

NEW SPECIES AND RECORDS OF BDELLIDAE FROM MACQUARIE AND THE AUCKLAND ISLANDS (Acarina)¹

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Abstract: New species described are *Bdellodes (Hoploscirus) macquariensis*, 10 ♀♀, 8 ♂♂, from Macquarie Island; and *B. (H.) watsoni*, 12 ♀♀, 6 ♂♂, from Macquarie I. Two keys for the identification of the mites are given; one for each of the two island groups mentioned in the title.

Bdellid species from Campbell I. and the Auckland Is. were described recently by Atyeo (1963) from material collected by the staff of the Dominion Museum, Wellington, New Zealand. The new species and the new records in the present paper are based on collections made by J. L. Gressitt (B. P. Bishop Museum) and K. Watson (Australian National Antarctic Research Expeditions). These collections were received too late to be included in Atyeo (1963). Known species of Bdellidae from these subantarctic islands are included for comparison with the new species and the new locality data. The terminology and format of the descriptions are as in the paper cited above.

KEY TO MACQUARIE ISLAND SPECIES OF BDELLODES

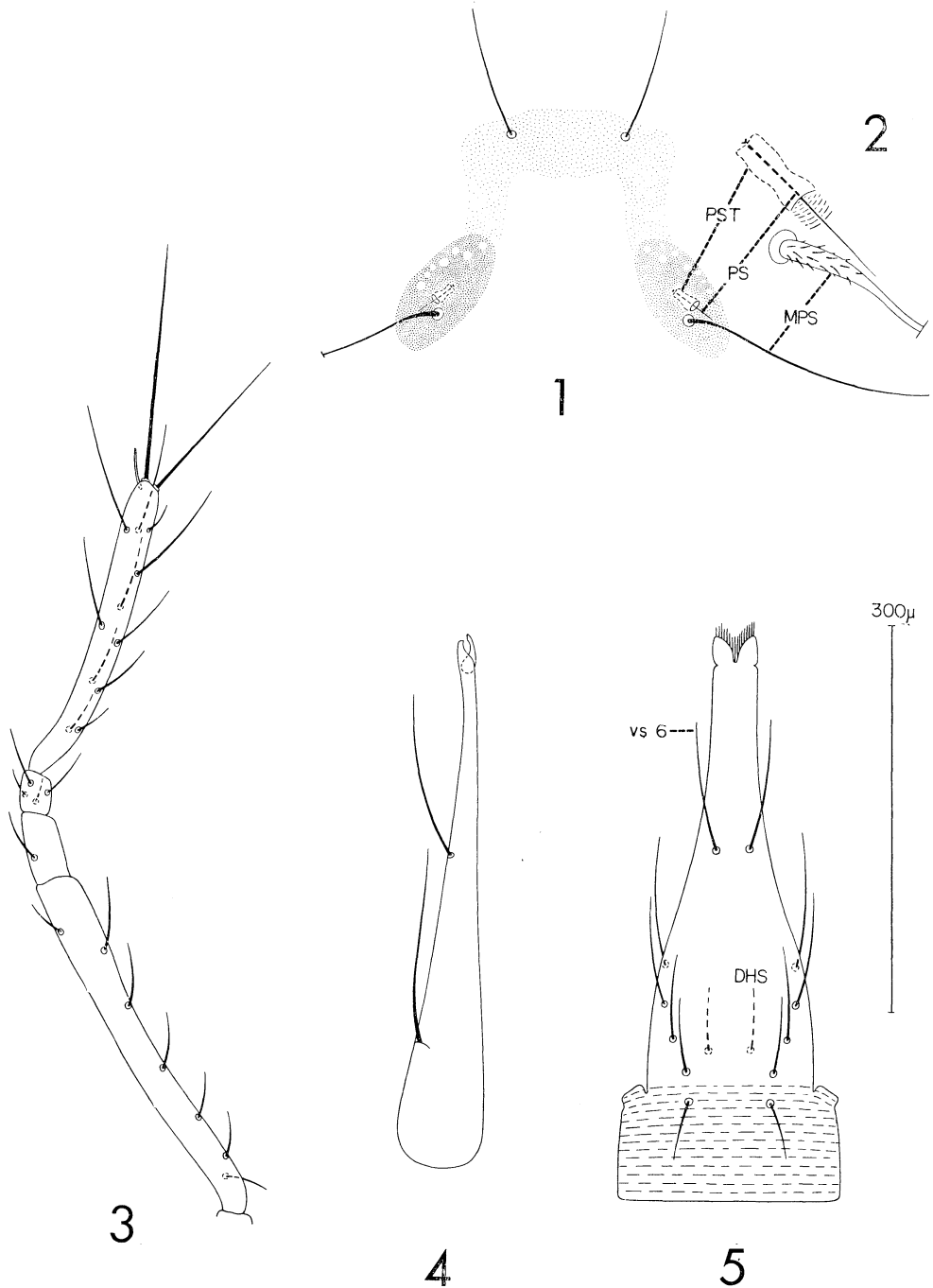
Dorsal hysterosomal setae long, *i. e.*, internal humeral setae as long as 1st interspaces
..... **macquariensis**
Dorsal hysterosomal setae short, *i. e.*, internal humeral setae about 1/2 length of 1st
interspaces..... **watsoni**

