

## PYCNOGONIDA FROM THE ALTHORPE ISLANDS, SOUTH AUSTRALIA

by D. A. STAPLES\*

### Summary

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Six species of shallow-water Pycnogonida are recorded from the Althorpe Islands. *Pseudopallene watsonae* sp. nov. and *Pseudopallene inflata* sp. nov. are described. The adult male of *Spasmopallene reflexa* (Stock, 1968), described on the basis of a juvenile, is described and the species rediagnosed. The genera *Spasmopallene* Stock, 1968 and *Pallenella* Schimkewitsch, 1909 are synonymised with *Pseudopallene* Wilson, 1878. The holotype of *Ps. ambigua* Stock, 1956 has been re-examined and compared with the new species. *Callipallene emaciata micracantha* Stock, 1954 is raised to species status. *Stylopallene cheilorhynchus* Clark, 1963 and *Achelia transfugoides* Stock, 1973 are recorded.

KEY WORDS: Pycnogonids; Althorpe Islands; Callipallenidae; Ammotheidae.

### Introduction

The pycnogonid fauna of South Australia is well represented in museum and private collections principally as a result of research and monitoring programs conducted over many years. Most specimens have been collected in Spencer Gulf and Gulf St Vincent, with few records from offshore islands, and none from the Althorpe Islands. Six species referable to four genera and to two families are represented. This collection provides an opportunity to reconsider the generic status of *Spasmopallene* and *Pallenella* and describe new species. Specimens were collected using SCUBA at depths ranging from 2 to 27 m. Background information to the Althorpe Is and expedition details are given by Murray-Jones & Shepherd (2005). Specimens examined are lodged in the South Australian Museum (SAM) and Museum Victoria (NMV).

#### CALLIPALLENIDAE Hilton, 1942

##### *Pseudopallene* Wilson, 1878

*Pseudopallene* Wilson, 1878: 202; Stock, 1954.

*Pallenella* Schimkewitsch, 1909b: 1-13  
(new synonymy).

*Spasmopallene* Stock, 1968: 39-40  
(new synonymy).

#### Type species

*Pseudopallene circularis* (Goodsir, 1842).

#### Diagnosis

Scapes 1-segmented, chelae fingers smooth; proboscis conical distally, tip mamilliform; ovigers

10-segmented, sexually dimorphic, terminal claw well developed; palps and auxiliary claws absent. All Australian species recorded to date share the same habitus as the holotype; body compact, segmented; anterior region of cephalon bulbous; neck short; proboscis directed ventrally, not visible in dorsal view. Scapes carried ventrally and angled outwards, chelae directed inwards such that the fingers lay directly below the mouth; cephalon and chelifores in combination, assuming a somewhat triangular aspect when viewed anteriorly. Juveniles and subadults differ from adults in the shape of the proboscis and chelifores, which are angled towards posterior; chelae geniculate, directed forward and upward; movable fingers distorted, digitiform; propodal heel more pronounced; coxa 2 short; oviger spine numbers low.

#### Remarks

The genus is common in southern Australian waters. Species determination is confused by a range of intermediate and overlapping characters, which no doubt contributed to Clark's (1963: 33) observation that no two males (or females) of this group have been found to be exactly alike. To a large extent this variability can be attributed to ontogenetic changes previously noted by Stock (1973a: 116) and Staples (1997: 1053). In the present material, limited variation is also evident in adult specimens, particularly in the heel and oviger spine numbers.

Stock (1968: 39) erected the genus *Spasmopallene* to accommodate specimens from the Great Australian Bight, which he described as *S. reflexa* and *S. clarki* Stock, 1968, at the same time embracing *Pseudopallene dubia* Clark, 1963. It is evident by association of larvae, juveniles and subadults with adult *Pseudopallene* and the sharing of a common substrate, that the genus

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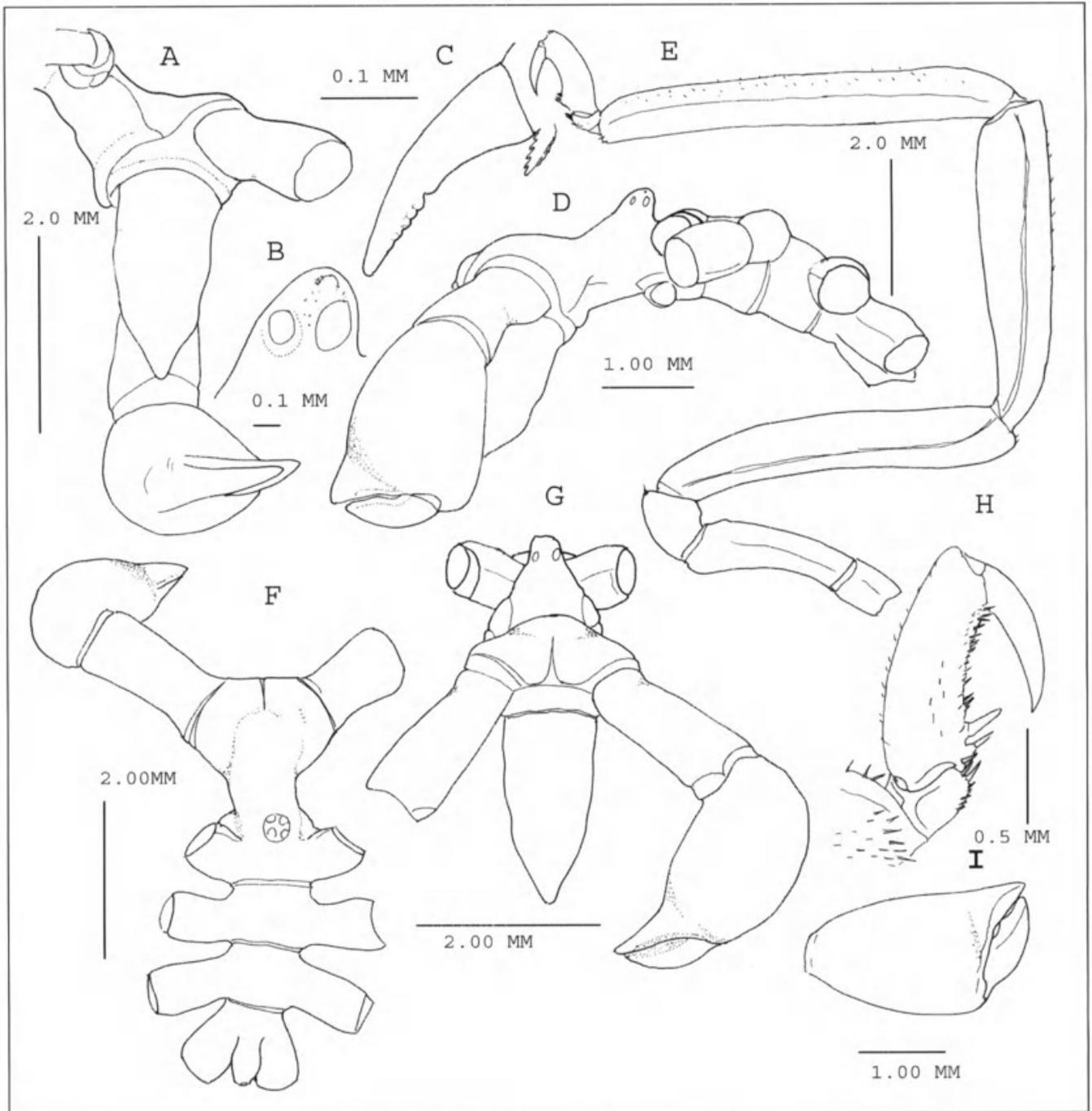


