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Overview and key to the New Zealand Cynipoidea (Hymenoptera)

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Abstract

An overview of Cynipoidea (Hymenoptera) in New Zealand is presented with information on families, genera, and when available, species. Notes on their distribution, biology, and a taxonomic key are provided. The New Zealand cynipoid fauna is very poorly known, with only 11 described species, and five genus-only taxa. The fauna is dominated by introduced species; two species have been deliberately introduced as biological control agents, and at least 12 taxa are definitely or probably adventives. Many of these species are widespread and collected from modified and non-native habitats. New generic records of Figitidae for New Zealand include: *Xyalaspis* (Anacharitinae), *Ganaspis*, (Eucoilinae), and *Thoreauella* (Emargininae), all of which are considered adventives. There are no native species of gall forming wasps (Cynipidae) in New Zealand, and only two native species of Figitidae are present: *Anacharis zealandica* Ashmead, 1900 and *Kleidotoma subantarcticana* Yoshimoto, 1964.

Key words: Adventives, Cynipidae, Figitidae, Ibaliidae, taxonomy

Introduction

Cynipoidea are a globally diverse and economically important group of Hymenoptera (Ronquist 1999; Buffington *et al.* 2007; Ros-Farré & Pujade-Villar 2007). Some cynipoid wasps can be significant pests of chestnut and oak trees, where they induce the formation of galls, reducing plant vigour and production (Kato & Hijii 1997; Stone *et al.* 2002; Melika *et al*. 2009; Pujade-Villar *et al.*, 2014). Some cynipoids can be pests in agriculture where, through parasitism, they reduce the abundance of natural enemies of aphids. For example, parasitism by *Anacharis zealandica* (Figitidae) reduces the abundance of the brown lacewing *Micromus tasmaniae* (Neuroptera: Hemerobiidae) and subsequently affects aphid numbers (Jonsson *et al.* 2009; Jacometti *et al.* 2010). However, cynipoid wasps can also be economically beneficial for the biological control of pests. For example, *Ibalia leucospoides* (Ibaliidae) has helped control of the European woodwasp, *Sirex noctilio* in New Zealand (Bain *et al.* 2012). Gall formers can be utilised to help control invasive plants, for example, *Aulacidea subterminalis* (Cynipdae) was introduced into New Zealand for the control of the grassland weed *Hieracium pilosella* L. (Asteraceae) (Syrett *et al.* 2001).

The taxonomy and biology of cynipoids are very poorly known outside the Holarctic region, particularly in the Southern Hemisphere (Nieves-Aldrey *et al.* 2009; Paretas-Martínez *et al.* 2013). Recently, Paretas-Martínez *et al.* (2013) has highlighted the very limited knowledge of the species-rich cynipod fauna of Australia, which includes two endemic families, Austrocynipidae and Mikeiinae (Paretas-Martínez *et al.* 2013) and Ferrer-Suay *et al.* (2014) studied the Charipinae fauna from Australia.

In contrast to Australia, the New Zealand cynipod fauna appears to almost exclusively consist of exotic species, either introduced purposefully for biological control or which have become accidentally introduced. Although several species are relatively well studied, cynipods have had little study in New Zealand and there is no guide to the identification of taxa. Such a guide is vital given the economic importance of cynipods, especially in horticulture and agriculture. This paper presents a taxonomic overview of the Cynipoidea in New Zealand, with information on families, genera, and when available, species. A taxonomic key is provided and notes on distribution, biology are presented.

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