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Achelia shepherdii n. sp. and other Pycnogonida from Australia

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ABSTRACT

Records of 10 species of shallow water Pycnogonida from Western Australia, Victoria, Tasmania, and New South Wales, including *Achelia shepherdii* n. sp., *Parapallene avida* Stock, 1973 (♀ new to science), and *Anoplodactylus pulcher* Carpenter, 1907 (new to Australia).

INTRODUCTION

Shortly after the publication of my paper on Pycnogonida from southeastern Australia (Stock, 1973), Mr. S. A. Shepherd, Senior Fisheries Officer at the Department of Fisheries, Adelaide, South Australia, collected some new and interesting samples which he kindly entrusted to me for study. He also made available a number of samples collected by Mr. N. Coleman, honorary collaborator of the Australian Museum. There is one new species in these samples, *Achelia shepherdii*, which I dedicate with great pleasure to Mr. S. A. Shepherd in recognition of his most prolific collecting activities on which this (and my previous 1973) paper have been based. Moreover, the collections contain a species new to the Australian fauna (*Anoplodactylus pulcher*), whereas also the hitherto unknown female sex of *Parapallene avida* was obtained.

MATERIAL

The following samples were examined and the following species are represented:

1. Gabo Island, Victoria: Shepherd St. B1, sheltered site, in red algae, depth 28 m, 19 Feb. 1973. For the exact position of the collection sites on Gabo Island, see Shepherd, 1973, fig. 1.
Nymphon molleri Clark, 1963, 1 ♀.

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2. Do., St. B2, rough water site, in red algae, depth 28 m, 17 Feb. 1973.
Achelia transfugoides Stock, 1973, 1 ♀
Achelia assimilis (Haswell, 1885), 1 ♀
Achelia shepherdii n. sp., 1 ♀
Parapallene avida Stock, 1973, 2 ♀, 3 ♂, 5 juv.
3. Do., St. B3, rough water site, in red algae, depth 28 m, 16 Feb. 1973.
Ammothea (Lecythorhynchus) ovatoides Stock, 1973, 1 ♂ ovig.
Pseudopallene ambigua Stock, 1956, 1 juv.
4. Quiet Corner, Bruny Island, Tasmania, on Bryozoa, depth 15 ft., 16 Feb. 1972; leg. N. Coleman.
Pseudopallene ambigua Stock, 1956, 1 juv.
Achelia shepherdii n. sp., 1 ♂
5. Quiet Corner, Adventure Bay, Bruny Island, Tasmania; on coralline algae; depth 10 ft., 9 Feb. 1972; leg. N. Coleman.
Pseudopallene ambigua Stock, 1956, 1 juv.
6. Fluted Cape, Bruny Island, Tasmania, on Bryozoa, depth 50 ft., 12 Feb. 1972, leg. N. Coleman.
Pseudopallene ambigua Stock, 1956, 1 ♂ larvigerous.
7. Carnac Island, Western Australia, reef, in red algae, 21 March 1972, leg. N. Coleman.
Anoplodactylus pulcher Carpenter, 1907, 1 ♂
8. Bowen Island, Jervis Bay, New South Wales, on Bryozoa, depth 80 ft., 28 Dec. 1972, leg. N. Coleman.
Stylopallene cheilorhynchus Clark, 1963, 1 ♂ ovig.
Siphopallene tubirostrum (Clark, 1963), 1 ♂.

NOTES ON SOME OF THE SPECIES

Most of the species collected were already known from southern Australia, although several were recorded for the second time only. Some other species merit a special discussion.

Achelia shepherdii n. sp. Figs. 1—2.

Material. — 1 ♂ (holotype). Tasmania: Quiet Bay, Bruny Island (no. 4 in the above list). (Australian Museum, Sydney).

1 ♀ (paratype). Victoria: Gabo Island (no. 2 in the above list). (Zoölogisch Museum, Amsterdam, Pa. 1968).

Description. — Male: Trunk unsegmented. Neck wide, armed with 2 spiniferous tubercles at each side. No tubercles in the midline of the trunk. Lateral processes with strong, sometimes bifid, mostly spiniferous, tubercles; 2 such tubercles on each of the lateral processes 1, 2, and 3, 1 on lateral process 4. Abdomen long, with 2 minute dorsal tubercles. Ocular tubercle rounded, with a minute point over the pigmented eyes.

Proboscis widely oval.

Chelifore scape 1-segmented, distally armed with 2 spiniferous knobs and a dorsally projecting lobe armed with 2 spines, which overhangs the chela. The latter is reduced, non-chelate, armed with 1 large spine.

