

A new *Microvelia* from Australia with a check-list of Australian species (Hemiptera, Veliidae).

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The new *Microvelia* described below was present in a small collection sent to the author for identification by Mr. I. Lansbury, Oxford. The subsequent check-list summarizes the nomenclatural and distributional knowledge about Australian species of this genus.

***Microvelia* (s. str.) *childi* n. sp.** (Figs. 1—11)

Colour: Apterous male chiefly blackish with patches of silverish hairs above. Head blackish brown or black with the usual shiny, median stripe reaching hind margin of head; small silvery patches laterally, in front and behind the reddish eyes; antennae dark brownish. Lower parts of head and rostrum brownish yellow save for the last rostral segment which is black and shiny. Pronotum blackish with golden dots and darker punctures; an uninterrupted brownish orange, transverse band a little wider than vertex in middle of pronotum close to the anterior margin, obscured laterally on both sides by a large patch of silverish hairs; antero-lateral area of pronotum and propleura orange. Pro- and mesosternum brownish yellow, metasternum black. Coxae, trochanters and lower parts of rest of the legs yellowish, upper surface brownish except basal parts of femora. Abdominal tergites and inner part of femora. Abdominal tergites and inner part of latero-tergites predominantly blackish with minute golden dots; outer margins of all but 1st latero-tergite narrowly brownish orange. 2nd and 3rd tergites grayish blue with a purple tint except in middle; larger patches of silverish hairs laterally on 1st-3rd and 7th tergites, smaller ones laterally on 4th-6th tergites, and medially

on 1st and 2nd. Abdomen laterally and ventrally grayish black with long, whitish pubescence; connexival margin narrowly brownish orange, 4th-7th segments with small, silvery patches below connexivum; a median stripe on 5th and 6th and most of 7th sterna brownish orange; 8th abdominal and the genital segment dark brownish.

Apterous female (fig. 1) with colour-pattern mostly as in male, but abdomen with some additional spots of grayish blue: A smaller spot in the middle of posterior part of 5th tergite, a larger one on 6th tergite, and small spots on 4th-7th sterna below connexivum; the small silvery patches lacking on 4th-6th tergites; 7th tergite hidden by the inflexed connexiva.

Macropterous female with brownish black or blackish hemelytra with white spots and stripes as follows: Two longer basal stripes, reaching well behind apex of pronotum; one oval spot in each of the two median cells and in the apical open cell; one oval spot at the inner margin before apex (the last one not present in another female). Veins black with golden hairs on basal parts.

Structure: A medium-sized *Microvelia*. Apterous male: Body oval, tapering posteriorly. Total length 2.42 — 2.60 mm; greatest width (at the 3rd abdominal segment) 0.92 — 0.98 mm. Head 0.61 — 0.64 mm across eyes, about two-thirds as long as wide across eyes (31:50 *). Eyes small, width one-third the interocular space (10:29); antennae relatively long and slender, about half the total length; 1st segment thick and curved with two long and erect bristles internally; 3rd and 4th segments slender and long, 2nd shorter and thicker; proportional length of antennal segments (1st-4th): 27:19:28:38. Rostrum reaching middle of mesosternum.

Pronotum rather long, a little more than half as long as wide (39:70), a distinct row of punctures along the anterior and posterior margins of the transverse band; numerous punctures on the disc; additional punctures on propleura. Legs relatively long and slender; proportional length of leg segments:

	Femur	Tibia	Tarsus
Front leg	55	47	25
Middle leg	65	61	13:21
Hind leg	75	82	15:22

* 1 unit = 0.0125 mm.

