

## The Australian Museum Lord Howe Island Expedition 2017—Coleoptera

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**ABSTRACT.** A survey of Lord Howe Island Coleoptera was conducted by a team from the Australian Museum and the Natural History Museum of Denmark (University of Copenhagen), in February 2017. The primary purpose of the survey was to assess the status of larger species, with the assumption that these are more vulnerable to predation by the introduced rodent *Rattus rattus*. Critical size was arbitrarily designated 1 cm or more in length. The 32 large species collected are listed here with comments on both their status on the islands and their taxonomy. Nine of these species are newly recorded from the island. The small number of large beetle species collected by a second Australian Museum group working on Balls Pyramid, 22 km from the main island, is also included here. The cerambycid *Oricopis insulana* (Olliff, 1889) is recorded for the first time since its original collection in the early 1880s.

**KEYWORDS:** Lord Howe Island; Coleoptera

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### Introduction

The Coleoptera (beetle) component of the Australian Museum's 2017 expeditions to Lord Howe had four aims: (a) to search for large beetles, large enough to be threatened by predation by *Rattus rattus*; (b) to collect fern-feeding flea beetles; (c) to survey the beetles of Balls Pyramid; and (d) to find as many species as possible besides the above. The large beetles are discussed here. The fern feeding flea beetles will be treated elsewhere. The survey of Balls Pyramid produced very few specimens as the conditions were so dry. Most specimens collected on Balls Pyramid were large, so these are included in the discussion below. The bulk of the Coleoptera collected remains to be studied. Approximately 3000 specimens of 270 species were collected.

### Large beetles

There is some evidence that large terrestrial invertebrates on Lord Howe have suffered extinction or greatly reduced populations in the last 100 years (snails, Köhler & Hyman, 2018; phasmids, Priddel *et al.*, 2003). The status of the larger beetles is less well documented, although *Hybomorphus melanosomus* Saunders & Jekel, 1855, is listed under New South Wales legislation as an extinct species, as it has not been collected alive since the 1860s, coincident with the arrival of house mice (*Musca domestica*) (Olliff, 1889; Hutton *et al.*, 2007). Much of the loss immediately postdates the inadvertent introduction of Black Rats *Rattus rattus* in 1918 (Hutton *et al.*, 2007). The diet of Black Rat is primarily plant material, especially seeds, but *R. rattus* is an omnivore