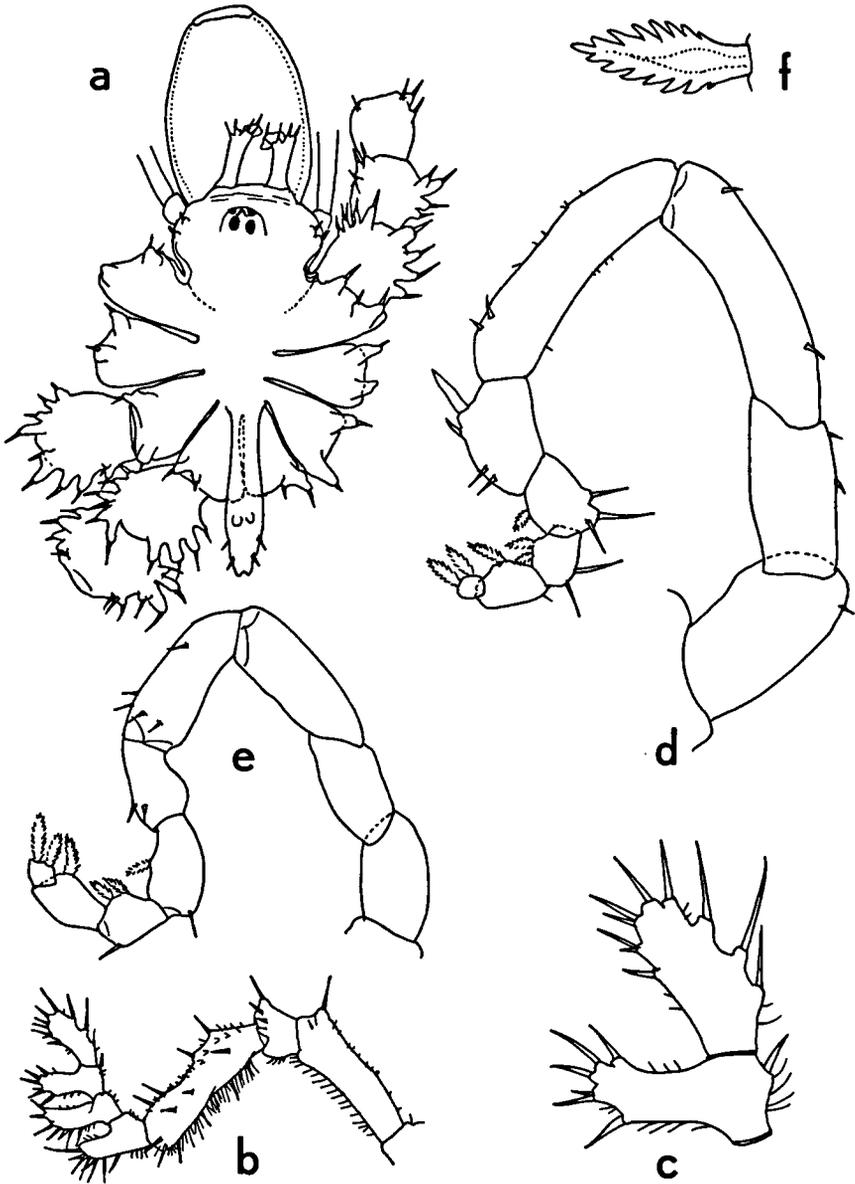


FIG. 1. *Achelia shepherdii* n. sp. (e, after ♀ paratype, from Gabo Island, Victoria, St. B2; rest after ♂ holotype, from Bruny Island, Tasmania): a, trunk, dorsal; b, palp; c, distal palp segments; d, e, oviger; f, terminal compound spine of oviger segment 10.

Palp 8-segmented. Segments 2 and 4 elongate, subequal, armed with a few larger and numerous smaller spines. Segments 5, 6, and 7 with very long, almost finger-shaped, spiniferous ventral projections. Segment 8 elongate,

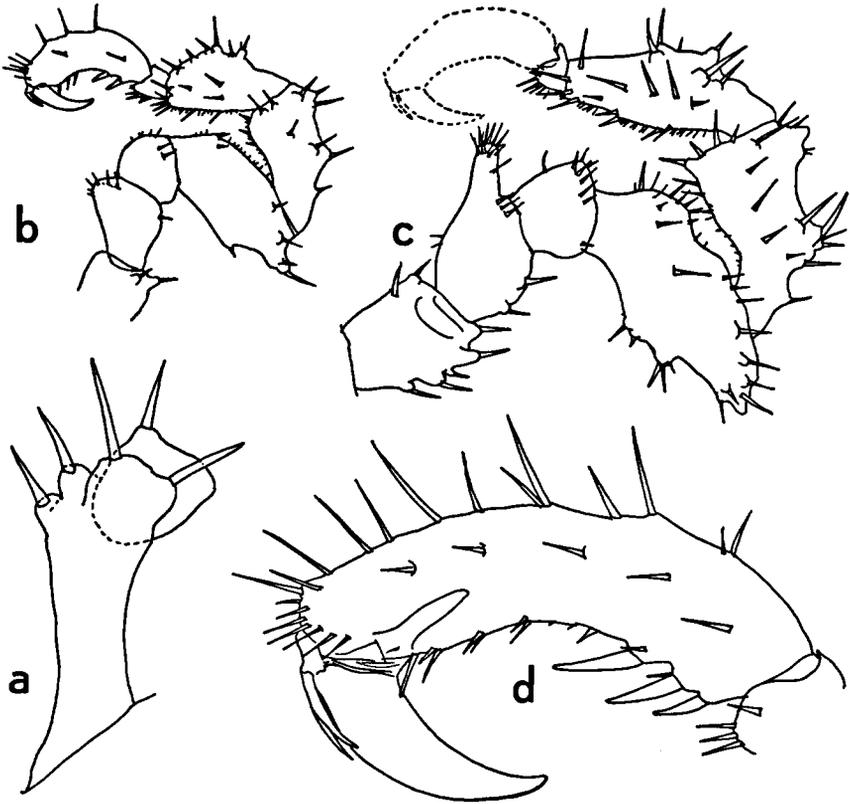


FIG. 2. *Achelia shepherdi* n. sp. (b, after ♀ paratype; rest after ♂ holotype; for localities, see fig. 1): a, chelifore; b, c, third leg; d, distal segments of third leg.

with 3 dorsal protuberances bearing each a spine; moreover with 2 distal and several ventral spines.

Oviger 10-segmented. Segment 6 with reversed spine. Segments 7 to 10 with 1, 2, 1, and 2 compound spines, respectively.

Coxa 1 with 3 anterior, finger-shaped, spiniferous projections, with 3 or 4 similar distal projections, and with 3 similar posterior projections. Coxa 2 with 3 anterior and 4 posterior spiniferous projections. Smaller spiniferous tubercles occur on the femur and tibiae. Propodus curved; heel slightly developed, armed with 3 spines; sole with a few, mostly paired, small spines. Claw strong, curved. Auxiliary claws feeble, about 1/3 of the main claw. Coxa 2 of legs 3 and 4 with a long, spiny genital spur.

Female: Trunk, abdomen, chelifore, coxae and femur with fewer and/or lower spiniferous projections. Palp similar to that of the male. Oviger much smaller; no reversed spine on segment 6; compound spine formula as in male. Femur swollen. Propodus with 2 spines on the heel, and only 3 on the sole.

Measurements (in mm):

	♀	♂
Length trunk (anterior border cephalic segment to tip 4th lateral process)	1.18	1.50
Width across 2nd lateral processes	0.95	1.33
Length abdomen	0.53	0.78
Length proboscis (ventral)	0.75	1.15
Greatest diameter proboscis	0.60	0.95
Third leg —		
coxa 1	0.20	0.33
coxa 2	0.28	0.40
coxa 3	0.18	0.25
femur	0.45	0.70
tibia 1	0.40	0.63
tibia 2	0.40	0.63
tarsus	0.06	0.09
propodus	0.43	0.59
claw	0.20	0.31
auxiliary claws	0.06	0.11

Remarks. — Both by the shape of the proboscis and by the numerous spiniferous projections on body and legs, this species is easily recognizable. The ventral projections on palp segments 5, 6, and 7 are much more strongly developed than in any other *Achelia*. The structure of the palp resembles that of another Australian pycnogonid, *Ammothella (biunguiculata) australiensis* Williams, 1940, but the structure of the claw distinguishes this form at once from the present material.

***Pseudopallene ambigua* Stock, 1956**

Mr. N. Coleman, of Caringbah, New South Wales, kindly provided some colour slides of live specimens of this species. These specimens were collected on coralline algae, in Bruny Island, Tasmania. Since these slides show *P. ambigua* as a very conspicuously coloured pycnogonid, and since so few colour notes about live sea-spiders are known, it was thought useful to give a description of the colour pattern here:

The body and legs are brightly straw-yellow. Dark carmine-red strikes occur on several places: on the dorsal side of coxa 1 and coxa 2 (longitudinal strike), on the dorso-distal edge of coxa 3 (transversal strike), on the dorso-distal edge of the femur (transversal strike), on the dorsal side of the cephalic segment, from the ocular tubercle to the incision of the frontal margin of the cephalon. The ocular tubercle itself is also dark carmine-red. Fainter reddish strikes are seen on the dorsal surface of trunk segments 1, 2, and 3 (transversal strikes), and on the dorsal surface of the distal part of the lateral processes 1, 2, and 3 (longitudinal strikes). The tips of the fingers of the chela are brown. The eggs carried by an ovigerous male were pale yellowish to yellowish brown.