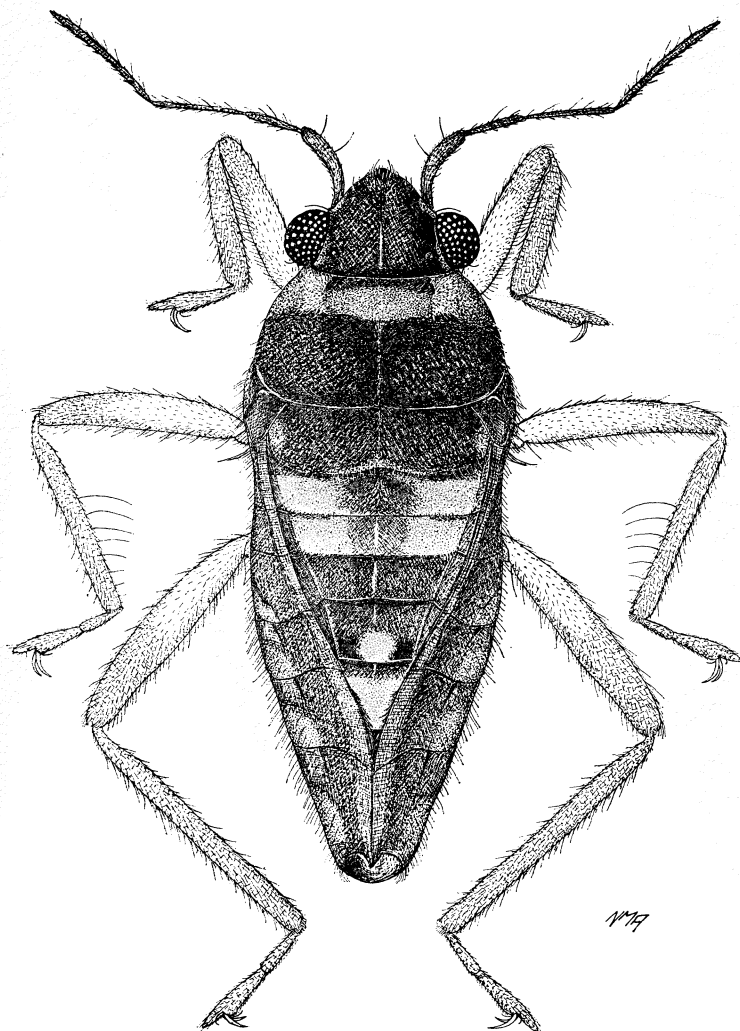
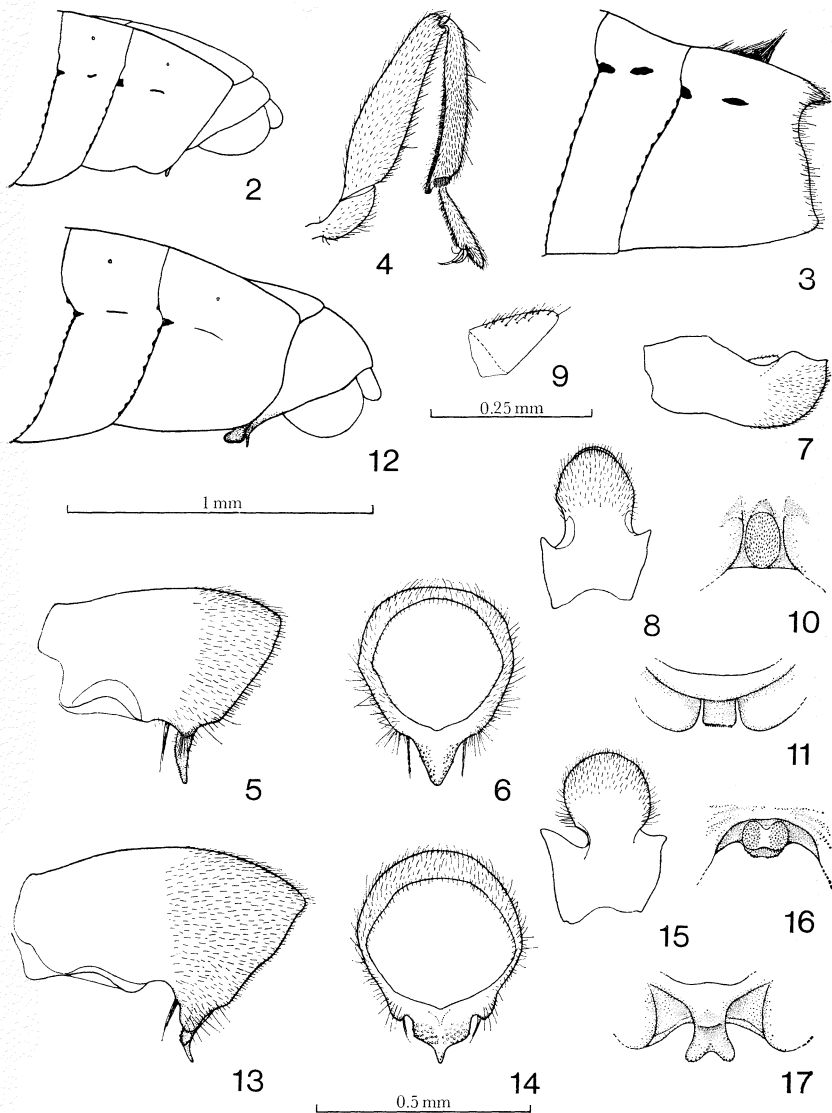


