



## The genus *Manota* Williston (Diptera: Mycetophilidae) in New Zealand

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### Abstract

*Manota* spp. are quite common in all kinds of indigenous forest in New Zealand. Five species are present: *M. maorica* Edwards, *M. granvillensis* sp. n., *M. birgitae* sp. n., *M. purakaunui* sp. n., and *M. regineae* sp. n. They can be distinguished from one another by male genitalic characters, in particular those of gonostylus. New Zealand *Manota* form a monophyletic group though their relationship to *Manota* spp. outside New Zealand is unclear.

**Key words:** Diptera, Mycetophilidae, *Manota*, new species, New Zealand

### Introduction

The genus *Manota* is a prime example of an open-ended taxon in Mycetophilidae (cf. Bickel 2009). The number of described species stands currently at 161 (Hippa & Ševčík 2010), but any Malaise sample taken in tropical rainforest is likely to contain additional species. Compared with the tropics, the genus is much less speciose in the moist temperate forests of both the southern and northern hemisphere. For instance, *Manota* has few species in the Holarctic Region and South Africa and appears to be completely lacking in Tasmania (pers. obs.). In New Zealand manotas are among the most common mycetophilids (pers. obs.). This fact, only brought to light with the widespread use of Malaise traps, is well known to contemporary New Zealand entomologists studying fungus gnats (cf. Davies 1988, Toft *et al.* 2001). Previous findings were always assigned to *Manota maorica* Edwards, the only previously described New Zealand species (Tonnoir & Edwards 1927). *Manota maorica* was described on the basis of four male specimens of which the holotype specimen was recently restudied by Hippa (2007). Here we document the occurrence in abundance of *Manota* throughout New Zealand and the presence of five species, four of them new. The new species are described and named and compared with manotas elsewhere. Further, we describe the female of *Manota maorica* and supplement the male description.

### Material and methods

We studied a total of 1417 specimens, among which were only 3 females. Specimens were, for the most part, picked from unsorted ethanol samples deposited with the following New Zealand institutions: New Zealand Arthropod Collection, Tamaki, Auckland (Dr T.K. Crosby); Landcare Research, Nelson (R. Toft); Department of Conservation, St Arnaud (through mediation by R. Toft); Canterbury Museum, Christchurch (P.M. Johns, Dr R.P. Macfarlane); University of Canterbury, Christchurch (Dr R.K. Didham); and School of Forestry, Christchurch (through mediation by P.M. Johns). Another large number of specimens were collected by ourselves on various occasions during the years 2001–2003. Holotypes, most paratypes and further specimens are deposited in the New Zealand Arthropod Collection (NZAC). Some paratypes and voucher specimens are kept in the Senckenberg Naturhistorische Sammlungen, Museum für Tierkunde, Dresden, Germany (SMTD).