



An annotated checklist of the Coccinellidae (Coleoptera) from New Caledonia

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Abstract

We present an updated checklist of the ladybird beetle fauna of New Caledonia. Fifty species have been tracked from literature and collections, but six should be removed from the list as they represent false records, invalid or unestablished species: *Coccinella boletifera* Fauvel, *Harmonia conformis* (Boisduval), *Menochilus duodecimpunctatus* (Fauvel), *Micraspis lineola* (Fabricius), *Orcus australasiae* Boisduval, and *Curinus coeruleus* (Mulsant). After our investigations, the current described ladybird beetle fauna totals 44 named species, belonging to 18 valid genera. The endemism rate is 47.7% (21 species), with one endemic subgenus, *Scymnus (Caledonus)*. Based on comparisons of the coccinellid faunas of surrounding regions, the New Caledonian fauna has affinities with Australia and Papua New Guinea more than with the rest of the Pacific area. At least 19 species (43.2%) seem to have been introduced by human activities (either deliberately or accidentally).

Key words: Endemism, ladybird beetles, predators, south-west Pacific

Introduction

Among Coleoptera, ladybird beetles are an ecologically and morphologically diverse group, comprising roughly 360 genera and 6,000 species worldwide (Seago *et al.* 2011; Vandenberg 2002). The representatives of this family are primarily insectivorous predators, so that many species have been used as biological control agents worldwide, which explains the cosmopolitan distribution of some of them (Iablokoff-Khnzorian 1982; Samways *et al.* 1999; Slipinski 2007).

Located in the south-west Pacific, New Caledonia is considered one of the major biodiversity hotspots (Kier *et al.* 2009; Myers *et al.* 2000), characterized by high species richness and strong endemism (Grandcolas *et al.* 2008; Pellens & Grandcolas 2009). However, for coccinellids, no global assessment has been done in New Caledonia to evaluate the contribution to the uniqueness of this island system. To date, only Coccinellinae are recorded or described from New Caledonia and adjacent islands. From a historical perspective, coccinellid research in New Caledonia can be tracked back to the mid-19th century, with the first account of species by Mulsant (1850, 1853). Montrouzier (1861), then Perroud & Montrouzier (1864), gave the first accounts of endemic ladybugs from New Caledonia. Fauvel (1862, 1866, 1903) expanded the census and described numerous new species for the archipelago. During the same period, Crotch (1874) also added one endemic species from New Caledonia. By the time of the Roux and Sarazin expedition in 1911–1912, 27 species were recorded from New Caledonia as pointed out by Heller (1916). This last author brings some new records of distribution. No new accounts or research on New Caledonian coccinellids occurred until the second half of the 20th century, when several contributions on taxonomy and biogeography were published (Bielawski 1963, 1972, 1973; Chazeau 1978, 1979, 1981a, 1982, 1983, 1991; Chazeau *et al.* 1995). These works have been followed by detailed studies on some species because of