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The identity and distribution of *Fiorinia phantasma* (Cockerell & Robinson) (Hemiptera: Coccomorpha: Diaspididae), with a new synonym

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Abstract

The morphologies of *Fiorinia phantasma* (Cockerell & Robinson) (Hemiptera: Coccomorpha: Diaspididae) and *F. coronata* Williams & Watson are reviewed, and the name *F. coronata* is placed as a junior synonym of the name *F. phantasma* **syn. n.** The known geographical distribution and host range of *F. phantasma* is documented and discussed. An identification key to 12 of the 16 species of *Fiorinia* known from the Australasian, Nearctic and Neotropical Regions is provided.

Key words: morphology, synonymy, distribution, host range, natural enemies

Introduction

Cockerell & Robinson (1915) described *Fiorinia phantasma* Cockerell & Robinson, 1915 (Hemiptera: Coccomorpha: Diaspididae) from the Philippines, Luzon Island, Mount Makiling, on *Neolitsea* sp., collected by C.F. Baker in 1914. Two incompletely labelled slides of unstained syntype material are in the collection of The Natural History Museum, London, U.K. One, clearly labelled with the collection data, sample number 2370 and 'Type", contains a badly crumpled adult female that is almost impossible to study, a damaged parasitized adult female and an adult hymenopteran parasitoid. The second slide is labelled only with "male" and the same sample number as the "Type" slide but there is no mention of it being type material: this slide contains a fragmented adult male and an adult female in relatively good condition. A third syntype slide is in the collection of the Smithsonian's National Museum of Natural History, Beltsville, Maryland, U.S.A. that contains an adult female in poor condition except for half of the pygidium, which is intact.

When Williams and Watson were researching specimens of *Fiorinia* on *Cocos nucifera* from the Solomon Islands for the first of three monographs on the scale insects of the tropical South Pacific in the late 1980s, the species involved was not recognized as being *F. phantasma* and therefore was described as a new species, *F. coronata* Williams & Watson, 1988.

Fiorinia phantasma was first discovered in Hawaii on Oahu in December 2004, heavily infesting the leaf undersides of *Ligustrum japonicum* (Oleaceae), causing distinct yellow blotching, and eventually, leaf drop (Garcia 2011). It was collected again in November 2008 in Oahu, from *Pittosporum tobira* (Pittosporaceae). Subsequent collections from 14 additional host plants indicated its polyphagy and pest potential in Hawaii. In September 2011, it was found severely infesting landscaped *Areca* palms on another island, Maui, and it was deduced that it was probably being spread by inter-island transport of nursery plants (Garcia 2011).

At about the same time as the identification of Hawaiian material as *F. phantasma* by DRM in 2008, two other samples originating from Hawaii were identified, by John Dooley of USDA-APHIS and GW respectively, as *F. coronata*. When DRM and GW were asked how to differentiate the two species, it became apparent that there were no consistent morphological differences between them. Stocks (2012) remarked on the need for taxonomic study to

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