Fig. 1. *Pseudopallene ambigua* Stock, 1956, holotype: A, cephalon ventro-anterior; B, ocular tubercle; C, oviger claw; D, trunk, lateral; E, third leg; F, trunk dorsal view; G, trunk, anterior view; H, propodus and tarsus, leg 3; I, chela.

*Spasmopallene* is based on juvenile *Pseudopallene*. Sexual dimorphism of the ovigers is clearly evident in subadults, perhaps contributing to an assumption that the type specimens of *Spasmopallene* were sexually mature. Neither author mentioned the presence of genital pores in type material.

The genus *Pallenella* was erected by Schimkewitsch (1909) to accommodate *Pallene laevis* Hoek, 1881, principally based on that species having 2-segmented scapes. In all other respects, diagnosis of the genus agrees with *Pseudopallene*. Hoek's description of the scapes is, however, rather

ambiguous and appears to have been misinterpreted by Schimkewitsch. His figures, which show the scapes to be clearly segmented (Pl.XI Figs 8 and 9), are inconsistent with his description of the scapes as being "constricted at the base, and indistinctly divided into two joints". Examination of specimens in this collection, and from elsewhere in southern Australia, shows that a basal constriction of the scape is a variable character present in more than one species of *Pseudopallene*. In some instances the restriction is well defined and with a suggestion of a suture, but never segmented. It can be present in

subadult and adult specimens and, in some cases, in specimens from the same collection. *Pallenella* has remained monotypic and retention of the genus is not supported by these observations. The genera *Spasmopallene* and *Pallenella* are synonymised with *Pseudopallene*.

### Key to adults of species of southern Australian *Pseudopallene*

1. a) Long segments of legs each with 2 distinct annular constrictions .....*P. pachychiera*  
b) Leg segments without distinct constrictions.....2
2. a) Propodal heel with spines arranged in 4 pairs  
*P. reflexa*  
b) Propodal heel spines not paired.....3
3. a) Anterior margin of cephalon evenly rounded.....4  
b) Anterior margin of cephalon with mid-dorsal mound.....5
4. a) Terminal oviger claw, smooth, crenulate or serrated on 1 margin only .....5  
b) Terminal claw serrated on both margins.....6
5. a) Terminal oviger claw smooth or crenulate .....  
.....*P. ambigua*  
b) Terminal oviger claw serrated.....*P. laevis*
6. a) Chela fingers about  $\frac{1}{4}$  length of palm, immovable finger strongly curved, tip blunt...  
.....*P. watsonae*  
b) Chela fingers longer than  $\frac{1}{2}$  length of palm, immovable finger weakly curved or straight, pointed .....*P. inflata*

#### *Pseudopallene ambigua* Stock, 1956

Fig 1 A-I

*Pseudopallene ambigua* Stock, 1956: 40-42, Fig. 5 a-i; Clark, 1963: 31-33, Fig. 16 A-F; -Stock, 1973a: 115-117, Fig. 7 c, g, e.

#### Material examined

Holotype, male. Bass Strait, Museum Hamburg, K17 680.

#### Remarks

The holotype of *Pseudopallene ambigua* has been re-examined for comparison with the new species. The following observations can be made but generally there is little to add to the original description. Stock remarked on the unusual shape of the ocular tubercle, which he illustrated with a stepped anterior margin (Stock, 1956: Fig. 5). No such unusual feature is now evident, suggesting perhaps, temporary handling damage to the tubercle. The scapes have a slight basal constriction and coxa 2 is more inflated distally than figured. Re-examination of the oviger terminal claw using high resolution digital imaging shows that the striations observed by Stock are in fact crenulations (Fig. 1, C).

*Pseudopallene ambigua* shares much in common

with *P. laevis*. Both species are of similar size (leg spans > 43 mm and about twice the size of the new species described herein) and share Bass Strait as their type locality. In both type specimens, only the inner margin of the oviger terminal claw is serrated or bears striations, whereas all specimens in this collection bear distinct serrations on both margins. I am grateful to Dr. H. Dastych of the Hamburg Museum who kindly re-examined the *P. ambigua* holotype to confirm my earlier observations. Based on Hoek's description, *P. laevis* can be distinguished by the more compact trunk and conical proboscis. A further point of difference is the curvature of the leg segments. Given that constriction of the scape segment appears to be a variable character, these differences are perhaps not significant, but serve to distinguish the species pending a detailed review of all available material. Additional figures of *P. ambigua* are provided.

#### *Pseudopallene watsonae* sp. nov.

(Figs 2, 3 J-K)

*Pseudopallene ambigua*.-Stock, 1973a:

Fig. 7 a, b, d, f. (non *P. ambigua* Stock, 1956).

#### Material examined

##### Holotype

SAM E3414, male (ovigerous), Althorpe Is. 35° 22' S 136° 51' E, Western Isles, S.A., on bryozoan *Orthoscuticella* cf. *ventricosa*, 27 m, R. Lewis, 6 Jan 2004.

##### Allotype

NMV J53155, female, Port Phillip Bay Heads, Vic., bryozoan *Scuticella* sp., J. E. Watson, Mar 1980.

##### Paratypes

NMV J53163, 1 male (ovigerous), Port Phillip Bay Heads, Vic., 15–25 m, J.E. Watson, Mar 1980; NMV J53164, 1 female, Port Phillip Bay Heads, Vic., 16 m, D.A. Staples, Nov 1978.

