



# The Genus *Uroleucon* Mordvilko (Insecta, Aphidoidea) in South America, with a key and descriptions of four new species

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*Uroleucon* is one of only two genera of Aphidinae to have undergone significant speciation in South America, with a group of about 14 endemic, morphologically similar species feeding on native Compositae, especially *Baccharis*. Multivariate morphometrics (canonical variates analysis, CVA) was used to discriminate between these species and compare them with the North American subgenus *Lambersius*, in which most of them have hitherto been placed. It is concluded that they probably form a separate monophyletic group. Four new species are described in this group—*brevisiphon*, *essigi*, *petrohuense* and *pseudomuermosum*—and five names are placed in synonymy. Of the other species of *Uroleucon* in South America, *U. lizerianum* is widespread and feeds on many species of native and introduced Compositae; it is morphometrically inseparable from the North American species *U. ambrosiae* and is probably an introduced form of that species, but has consistently fewer secondary rhinaria. A key is provided to the 19 available species of *Uroleucon* recorded from South America.

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ADDITIONAL KEY WORDS:—multivariate analysis – founder effect – introduced species.

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## INTRODUCTION

Aphids are a major component of the phytophagous insect fauna of north temperate regions, but very few species are indigenous to the tropics and southern hemisphere. Both ecological (Dixon *et al.*, 1987) and historical (Heie, 1994) reasons have been advanced for this. South American *Uroleucon* are of special interest because they are one of the very few groups of the main aphid subfamily Aphidinae to have undergone recent speciation on native plants in southern temperate regions.

In addition to endemics, there are also several introduced nearctic and palaeartic *Uroleucon* species in South America; comparison of the ecology and host-plant relationships of native and introduced species may help to explain the low diversity of southern hemisphere aphids. However, this initially requires taxonomic studies in order to redefine the native fauna, and to confirm the identity of the introduced species.

*Uroleucon* Mordvilko (= *Dactynotus* Rafinesque) has about 160 northern temperate species specializing on Compositae (Blackman & Eastop, 1984), and including pests of chicory, lettuce and safflower. Smith & Cermeli (1979) listed 23 species in this genus from the neotropical region, and two others that they listed under *Macrosiphum* (*chilense* Essig and *macolai* Blanchard) also belong in this genus (Eastop & Hille Ris Lambers, 1976; Remaudière *et al.*, 1991). Of these 25 species, 13 were described from Argentina (Blanchard, 1922, 1932, 1939), Chile (Essig, 1953) and Paraguay (Essig, 1956). Most of these species were originally described in the genus *Macrosiphum*, and many were collected on native *Baccharis*; several have not been collected since their original descriptions, which in some cases are so brief that it is difficult to be certain that the species really belong in *Uroleucon*. Blanchard (1939) keyed the Argentinian species within *Macrosiphum*. Recently, Delfino (1991, 1994) distinguished three new species on native plants in Argentina. Eastop, Costa & Blackman (in press) provide a key to five *Uroleucon* species in Brazil, but probably none of these are endemic.

Two main problems were encountered in revising the South American *Uroleucon*. Firstly, populations of an introduced aphid on numerous genera of Compositae in Central and South America in the BM(NH) collection have been identified as *U. ambrosiae* (Thomas), which in North America is one of a complex of similar-looking species. Aphids identified as *U. ambrosiae* have been reported as pests of chicory and lettuce, and as transmitting sugar cane mosaic and maize dwarf mosaic viruses (Blackman & Eastop, 1984). However, in her revision of the northeastern North American *Uroleucon*, Moran (1985) considered that *ambrosiae sensu stricto* restricts its feeding to just two genera, *Ambrosia* and *Iva*. Blanchard (1922) described an aphid found on various Compositae in Argentina as a new species, *lizerianum*; his description does not discriminate *lizerianum* from *ambrosiae*. Remaudière *et al.* (1991) redescribed *lizerianum* from collections on composite plants of four genera in Bolivia in comparison with paratypes, and compared it with two North American species, but not with *ambrosiae*. It is therefore necessary to establish whether more than one *ambrosiae*-like species has a broad host range and distribution in South America.

