



# Monograph

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## An updated host-parasite catalogue of world Dryinidae (Hymenoptera: Chrysidoidea)

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## Abstract

An updated host-parasite catalogue of world Dryinidae is presented. The catalogue presents 1014 relationships between dryinids and their hosts checked in 84 countries of the world, including 38 new records.

**Key words:** Hemiptera, Auchenorrhyncha, Cicadomorpha, Fulgoromorpha, parasitoids, relationships, index

## Introduction

Auchenorrhyncha include taxa such as leafhoppers, planthoppers and treehoppers that are important pests of cultivated and forest plants. They are often controlled by chemicals, resulting in some cases in environmental problems. The modern necessity to limit the use of chemicals to protect the environment and avoid damages to the health leads to enhance the value of the natural enemies of plant pests.

Together with oophagous parasitoids, Twisted-Wing parasites (Strepsiptera), Big-Headed Flies (Diptera: Pipunculidae) and other organisms of minor importance, Dryinidae (Hymenoptera: Chrysidoidea) are very effective natural enemies (Olm 1999a, 2000). They are parasitoids and often also predators of Auchenorrhyncha (except for Cicadoidea and Cercopoidea) to which they are strictly related. The example of *Gonatopus flavifemur* (Esaki & Hashimoto, 1932) is useful to emphasize the role and importance of dryinids in the biological balances: the female can parasitize during its life (lasting about 19 days) more than 400 host individuals and prey about 50 (Chua & Dyck 1982; Sahragard *et al.* 1991). Dryinids are not monospecific parasitoids. On the contrary they may parasitize many host species belonging to different genera, in some cases also to different families. Records of monospecific parasitization seem to be only the result of insufficient research.

The importance of Dryinidae was recognized for long time, resulting however in few biological control programmes:

**1. Hawaii (1906-07), control of the Sugarcane Planthopper, *Perkinsiella saccharicida* Kirkaldy, 1903:** introduction of *Pseudogonatopus hospes* R. Perkins, 1912 (now junior synonym of *Gonatopus nigricans* (R. Perkins, 1905)) from China, and *Haplogonatopus vitiensis* R. Perkins, 1906a, from the Fiji Islands (Swezey 1928; F. Williams 1931).

**2. New Zealand (1935), control of the Froggatt's Apple Leafhopper, *Typhlocyba froggatti* Baker, 1925 (now junior synonym of *Edwardsiana crataegi* (Douglas, 1876)):** introduction of *Aphelopus typhlocybae* Muesebeck, 1935 (now junior synonym of *Aphelopus albopictus* Ashmead, 1893) from the USA (Dumbleton, 1937; Charles 1989).

**3. Italy (1994), control of the Flatid Planthopper, *Metcalfa pruinosa* (Say, 1830):** introduction of *Neodryinus typhlocybae* (Ashmead, 1893) (Girolami & Camporese 1994, Olmi 1999b). This project is continuing still in other European countries.

**4. Colombia, Costa Rica, Cuba (from 1999), control of the Rice Delphacid, *Tagosodes orizicolus* (Muir, 1926):** introduction of *Haplogonatopus hernandezae* Olmi, 1984, in rice fields (Mora-Kepfer & Espinoza 2009).