

A new species of *Tylos* Audouin (Isopoda: Oniscidea: Tylidae) from Western Australia

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Abstract

Tylos tantabiddyi sp. nov. is described from specimens collected at Tantabiddy on the west coast of the Exmouth peninsula, WA. This is the third species of the genus found in Australia and the first from the west coast. A key to the Australian species is given.

Introduction

The Tylidae is a family of supralittoral isopods which occurs on the coasts of all continents. Twenty three species have been established (although opinions about synonymy vary) of which eight are from the southern hemisphere (Roman 1977, Schmalzfuss and Ferrara 1978, Schultz 1983,). Two more southern species have been described. The first Australian species *T. australis* Lewis and Bishop, 1990, from the south east of the continent was based on specimens collected in 1987 (Lewis and Bishop, 1990). A second species was collected by the author in Queensland in 1988 (Lewis, in press).

The family Tylidae Milne-Edwards, 1840, differs from other Oniscidea by the presence of all of the following characters:—

1. Well developed frontal process on cephalon.
2. Separate epimera on pereonal tergites 2-7.
3. Ventral uropods articulated laterally.
4. Obsolete uropod exopod.
5. Pleopod exopods with tracheal systems.
6. Antennula reduced to 1 joint.
7. Pleopod endopod 2 only, used in copulation.
8. Ability to conglobate.

(Vandel 1960, and Schmalzfuss and Ferrara 1978).

As well as showing the previous characteristics, the genus *Tylos* Audouin, 1826, is diagnosed as follows:

Ability to roll into perfect ball. Head with triangular protrusion between the antennae (frontal process). Lateral quadrangular grooves which contain the antennae when the animal rolls. Four jointed flagellum. Locking ventral grooves on epimera I. Pleon tergites not fused. Ventral pleon plates cover part of ventral area. (Schmalzfuss and Ferrara 1978).

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The following abbreviations are used:

WAM= Western Australian Museum

AM = The Australian Museum, Sydney

TM = Tasmanian Museum and Art Gallery, Hobart

QMW= Queensland Museum, Brisbane

MU = Macquarie University, Biological Sciences Museum.

Systematics

Tylos tantabiddyi sp. nov.

Figures 1-7

Holotype

Male, in WAM 21-90, Tantabiddy Beach south of boat ramp, under and among weed at high tide line, 17, August 1989, collected by Fiona Lewis.

Paratypes

WAM. 22-90, AM. P39745, TM. G3374, MU. Collection data as for holotype.

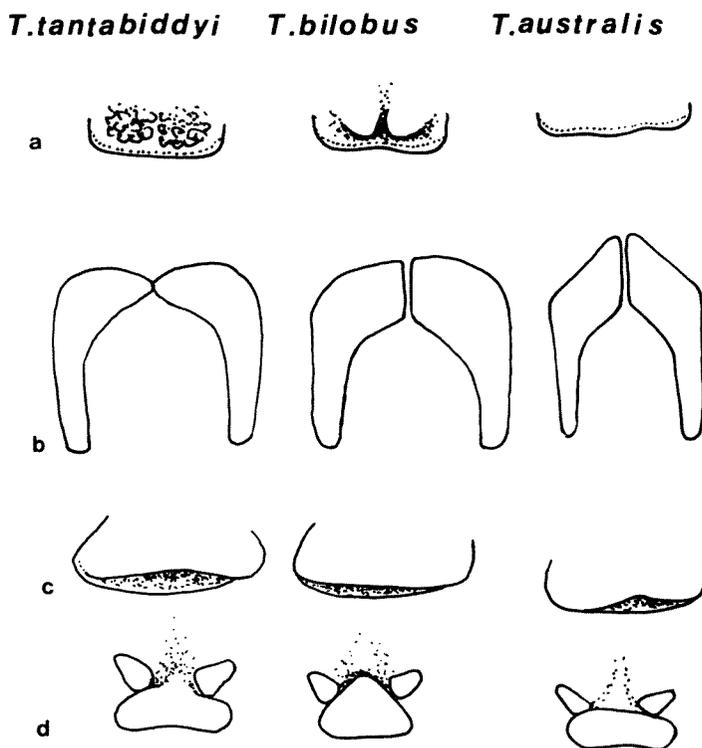


Figure 1. Differences between the three Australian species of Tyliidae; a, telson; b, ventral view of 5th pleon plates; c, lateral margin of 1st, left epimera; d, frontal process of cephalon, anterior view.

