had been synonymised with *G. bengalensis* by Li in 1964) and *G. johnsoni* W.M. Tattersall, 1937 (which had been transferred to the genus *Bowmaniella* by Băcescu in 1968) would be transferred to the genus *Haplostylus*

Table 1. Comparison of species in the genus *Haplostylus*.

Species	Spine on pleonites	Endopod of male pleopod 2 multi-articulate	Exopod of male pleopod 4 multi-articulate	Exopod of male pleopod 5 multi-articulate
<i>H. bacescui</i> Hatzakis, 1977	—	["as in <i>H. normani</i> "]		
<i>H. bengalensis</i> * (Hansen, 1910)	—	+	—	—
<i>H. brisbanensis</i> * (Băcescu and Udrescu, 1982)	+	+	—	—
<i>H. dakini</i> * (W.M. Tattersall, 1940)	—	+	+	+
<i>H. erythraeus</i> Kossmann, 1877	—	+	+	+
<i>H. estafriana</i> Băcescu, 1973	—	—	+	+
<i>H. indicus</i> * (Hansen, 1910)	—	—	—	—
<i>H. lobatus</i> (Nouvel, 1951)	—	?	?	?
<i>H. magnilobatus</i> (Băcescu and Schiecke 1974)	—	?	?	?
<i>H. normani</i> (G.O. Sars, 1877)	—	+	+	+
<i>H. pacificus</i> * (Hansen, 1912)	—	—	—	—
<i>H. parerythraeus</i> (Nouvel, 1944)	—	+	+	+
<i>H. parvus</i> (Hansen, 1910)	—	+	—	—
<i>H. pusillus</i> (Coifmann, 1937)	—	+	—	—
<i>H. queenslandensis</i> * (Băcescu and Udrescu, 1982)	—	+	+	+
<i>H. tattersalli</i> sp. nov.	+	+	+	+

* = known from Australia; ? = details not given in original description; + = present; — = absent.

when more detailed descriptions became available. *G. bengalensis* and two species described by Băcescu and Udrescu (1982), *G. brisbanensis* and *G. queenslandensis*, should also be transferred to *Haplostylus* on the basis of the structure of the third male pleopod. The status of *G. vulgaris* Nakazawa, 1910 remains unclear due to an inadequate original description. Ii (1964) discussed the possibility that it may be synonymous

with the relatively common Japanese species *Archaeomysis kokuboi* Ii, 1964 since he was unable to collect any specimens of *G. vulgaris* despite repeated attempts near the type locality.

Both the endopod and exopod of the male pleopod 2 are multi-articulate in most *Haplostylus* species (Table 1). Presumably this is true of *H. bacescui* also since Hatzakis (1977) refers to the pleopods "as in *H. normani*", in which pleo-

pod 2 has a multi-articulate endopod. It may be that Băcescu (1973) meant uni-articulate endopod on pleopods 1, 3, and 5 rather than 1, 2 and 5 as stated. The presence of an apophysis on the dorsal surface of pleonite 5 occurs in two species, *H. brisbanensis* and *H. tattersalli* sp. nov. This feature would, according to the generic diagnosis, remove these species from the genus *Haplostylus*; it is a feature that occurs in some but not all of the species in the genus *Gastrosaccus*. The only consistent feature of *Haplostylus* is the structure of the male pleopod 3. This feature alone was considered by Băcescu (1973: 321) as "a good feature for a generic taxon, the structure of this pleopod representing for the generic division of mysids, the same value as the genital armature does in insects."

The need for a complete revision of the two genera *Haplostylus* and *Gastrosaccus* is well recognised (Băcescu, pers. comm.), until this is done separation of the genera on the basis of the structure the third male pleopod will stand.

Haplostylus tattersalli sp. nov.

Figures 1–13

Type Material. Holotype. Western Bass Strait, 15 km SW of Point Reginald, Victoria (38°50.0'S, 143°07.5'E), 69 m, fine sand, Smith-McIntyre grab, R. Wilson on RV Tangaroa, 20 Nov 1981 (stn BSS-G 186), NMV J11044 (1 male).

