



## Redescription of *Notholimmophila* Alexander and *Acantholimmophila* Alexander, poorly known New Zealand endemics (Diptera: Tipulomorpha: Limoniidae)

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### Abstract

*Notholimmophila exclusiva* (Alexander, 1922) remains the only known species of the genus *Notholimmophila* Alexander, 1924. *Acantholimmophila* Alexander, 1924 includes two species, *A. maorica* (Alexander, 1922) and *A. bispina* (Alexander, 1922). These taxa, known exclusively from New Zealand, cannot be properly identified on the basis of available taxonomic information, and this situation prevents the advancement of any further studies. In this paper, *Notholimmophila* and *Acantholimmophila* are revised and the included species are redescribed and illustrated in detail.

**Key words:** *Acantholimmophila*, Limoniidae, morphology, New Zealand, *Notholimmophila*, taxonomy

### Introduction

Alexander (1922a, 1922b) described three New Zealand taxa under the genus *Limnophila*: *L. exclusiva*, *L. maorica* and *L. maorica bispina*. Alexander (1924) then erected the monotypic genus *Notholimmophila* for *L. exclusiva*, and for the two other taxa he erected the genus *Acantholimmophila*. The justification for this seems to rest in Alexander's (1924) recognition of *Limnophila* as a non-natural assemblage of taxa:

*“The genus Limnophila s.l. includes a considerable number of species found in all regions of the world. The structure of the adult flies seems to afford relatively few characters upon which to subdivide this heterogeneous aggregation. The genotype, L. pictipennis (Meigen), was designated by Westwood in 1840 and so restricts the name to the small Palaearctic group that was formerly called Poecilostola, Schiner, and strictly congeneric groups. Following this strict usage of the name, it seems probable that few, or possibly none, of the New Zealand species so far described as species of Limnophila really belong here.”* (Alexander, 1924: 366)

The paraphyly of the genus *Limnophila* was demonstrated in the study of Ribeiro (2008). Both *Acantholimmophila* and *Notholimmophila* were included in the analysis. *Notholimmophila* was placed, at least tentatively, in a clade together with other genera with restricted distributions in southern temperate areas of the globe, such as *Bergrothomyia* (Australia, Tasmania), *Mesolimmophila* and *Chilelimnophila* (Southern South America). *Acantholimmophila* was placed as the sister group of the widely distributed genus *Epiphragma*, a relationship suggested by Alexander (1924). As far as known, *Notholimmophila* and *Acantholimmophila* occur exclusively in New Zealand, in both North and South islands. Their very small diversity, restricted distributions, and putative phylogenetic positions as related to more diverse groups suggest they may constitute relicts of ancient, previously more diverse clades.

No morphological characters of either *Notholimmophila* or *Acantholimmophila* were ever illustrated until the depiction of their male genitalia by Ribeiro (2008: figs. 85, 159; 96–97, 170–171). However, without a firsthand comparison with the types or other properly identified specimens, which are few, the identification of these taxa solely on the basis of available taxonomic information would be very difficult. The redescriptions made here are aimed to provide better grounds for the recognition of both *Notholimmophila* and *Acantholimmophila*, as well as useful information for future comparative studies. So far, the immature stages of these genera are unknown, as well as any aspect of the biology of the included species.