Diagnosis (see Figures 1a-1c).

The morphology of the telson, fifth pleon plate, lateral margin of epimeron 1 and cephalon, distinguishes this species from the other two Australian species. This species is nearest geographically to *T. nudulus* Budde-Lund, 1906, from Christmas Island, but differs from this species, and all other described species, in having a less sharply defined frontal process, shallow tuberculated lobes on the telson and pointed medial margins of the 5th pleon plates.

Description

Size: 9mm long, 3mm broad.

Colour: (live). Dorsal surface creamy grey with very sparse black chromatophores, mainly along midline, extending laterally on pereonite seven and pleonites one and two, and in patches antero-medial to eyes.

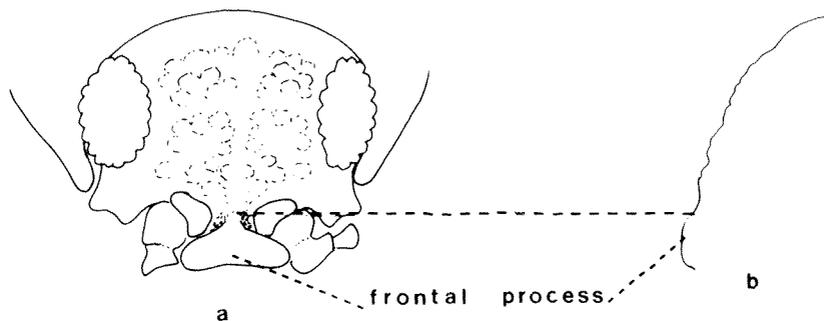


Figure 2. *Tylos tantabiddyi* spinov. Cephalon; a, anterior view, frontal process and antenna 1 labelled; b, lateral view, frontal process labelled.

Cephalon (Figures 2a, 2b). Eyes each of 27-30 ommatidia. Vertex without distinct frontal line, but with areas of large tubercles anterior and median to eyes. Frontal process triangular with apex smoothly joined to cephalon.

Antenna 1 (Figure 2a). Medial and slightly above 2nd antenna base; comprised of single, flattened, triangular article.



Figure 3. *Tylos tantabiddyi*. Antenna 2; a, peduncle and flagellum; b, lateral view, frontal process labelled.

Antenna 2 (Figures 3a, 3b). Short, slender, with flagellum of four articles, 3rd longer than 1st and 2nd, 4th minute, ending in brush organ, articles 0.03, 0.02, 0.05, and 0.01mm in length.

Left Mandible (Figure 4a). Incisor process of two pointed teeth and one round tooth, with lacinia mobilis of two teeth and rounded process, setose lobe at base with one large penicil, five smaller penicils between lobe and molar process which has one penicil.

Right Mandible (Figure 4b). Incisor process of three teeth with five small transparent teeth in arc, two penicils on lobe at base and five smaller penicils between lobe and molar process which has one medial penicil.

Maxilla 1 (Figure 4c). Lamellar, subquadrangular, terminally setose.



Figure 4. *Tylos tantabidnyi*. Mouthparts; a, left mandible; b, right mandible; c, maxilla 1; d, maxilla 2; e, maxilliped.

Maxilla 2 (Figure 4d). Outer lobe with five large, heavy teeth laterally, one with spines; seven slender teeth medially, one with spines. Inner lobe terminates in three setose penicils with large spine at base of superior penicil.