Paratypes. Western Bass Strait, 25 km S of Cape Otway, Victoria (39°06.7'S, 143°28.7'E), 92 m, fine sand, WHOI epibenthic sled, M. Gomon et al. on FRV Hai Kung, 31 Jan 1981 (stn BSS-S 119), NMV J11045 (4 males, 2 females). Western Bass Strait, 15 km SW of Point Reginald, Victoria (38°50.0'S, 143°07.5'E), 69 m, fine sand, Smith-McIntyre grab, R. Wilson on RV Tangaroa, 20 Nov 1981 (stn BSS-G 186), NMV J5440 (1 male, 1 female, 1 juvenile).

Other material. Western Bass Strait, 10 km W of Cape Otway, Victoria (39°49.0'S, 143°24.0'E), 56 m, fine sand, Smith-McIntyre grab, R. Wilson on RV Tangaroa, 20 Nov 1981 (stn BSS-G 184), NMV J5437 (1); Western Bass Strait, 42 km NW of Cape Farewell, King Island, Tasmania (39°17'S, 143°39'E), 86 m, coarse sand, carbonate, Smith-McIntyre grab or pipe dredge, G.C.B. Poore on HMAS Kimbla, 10 Oct 1980 (stn BSS 75), NMV J9523 (1); Western Bass Strait, 32 km SSW of Cape Otway, Victoria (39°09'S, 143°26'E), 85 m, coarse carbonate sand, Smith-McIntyre grab or naturalist's dredge, G.C.B. Poore on HMAS Kimbla, 8 Oct 1980 (stn BSS 55), NMV J9521 (12); Western Bass Strait, 25 km S of Cape Otway, Victoria (39°06.0'S, 143°35.8'E), 95 m, fine sand, 95% carbonate, Smith-McIntyre grab, M. Gomon, et al. on FRV Hai Kung 31 Jan 1981 (stn BSS-G 118), NMV J5409 (1); Eastern Bass Strait, 19 km E of Lake Tyers Entrance, Victoria (37°50.5'S, 148°16.0'E), 26 m, coarse sand, WHOI epi-

benthic sled, M. Gomon and R. Wilson on FV Silver Gull, 30 Jul 1983 (stn BSS-S 206), NMV J9524 (1).

Description. (Male holotype with female characters given [where appropriate] from paratype material). Carapace produced in front into a rounded rostrum (Fig. 1); posterior margin deeply emarginate exposing last 2 pereonites, with small lobe present on each side close to mid-line (Fig. 2). Pleonite 5 with spinose process on posterodorsal surface (Fig. 3).

Eyes small extending one-third of first article of antennular peduncle; pigment black.

Antennular peduncle with first article approximately same length as combined length of articles 2 and 3. Antennal scale only slightly longer than first article of antennular peduncle; outer margin naked terminated by distal spine beyond which apical lobe extends slightly; apex and inner lateral margin setose.

Labrum with large spine (Fig. 4). Maxilla with 12 plumose setae on distal end of terminal article of endopod (Fig. 5).

Carpo-propodus of endopod of pereopods 3, 4, 5, 6, 7 and 8 sub-divided into 6, 6, 8, 8, 10 and 13 articles respectively.

Female pleopods: pleopod 1 with long slender sympod and uni-articulate endopod and exopod (Fig. 6); pleopods 2–5 uniramous.

Pleonite 1 with pleural plate, larger in female than male.

Male pleopods: endopods of pleopods 1, 3, 4 and 5 rudimentary; exopods of pleopods 1, 4 and 5 composed of 9, 6 and 5 articles respectively (Figs 7, 8, 9). Pleopod 2 biramous, endopod composed of 7 articles, exopod composed of 9 articles (Fig. 10). Exopod of pleopod 3 composed of 7 articles, terminating in 1 barbed seta and 2 simple curved setae (Fig. 11).

