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RHIZOECUS (INSECTA: HOMOPTERA: PSEUDOCOCCIDAE) FROM AUSTRALIA WITH A DESCRIPTION OF A NEW SPECIES DAMAGING GARDEN PLANTS IN VICTORIA

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Abstract

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The six Australian species of the hypogeic mealybug genus *Rhizoecus* are discussed, including *R. cobelopus*, a new species causing damage to garden plants in Victoria. This new mealybug is the second endemic species to be found in Australia. A key is presented to separate all the Australian species.

Introduction

The hypogeic mealybug *Rhizoecus* Künckel d'Herculais, includes about 80 species and, although it is cosmopolitan, most of the species described so far are from the New World (Hambleton, 1976). Eight species are known from New Zealand (Cox, 1978) and in a recent publication Williams (1985) discussed the five known species from Australia, a small proportion of the 196 species of mealybugs described already in Australia.

Only one species of *Rhizoecus*, *R. sphagni* Williams, collected in Victoria in 1979, appears to be endemic. *R. cacticans* (Hambleton), *R. dianthi* Green and *R. falcifer* Künckel d'Herculais have been reported in various parts of the world and are recent introductions to Australia. The earliest collection date for *R. rumicis* (Maskell) in Australia is 1933, but this species was probably introduced from New Zealand where it is common and recorded in 1892.

Australia has a rich and varied mealybug fauna and many more species await discovery. When the soil fauna is investigated more thoroughly further species of *Rhizoecus* will almost surely be found. It is not the intention to describe new species of mealybugs as they are discovered but recently one such species, submitted to the Commonwealth Institute of Entomology for identification, has been found in Victoria causing serious damage to garden plants. This would be sufficient reason to describe it but the species is of added interest in lacking completely the tritubular and bitubular pores, characters normally associated with the genus and discussed for other species of *Rhizoecus* by Williams (1985).

Key to Australian species of *Rhizoecus*

1. Circulus present 2
- Circulus absent 3
2. Multilocolur disc pores absent, tritubular pores present ..... *R. cacticans* (Hambleton)
- Multilocular disc pores present on dorsum and venter, bitubular pores present ..... *R. rumicis* (Maskell)
3. Antennae 5-segmented, eyes absent ..... *R. falcifer* Künckel d'Herculais
- Antennae 6-segmented, eyes present but sometimes very small 4

4. Multilocular disc pores few, confined to posterior abdominal segments of venter ..... *R. dianthi* Green

– Multilocular disc pores abundant on dorsum and venter 5

5. Tritubular pores present, cephalic plate not apparent ..... *R. sphagni* Williams

– Tritubular pores absent, cephalic plate well developed and conspicuous ..... *R. cobelopus* sp. nov.

Pseudococcidae Cockerell, 1905

Rhizoecus Künckel d'Herculais, 1878

Rhizoecus cobelopus sp. nov.

Figure 1

Material examined. Holotype: Victoria, Nunawading, 20 km E. of Melbourne, on roots of various garden plants, A. Neboiss, 22 May 1985, Museum of Victoria (NMV), Reg. no. T-8908(♀).

Paratypes: Victoria, same data as holotype; (NMV T-8909-T-8913, 5 ♀♀; BMNH 5 ♀♀). Same locality, 1 Jan 1985 (NMV T-8914-T-8917, 4 ♀♀; BMNH 4 ♀♀).

Description. External appearance of adult female on roots of plants: covered with white flocculent wax as though roots are covered with white strings. When prepared on microscope slides: body elongate-oval, largest specimens about 1.6 mm long. Anal lobes poorly developed, membranous, each with 2 dorsal and 1 ventral seta about 65 μm long, forming a group of 3. Antenna 160-180 μm long, with 6 segments, apical segment 40 μm long, tapering. Legs well developed, slender. Hind trochanter+femur 140-160 μm long, hind tibia+tarsus 160-170 μm long, claw unusually slender, 28-32 μm long with digitules short and seta-like. Ratio of lengths of hind tibia+tarsus to trochanter+femur 1.06-1.14. Ratio of lengths of hind tibia to tarsus 1.28-1.42. Second and third legs with spine-like distal setae on anterior surface of tibia and on inner edge of tarsus. Labium 90-100 μm long, about same length as clypeolabral shield. Circulus absent. Cephalic plate conspicuous, sclerotised, often containing 1 or 2 setae, trilocular pores and multilocular disc pores. Eyes present, small. Anal ring 65-70 μm wide, with 6 setae, each 65-70 μm long, and with inner and outer row of pores. Ostioles with inner edges of lips sclerotised, each lip with 1-4 setae and 1-4 trilocular pores.

Dorsal surface with slender setae in moderate numbers, 12-20 μm long, except towards posterior end of body where they are often 35 μm long. Trilocular pores in an even distribution, not numerous. Multilocular disc pores abundant in bands across the segments, absent in the intersegmental areas. Bitubular and tritubular pores absent. Minute ducts present, few, sclerotised, in more or less single rows across segments, each duct narrower than a trilocular pore and with external rim that is wide but thin.

Ventral surface with similar setae to those on dorsum, but fewer. Multilocular disc pores not so numerous as on dorsum, following the general pattern of the setae. Trilocular pores sparse. Tubular ducts, as on dorsum, represented by 1 or 2 near each spiracle on thorax, there being rarely more than 5 across the middle of each abdominal segment.

Etymology. From the Greek *kobele* (needle) and *pous* (foot) referring to the long slender claw.