Maxilliped (Figure 4e). Endite with three lobes bearing heavy, blunt spines, with sharp spines at bases of two medial lobes and along lateral margin. Endite has four small lobes extending into short setose penicils, with tooth at base of medial two lobes.

Pereon (Figures 5a, 5b). Lightly granulated. Epimera two to four subtriangular, decreasing in size. Epimeron five rounded, epimera six and seven large and subrectangular. Lateral border of epimeron one slightly convex with groove joining ventrally to raised triangular lobe, small raised areas on ventral surfaces of epimera two and three.

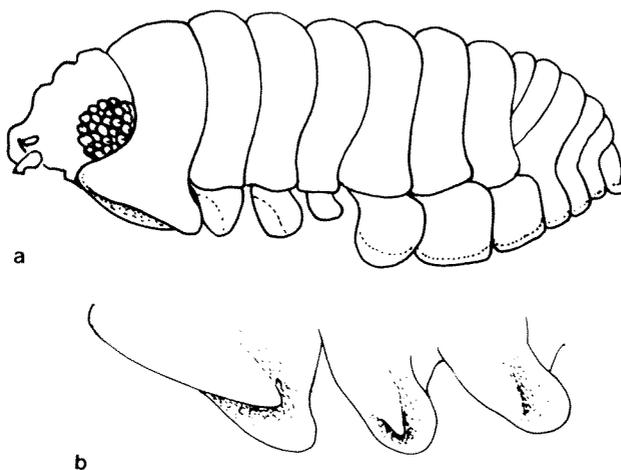


Figure 5. *Tylos tantabiddyi*. Pereon: a, lateral view; b, ventral view of epimera 1-3.

Pereopods (Figures 6a-6f). Pereopods 1-4 slender, pereopods 5-7 increasingly short and stout, with anterior process at distal end of ischium increasing in size. Dactylar organs and accessory claws on all.

Pleon (Figures 7a, 7b). Third segment squarely truncated, 4th and 5th rounded laterally. Telson rectangular, broader than long, with two subrectangular, raised areas of low tubercles close to mid line. Posterior border with evenly spaced large setae. Ventrally 5th pleon plates meet medially in a rounded point covering 5th and half of 4th pleopod.

Pleopod 1 (Figure 7b). Reduced to slender lamella curving around lateral angle of pleopod 2.

Pleopod 2 (Figure 7b). Exopod subrectangular extending to posterior pointed process medially, with folds enclosing slit openings of pseudotracheae. Endopod modified to form copulatory stylet.