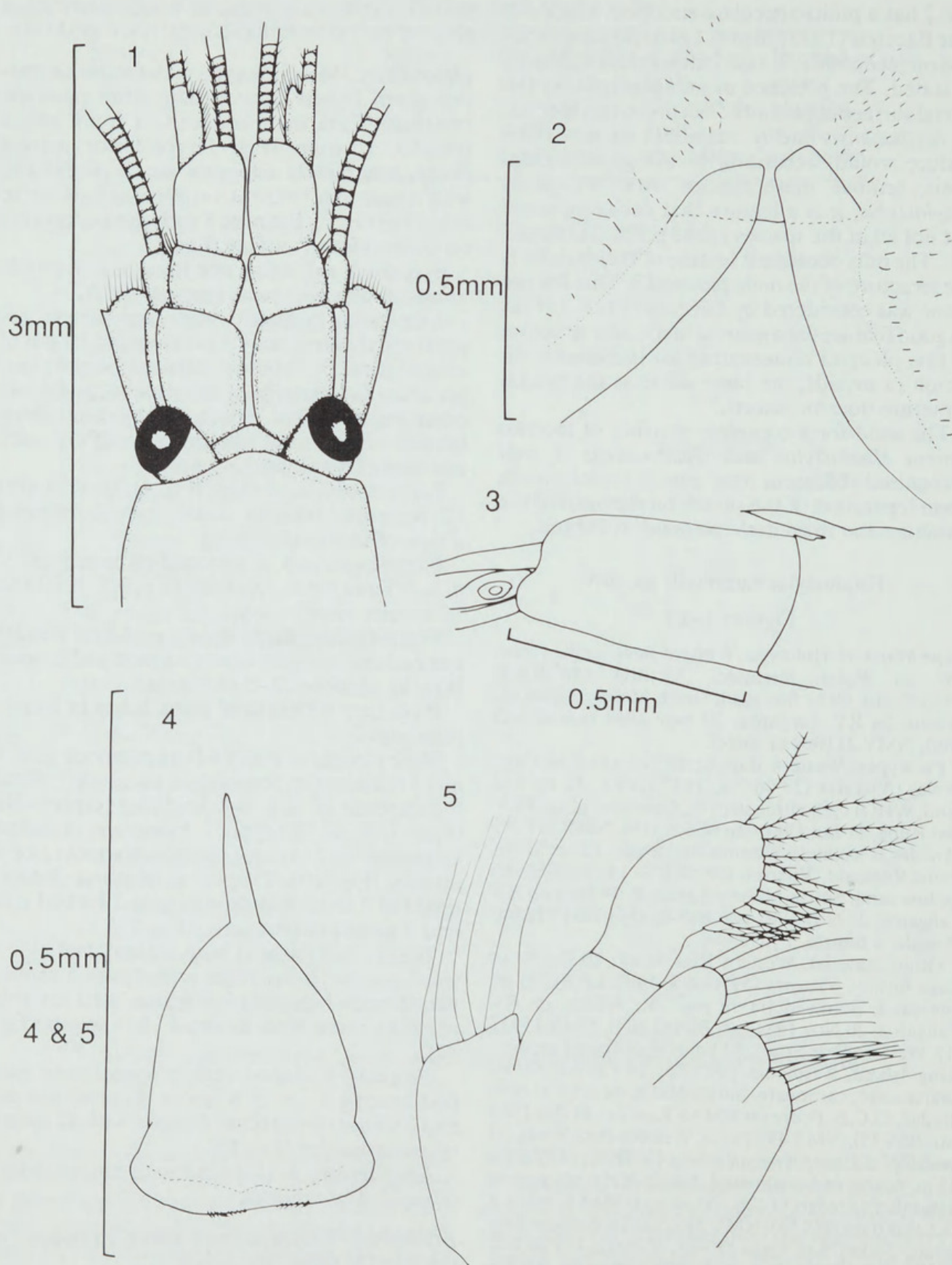
Telson cleft, armed with approximately 15 small spines; lateral edges armed with 5 spines, pair directly behind apical spines bend inwards reaching same level as small cleft spines (Fig. 12).

Uropods: Endopod slightly longer than exopod bearing a row of 8 spines on inner margin and 2 spines on statocyst. Exopod with 12 spines on outer border (Fig. 13).