Bdellodes (Hoploscirus) macquariensis Atyeo, n. sp. Figs. 1-5.

B. (H.) macquariensis is closely related to *B. (H.) watsoni*, n. sp. as shown by the similarities in the structure of the palpi and in the modification of the posterior pseudo-stigmatic organs (sensilla). The former species is easily distinguishable in that the dorsal hysterosomal setae are long (see key above).

Female: Length, including gnathosoma, 1550 μ . *Gnathosoma* (figs. 3-5): Palpal basifemur with 5 setae on mesal surface; measurements: II, 304 μ ; III, 65 μ ; IV, 37 μ ; V, 239 μ ; *des*, 190 μ ; *ves*, 155 μ . Chelicera nonstriated, 429 μ in length; movable digit flattened subapically; setae as figured; anterior seta, 176 μ , posterior seta, 322 μ from apices of chela. Gnathosomal base and hypostome striated to level of *vh* 2, remainder nonstriated; *vh* 6

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Figs. 1-5. *Bdellodes (Hoploscirus) macquariensis* Atyeo, n. sp. 1, dorsal propodosomal shield; 2, posterior pseudostigma, enlarged; 3-5, ventral gnathosoma. *DHS*—dorsal hypostomal seta, *MPS*—median propodosomal seta, *PS*—posterior sensillum, *PST*—posterior pseudostigma, *vh 6*—ventral hypostomal seta no. 6.

nearer to *vh* 5 than to hypostomal tip. Dorsal hypostomal seta, $52\ \mu$ in length. *Dorsal idiosoma*: Striae without superimposed oscillatory pattern. Dorsal propodosoma with lateral subcuticular thickening surrounding bases of sensilla and median propodosomal seta (fig. 1); anterior sensilla, $155\ \mu$ in length, separated by $70\ \mu$; posterior sensilla, $34\ \mu$ in length, separated by $164\ \mu$; median propodosomal setae, $276\ \mu$ in length, with minute branches on proximal portion (fig. 2). Hysterosomal setae minutely branched; length of internal humeral seta, $169\ \mu$, approximately equal to 1st interspace; external humeral seta, $188\ \mu$ in length. *Ventral idiosoma*: Striae as on dorsum. Each genital plate with 7 setae in linear arrangement; 2 pairs of paranal setae; 3 pairs of paragenital setae. *Legs*: Each claw with 5–6 lateral rays, row of minute rays apparently wanting; measurements: tibia I, $101\ \mu$; tarsus I, $301\ \mu$; pretarsus I, $49\ \mu$; tibia II, $114\ \mu$; tarsus II, $299\ \mu$; tibia IV, $197\ \mu$; tarsus IV, $365\ \mu$; lengths of legs (excluding coxae and pretarsi): I, $848\ \mu$; II, $869\ \mu$; III, $973\ \mu$; IV, $1193\ \mu$. *Chaetotaxy*: without supernumerary setae; coxae I–IV, 4, 3, 4, 2 tactile setae; trochanters I–IV, 1 tactile seta each; basifemora I–IV, 18, 19, 12, 6 tactile setae; telofemora I–IV, 7, 7 (8), 7, 7 (9) tactile setae and respectively, 6, 2 (4), 2 (1), 2 (1) attenuate sensory setae; genua I–IV, 6, 6, 6, 5 tactile setae and respectively 9, 11, 10, 10 (9) attenuate sensory setae; tibia I, 11 tactile setae, 3 attenuate sensory setae, 1 peg, trichoboth; tibia II, 10 tactile setae, 1 attenuate and 1 blunt, nonrecessed sensory seta; tibia III, 12 tactile setae, 1 attenuate sensory seta distal; tibia IV, 13 tactile setae, trichoboth at $1/4$ length; tarsus I, 22 pilose ventral setae arranged in 2 rows, 11 lateral and 2 dorsal setae, 3 attenuate and 2 long, attenuate sensory setae, *dt* 1, nude, *dt* 2, 3, branched; tarsus II, 1 dorsal tactile seta, 2 attenuate and 2 long, attenuate sensory setae; tarsi III–IV, trichoboth.