#### Description

Holotype. Leg span 21.3 mm. Trunk smooth, segmented, separated from lateral processes by distinct cuticular line, lateral ecdysial lines well-defined, arthroal membrane broad. Neck short, cephalon with low mid-dorsal mound anterior to ocular tubercle divided longitudinally by a cuticular band extending the length of the neck. The band is darkly pigmented, fading to base of tubercle. Lateral processes about as long as own maximum diameter, each with several tiny dorsodistal spines, each process separated by <  $\frac{1}{3}$  own basal diameter, separation decreasing between posterior processes. Abdomen slightly inclined, short, inflated, narrows

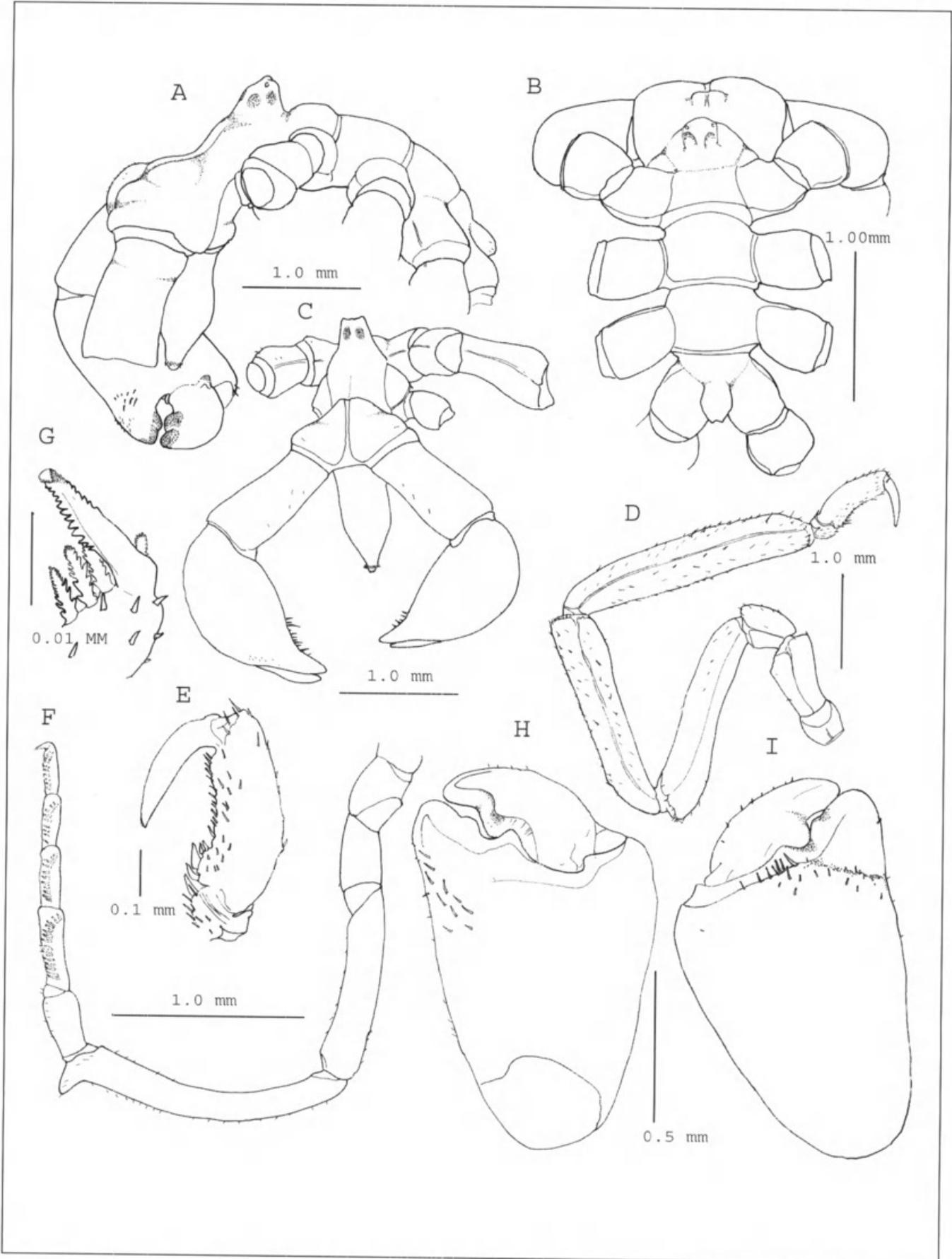


Fig. 2. *Pseudopallene watsonae* sp. nov., SAM E3414, male holotype: A, trunk, lateral view; B, trunk, dorsal view; C, trunk, anterior view; D, third leg; E, tarsus and propodus, third leg; F, oviger; G, oviger claw; H, chela, left, interior; I, chela, left, exterior.

abruptly to a cleft tip, reaching to about half length of 4th lateral process. Ocular tubercle a little wider than tall, bearing 2 prominent dorsal papillae, 4 large pigmented eyes of equal size, lateral sense organs not evident. Proboscis directed ventrally, mid-region gently curved inward, tapering to oral surface, conspicuous fringe of dense setae immediately preceding tip. Scape one-segmented, little shorter than length of proboscis, slight basal constriction. Chelae robust, fingers short, tips blunt, touching when closed; immoveable finger straight, less than  $\frac{1}{4}$  length of palm; moveable finger strongly curved and rounded, a little off-set distally from immovable finger, prominent lobe on each finger corresponds with indentation on inner surface of the opposing finger. Palm broad, outer surface strongly inflated, inner and outer surfaces covered in short setae with a group of longer setae on inner surface at base of immoveable finger. Oviger segment 5 longest, about 25% longer than segment 4, curved, distal apophysis prominent, strigilis absent, terminal claw, distally acute, partially folded over, margins serrated, distal serrations fine, spine formula 14:10:10:10, proximal spine smallest, distal-most spine placed dorso-laterally, spines relatively narrow and long, many partially folded distally, similar to the main claw, segments 7 – 10 with scattered surface spinules, bifurcate setae visible under high magnification.

#### Measurements

Oviger male (mm). Seg. 1, damaged; Seg. 2, 0.24; seg. 3, 0.27; seg. 4, 0.95; seg. 5, 1.27; seg. 6, 0.25; seg. 7, 0.42; seg. 8, 0.26; seg. 9, 0.25; seg. 10, 0.25, claw 0.17.

Legs slender, scattered short spines on longer segments, most spines with basal process. Coxa 2 is 2.3 times as long as coxa 3, tibia 2 longest segment, femur and tibia 1 subequal, length of tibia 2 about 5.0 times maximum width; tarsus bearing one large and many smaller spines; propodus weakly curved, heel low, with 2 (3) large spines of slightly variable shape followed by two smaller spines in single row, of the larger spines, the distal-most is largest, proximal spine slightly curved, sole with median row of about twelve spines flanked by numerous smaller spines. Main claw of varying length, from  $\frac{1}{2}$  –  $\frac{4}{5}$  length of propodus. Genital pores small and appear to be on legs 3 and 4 only. Conical area on dorsal surface coxa 2 of all legs may indicate the presence of a gland.