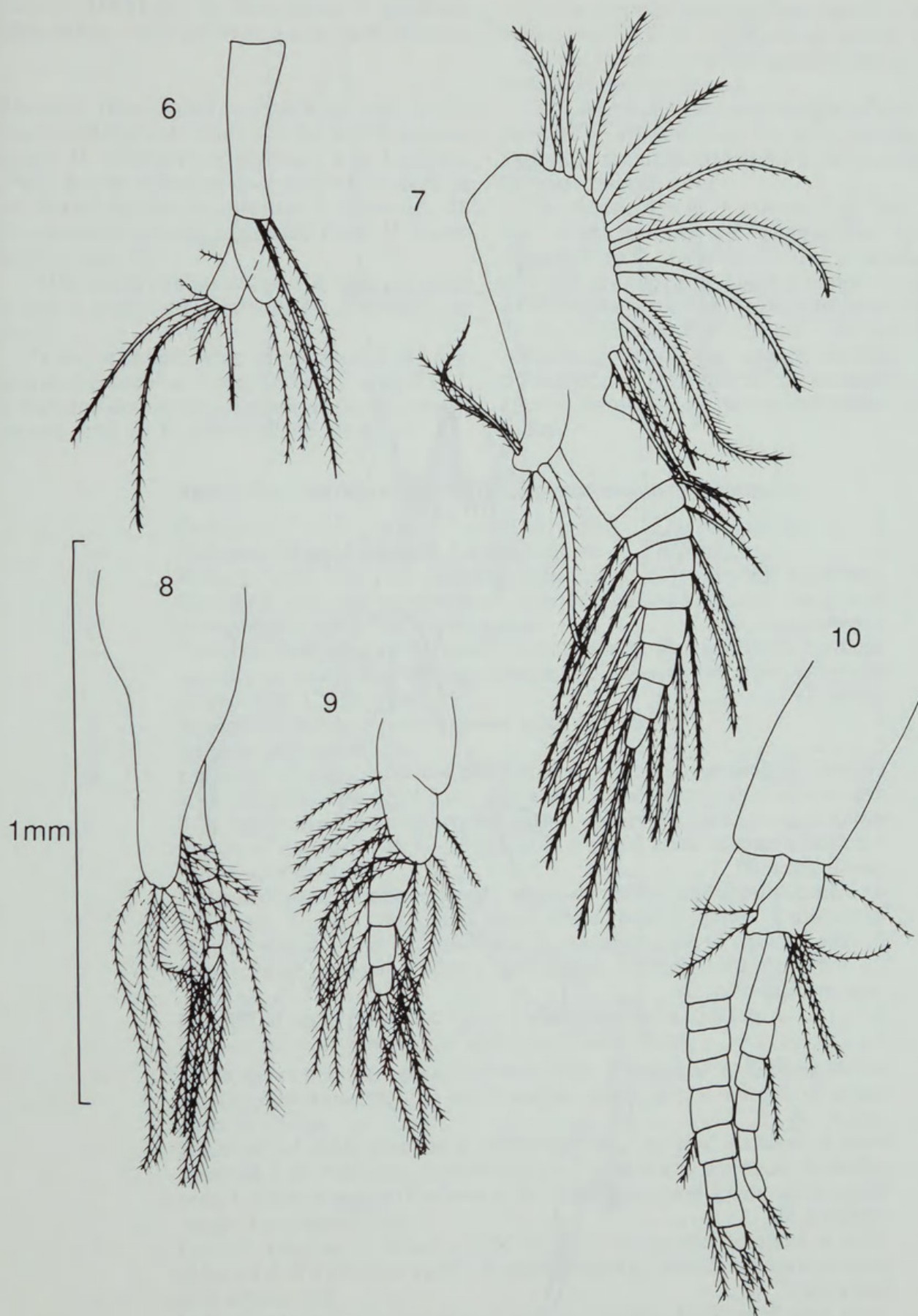
Adult length: 9–13.4 mm (tip of rostrum to tip of exopod of uropod).