Male: Slightly smaller than holotype ♀. The numbers of attenuate sensory setae on telofemora and genua equal to or greater in number than on corresponding segment of ♀.

Holotype ♀, Finch Creek, Macquarie I., 30. XII. 1960, by K. Watson, in fern debris. Allotype ♂, Lambing Gully, Macquarie I., 17. VIII. 1961, by Watson, in *Stilbocarpa* litter. Paratypes: 1 ♂, 1 ♀, same data as allotype; 2 ♂♂, Lambing Gully, 30. IX. 1961, *Stilbocarpa* litter; 1 ♂, Lambing Gully, 30. IX. 1961, *Stilbocarpa* leaves; 1 ♀, Lambing Gully, 12. V. 1961, *Stilbocarpa* litter; 2 ♀♀, sub-plateau, 23. VIII. 1961, *Stilbocarpa* litter; 1 ♂, plateau, 28. X. 1961, *Pterodroma lessoni* burrow; 1 ♀, plateau, 25. XI. 1961, *Azorella*, mosses and soil; 1 ♀, Garden Cove, 29. XI. 1961, *Colobanthus muscoides*; 1 ♀, Garden Cove, 18. IX. 1961, *Stilbocarpa* litter; 1 ♂, Wireless Hill, 5. IV. 1961, *Festuca erecta*; 1 ♀, Langdon Point, 13. XI. 1961, *Stilbocarpa* litter; 1 ♀, First Gully, 24. II. 1961, *Stilbocarpa* plants; all Macquarie I., collected by K. Watson. One ♂, N. end of Macquarie I., 7. XII. 1960, moss and *Azorella* (Berlese), collected by J. L. Gressitt.

Location of types: The holotype, allotype and 7 paratypes are temporarily in the possession of Mr. K. Watson, Division of Wildlife Research, C. S. I. R. O., Canberra; these specimens will be deposited in the Australian National Insect Collection, Canberra at a future date. Two paratypes are deposited in each of the following: British Museum (Nat. Hist.), United States National Museum, South Australian Museum, and the personal collection of the author; 1 paratype deposited in the B. P. Bishop Museum, Honolulu.

The variations in the numbers of attenuate sensory setae are in the range of the differences stated between the holotype and allotype. Occasionally, the number of setae in the mesal row on the palpal basifemur is 4 rather than 5. This species is named *macquariensis* to denote the small geographical area to which this species seems to be limited.