Fig. 1. *Microvelia childi* n. sp. Apterous female. Paratype from Boro-
nia, N. S. Wales.

Front femur moderately incrassate in basal half, a little thicker than middle femur; only front tibia with a comb of pegs (about 80 thicker ones in the straight part of the comb, numerous slender spines in that part which turns around the apex of tibia) occupying about three fifths of tibia length (30:47). Chaetotaxy of middle and hind legs without peculiarities.

Abdominal tergites together a little more than three times as long as pronotum (129:39), evenly tapering in width towards posterior margin of 7th segment; 7th tergite longer than the preceding two segments (39:33); greatest width of connexivum, at the hind margin of 4th segment, one-third the width of the corresponding tergite (16:48); connexivum only slightly raised above the level of tergum. Ventral surface of abdomen with long and suberect hairs and with a shallow depression bordered with longer hairs in the middle of 5th-6th sterna; 7th sternum with apical margin concave and with a deep depression in the middle, narrowing posteriorly; at the hind margin of 7th sternum a shallow, oval tubercle provided with numerous minute denticles (fig. 10) is situated between the raised margins of the groove-shaped depression. 8th segment (fig. 5—6) a little longer than 7th tergite (44:39); ventral, apical margin concave, with a long process, which, in side view (fig. 5) is slightly curved and with numerous denticles on the caudal surface; viewed from behind (fig. 6) with broad base and pointed apex; on each side of this process a low tubercle with long bristles and an additional tuft of long hairs; 8th segment in the resting position nearly completely withdrawn in the preceding segment and the ventral process fits against the low tubercle on 7th sternum described above (fig. 2). 9th segment (pygofer) (fig. 7) relatively small, only slightly asymmetrical, in rest clockwise rotated in the 8th segment; anal cone (fig. 8) with small, asymmetrically developed, lateral wings; the two claspers nearly identical, small, subconical, with numerous small hairs on the antero-dorsally directed surface (fig. 9). Phallus with a very complicated set of ill-defined sclerites, and thus not very useful for taxonomic purposes.

Apterous female (fig. 1): Body more elongate than in male; abdomen tapering. Total length 2.52—2.80 mm; greatest width (across mesothorax) 0.95—1.05 mm. Head 0.65—0.68 mm. Antennae little less than half the total length; antennal formula (1st-4th): 25:19:27:36. Rostrum reaching middle of mesosternum.