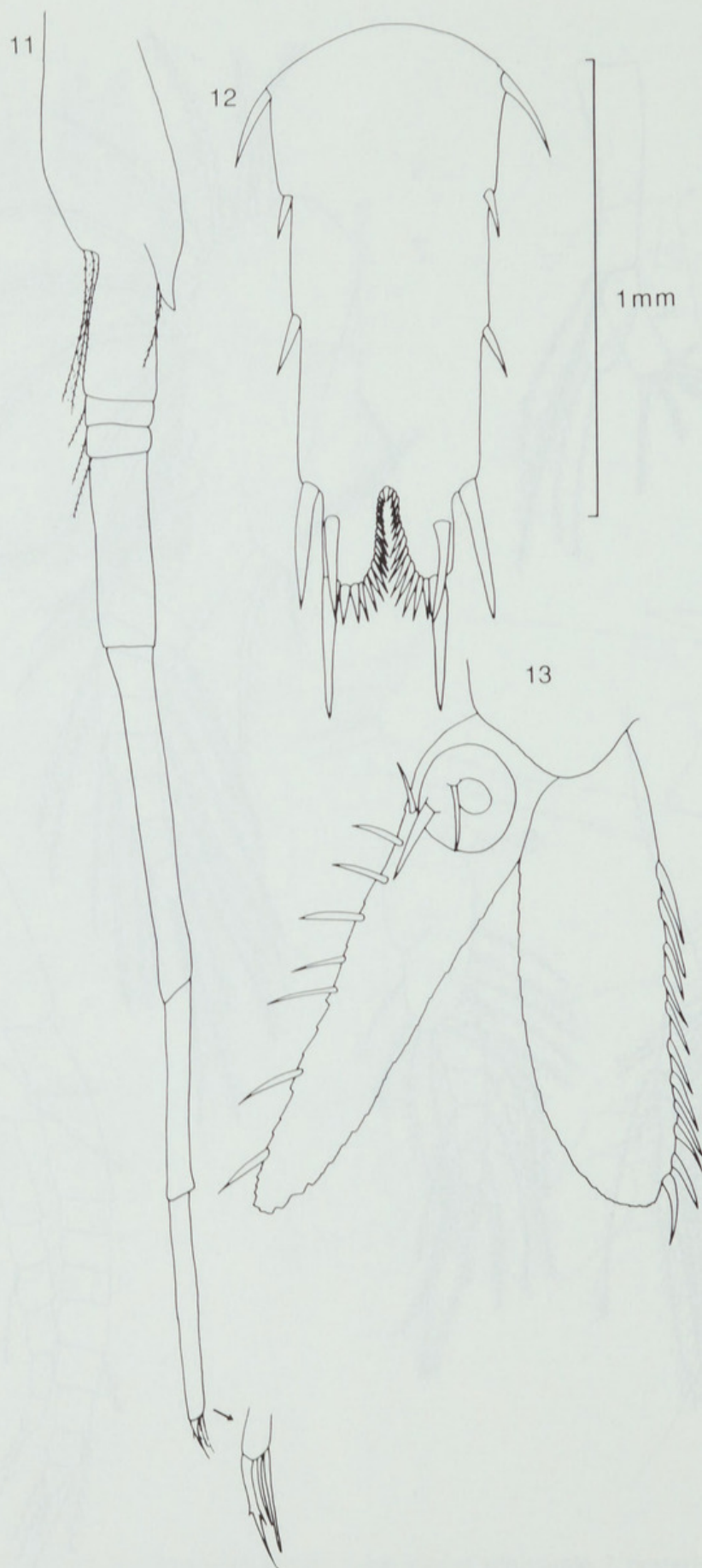
Etymology. This species is named in honour of the late Dr W.M. Tattersall.

Distribution. South-eastern Australia including Broken Bay, New South Wales (Dakin and Colefax, 1940), One Tree Point, southern Tasmania



Figures 1–10. *Haplostylus tattersalli* sp. nov. Holotype. 1, anterior of adult male. 2, posterior margin of carapace (dorsal view). 3, spinose process of pleonite 5. 4, labrum. 5, maxilla. 6, female pleopod 1 (paratype). 7, male pleopod 1. 8, male pleopod 4. 9, male pleopod 5. 10, male pleopod 2.





Figures 11–13. *Haplostylus tattersalli* sp. nov. Holotype. 11, male pleopod 3. 12, telson. 13, right uropods.

(Fenton, 1985) and in Bass Strait. It has been collected in water between 3 and 96 m deep.