Remarks. In its general distribution of multilocular disc pores, this species resembles *R. sphagni* described from Victoria. The new species differs in lacking completely any tritubular pores but it does possess minute ducts with a wide and thin external rim. These ducts may be modified monotubular pores replacing the normal tritubular pores. Furthermore, the new species has a distinct cephalic plate that is absent in *R. sphagni*.

The insects damage the root system, particularly the fine root tips, and even roots of 4 or 5 mm diameter. The roots eventually rot. Native plants attacked are *Prostanthera* sp., *Grevillea* sp. and *Eucalyptus* sp., but introduced plants, *Azalea* sp., *Viburnum* sp. and *Ilex* sp., are also infested. The host-plant range may be large because the ground has been reported full of the mealybugs between root systems. There is reason to believe that the mealybug may have been introduced with some soil or plants from elsewhere in Australia.

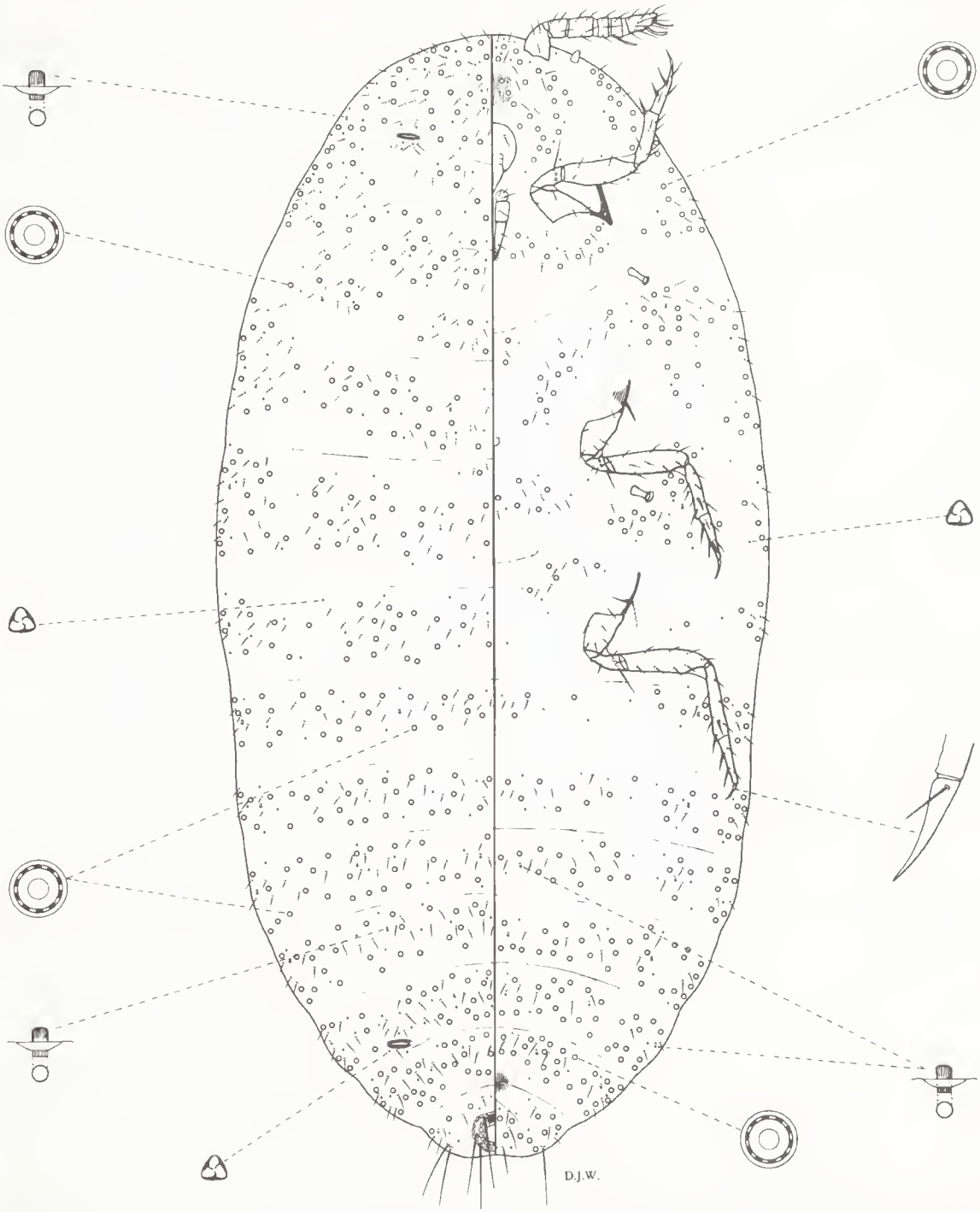

Figure 1. *Rhizoecus cobelopus* sp. nov., adult female holotype (slide-mounted specimen). Dorsal surface on left, ventral surface on right.

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References

Cox, J.M., 1978. Revision of the *Rhizoecus* species (Homoptera: Pseudococcidae) known from New Zealand. *N.Z. Jl Zool.* 5: 623-638.

Hambleton, E.J., 1976. A revision of the New World mealybugs of the genus *Rhizoecus* (Homoptera: Pseudococcidae). *Tech. Bull. U.S. Dep. Agric.*) 1522: 1-88.

Williams, D.J., 1985. *Australian Mealybugs*. British Museum (Natural History): London. 431 pp.