#### Measurements

Holotype (mm). – Length of trunk (frontal margin of cephalic segment to tip of 4th lateral process), 3.40; width (across 2nd lateral process), 1.50; proboscis length (lateral), 0.77; Third leg; coxa 1,

0.42; coxa 2, 0.97; coxa 3, 0.42; femur, 2.00; tibia 1, 2.0; tibia 2, 2.4; tarsus, 0.22; propodus, 0.75; claw, 0.67.

#### Allotype

Slightly smaller but otherwise in close agreement with male. One oviger lost, other, segment 10 damaged, partly missing. Segment 5 marginally longer than segment 4, segment 4 slightly swollen proximally. Lateral processes narrowly separated. Scape with strong proximal constriction. Femora swollen, each with about 10 eggs. Genital pores large, all legs.

#### Variation

The oviger spine formulae are variable. Port Phillip Bay male, (J53163) 13:10:10:10; female (J53264) 14:9:8:10. The oviger distal claw shape was constant. Scapes of female (J53164) strongly constricted at base.

#### Remarks

I have not examined Stock's (1973a:115) material from Pearson I.; however, based on his description (Figs 7 a, b d, f) it is clear that he has attributed the juvenile specimens of *P. watsonae* to *P. ambigua*. This new material, consisting of mature specimens, confirms the independent status of *P. watsonae*. The most conspicuous difference between *P. watsonae* and *P. ambigua* is in the shape of the chelifore fingers. *Pseudopallene ambigua* is further distinguished by the overall size, being about twice that of *P. watsonae* and the more slender legs of which tibia 2 is about 7.2 times as long as the maximum width. The mid-dorsal region of cephalon is evenly rounded with no suggestion of a mid-dorsal process. The proboscis is slightly constricted at about one-third and two-thirds its length before tapering distally. The curvature of oviger segment 5 is stronger and the terminal claw lacks well-defined teeth. This ovigerous holotype carried several larvae amongst the eggs. The larvae are hyaline, the 4 legs each terminated in a claw as long as the propodus and tarsus together, heel with single spine, propodal sole with 2 spines (Fig. 3, J). In contrast to the robust chela fingers of the adult, which are well suited to crushing bryozoan zooids, the larval chelae are delicate. The moveable finger is distorted and digitiform, terminating in a needle-like process which appears to connect with internal (glandular?) tissue (Fig. 3 K). The shape of the digitiform process suggests a specialized purpose, and it is possible that it may be used to manipulate the manubrium covering the frontal pore of each zooid facilitating insertion of the proboscis. Many of the bryozoan zooids were empty with the operculum of the frontal pore displaced to a vertical position.

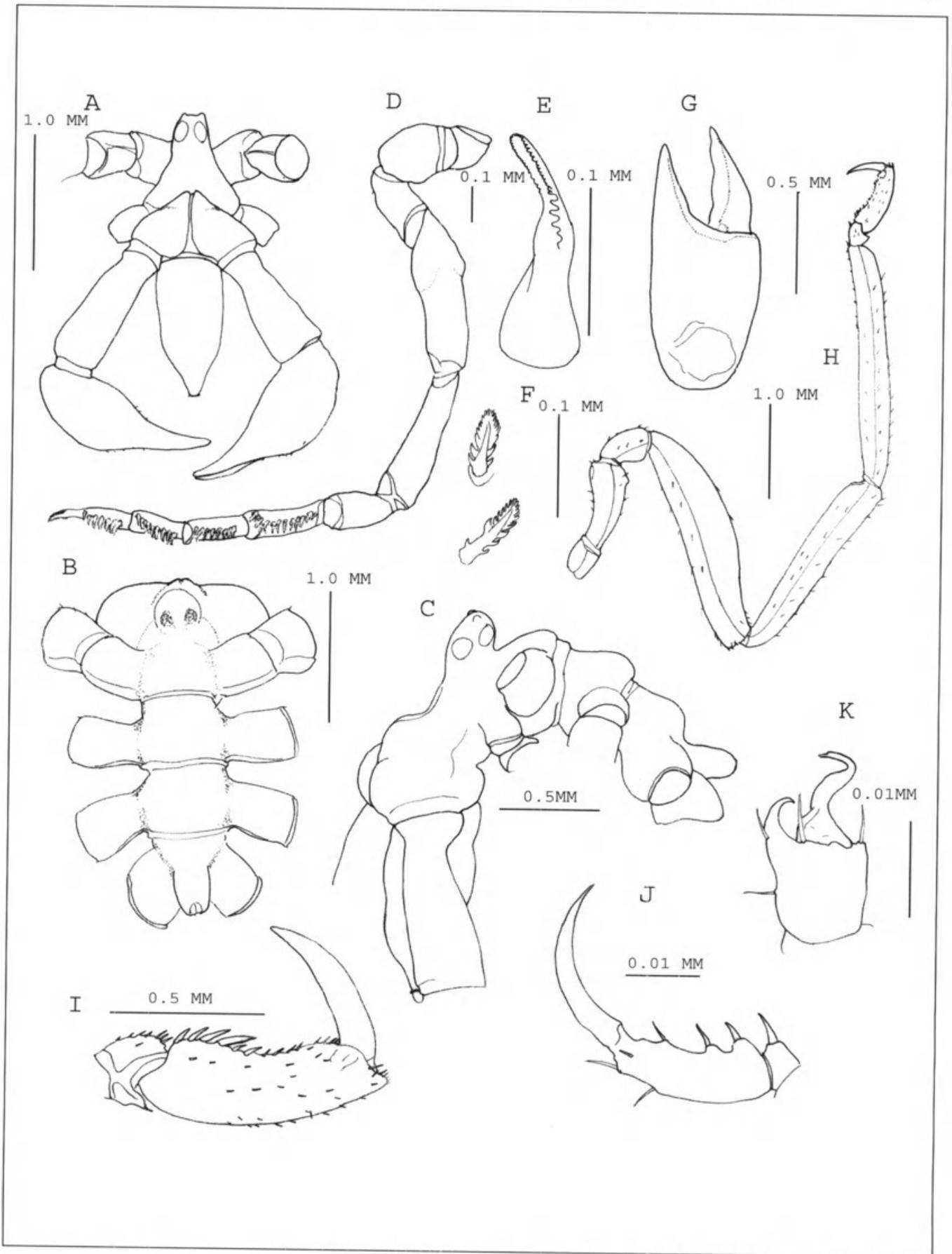


Fig. 3. *Pseudopallene inflata* sp.nov., SAME 3417, female allotype: A, trunk, anterior view; B, trunk, dorsal view; C, trunk, lateral; D, oviger; E, oviger claw; F, oviger spines; G, chela; H leg 4; I, tarsus and propodus leg 4; *Pseudopallene watsonae* SAM E3414, larval form: J, tarsus and propodus; K, chela.

