WATER MITES OF THE GENUS ASPIDIOBATES FROM VICTORIA, AUSTRALIA, WITH THE DESCRIPTION OF TWO NEW SPECIES (CHELICERATA: ACARINA: HYGROBATIDAE)

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Abstract


Five species of Aspidiobates Lundblad are recorded from Victoria, Australia: A. bidewel sp. nov., A. aethes sp. nov., A. scutatus Lundblad, A. similis Cook and A. geometricus Cook. A key to the Australian species of the genus is provided.

Introduction

Thirteen species of Aspidiobates Lundblad have been previously described, nine from New Caledonia (Viets, 1968), one from New Zealand (Hopkins, 1975, Cook, 1984) and three from Australia (Lundblad, 1941, Cook, 1986). Of the three described Australian species, only A. scutatus Lundblad has been recorded from Victoria (Cook, 1986). Recent field work has uncovered many additional specimens of five species of this genus, including representatives of two new species, specimens of which exhibit character states hitherto unrecorded in the genus. Thus, the opportunity is taken to describe these species, as well as provide new locality records for the three previously described Australian species.

Specimens are lodged in the Museum of Victoria, Melbourne (NMV), the Field Museum of Natural History, Chicago (FMNH) and the Canadian National Collection, Ottawa (CNC). Many specimens are mounted on microscope slides in glycerine jelly. The collection sites and station numbers of A. aethes are described by Malipati and Blyth (1982) and Blyth et al. (1984), and unless otherwise stated, all material was collected by the Museum of Victoria’s Biological Survey Department (now the Department of Environmental Records). Terminology follows Cook (1974), except for the terminology of the leg segments which follows Smith (1976). Measurements were taken to the nearest 5 μm and dimensions are usually given as length divided by width.

Hygrobatidae

Aspidiobates Lundblad

Aspidiobates Lundblad, 1941: 115. — Cook, 1974: 224-225. (Type species Aspidiobates scutatus Lundblad, 1941, by original designation.)

Remarks. The diagnosis provided by Cook (1974) is adequate except for the following amendments: three or four pairs of genital acetabula; legs relatively unmodified, except for males of one species in which the genu of the fourth leg is modified, and without swimming hairs.

Aspidiobates bidewel sp. nov.

Figures 1-13

Type material. Holotype male, Victoria, Bonang River, 4 km SSE of Bonang, D.R. Cook, M.S. Harvey and A.J. Boulton, 7 Apr 1985, NMV K354 (slide).

Paratypes: same data as holotype, NMV K355-367, 8 males, 5 females (slides and fluid); FMNH, 1 male, 1 female (slides); CNC 1 male, 1 female (slides).

Other material examined. Victoria, Yarra River at Maroondah Highway, collected by staff of Chisholm Institute, Oct 1980, NMV, 1 female (slide).

Diagnosis. Genu IV of male curved and with a ventral row of stout setae, the proximal ones spatulate.

Description. Dorsal and ventral shields present; dorsal shield of male (Fig. 1) entire, of female (Fig. 3) consisting of a large anterior plate and 2 pairs of narrow posterior platelets; male dorsal shield with first pair of glandularia slightly anterior to...
Key to Australian species of *Aspidiobates*

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Species</th>
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<tbody>
<tr>
<td>1.</td>
<td>Genital field with 4 pairs of acetabula</td>
<td><em>A. aethes</em></td>
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<tr>
<td></td>
<td>Genital field with 3 pairs of acetabula</td>
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<tr>
<td>2(1)</td>
<td>Males</td>
<td></td>
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<tr>
<td></td>
<td>Females</td>
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<tr>
<td>3(2)</td>
<td>Dorsal shield entire; genu IV proximally curved, ventral margin with a row</td>
<td><em>A. bidewel</em></td>
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<td></td>
<td>of stout setae</td>
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<td></td>
<td>Dorsal shield divided into at least 3 platelets; genu IV not curved, without</td>
<td></td>
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<tr>
<td></td>
<td>stout setae</td>
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<tr>
<td>4(3)</td>
<td>Dorsal shield divided into 3 platelets</td>
<td><em>A. geometricus</em></td>
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<td></td>
<td>Dorsal shield divided into 5 platelets</td>
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<tr>
<td>5(4)</td>
<td>Distance separating first pair of glandularia greater than distance separating</td>
<td><em>A. scutatus</em></td>
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<td></td>
<td>second pair of glandularia; anus midway between genital field and posterior</td>
<td></td>
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<tr>
<td></td>
<td>edge of ventral shield</td>
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<td></td>
<td>Distance separating first pair of glandularia equal to distance between</td>
<td><em>A. similis</em></td>
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<td></td>
<td>second pair of glandularia; anus close to genital field</td>
<td></td>
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<tr>
<td>6(2)</td>
<td>Dorsal shield divided into 6 platelets</td>
<td><em>A. geometricus</em></td>
</tr>
<tr>
<td></td>
<td>Dorsal shield divided into 5 platelets</td>
<td></td>
</tr>
<tr>
<td>7(6)</td>
<td>Distance separating first pair of glandularia greater than distance separating</td>
<td><em>A. scutatus</em></td>
</tr>
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<td></td>
<td>second pair of glandularia</td>
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<tr>
<td></td>
<td>Distance separating first pair of glandularia equal to distance separating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>second pair of glandularia</td>
<td></td>
</tr>
<tr>
<td>8(7)</td>
<td>Dorsal shield approximately 850-960</td>
<td><em>A. similis</em></td>
</tr>
<tr>
<td></td>
<td>Dorsal shield greater than 1100 µm in length</td>
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</table>