***Parapallene avida* Stock, 1973. Fig. 3 a-c.**

This species has been described after a single male from Western Port, Victoria. The present collection contains also the hitherto unknown female

sex, in a sample from Gabo Island, Victoria. The sexually dimorphic oviger and the legs are illustrated in the present paper. It should be noted, that in the present sample, the femur (both in female and in male) possesses 2 very pronounced mediodorsal knobs, which project anteriorad and posteriorad, respectively, and which were less clearly marked in the holotype.

***Siphopallene tubirostrum* (Clark, 1963). Fig. 3 d.**

The detailed structure of the proboscis of this species, which was never before figured or described, shows the presence of a produced, free, dorsal, and of two free lateral labial antimeres, and thus confirms Clark's view that *Siphopallene tubirostrum* is closely related to *Stylopallene*.

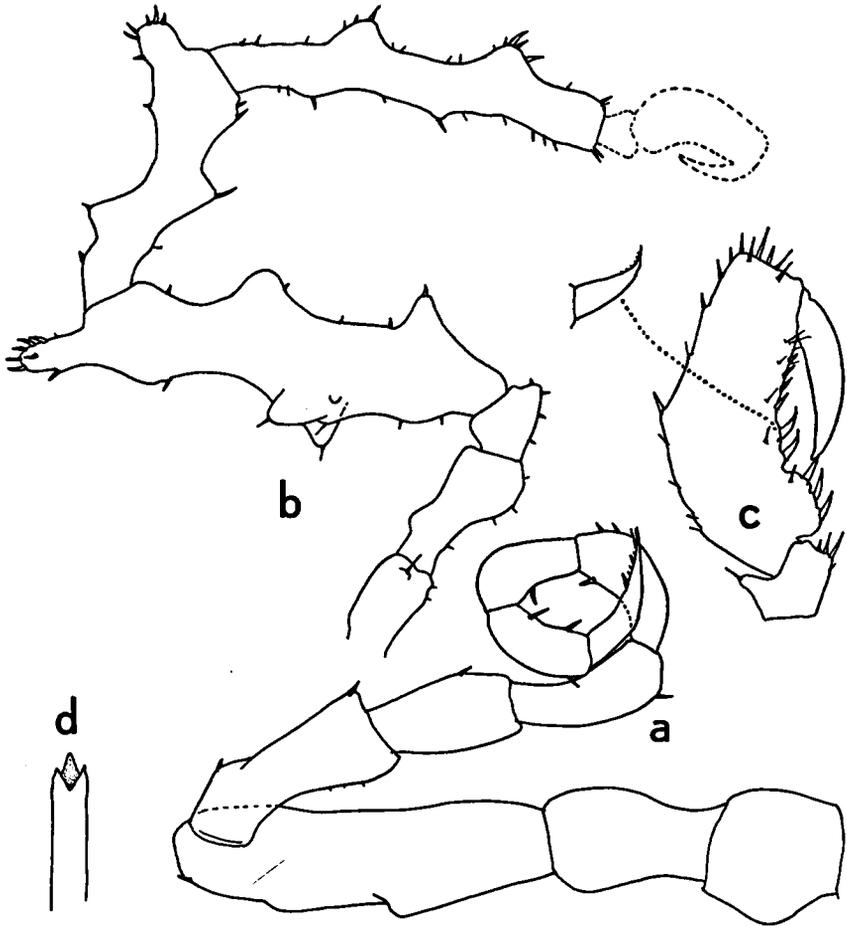


FIG. 3. a-c, *Parapallene avida* Stock, 1973, ♀ (from Gabo Island, Victoria, St. B2): a, oviger; b, third leg; c, distal segments of third leg. d, *Siphopallene tubirostrum* (Clark, 1963), ♂ (from Bowen Island, Jervis Bay, New South Wales): tip of proboscis, in ventral view, showing the three labial antimeres.

Anoplodactylus pulcher Carpenter, 1907

This species is new to Australia. *A. pulcher* (with which *A. stylops* Loman, 1908, is synonymous) was previously known from Banda (Indonesia), the Maldives, Paumben (India), and Madagascar (for references, see Stock, 1965). *A. pulcher* is, as it were, a hairy edition of the well-known Australian species *A. tubiferus* (Haswell, 1885).

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