Remarks. *Haplostylus tattersalli* sp. nov. is distinguished from all other members of the genus, except *H. brisbanensis* (Băcescu and Udrescu, 1982), by the presence of a spinous process on the dorsal surface of pleonite 5. However, *H. brisbanensis* is easily separated from *H. tattersalli* sp. nov. by:

(1) the uni-articulate exopod of male pleopods 4 and 5 (multi-articulate in *H. tattersalli* sp. nov.);

(2) the terminal setae of pleopod 3 is composed of 2 equal and opposed rami armed with 2–6 paired denticles (1 barbed seta and 2 simple curved setae in *H. tattersalli* sp. nov.);

(3) the carpo-propodus of pereopods of 10–16 articles (6–13 in *H. tattersalli* sp. nov.);

(4) the telson bears 8–9 lateral spines (5 in *H. tattersalli* sp. nov.); and

(5) 6 spines on the inner margin of the endopod and 13–18 spines on the outer margin of the exopod of the uropod (8 and 12 in *H. tattersalli* sp. nov. respectively).

The description of *H. tattersalli* sp. nov. takes the total number of *Haplostylus* species, recorded from Australian waters to seven, four of which are endemic. There are also two species of *Gastrosaccus* known from Australian waters, *G. daviei* Băcescu and Udrescu, 1982 and *G. sorrentoensis* Wooldridge and McLachlan, 1986, both endemic. A key for the identification of the species known from Australian waters is provided.

Key to the Australian Species of *Gastrosaccus* and *Haplostylus*

1. Endopod of male pleopod 3 multi-articulate ... *Gastrosaccus* 2
- Endopod of male pleopod 3 uni-articulate ... *Haplostylus* 3
2. Posterodorsal edge of carapace with fringe of spine-like filaments. Spinous process on posterodorsal edge of pleonite 5. Lateral margins of telson armed with 7–8 strong spines *G. sorrentoensis*
- Posterodorsal edge of carapace without spine-like filaments. Spinous process on posterodorsal edge of pleonite 5. Lateral margins of telson armed with 12–15 spines *G. daviei*
3. Spinous process on posterodorsal edge of pleonite 5 4
- Spinous process absent 5
4. Endopod of male pleopod 4 of 8 articles; exopod uni-articulate. Exopod and endopod of pleopod 5 uni-articulate. Lateral margins of telson with 8–9 spines. Endopod of uropod with 6 spines on inner margin, outer margin of exopod with 13–18 spines. Terminal setae of male pleopod 3 broad with denticles *H. brisbanensis*
- Exopod of male pleopods 4 and 5 multi-articulate; endopod of both uni-articulate. Lateral margins of telson armed with 5 spines. Endopod of uropod with 8 spines on inner margin, outer margin of exopod with 12 spines. Male pleopod 3 with 1 barbed and 2 simple terminal setae ...
..... *H. tattersalli* sp. nov.
5. Exopod of male pleopods 4 and 5 short and uni-articulate 6
- Exopod of male pleopods 4 and 5 multi-articulate 7
6. Endopod of male pleopod 2 uni-articulate. Exopod of male pleopod 3 of 4 articles terminating in 2 small simple setae. Lateral margins of telson with 10 spines *H. indicus*
- Endopod of male pleopod 2 composed of 2 articles. Exopod of male pleopod 3 of 3 articles terminating in 2 spines and a sinuous lash-like seta. Lateral margins of telson with 12 spines, penultimate spine much longer than apical ones *H. pacificus*
7. Lateral margins of telson armed with 11–13 spines. Exopod of male pleopod 3 of 5 articles. Rami of male pleopod 2 modified with a process and strong seta *H. bengalensis*
- Lateral margins of telson armed with 6–7 spines. Exopod of male pleopod 3 of 3 or 4 articles. Terminal setae of male pleopod 2 not as above 8

8. Exopod of male pleopod 3 of 3 articles. Endopod of male pleopod 2 of 6 articles; terminal setae simple and curved. Lateral edges of telson armed with 6 spines *H. dakini*
- Exopod of male pleopod 3 of 4 articles. Endopod of male pleopod 2 of 7 articles; terminal setae modified. Lateral margins of telson with 7 spines *H. queenslandensis*

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