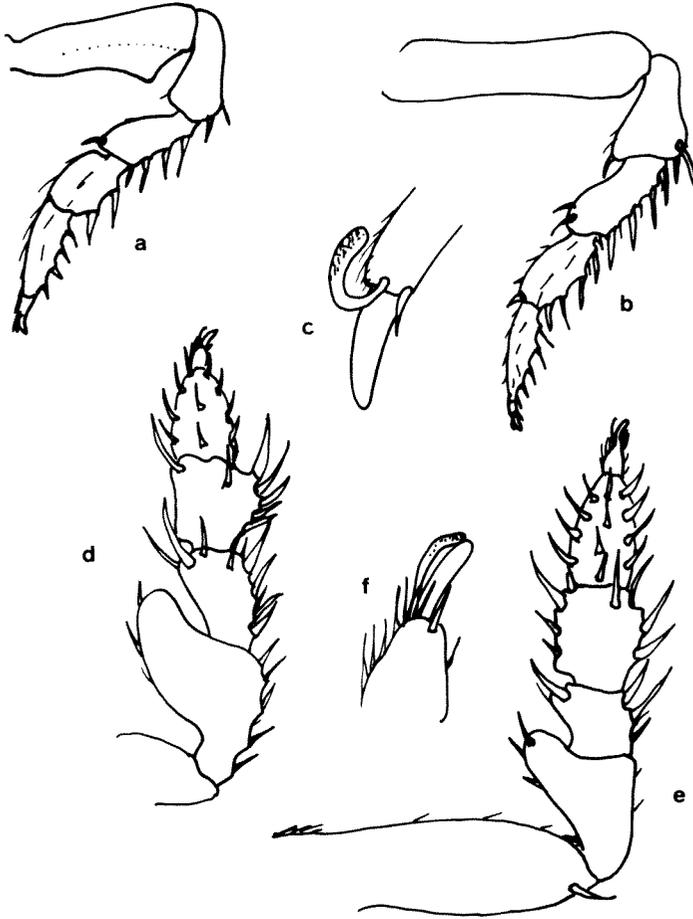


Figure 6. *Tylos tantabiddyi*. Pereopods; a, first; b, third; c, dactylus showing dactylar organ of pereopod 1; d, fifth.

Pleopods 3-5 (Figure 7b). Exopods similar to 2nd, endopods lamellar.

Uropod (Figure 7c). Not visible dorsally. Wedge shaped and platelike with setose endopod.

The following key to Australian species of Tyliidae uses simple morphological characters to separate the three species.

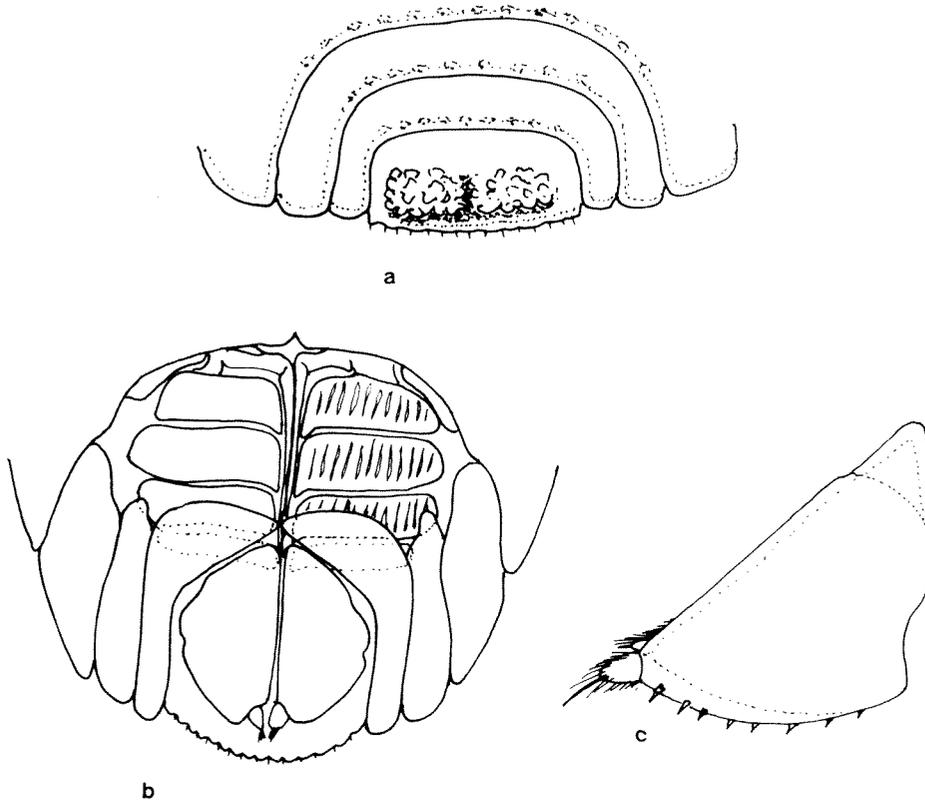


Figure 7. *Tylos tantabidyi*. Pleon: a, dorsal view; b, ventral view; c, uropod, ventral view.

A Key to the Australian Species of Tyliidae

1. Telson with small tubercles *T. australis*
Telson with two raised lobes 2
2. Telson with raised areas of low tubercles close to midline;
lateral edge of epimeron one sinuous *T. tantabidyi*
Telson with large lobes; lateral edge of epimeron one smooth.
..... *T. bilobus* (Lewis, in press)

Acknowledgements

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