

Chapter 2

Katydids of the Nakanai Mountains, East New Britain Province, Papua New Guinea (Insecta: Orthoptera: Tettigoniidae)

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SUMMARY

Thirty five species of katydids were collected during a rapid biodiversity assessment of the Nakanai Mountains on New Britain island, which represents an increase of more than 130% in the known katydid fauna of the island. An additional nine species of katydids were recorded at the Mt. Gahavisuka Regional Park (Eastern Highlands Province). At least 12 species recorded during the survey are new to science, and one represents a genus new to science. Based on the limited sampling of the current survey it appears that the katydid fauna of New Britain is potentially rich, yet still virtually unknown. Although no specific conservation issues are known to affect the katydid fauna, habitat loss on New Britain is the primary threat to the biota of the island.

INTRODUCTION

Katydids (Orthoptera: Tettigoniodea) are useful organisms for assessing the success of conservation practices because they exhibit strong microhabitat fidelity, low dispersal abilities (Rentz 1993a), and high sensitivity to habitat fragmentation (Kindvall and Ahlen 1992) thus making them good indicators of habitat disturbance. These insects also play a major role in many terrestrial ecosystems as herbivores and predators (Rentz 1996). They are themselves a principal prey item for several groups of invertebrates and vertebrates, including birds, bats (Belwood 1990), and primates (Nickle and Heymann 1996). At the same time many species of katydids are threatened and some appear to have already gone extinct (Rentz 1977).

The conservation value of katydids has long been recognized in Australia (Rentz 1993b) and Europe, leading to the development of captive breeding programs (Pearce-Kelly et al. 1998), listings on country (Glowacinski and Nowacki 2006) and global (IUCN) Red Lists, and introduction of regulations aimed at their conservation. But their use as conservation tools or targets of conservation actions in tropical regions, where their importance and the level of endangerment are the highest, is hampered by the lack of baseline data on katydid distribution as well as the shortage of katydid expertise and identification tools, a phenomenon known as the taxonomic impediment. It is critically important that more surveys of katydid faunas are conducted across the tropics to provide baseline data on which a successful conservation strategy for these animals can be built. Such surveys, if conducted in pristine or relatively undisturbed areas, also provide reference data which can later be used in habitat monitoring or restoration efforts that should follow any industrial or agricultural activity.

The katydid fauna of New Britain, and of the Bismarck Archipelago in general, is one of the least explored in Melanesia. To date no synthetic overview of its composition has been attempted and the entomological literature contains records of only 18 species of the Tettigoniidae collected on New Britain, and only one (*Segestidea insulana* Willemse) from the Nakanai Mountains (Willemse 1961). By comparison, nearly 300 species of the Tettigoniidae have been recorded from mainland New Guinea (Indonesian New Guinea and Papua New