*Etymology*: This species is named for Dr. Jeanette Watson in recognition of her outstanding contribution to Australian pycnogonid collections.

***Pseudopallene inflata* sp. nov.**

Fig 3

*Holotype*

SAM E3417, female, Althorpe I., 35° 22' S; 136° 51' E; 300 m N-NW of The Monuments, on bryozoan *Orthoscuticella* cf. *ventricosa*, 23 m, R. Lewis, 6 Feb 2004.

*Paratypes*

SAM E3416, 1 female (subadult), Althorpe Is, Western Isles, S.A. on bryozoan *Orthoscuticella* cf. *ventricosa*, 13 m, D. A. Staples and T. Laperousaz, 6/02/04; SAM E3415, 1 female, eastern Mooring Bay, Althorpe I. on bryozoan *Scuticella*, 3-5 m, S.A. Shepherd, 12/2/05.

*Female*

(holotype): Leg span 15.5mm. Trunk smooth, segmented, lateral ecdysial lines well-defined. Neck short, mid-dorsal mound on cephalon conical, divided by longitudinal band; dorsal and ventral surface of all trunk segments inflated. Lateral processes little longer than maximum width, separated by about half own basal diameter, each with several tiny dorso-distal spines. Abdomen short, rounded, inclined at about 45 degrees. Ocular tubercle taller than width at base, tapered toward tip, apical papillae prominent, frontal margin convex; 4 eyes, oval, pigmented; lateral sense organs not evident. Proboscis directed ventrally slightly constricted at about one-third and two-thirds length. Scape strongly constricted proximally, chela fingers pointed, cutting edges smooth, slightly irregular, immoveable finger little more than 1/2 length of palm, few setae. Oviger segments 4 and 5 about equal length, segment 4 swollen proximally, spine formula segments 7 – 10, 13:9:9:8, terminal claw elongate, greater than half length segment 10, scoop-shaped, margins of distal two-thirds bluntly serrated, serrations larger proximally.

*Measurements*

Oviger holotype (mm). Seg. 1, 0.10; seg. 2, 0.25; seg. 3, 0.28; seg. 4, 0.55; seg. 5, 0.58; seg. 6, 0.17; seg. 7, 0.31; seg. 8, 0.25; seg. 9, 0.23; seg. 10, 0.21, claw 0.12.

Legs; coxa 2 about 2 times length coxa 3, inflated distally, tibia 2 longest segment, femur slightly curved, inflated, surface with scattered spines, little longer than tibia 1, both tibiae spinous dorsally, individual spines mounted on small processes, propodal heel low, 3 - 4 heel spines, distal-most spine

longest, longer than 1/2 width of segment, sole armed with about 10 smaller spines. The remaining third leg is damaged. Genital pores large, all legs.

*Measurements*

Holotype (mm) – Length trunk (frontal margin of cephalic segment to tip of 4th lateral process, lateral), 1.91; width (across 2nd lateral process), 1.15 proboscis length (lateral), 0.98. 4th leg; coxa 1, 0.3; coxa 2, 0.77; coxa 3, 0.37; femur, 2.09; tibia 1, 2.0; tibia 2, 2.18 tarsus, 0.12; propodus, 0.67; claw, 0.45.

*Variation*

The oviger spine formulae variable, distal claw shapes constant. The spine formulae adult female SAM E3415 was 12:9:9:10, SAM 3416 was 11:8:7:7

*Remarks*

The presence of an acute swelling on the mid dorsal surface of the cephalon anterior to the ocular tubercle, together with inflated trunk segments most readily distinguish this species from its congeners. The longer heel spines, also, appear to be a useful diagnostic character.

*Etymology*

The specific name alludes to the rounded or inflated trunk segments.

***Pseudopallene reflexa* (Stock, 1968) comb. nov.**

Fig 4, Fig 5 F-G

*Spasmopallene reflexa* Stock, 1968: 40-42, Fig. 15 a-h.

*Type locality*

Galathea Stn. 571. Great Australian Bight. (38° 47' S, 142° 41' E).

*Material examined*

SAM E3418, 1 male (ovigerous), 4 subadults, 3 juveniles; Althorpe Is, Western Isles, S.A. amongst bryozoan *Orthoscuticella* cf. *ventricosa*, 13 m, D. A. Staples and T. Laperousaz, 6 Feb 2004. NMV J53160, 1 subadult female, Popes Eye, Port Phillip Bay, Vic., on bryozoan *Orthoscuticella ventricosa*, 3m, T. O'Hara, 10 Mar 2005.

*Description*

*Male*

Leg span 20.0 mm. Trunk smooth, completely segmented, lateral ecdysial lines not evident. Lateral processes little longer than maximum width, first and second pair separated by about two-thirds own basal diameter, decreasing to about 1/4 diameter between segments 3 and 4. Mid-dorsal region of cephalon, anterior to ocular tubercle, rounded in

