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## SOME TASMANIAN CHTHONIID PSEUDOSCORPIONS

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(With three figures)

## SUMMARY

Four species of pseudoscorpions of the family Chthoniidae are recorded from Tasmania. Two cave dwelling forms are new species whilst another is shown to possess an extensive distribution throughout Tasmania and southern Australia. Descriptions of the new species are given, a key to the known Tasmanian species provided and a map included to show the localities from which material has been taken.

## INTRODUCTION

The pseudoscorpion fauna of Tasmania is little known and only three species appear to be recorded from the island with any certainty (Morris, 1947; Beier, 1966). The efforts of various people have enabled me to examine specimens of pseudoscorpions of the family Chthoniidae from throughout the State. I am indebted to Emeritus Professor V. V. Hickman who placed his collections in my care and Professor M. Beier for his advice. My thanks are proffered to the members of the Southern Caving Society and the Tasmanian Caverneering Club who have collected for me. It is hoped that recording their names with the material that they have collected will be sufficient acknowledgment.

Twelve Australian species of Chthoniidae are known to date, included in five genera (Beier, 1966, 1968). The Tasmanian material to hand adds two new species to the list and extends the known distribution of another. Including the two new species, six Australian chthoniid pseudoscorpions are now known from caves.

A key to the chthoniids known to occur in Tasmania is provided and a map to show the localities from which the material was collected is included.

## SYSTEMATIC ACCOUNT

## Order PSEUDOSCORPIONIDA

## Family CHTHONIIDAE

Genus *AUSTROCHTHONIUS* Chamberlin

Chamberlin, J. C., 1929.—*Ann. Mag. Nat. Hist.*, (10) 4: 50-80.

*Austrochthonius australis* Hoff

Hoff, C. C., 1951.—*Ann. Mus. Novit.*, 1483: 1-13;

Beier, M., 1966.—*Aust. J. Zool.*, 14: 281-283.

*Material examined:* Two tritonymphs, three deutonymphs. Battery Point, Hobart, Tasmania; under stones and garden debris; 18.I.1969. Mrs T. Goede leg. Tasmanian Museum Reg. No. J612.

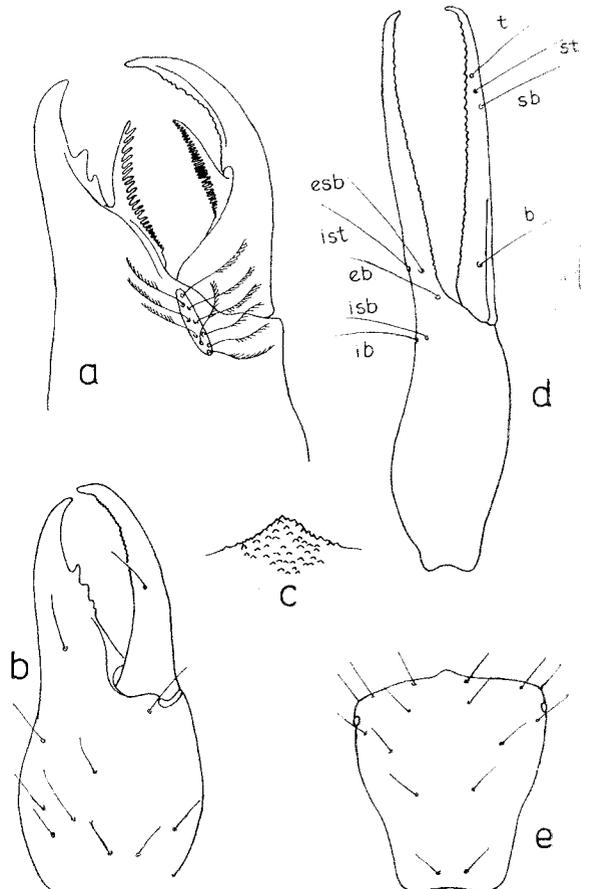


FIG. 1.—*Pseudotyranochthonius tasmanicus* sp. nov. Holotype ♂

- (a) Chelicera showing flagellum and lamellae.  
 (b) Chelicera showing setae of hand.  
 (c) Epistome.  
 (d) Pedipalpal setae.  
 (e) Carapace.