Figs. 2—11. *Microvelia childi* n. sp. (2 and 3) Lateral view of apical abdominal segment in apterous male and female, respectively. (4) Right front leg in male. (5 and 6) 8th abdominal segment in male, lateral and caudal view, respectively. (7) Lateral view of 9th segment in male. (8) Anal cone. (9) Left clasper. (10 and 11) Hind margin of 7th abdominal sternum in male, ventral and caudal view, respectively. — Figs. 12—17. *Microvelia mjobergi* Hale. Apterous male holotype. (12) Lateral view of apical abdominal segments. (13 and 14) 8th abdominal segment, lateral and caudal view, respectively. (15) Anal cone. (16 and 17) Hind margin of 7th abdominal sternum, ventral and caudal view, respectively.

Pronotal length a little more than half the width (37:71). Proportional length of leg segments:

	Femur	Tibia	Tarsus
Front leg	51	42	25
Middle leg	63	60	12:21
Hind leg	74	81	14:22

Front femur not thicker than middle femur; front tibia without comb.

Dorsal length of abdomen a little less than four times the pronotal length (140:37). Connexivum vertically raised in anterior half, reflexed and bent inwards in posterior half, meeting in the median line above 7th tergite; margin of one or both of 7th latero-tergites in three of the seven apterous females examined, furnished with a suberect, dense tuft of black bristles as long as an eye-width (fig. 3); 7th sternum long, longer than the preceding two segments together (49:38). Genital segments completely withdrawn into the cylindrical 7th abdominal segment; anal cone bent downwards, covering valvifers.

Macropterous female (macropterous male unknown): Total length 2.82—2.88 mm; greatest width (across humeri) 1.25—1.30 mm; width across eyes 0.66—0.68 mm. Pronotum considerably widened across humeri, wider than long (50:40); disc between and behind humeri relatively long, transversely raised, posterior margin forming a rounded, slightly acute angle. Hemielytra reaching or surpassing tip of abdomen. Venation like fig. 115 C in Lundblad 1933. Connexivum almost vertically raised.

Notes on types: Described from 3 ♂ 2 ♀ apt., 3 ♀ macr. (male holotype and paratypes) together with 25 nymphs (penultimate and ultimate instars) labeled: "Kuringai Chase, 20 miles N. of Sydney; altitude 500'; freshwater stream; April 1966. J. Child", and 5 ♂ 5 ♀ apt. (paratypes) and 1 nymph (ultimate instar) labeled: "Freshwater stream; Boronia PK; N. S. Wales; 7.6.66. J. Child". All of the specimens originally preserved in alcohol, the holotype and most of the paratypes are now mounted dry. Holotype and paratypes in the I. Lansbury collection, Hope Department, University of Oxford. 2 ♂ 1 ♀ apt., 1 ♀ macr. and some nymphs now present in the Zoological Museum of Copenhagen.

Measurements of male holotype: Total length 2.42 mm; greatest width (at the 3rd abdominal segment) 0.95 mm; head width 0.61 mm.

Comparative notes: Among the seven Australian species of *Microvelia* described or quoted by Hale (1925 and 1926), *M. childi* n. sp. seems to be nearest to *M. mjobergi* Hale, *peramoena* Hale, and *howense* Hale. The latter species was not seen by the present author, but has relatively longer legs than the new species and a tibial comb in the male which is about half as long as the tibia. It was described from Lord Howe Island, far from the east coast of Australia, and probably is endemic to that island. *M. peramoena* Hale was more satisfactorily redescribed by Lundblad (1933, p. 324—326, fig. 102). It has the transverse yellowish band on pronotum clearly interrupted in middle, and the male has a very characteristic 8th abdominal segment with two vertical hooks at the ventral hind margin. *M. mjobergi* Hale is apparently the nearest relative to the new species. The author has been able to examine the apterous male type of *M. mjobergi*, which is deposited in Naturhistoriska Riksmuseet in Stockholm. Special attention was given to the male genitalia, which were not mentioned in the original description. *M. mjobergi* Hale is a somewhat larger species than *M. childi* n. sp., with a total length of 3.15 mm (apt. ♂) and 3.14 mm (apt. ♀, placed on the same card as the type); greatest width 0.72 mm and 0.75 mm, respectively. The head is lighter and connexivum yellowish brown, not black as in *childi*. However, the most convincing differences are in the apical abdominal segments of the male, as seen from the accompanying figures (figs. 5—17). The vertical processes on 8th segment is broad basally with a slender and pointed apex, not evenly tapering as in *childi* n.sp. The ventral tubercle at the end of the sternal furrow on 7th abdominal segment is bilobated in *mjobergi*, simple and not so prominent in *childi*. Small differences are also found in the structure of the anal cone. The pygofer and claspers are practically identical; the phallus structure is very complicated in both species and not compared here.

