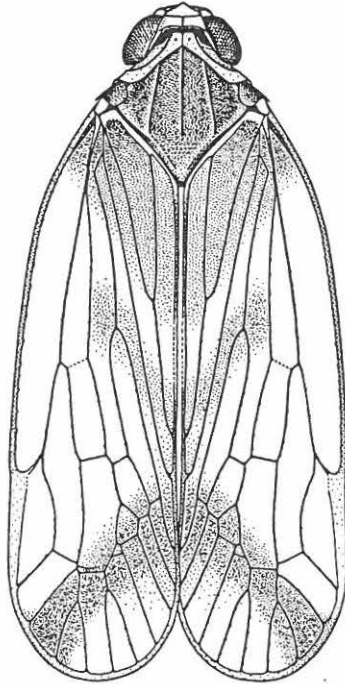


# NEW ZEALAND CIXIIDAE (HEMIPTERA): TAXONOMY, FAUNAL COMPOSITION, REGIONAL DIVERSITY, AND ECOLOGICAL PREFERENCES

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Nine genera and 17 species of planthoppers of the family Cixiidae are known from New Zealand. These species are: *Aka duniana* (Myers, 1924); *A. finitima* (Walker, 1858); *Cixius aspilus* Walker, 1858; *C. kermadecensis* Myers, 1924; *C. punctimargo* Walker, 1858; *Confuga persephone* Fennah, 1975; *Huttia harrisi* Myers, 1924; *H. nigrifrons* Myers, 1924; *Koroana arthuria* Myers, 1924; *K. interior* (Walker, 1858); *Malpha cockrofti* Myers, 1924; *M. iris* Myers, 1924; *M. muii* Myers, 1924; *Oliarus atkinsoni* Myers, 1924; *O. oppositus* (Walker, 1851); *Semo clypeatus* F.B. White; *Tiriteana clarkei* Myers, 1924.



*Tiriteana clarkei* Myers

Myers (1924) furnished the most extensive treatment of the family for New Zealand, which included a key to the genera, descriptions of new taxa, and additional comments on a number of described taxa. This was followed by a revised key to the genera (Deitz and Helmore, 1979) and the description of a cave-dwelling species (Fennah, 1975).

The present study is based on all material contained in 8 New Zealand collections, and aims to provide the first comprehensive revisionary treatment of the family.

A preliminary morphological analysis suggests that 3 additional genera and 10 new species should be recognised. Morphological characters and their diagnostic value at various classificatory levels are reviewed. In fulgorooid taxonomy the ultimate criterion for species recognition is the structure of the male genitalia, more particularly the aedeagus, and there is now no doubt that this is also true for New Zealand Cixiidae. Characters used for species diagnosis are reviewed for a number of genera and speciation patterns are examined in the light of other information, such as geographical distribution and ecological preferences.

At least 75% of New Zealand's cixiid fauna is endemic. Regional diversity and ecological assemblages, including habitat preferences and host-plant relationships, are briefly outlined.

The indigenous genus *Aka* has one representative in Australia, where the cosmopolitan genera *Cixius* and *Oliarus* occur also. Apparently no species is shared between Australia and New Zealand.

An attempt is made to identify phylogenetic relationships among taxa. The relative apomorphy of head, thorax, and genital character states is discussed, and results from a preliminary cladistic analysis are presented.

The potential use of molecular techniques to support morphological analyses, including the testing of species boundaries in some genera, is outlined.

## REFERENCES

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