*Comments:* These specimens add little to the descriptions offered by both Hoff and Beier. Previously recorded in Tasmania, by Beier, from Grove and Mt Wellington in wet sclerophyll forest.

Genus **PSEUDOTYRANNOCHTHONIUS** Beier

Beier, M., 1930.—*Boll. Lab. Zool. Gen. Agr. Portici.*, 23: 197-209; 1966.—*Austr. J. Zool.*, 14: 285-288.

*Pseudotyrannochthonius tasmanicus* sp. nov.

(Fig. 1, a-e)

*Description of holotype:* Light brown in colour, chelicerae and pedipalps darker than the rest of the body. Carapace slightly longer than broad, strongly narrowed caudally and with a pronounced triangular, dentate epistome on the anterior margin. Sculpture of the carapace very finely dentate especially near to the lateral margins. The disc carries sixteen bristles of which 6 are on the anterior border and 2 near the hind margin.

A small pair of eye lenses are present. (Eye lenses are absent in one specimen, J614.) Eyes absent.

Chaetotaxy of the abdominal tergites 2. 4. 4. 6. 6. 8. 8, etc.

Chelicerae broad and heavy carrying nine bristles on the palm. Flagellum of ten bristles arranged in two rows on a large areole. Fixed cheliceral finger with three distinct teeth followed proximally by a smaller tooth. Moveable finger heavily thickened along the inner edge. Without a spinneret hump.

Pedipalps long and slender. Femur about 0.85 times the length of the chela. Moveable finger about 1.1 times the length of the hand carrying some fifteen teeth distally and about thirty blunt serrations along the proximal half of the finger. Fixed finger with about forty simple teeth.

Tactile setae *ib* and *isb* dorsodistally on the palpal hand. Setae *sb*, *st* and *t* grouped in an oblique line on the distal third of the moveable palpal finger. The distance between *sb* and *b* is about four times the distance between *sb* and *t*.

The coxae of the pedipalps carry two spines. Coxae of the walking legs spined as follows: i. 7, ii. 6, iii. 5, iv. 5. The coxae of the first pair of walking legs also carry a row of seven coxal spines of typical fascies on the forward margin. A bisetose intercoxal tubercle is not present.

*Measurements of the holotype:* Body length 3.0 mm, carapace length 1.1 mm, greatest width of carapace 1.0 mm, posterior width of carapace 0.8 mm, length of chela 2.1 mm, cheliceral length 0.7 mm, breadth of cheliceral palm 0.4 mm.

*Type locality:* King George V Cave, SE Tasmania. Map reference 4756/6597 Southport topographic sheet 8211/II/S.

*Holotype:* One ♂. King George V Cave, SE Tasmania. About 300 feet inside cave and c. 6 feet above water level in stream passage; amongst organic debris in discarded rubber glove. 22.VI.1968. Mrs T. Goede leg. Tasmanian Museum Reg. No. J613.

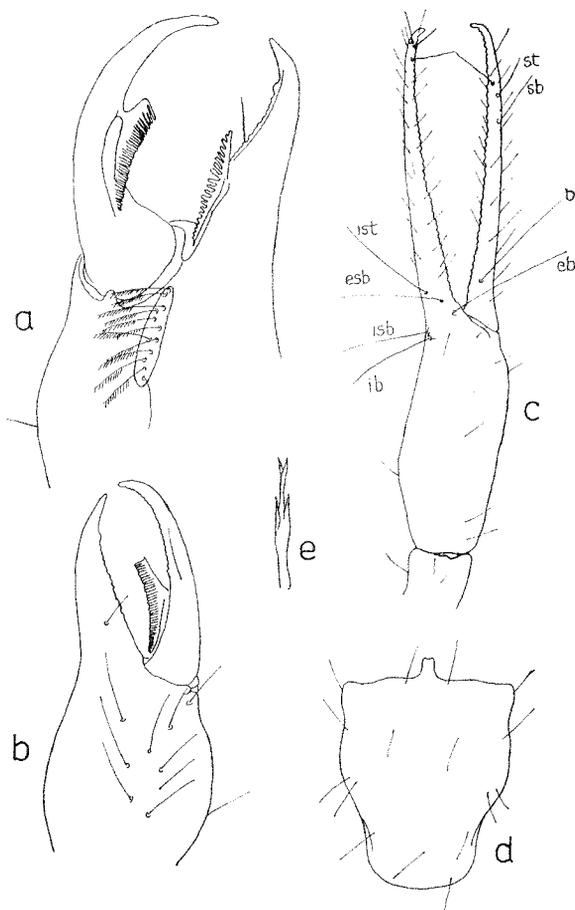


FIG. 2.—*Pseudotyrannochthonius typhlus* sp. nov. Holotype ♂

- (a) Chelicera showing flagellum and lamellae.
- (b) Chelicera showing setae of hand.
- (c) Pedipalpal setae.
- (d) Carapace.
- (e) Single coxal spine.