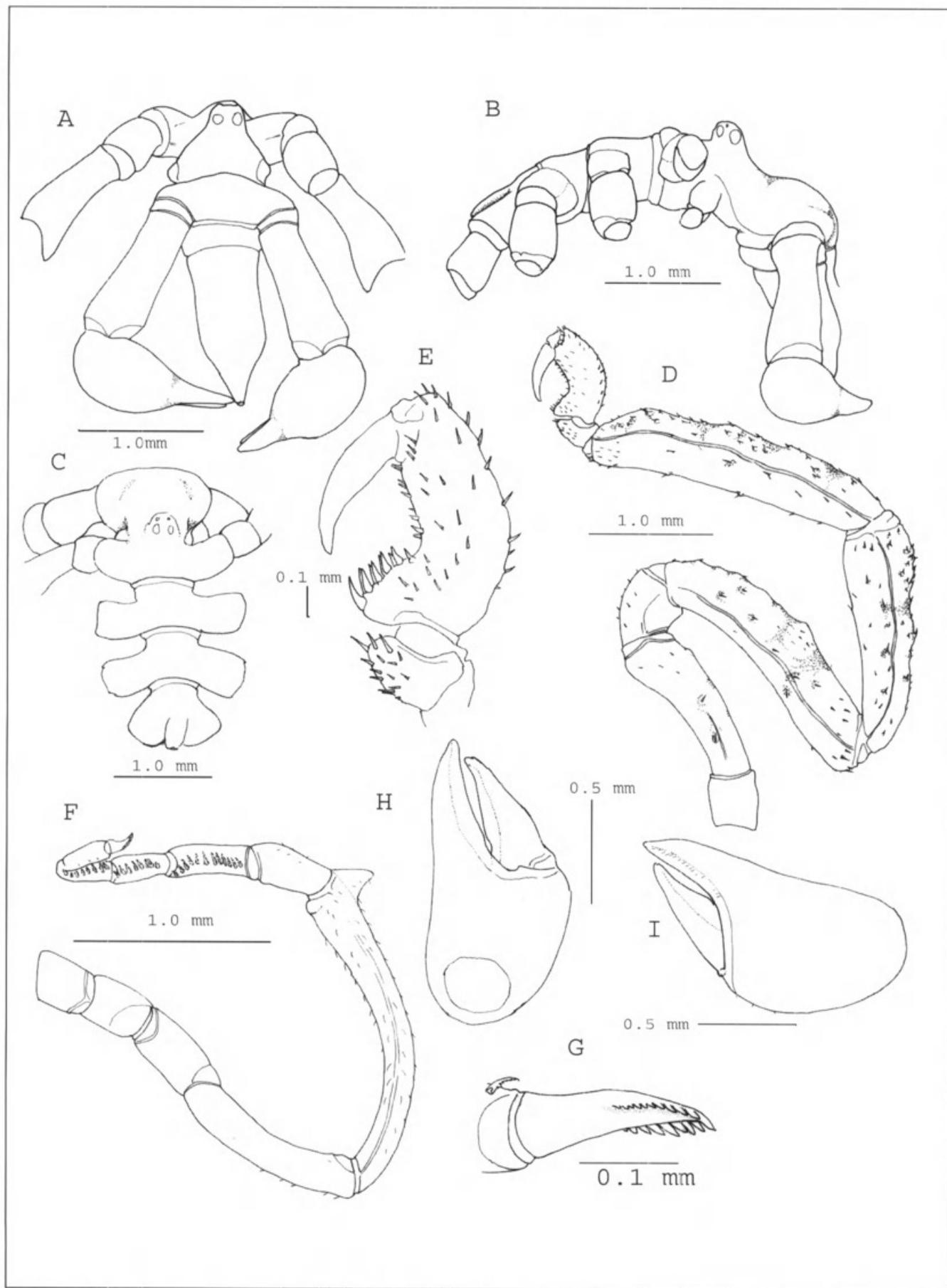


Fig. 4. *Pseudopallene reflexa*, SAM E3418, male: A, trunk, anterior view; B, trunk, lateral view; C, trunk, dorsal view; D, third leg; E, tarsus and propodus, third leg; F, oviger; G, oviger claw; H, chela, left interior; I, chela, left exterior.

anterior view, smooth, no evidence of mound or longitudinal division. Neck short. Abdomen follows downward curvature of trunk, inflated, barrel-shaped, cleft at tip, little shorter than distal margin of 4<sup>th</sup> lateral process. Ocular tubercle broader than tall, four well pigmented eyes, 2 low apical papillae; lateral sense organs not evident. Proboscis very slightly inflated at about two-thirds length, almost parallel sided, narrows sharply distally, dense fringe of oral setae, proboscis and basal arthroal membrane extended. Scape with slight basal constriction, chelae fingers smooth, pointed, immovable finger little longer than moveable finger and little less than  $\frac{1}{2}$  length of palm; palm glabrous.

Oviger segment 5 longest, strongly curved, distal apophysis prominent, acute; segments 4 and 5 with scattered, fine setae; bifurcate setae visible under high magnification on segments 4 – 10, spine formula 12:9:9:8, terminal claw of same form in adults and subadults, elongate, ladle-like, margin lined distally with about 20 well-defined teeth, increasing in length distally.

#### *Oviger measurements*

Male holotype (mm). Seg. 1, 0.25; seg. 2, 0.30; seg. 3, 0.40; seg. 4, 0.90; seg. 5, 1.53; seg. 6, 0.35; seg. 7, 0.42; seg. 8, 0.30; seg. 9, 0.27; seg. 10, 0.25, claw 0.18.

Legs; coxa 2, 2.7 times as long as coxa 3, coxa 2 with low, conical swelling on dorsal surface at about  $\frac{3}{4}$  length of segment, surface of femur and tibiae with scattered spines, longer spines about  $\frac{1}{5}$  segment width but mostly shorter, dorsal spines particularly abundant, most surmounted on a basal process, longer segments uneven, with low swellings on surface; tibia 2 longest, 4.7 times as long as greatest width; femur little longer than tibia 1, low swelling ventrally at  $\frac{1}{2}$  to  $\frac{2}{3}$  length, dorsal surface linear, dorsal surface of tibiae irregular, ventral surface linear with few spines; tarsus short, numerous scattered setae on dorsal surface, single larger distal spine; propodal heel pronounced, spine arrangement distinctive, typically with two basal median spines, distal-most spine slightly larger, followed by 4 pair of slightly smaller spines angled in a 'V' arrangement; sole with about 10 spines. Main claw little less than  $\frac{2}{3}$  length of propodus. Genital pores small, ventral surface coxa 2 legs 3 and 4. Auxiliary claws absent.

#### *Measurements*

(male mm). Length trunk (frontal margin of cephalic segment to tip of 4th lateral process), 3.55; width (across 2nd lateral process), 1.42; proboscis length (lateral), 1.37. Third leg; coxa 1, 0.37; coxa 2, 1.32; coxa 3, 0.50; femur, 2.00; tibia 1, 1.70; tibia 2, 2.37; tarsus, 0.22; propodus, 0.65; claw, 0.47.

#### *Remarks*

These specimens have taken up the orange-brown colour of the gut contents and match the Scuticellid bryozoan on which they were found. The juvenile specimen is in close agreement with the form described as *Spasmopallene reflexa* Stock, 1968 first described from the region. In particular, it agrees in the shape of the proboscis and distal oviger claw. Unfortunately, however, I have been unsuccessful in confirming the characteristic arrangement of heel spines on the holotype. Stock recorded 4 – 5 heel spines but it is possible that 4 of the spines observed by Stock obscured matching pairs and that the 5th spine represents a median basal spine. Based on Stock's description, and the material before me, I have little reason to doubt that the same species is represented. The 2nd coxae of subadults and juveniles are short, 1.6 – 1.8 times longer than coxa 3, and the propodus is much more strongly curved with a more prominent heel. The gut follows the contours and irregular surface of the legs, narrowing and dilating intermittently giving it a globular appearance. The proboscis of one subadult female tapers from about  $\frac{1}{2}$  its length, distal portion plug-like, expanding slightly before again narrowing to setose tip (Fig. 5 G). *Pseudopallene reflexa* is readily distinguished from other described species by the irregular surface of the longer leg segments, the distinctive paired arrangement of the propodal heel spines, the proboscis shape, the stronger curvature of the 5th oviger segment and the form of the terminal oviger claw.

