



## New scale insect (Hemiptera: Sternorrhyncha: Coccoidea) records from Fiji: three new species, records of several new invasive species and an updated checklist of Coccoidea

CHRIS J. HODGSON<sup>1,3</sup> & BOZENA ŁAGOWSKA<sup>2</sup>

<sup>1</sup>Department of Biodiversity and Biological Systematics, The National Museum of Wales, Cardiff, CF10 3NP, UK.  
E-mail hodgsoncj@cardiff.ac.uk

<sup>2</sup>Department of Entomology, University of Life Sciences in Lublin, ul. Leszczyńskiego 7, 20-069 Lublin, Poland.  
E-mail: bozena.lagowska@up.lublin.pl

<sup>3</sup>Corresponding author

### Abstract

The adult females of three new scale insect species are described from Fiji: *Crystallotesta marika* Hodgson & Łagowska (Coccidae: Cardiococcinae); *Paracoccus boumaensis* Hodgson & Łagowska (Pseudococcidae) and *Pseudaulacaspis pyrrosiae* Hodgson & Łagowska (Diaspididae). The genus *Crystallotesta* had previously only been known from New Zealand. *P. pyrrosiae* is the third possibly endemic species of *Pseudaulacaspis* to be described from Fiji. In addition, *Icerya imperatae* Rao (Monophlebidae), *Bambusaspis bambusae* (Boisduval) and *B. robusta* (Green) (Asterolecaniidae), *Kilifia acuminata* (Signoret) and *Milviscutulus ciliatus* Williams & Watson (Coccidae), and *Maconellicoccus hirsutus* (Green), *Nipaecoccus nipae* (Maskell) and *Phenacoccus parvus* Morrison (Pseudococcidae) are recorded from Fiji for the first time. The adult female of *I. imperatae* is redescribed. It is considered that *M. hirsutus* and *N. nipae* could be potentially very important ecologically and economically. A complete checklist of Coccoidea known from Fiji, along with their known island distributions and host plants, is appended. We also record *Pseudaulacaspis coluisuvae* Williams & Watson from the Solomon Islands for the first time.

**Key words:** Scale insects; checklist; Fiji; Solomon Is.; Fiji; Viti Levu; Taveuni; Kadavu; invasive species; new species

### Introduction

Fiji is an archipelago of more than 300 islands located some 3000 km east of Australia at 16–20°S latitude and 178°E–178°W longitude. The largest islands are Viti Levu and Vanua Levu, which make up 78% of the land area of Fiji. Most islands are the remnants of once-active volcanoes and are part of the Pacific Plate which is slowly drifting southeast. The oldest terrestrial areas have been exposed for between 5 and 20 million years, although Taveuni last erupted only about 2000 years ago (Doyle & Fuller, 1998). The climate is tropical, with mean monthly temperatures ranging from 22°C in July to 26°C in January. There is little seasonality to the rainfall and most areas receive over 2,500 mm of rain per year, but this is greatest at higher altitudes (Ash, 1992), particularly on southeast facing slopes. In these wet areas, lowland rain forest (to about 400 m), montane rain forest (between 400–600 m) and cloud forest (above about 600 m) occur. Northeast slopes are often in a rain shadow and so have tropical dry forests. The tropical moist forests are considered to contain the richest natural communities of all the ocean islands in the Pacific, except New Caledonia, giving rise to a highly endemic biota. Thus, about a quarter of the vascular plant species are thought to be endemic (worldwildlife.org., 2010).

The islands of the Fiji archipelago have a complex geological history spanning at least 40 million years since the Eocene. The position of this group of islands has varied under the influence of seafloor spreading and the formation of oceanic arc-trench complexes but is considered never to have been part of the super-continent Gondwana. Nonetheless, it does have strong Gondwanan influences. It is believed (Mueller-Dombois & Fosberg, 1998) that the Tongan island of 'Eua, which was originally part of Gondwana, moved close enough to Viti Levu about 5