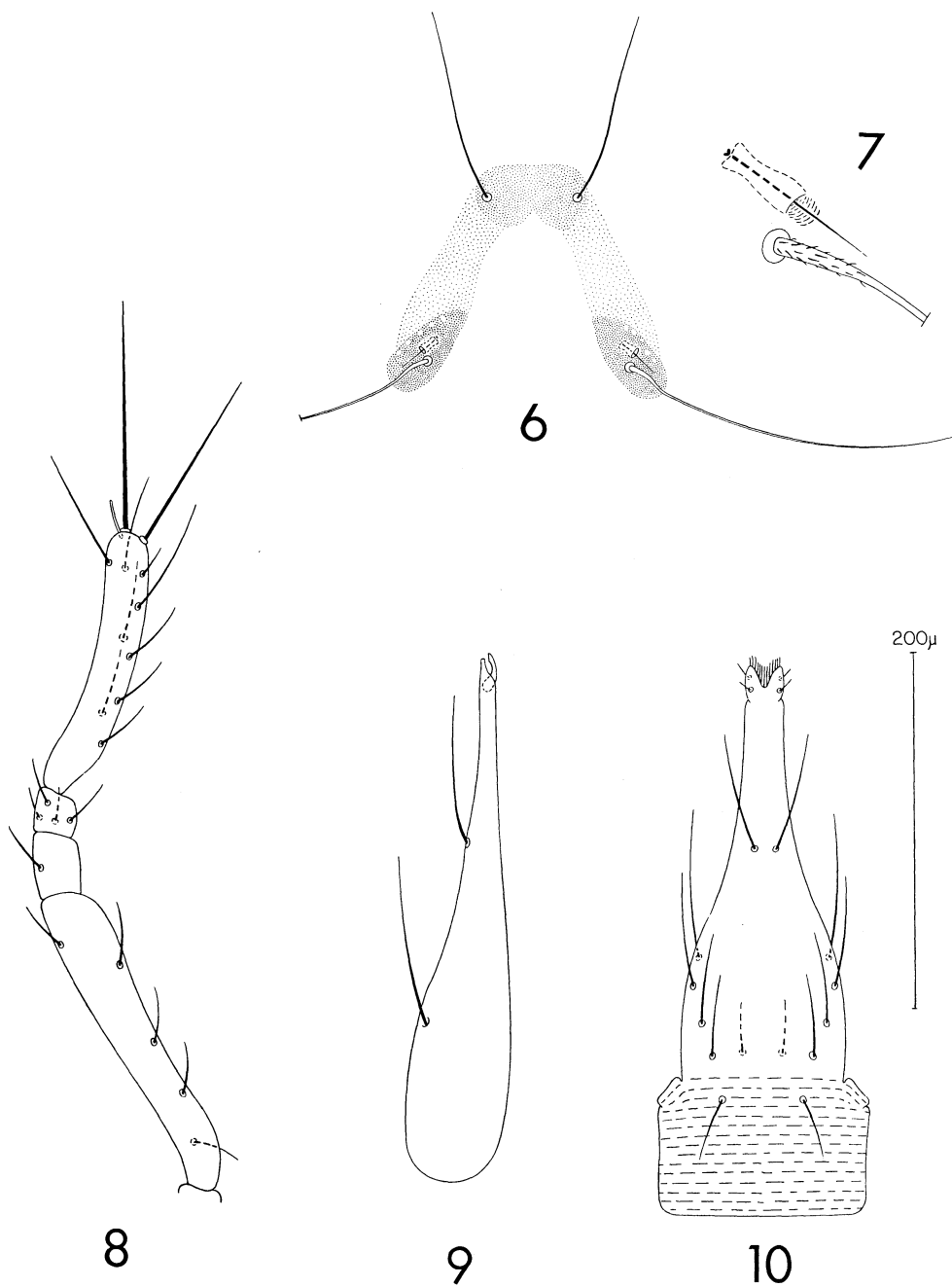
Bdellodes (Hoploscirus) watsoni Atyeo, n. sp. Figs. 6-10.

This species is related to *B. (H.) macquariensis*, n. sp. The palpal chaetotaxy and the modified posterior sensilla are similar in both species, however, *B. (H.) watsoni* has the tibiae and genua of legs I equal to or longer than their respective members of legs II, internal humeral setae approximately 1/2 the length of the 1st interspaces, and with 0-3 attenuate sensory setae on each telofemur. The related *B. (H.) macquariensis* has the genua and tibiae of legs I shorter than those of legs II, internal humeral setae equal to or slightly longer than the 1st interspace, and numerous attenuate sensory setae on each telofemur.

Female: Length, including gnathosoma, 1115 μ . *Gnathosoma* (figs. 8-10): Palpal basifemur with 3 setae on mesal surface; measurements: II, 183 μ ; III, 44 μ ; IV, 28 μ ; V, 151 μ ; *des*, 140 μ ; *ves*, 109 μ . Chelicera nonstriated, 298 μ in length; movable digit flattened subapically; setae as figured; anterior seta, 125 μ , posterior seta, 223 μ from apices of chela. Gnathosomal base and hypostome striated to level of *vh* 2, remainder nonstriated; *vh* 6 nearer to *vh* 5 than to hypostomal tip. Dorsal hypostomal seta, 37 μ in length. *Dorsal idiosoma*: Striae without superimposed oscillatory pattern. Dorsal propodosoma with lateral subcuticular thickening surrounding bases of sensilla and median propodosomal seta (fig. 6); anterior sensilla, 107 μ in length, separated by 65 μ ; posterior sensilla, 29 μ in length, separated by 143 μ ; median propodosomal setae, 143 μ in length, with minute branches on proximal portion (fig. 7). Hysterosomal setae minutely branched; length of internal humeral seta, 70 μ , approximately 1/2 of 1st interspace; external humeral seta, 81 μ in length. *Ventral idiosoma*: Striae as on dorsum. Each genital plate with 7 setae in linear arrangement; 2 pairs of paranal setae; 3 pairs of paragenital setae. *Legs*: Each claw with 4-5 lateral rays, row of minute rays not apparent; measurements: tibia I, 73 μ ; tarsus I, 176 μ ; pretarsus I, 42 μ ; tibia II, 70 μ ; tarsus II, 173 μ ; tibia IV, 125 μ ; tarsus IV, 221 μ ; lengths of legs (excluding coxae and pretarsi): I, 484 μ ; II, 453 μ ; III, 632 μ ; IV, 756 μ . *Chaetotaxy*: without supernumerary setae; coxae I-IV, 4, 4, 5, 2 tactile setae; trochanters I-IV, 1 tactile seta each; basifemora I-IV, 17, 14, 9, 5 tactile setae; telofemora I-IV, 7 tactile setae each; genua I-IV, each with 5-6 tactile setae and respectively 10, 10 (8), 7, 6 attenuate sensory setae; tibia I, 8 tactile setae, 3 attenuate sensory setae and 1 peg distal, trichoboth; tibia II, 9 tactile setae, 1 attenuate and 1 blunt, nonrecessed sensory seta, trichoboth; tibia III, 9 tactile setae, 1 attenuate sensory seta distal; tibia IV, 9 tactile setae, trichoboth at 1/4 length; tarsus I, 18 pilose ventral setae arranged in 2 rows, 1 dorsal and 9 lateral tactile setae, 3 attenuate and 2 long, attenuate sensory setae, 1 peg, *dt* 1, nude, *dt* 2, 3, branched; tarsus II, 1 dorsal tactile seta, 2 attenuate and 2 long, attenuate sensory setae; tarsi III-IV, trichoboth.