#### *Distribution*

Bicheno, Tas.; Bass Strait; Port Phillip Bay, Vic. at depths 3 – 72 m.

*Stylopallene* Clark, 1963

*Stylopallene cheilorhynchus* Clark, 1963

(Fig 5 A, B)

*Stylopallene cheilorhynchus* Clark, 1963: 36-38, Fig. 19 A-I.? Stock, 1973a: 117.? Stock, 1973b: 92.

#### *Type locality*

Port Arthur, Tasmania.

#### *Material examined*

SAM E3420, 2 subadults, 1 larval form, Althorpe Is, 300 m N-NW of The Monuments, S.A. 23 m, R. Lewis, 6 Feb 2004; SAM E3421, 5 immature specimens, 2 larval forms, Western Isles, 27 m, R. Lewis, 6 Feb 2004; SAM E3422, 7 males, 4 females, 6 subadults, 1 larval form, Western Isles, on bryozoan *Amathia wilsoni*, 13 m, D. Staples and T. Laperousaz, 6 Feb 2004; SAM E3423, 1 male, eastern Mooring Bay, Althorpe I., 3 – 5 m, S.A.

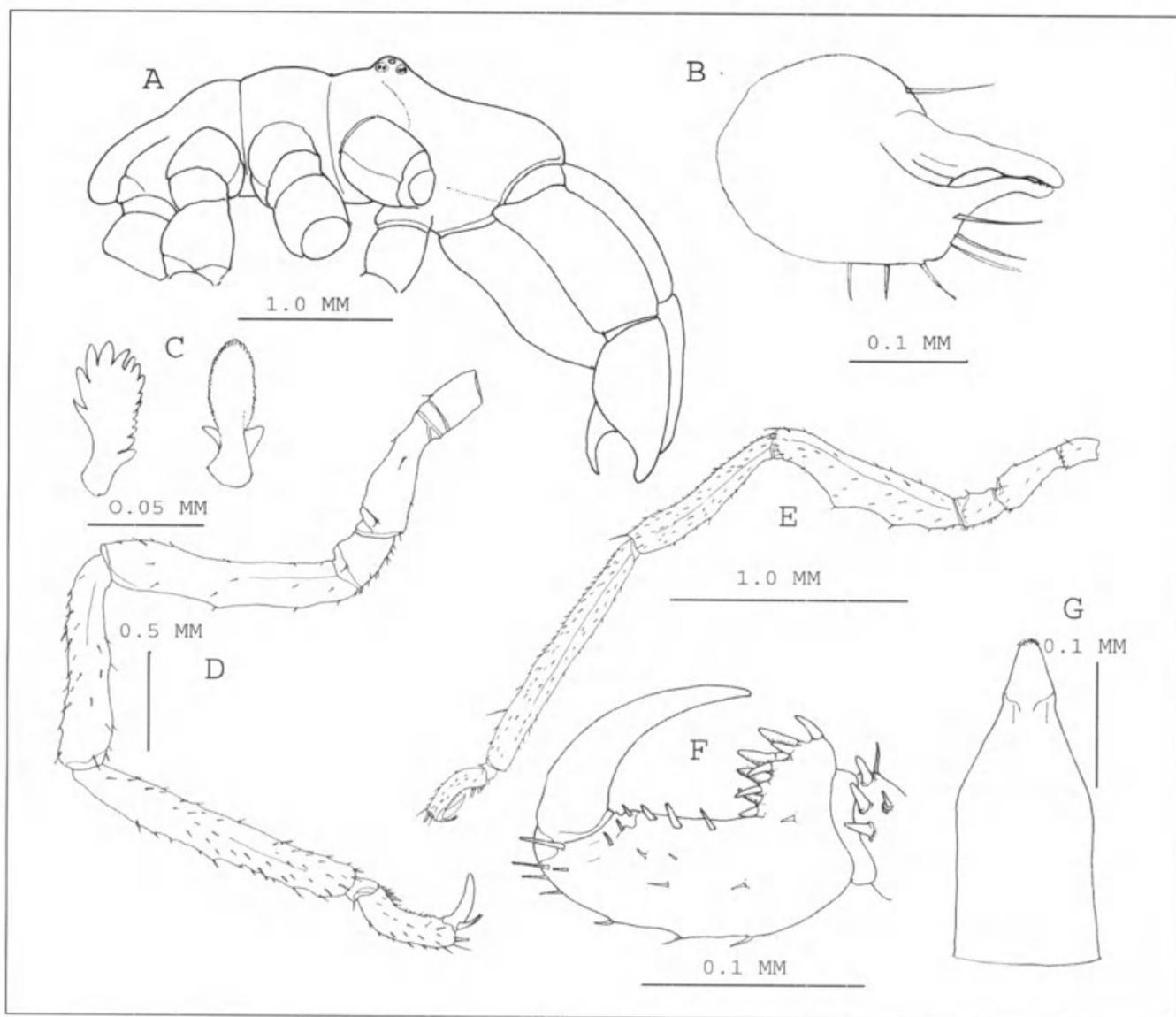


Fig. 5. *Stylopallene cheilorhynchus* SAM E3422: A., trunk, male, lateral; B, chela, juvenile. *Callipallene micracantha* SAM E3424, male, C, oviger spines; D, leg 3; SAM E3425, female, E, leg 3; *P. reflexa*, SAM E3418, F, propodus, juvenile leg 3; G, proboscis, sub adult.

