

Chapter 7

Insects of the Nakorotubu Range, Ra and Tailevu Provinces, Fiji.

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SUMMARY

In November 2009, an entomological survey of the Nakorotubu Range, Viti Levu was conducted. The entomological quantitative surveys included: leaf litter sampling and pitfall trapping; qualitative surveys included: light trapping to target nocturnal insects, butterfly collections, fruit fly baiting and opportunistic encounters. The surveys were divided into three focal surveys sites averaging three field days per site. Adverse weather conditions on some of the days prevented insect sampling especially at Base camp 3 which limited collections from leaf litter and pitfall traps.

The order Coleoptera (beetles) was the most common insect order encountered throughout the surveys and was the target taxa. Overall Coleoptera recorded a total of 25 families. Rare families encountered during the surveys included: Pselaphidae, Callirhyphidae, Cerambycidae and Cicindellidae. The highlight of the survey was the discovery of the two rare Fijian stick insects *Nisyrius spinulosus* and *Cotylosoma dipneusticum* which were both found at Base camp 2. One of Fiji most unique forest systems, i.e. comprised of upland forest area was identified at this study site.

The uniqueness and isolation of this forest system explains much of the diversity of insects from the Nakorotubu Range.

INTRODUCTION

It is estimated that the Pacific island region is home to about 915,000 species of invertebrates, approximately 15% of the world total with more than half the insect species unknown to science (Allison & Englund 2005). High rates of endemism are also characteristic of this region, attributed to the extreme geographic isolation of many island groups. However, little is known of the invertebrate fauna of Fiji particularly with respect to their taxonomy, distribution and ecology.

Currently for Fiji and many other Pacific islands, habitat loss (effectively forest loss) remains the most serious threat to the endemic fauna and flora, with deforestation in Fiji continuing (Watling & Chape 1992). However, Fiji is considered one of the best remaining forested areas in the central Pacific with most restricted to the higher and wetter portions of the islands subjected to extensive fragmentation. These upland forested areas are considered to harbour the greatest diversity of native arthropod species and consequently these areas and their constituent native species are most vulnerable to perturbations and possible resulting reductions in populations and even extinctions (Evenhuis & Bickel 2005).

The roles of Coleoptera in ecosystems are well known and documented. They are an important food source, recycle vegetation through decomposition and herbivory, provide pollination services and are also regarded as indicators of environmental change. The distribution of Coleoptera in general is related to vegetation types and climatic conditions as a result of changes to landscape forms and altitude. Coleoptera is also known to be the most diverse group. For Fiji alone, a total of 1398 coleopteran species have been recorded and many still await discovery.