Male: Slightly smaller than $\text{\textit{f}}$ in all measurements, *e. g.*, total length, 1040 μ . Chaetotaxy of legs differs from holotype $\text{\textit{f}}$ as follows: coxae I-IV, 4, 3, 4, 2 tactile setae; basifemora I-IV, 15, 12, 12, 5 tactile setae; genu III, 6 tactile and 8 attenuate sensory setae; tibia I has 1 more and tarsus I has 1 less sensory seta.

Holotype $\text{\textit{f}}$, First Gully, Macquarie I., 24. II. 1961, K. Watson, in dead *Poa foliosa* shoots. Allotype $\text{\textit{m}}$, same data as holotype. Paratypes: 2 $\text{\textit{m}}$, 3 $\text{\textit{f}}$, same data as holotype; 1 $\text{\textit{f}}$, North Head, 20. III. 1961, rotting *Poa hamiltoni* leaves; 1 $\text{\textit{m}}$, 1 $\text{\textit{f}}$, Garden Cove, 18. IX. 1961, green alga; 1 $\text{\textit{m}}$, 2 $\text{\textit{f}}$, North Head, 26. IX. 1961, green alga on rookery rocks; 1 $\text{\textit{m}}$, 2 $\text{\textit{f}}$, Garden Cove, 20. VI. 1961, green alga; 2 $\text{\textit{f}}$, Finch Gully, 30. XII. 1961, fern debris; all Macquarie I., collected by K. Watson.



Figs. 6-10. *Bdellodes (Hoploscirus) watsoni* Ateyo, n. sp. 6, dorsal propodosomal shield; 7, posterior pseudostigma, enlarged; 8-10, ventral gnathosoma.

Location of types: The holotype, allotype and 8 paratypes are temporarily in the possession of Mr. K. Watson, Div. of Wildlife Res., C. S. I. R. O., Canberra; these specimens will be deposited in the Australian National Insect Collection, Canberra at a future date. Two paratypes are deposited in each of the following: British Museum (Nat. Hist.), U. S. National Museum, South Australian Museum, and in my personal collection.

The specimens from Finch Gully (2 ♀♀) and North Head (1 ♂) have attenuate sensory setae on the telofemora; the maximal number is 3 on telofemora I, with lesser numbers on telofemora II-IV. The new species is named after K. Watson, collector of the type series of this species.

KEY TO AUCKLAND ISLANDS SPECIES OF BDELLODES

New data concerning the bdellid fauna on these islands has not been received; for descriptions and distribution of the species in the following key, see Atyeo (1963).

- 1. Palpal genu with more than 6 setae (usually 8-10); palpal basifemur with 3 or more series of setae arranged along length of segment..... 2
- Palpal genu with 4 setae; palpal basifemur with 2 series of setae arranged along length of segment; anterior cheliceral seta more than 2× length of posterior seta **multicia**
- 2. Each chelicera with 2 setae, anterior seta equal to or shorter than posterior seta **curvus**
- Each chelicera with 1 seta **tanta**

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LITERATURE CITED

Atyeo, Warren T. 1963. The Bdellidae of the Australian Realm. Part. I. New Zealand, Campbell Island, and the Auckland Islands. Part. II. Australia and Tasmania. Bull. Univ. Nebraska St. Mus. 4 (8): 113-210.