Shepherd, 12/02/05; SAM E3429, 1 male ovigerous, Nora Creina, S.A., snorkel collection, A.I.M.S collecting Team, 20 Feb 1989; SAM E3438, 1 subadult, Cape Northumberland, S.A. in algae, 15 m, S.A. Shepherd, Feb 1977; SAM E3430, 1 male ovigerous, St Francis I., off SW point, S.A., rocks and sand 35 m, W. Zeidler, 29/01/1982; SAM E3431, 1 female, Pearson I., S.A., 30 – 33 m, (no additional data); SAM E3432, 9 larval forms and juveniles, off Cape Jaffa, approx 3 km WNW of Margaret Brock Reef Lighthouse, S.A., ridges crevices, overhangs, algae, few sand pockets, W. Zeidler and K.L. Gowlett-Holmes, 17 Feb 1989; SAM E3433, 2 females, Dutton Cove, NE Kangaroo I., S.A. in night time plankton tow, J. Ottaway, 19 Jan 1979; SAM E3428, 1 male ovigerous, Cape Thomas, between Godfrey I., S.A., 3 – 7 m, red algae, soft rock, reef,

sand wreck, W. Zeidler and K. Gowlett-Holmes, 16 Feb 1989; SAM E3434, 1 female, Kingscote, Kangaroo I., S.A., 5 m, on hydroids, N. Coleman, 13 Mar 1978; SAM E3435, 1 Juv., Robe, S.A., 1 km offshore, 15 m, D. Staples, 16 Apr 1976; SAM E3436, 1 male ovigerous, West I., Encounter Bay, in sortings, 12 m, J. Ottaway, 26 Nov 1978; SAM E3437, 1 male ovigerous, Hopkins I., SE Eyre Peninsula, S.A., 17 m, 30 Nov 1995.

*Remarks*

A compact species, easily confused with closely related but more elongate, *S. longicauda* Stock, 1973a, and shares similar body markings. The distal 1/2 of the longer segments of the legs is black, contrasting against the proximal off-white colouring giving a banded appearance to the specimens. There

is little to add to Clark's (1963) description. Clark described the femur and tibia 2 as subequal; in this material tibia 2 is consistently about 1.2 times longer than the femur. Female genital pores are prominent and swollen. Male genital pores are tiny and obscure in comparison. Additional figures showing the adult in lateral view and juvenile chela are provided. This species was present in vast numbers on colonies of the arborescent bryozoan *Amathia wilsoni*. The large proportion of egg-bearing adults and the presence of so many immature forms may indicate a summer breeding season.

#### Distribution

St Francis Isles, S.A. to Coffs Harbour, N.S.W. and Tasmania. Low-water to 90 m. Very common in SE Aust.

*Callipallene* Flynn, 1929

*Callipallene micracantha* Stock, 1954

Fig 5 C-E

*Callipallene emaciata micracantha* Stock, 1954: 44-46, figs 19, 20 a-b. – Clark, 1963: 21-23, Fig. 11 A-I. – Child, 1975: 10.

#### Type locality

Off Cape Everard, Victoria (37° 05' S, 150° 05' E).

#### Material examined

SAM E3424, 1 ovigerous male, Althorpe Is., Western Isles, S.A., 27 m, R. Lewis, 6 Feb 2004; SAM E3425, 2 males, 1 female, Backstairs Passage, J. E. Watson, (undated); SAM E3439, 1 female, Cape Northumberland, S.A. in algae, 15 m, S.A. Shepherd, 1 March 1975; SAM E3440, 1 female, Gulf St Vincent, S.A. on *Posidonia sinuosa*, S.A. Shepherd, May 1985; SAM E3441, 1 female, Wallaroo, Spencer Gulf, S.A., J. E. Watson, Jan 1983.

#### Remarks

These specimens substantially agree with Stock's (1954) description of the male holotype. Stock erected the subspecies *micracantha* to accommodate a single male specimen from eastern Bass Strait, which differed from other species and subspecies of the genus in the spination of the lateral processes and crop. His specimen was also notable in the presence of a double row of denticles on the immovable finger, a character shared with *C. cuspidata* Stock, 1954 and *Neopallene antipoda* Stock, 1954. The double row of denticles is not present in this male specimen; however examination of additional material from the Victorian coastline and Bass Strait indicates this to be a variable character in adults of both sexes. The ventral spine-tipped swellings of the femur and to a lesser extent tibia 1, are present in all

southern Australian specimens but more pronounced in the female, particularly egg-bearing specimens (Fig. 5, E). The crenulate propodal spines and serrated auxiliary claws characteristic of *C. emaciata* (Child 1979:41) are not present in the material examined. In the shape of the femur and tibia 1 the Australian material agrees with *C. emaciata* subspec. (Stock, 1954:46) from New Zealand but significant differences in the length of the neck and shape of the proboscis distinguish the species. Stock (1954) was reluctant to give his specimen species status on the basis of his solitary male, but given the wide range of material now available and the consistency in significant morphological characters, specific rank is well justified. The oviger spines are dimorphic. The distal-most spine on oviger segments 7 – 9 is off-set and larger than preceding spines. The teeth are irregular, well defined and larger on the distal margin. Dimorphism is not unique in the genus but in general shape, the distal spine morphology is close to that found in *C. panamensis* Child, 1979, *C. brevirostris novaezealandiae* (Thomson, 1884) and *C. phantoma* (Döhrn, 1881). Spines preceding the distal spine are uniform and finely denticulate. Spines at the base of the chelifore implants are variable in number, 3-4 most common, often with about 3 additional spines on the lateral margin. Female genital pores are larger than those of the male and present on all legs.

#### Distribution

Pearson I., S.A. to Batemans Bay, NSW and Tasmania 10 – 135 m

AMMOTHEIDAE Dohrn, 1881

*Achelia* Hodge, 1864

*Achelia transfugoides* Stock, 1973

*Achelia transfugoides* Stock, 1973a: 104–106, Fig. 2. — Stock, 1973b: 92.

#### Type locality

Toad Head, West I., South Australia.

#### Material examined

SAM E3426, 1 female, Althorpe Is, Western Isles, S.A., in sortings, 13 m, D. Staples and T. Laperousaz, 6 Feb 2004; SAM E3427, 1 male, eastern Mooring Bay, Althorpe I., S.A. on bryozoan *Amathia* sp, 3 – 5 m, S.A. Shepherd, 12/02/05; SAM E3442, 1 subadult, 7 females, 5 males ovigerous, Fanny Point, Boston I., Spencer Gulf, S.A. on *Sargassum*, reef, 2-8 m, W. Zeidler, K.L. Gowlett-Holmes, 17 Feb 1988,

#### Remarks

I have tentatively assigned this material to *A. transfugoides*, the principal difference being in the

shape of the proboscis. Stock (1973a:104) described the proboscis with a swollen basal part which is consistent with his Fig. 2 c showing maximum width at the base. This figure is however, inconsistent with his figures b, e, in which he shows the basal part narrower than the inflated mid-region and with which the present material agrees. The tubiform part of the proboscis is a little shorter than illustrated by Stock (Fig. e), and in some other material I have examined, but otherwise closely agrees with the type material.

#### Distribution

Perth, WA to Wilsons Promontory, Vic.

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