*Paratypes:* One ♀. Outside King George V Cave, SE Tasmania; under log in wet sclerophyll forest. 24.III.1969. Mrs T. Goede leg. Tasmanian Museum Reg. No. J614.

One ♀. King George V Cave, SE Tasmania. In main chamber in discarded matchbox. 24.III.1969. B. P. Moore leg. Tasmanian Museum Reg. No. J615.

One ♀. King George V Cave, SE Tasmania. In main chamber under cigarette paper. 24.III.1969. A. Goede leg. Tasmanian Museum Reg. No. J616.

*Comments:* In spite of the absence of an intercoxal tubercle in this form this author feels that on the chaetotaxy of the palpal hand, coxal area and tergites the new species can be placed in no other genus.

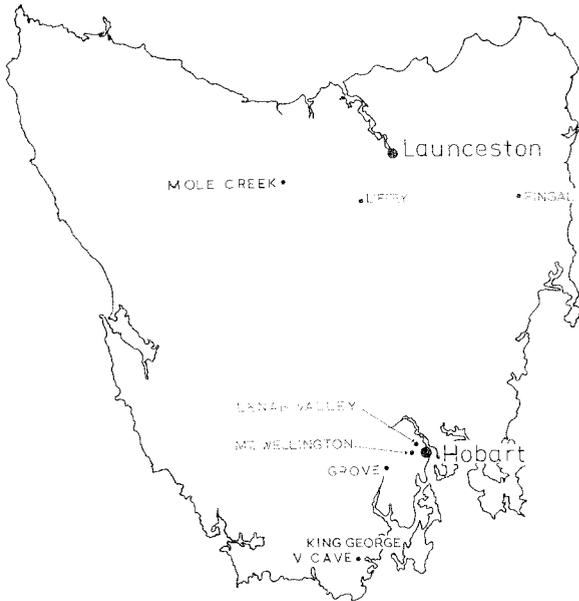


FIG. 3.—Map of Tasmania showing localities mentioned in the text.

*Pseudotyranochthonius typhlus*\* sp. nov.

\*Typhlus is derived from typhlos (Gk)=blind (Fig. 2, a-e)

**Description of holotype:** Carapace finely sculptured, nearly equal in width to the length, strongly narrowed caudally. Disc with sixteen strong bristles all arranged singly except for a pair situated medially on each lateral margin. Anterior margin of carapace more or less straight with a slight concavity towards the antero-lateral angle. A large epistome is present, finely granulate and depressed in the long axis with the lateral borders raised.

Eyes and eye lenses absent.

Chaetotaxy of the abdominal tergites 2. 4. 4. 4. 6. 7. 6. 8, etc. Two bristles missing from tergite seven in the holotype.

Chelicera broad and heavy, with lightly squamoid sculpturing and bearing ten bristles on the palm. Flagellum of twelve bristles arranged in two close rows upon a large areole; each flagellar bristle carries fine rami along one side for the distal half of its length. Fixed cheliceral finger with one strong tooth distal to a bluntly serrate ridge of some fifteen small teeth. Moveable finger with numerous blunt serrations. Without a spinneret hump.

Pedipalps slender. Femur a third as long again as the carapace and three-quarters the length of the chela. Moveable finger about 2.3 times the length of the hand, carrying twenty-eight simple teeth distally and a ridge with ten blunt serrations proximal to the articulation. Fixed finger with thirty-five simple teeth. Tactile setae *ib* and *ist* situated dorsodistally on the hand on small tubercles. The distance between setae *sb* and *b* about four times the distance between *sb* and *t*.