Postocularia and closer to postocularia than to lateral margins of plate; third pair of glandularia same distance apart as second pair of glandularia; female dorsal plate with first pair of glandularia slightly posterior to postocularia and closer to lateral margin of shield than to postocularia; ventral shield (Figs. 2, 4 with suture lines between third and fourth coxae at a moderate angle; glandularia of fourth coxae shifted onto the third coxae but not approaching edge of third coxae; genital field with 3 pairs of acetabula (Figs. 5, 10), anterior pair slightly elongate (anterior pair absent in one female, and partially absent in another); anus on same level as posterior pair of ventroglandularia. Palp (Figs. 9, 11): genu of male with more dorsal setae than that of female. Legs (Figs. 6-8, 12-13): swimming setae absent; telofemur of male leg I thickened and with many thin setae; genu of male leg IV proximally curved, ventral margin with a row of stout setae, the proximal ones distally spatulate.


**Etymology.** The specific epithet is a noun in apposition taken from the name of the aboriginal tribe that originally inhabited the area of east Gippsland that includes the type locality (Tindale, 1940).

**Remarks.** *Aspidiobates bidewel* resembles *A. imamurah* K.O. Viet from New Caledonia in the type of sexual dimorphism of the dorsal shield, but males differ in the shape of the genu of leg IV and females by the relative sizes of the platelets of the dorsal shield. *Aspidiobates bidewel* is the largest known Australian species of the genus, but several species from New Caledonia are approximately the same size (Viet, 1968).

The female from the Yarra River is provisionally identified as this species, as it is slightly larger than the females from the type locality (it’s measurements have not been incorporated in the description). Males are needed to confirm the identification.
Figures 1-4. *Aspidiobates bidewel* sp. nov. Holotype male: fig. 1, dorsal shield; fig. 2, ventral shield. Paratype female, K363: fig. 3, dorsal shield; fig. 4, ventral shield. Scale line = 500 μm.
Figures 5-13. *Aspidiobates* bidewel sp. nov. Holotype male: fig. 5, genital field; fig. 6, right leg I; fig. 7, right leg IV; fig. 8, right genu IV. Paratype male, K355: fig. 9, left palp. Paratype female, K363: fig. 10, genital field; fig. 11, left palp; fig. 12, left leg I; fig. 13, left leg IV. Scale line = 200 µm (Figs. 5, 8-11), 500 µm (Figs. 6-7, 12-13).
**Aspidiobates aethes** sp. nov.

*Type material.* Holotype male, Victoria, Lyndon Flat, Barkly-Macalister junction (stn Mc14), 24 Feb 1978, NMV K372 (slide).


Figures 14-22

Aspidiobates aethes sp. nov. Holotype male: fig. 14, dorsal shield; fig. 15, ventral shield. Paratype female, K380: fig. 16, dorsal shield; fig. 17, ventral shield. Scale line = 500 µm.
Diagnosis. Genital field with four pairs of acetabula.

Description. Dorsal and ventral shields present; dorsal shield (Figs. 14, 16) similar in both sexes, with 2 pairs of narrow posteriorly placed platelets; large dorsal plate with 2 pairs of glandularia and the postocularia; postocularia and the first pair of glandularia placed relatively close to each other; ventral shield (Figs. 15, 17) with suture lines between third and fourth coxae extending anterolaterally at a moderate angle; glands of fourth coxae shifted onto the third coxae near the anterior suture lines of the third coxae; genital field with 4 pairs of acetabula (Figs. 18, 21), anterior pair slightly elongate; anus slightly posterior to genital field. Palp (Fig. 22): not sexually dimorphic. Legs (Figs. 19-20): swimming setae absent; not sexually dimorphic.


Etymology. The specific epithet refers to the unusual number of acetabula (Greek aethes unusual, strange).

Remarks. Aspidiobates aethes most closely resembles A. scutatus Lundblad and A. similis Cook in...
the shape and lack of sexual dimorphism of the dorsal shield, but differs from them by the possession of four pairs of acetabula.

**Aspidiobates scutatus** Lundblad


**Remarks.** Lundblad (1947) and Cook (1986) have recorded this species from one site in each of Tasmania, Victoria and New South Wales.

**Aspidiobates similis** Cook

*Aspidiobates similis* Cook, 1986: 105-106, figs. 545-552.


**Remarks.** Initially described from Tasmania by Cook (1986), this is the first record of *A. similis* from mainland Australia where it has been taken only in the Lederderg River.

**Aspidiobates geometricus** Cook

*Aspidiobates geometricus* Cook, 1986: 106-107, figs. 561-569.

*Material examined.* Victoria: Sandy Waterhole Creek, Genoa, 37°23'S, 149°26'E, 24 Feb 1976, NMV, 1 male (slide).

**Remarks.** This is the first record of this species from Victoria, which was originally described from New South Wales and Queensland.

**Acknowledgements**

We wish to thank Ros St Clair and Andrew Boulton for donating specimens or assisting in the collection of material, Dr I.M. Smith for sending us the Thomson River material he identified for Malipatil and Blyth (1982), John Blyth for support, the National Parks and Wildlife Service for allowing work to be undertaken in Mount Buffalo National Park, and the Australian Biological Resources Study for financial support.

**References**


Correction


M. S. Harvey. *Grymeus*, a new genus of pouched oonopid spider from Australia (Chelicerata: Aranae)

On page 127 the list of paratypes of *Grymeus yanga* Harvey from New South Wales should read: