

## Chapter 3

### Odonata (dragonflies and damselflies) of the Nakanai Mountains, East New Britain Province, Papua New Guinea

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#### SUMMARY

Odonatological results of a biodiversity assessment of the Nakanai Mountains, East New Britain Province, Papua New Guinea in April 2009 are presented. Thirty-two species of Odonata were collected at three different elevations (200-1,700 m) in the Nakanai Mountains and, to a minor extent, on the coastal fringe of Jacquinot Bay. Ten species are recorded from New Britain island for the first time. An undescribed species of *Pseudagrion* Selys and a species or subspecies of *Tetrathemis* Brauer new to science were found. Eleven odonate taxa appear to be endemic to the island and some species were only found at particular elevations suggesting that more odonate species await discovery on the island.

Due to the karst topography of the Nakanai Mountains, surface water that is essential for the development of odonate larvae is very scarce in the region. Natural forest cover is crucial for the survival of forest-dwelling habitat specialists, particularly those occupying the limited above-ground aquatic habitats that do exist. The designation of a World Heritage Area in the Nakanai Mountains will be an important first step to protect New Britain's unique aquatic invertebrate fauna from extinction.

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#### INTRODUCTION

Despite several major contributions to knowledge about the dragonfly fauna of New Britain and the Bismarck Archipelago since the end of the 19th century, the odonate fauna of these islands remains poorly known. F. Ris (1898, 1900) published two papers based largely on the collections of F. Dahl, a German zoologist who spent about a year at a research station at Ralum on Blanche Bay (northern Gazelle Peninsula). Dahl used Ralum as a base from which to travel the surrounding areas collecting zoological specimens (Frodin 2007, Groeben 2004). His collection survived the course of time and is currently housed in the Berlin Museum (Dr. M. Ohl, pers. comm.). In 1919 the British zoologist H. Champion published a short note on a collection of New Britain Odonata obtained by A. Willey and deposited in the Cambridge Museum of Zoology (UK). The most recent synopsis of the Odonata of the Bismarck Archipelago (and the Solomons) was provided by Dutch odonatologist M. A. Liefstinck (1949a) who examined specimens in various collections.

Since the summary of Liefstinck (1949a) knowledge of the New Britain odonate fauna has resulted mostly from a few expeditions with broad zoological and botanical targets that did not have a special focus on Odonata. An important example is the Danish Noona Dan Expedition which visited the Bismarck Archipelago in 1962. This expedition had a broad focus on entomology and yielded dragonfly specimens from New Britain's Gazelle Peninsula including samples from an elevation of about 1000 m at Yalom and Komgi villages (Petersen 1966).

Recent advances include the works of Donnelly (1993) who erected two new genera of Isostictidae, each with a single species, from New Britain, Theischinger and Richards (2005) who described the only platystictid damselfly currently known from New Britain based on