M. mjobergi and *childi* constitute a group of related species which also includes *M. magnifica* Lundblad, 1933 described from Bali (Lundblad 1933, p. 326—328 and 475—476). *M. magnifica* is of about the same size as *M. mjobergi* (3.2 mm); the male has a tibial comb of three-fourths the tibia length and an 8th segment with a very long and pointed process on the apical ventral margin, pointing obliquely forwards.

Check-list of Australian species of *Microvelia*

Genus *Microvelia* Westwood, 1834.

(*Hydroessa* Burmeister, 1835)

- austratica* Bergroth, 1916 (p.38). (Laird 1956, p.75). — Queensland, S. Australia or N. Territory (Palm Creek).
childi Andersen, 1969 (p. 253). — N. S. Wales.
dubia Hale, 1926 (p. 214). — N. S. Wales, Tasmania.
halei Esaki, 1928 (p. 69). (= *oceanica* Hale, 1926, p. 208 nec Distant, 1914). — Queensland, N. S. Wales, S. Australia, Tasmania, Lord Howe Island.
howense Hale, 1926 (p. 211). — Lord Howe Island.
melancholica Hale, 1925 (p. 5). (Hale 1926, p. 216; Lundblad 1933, p. 320). — Queensland.
mjobergi Hale, 1925 (p. 6). (Hale 1926, p. 213; Laird 1956, p. 75; Andersen 1969, p. 259). — Queensland.
peramoena Hale, 1925 (p. 8). (Hale 1926, p. 213; Lundblad 1933, p. 324; Hale 1935, p. 251; Laird 1956, p. 75). — Queensland, N. S. Wales, Victoria, S. and W. Australia, Tasmania.

Note: The species *M. oceanica* Dist. was originally described from N. Caledonia and Loyalty Islands. The occurrence of this species on the Australian continent, as postulated by Hale (1926, p. 208), was later questioned by Esaki (1928, p. 69), who renamed the Australian species as *M. halei* referring only to the description given by Hale (l.c.; in Hale's 1926 paper the illustrations of *M. oceanica* have been interchanged with those of *peramoena*, the latter being copied from his 1925 paper). However, Lundblad (1933, p. 342) has given evidence that Hale's *oceanica* is a complex of two or more species, and the fixation of the name given by Esaki to one of these species will raise some difficulties.

Without doubt *M. halei* Esaki belongs to the same group of species as *oceanica* Dist. which is characterized by the small size and the yellowish, pronotal hind margin. This group, the *oceanica* group, is widely distributed in the Indo-Australian and Pacific areas, but only few of the species are adequately known. *M. australica* Bergroth is insufficiently described but the yellow-margined pronotum places it readily in the *oceanica* group. Finally, China (in Hawkins 1942, p. 896) reports a "*Microvelia* sp. near *oceanica*" from Norfolk Island.

Acknowledgments

I am indebted to Mr. I. Lansbury, Oxford, for placing the material of the new species at my disposal and to Mr. Per Inge Persson, Stockholm, for the loan of the type of *Microvelia mjobergi* Hale.

Summary

A new species of *Microvelia*, *M. childi* n. sp., is described from N. S. Wales, Australia, and compared with *M. mjobergi* Hale. Additionally, the author gives an annotated check-list to the eight Australian species of *Microvelia*.

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