The coxae of the pedipalps carry three spines. The coxae of the walking legs are spined as follows:—i. 7, ii. 5, iii. 5, iv. 5. (In the holotype two spines are missing from the coxa of the second left walking leg and one missing from the coxa of the third left leg.) The coxae of the first pair of walking legs carry a row of fifteen spines standing near the anterior margin.

A bisetose intercoxal tubercle is present.

**Measurements of holotype:** Body length 2.8 mm, carapace length 1.0 mm, greatest width of carapace 1.0 mm, posterior width of carapace 0.7 mm, length of chela 2.6 mm, cheliceral length 1.2 mm, breadth of cheliceral palm 0.5 mm.

**Type locality:** Sennacheribs Passage, Georgies Hall Cave, Mole Creek, Tasmania. Map reference 364/766 Middlesex, zone 7, sheet 45.

**Holotype:** One ♂. Sennacheribs Passage, Georgies Hall Cave, Mole Creek. On moist sand and vegetable debris in stream passage. 27.I.1968. A. Terauds leg. Tasmanian Museum Reg. No. J602.

**Paratypes:** One deutonymph. Sennacheribs Passage, Georgies Hall Cave, Mole Creek, Tasmania. 27.I.1968. Collected with holotype. A. Terauds leg. Tasmanian Museum Reg. No. J603.

One tritonymph. Baldocks Cave, Mole Creek, Tasmania. In wood debris on clay bank near cave stream. 17.IV.1968. A. Goede leg. Tasmanian Museum Reg. No. J611.

*Pseudotyranochthonius solitarius* (Hoff)  
*Tubbichthonius solitarius* Hoff, C. C., 1951.—*Am. Mus. Novit.*, 1483: 10-13.

*Pseudotyranochthonius solitarius* Beier, M., 1966.—*Aust. J. Zool.*, 14: 286.

**Material examined:** Four ♀♀, four ♂♂. Liffey Falls, Tasmania. In moss and fallen leaves. 14.V.1953. V. V. Hickman leg. Tasmanian Museum Reg. No. J617.

Four deutonymphs. Mount Wellington, Tasmania. Under stones at an altitude of 1,000 feet. 30.IX.1947. V. V. Hickman leg. Tasmanian Museum Reg. No. J618.

One deutonymph. Lenah Valley, near Hobart, Tasmania. In grass tussocks. 26.V.1937. V. V. Hickman leg. Tasmanian Museum Reg. No. J620.

One ♂, four tritonymphs. Trevallyn, Launceston, Tasmania. In ants nest under stone. 20.IV.1928. V. V. Hickman leg. Tasmanian Museum Reg. No. J619.

Five tritonymphs, two deutonymphs. Fingal Tasmania. Under stones and amongst moss. 24.V.1928. V. V. Hickman leg. Tasmanian Museum Reg. No. J622.

One deutonymph, twenty-one protonymphs. Punchbowl, Launceston. Tasmanian Museum Reg. No. J621.

**Distribution:** Previously recorded from Victoria and SW Australia. Now known from Tasmania.

**Affinities of the Tasmanian species of *Pseudotyranochthonius*:** Both *P. typhlus* sp. nov. and *P. tasmanicus* sp. nov. appear to be most closely related to *P. jonesi* (Chamberlain), a cave dwelling species from New South Wales. All are large forms and can be distinguished from each other by the number of teeth of the moveable palpal finger.

## KEY TO THE KNOWN SPECIES OF CHTHONIIDAE IN TASMANIA

Pseudoscorpions with two pairs of forelegs with one tarsal joint; the two pairs of hind legs with one tarsal joint.

1. Tactile setae *ib* and *isb* near the middle of the forsum of the palpal hand; coxal spines present on the coxae of the second pair of legs

*Austrochthonius australis* Hoff

Tactile setae *ib* and *isb* distally on dorsum of the palpal hand; coxal spines present on the coxae of the first pair of legs

*Pseudotyranochthonius* Beier (2)

2. Moveable palpal finger with ten teeth distally  
Moveable palpal finger with more than ten teeth distally

*Pseudotyranochthonius solitarius* (Hoff)

(3)

3. Fixed cheliceral finger with three conspicuous teeth  
Fixed cheliceral finger with one conspicuous tooth

*Pseudotyranochthonius tasmanicus* sp. nov.

*Pseudotyranochthonius typhlus* sp. nov.

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