

Crocker Range National Park, Sabah, as a refuge for Borneo's montane herpetofauna

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Abstract. — Crocker Range National Park in Sabah (East Malaysia), northern Borneo, is an exceptional area for herpetological diversity. Inventories of the Park are incomplete, but show high diversity, as well as regional endemism shared with the adjacent and more well-known Gunung Kinabalu National Park. The montane ecosystem of the Range offers refuge for a number of rare herpetofaunal taxa, including *Stoliczka borneensis*, *Rhabdophis murudensis*, *Oligodon everetti*, *Philautus bunitus*, *Ansonia anotis*, *Sphenomorphus aesculeticola*, and undescribed species of squamates of the genera *Sphenomorphus* and *Gongylosoma*. The 59 species of amphibians and 45 species of reptiles now recorded from the Range represent 39 and 16.2 per cent of the total Bornean amphibian and reptile fauna, respectively. The high levels of deforestation of the surrounding regions of Borneo, particularly lowland rainforests, heighten the importance of protection of primary forests of northern Borneo's Crocker Range.

Key words. *Crocker Range National Park, Sabah, Malaysia, herpetofauna, conservation*

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Introduction

Borneo, one of four major islands of the great Indo-Malayan Archipelago (along with Sumatra, Java and Sulawesi), is situated on the eastern edge of the Sunda Shelf between coordinates 04° S to 07° N and from 109–119° E. It is the second largest tropical island in the world (after New Guinea), covering a land area of approximately 743,380 sq km. During the Pleistocene glaciation, sea levels fell between 120–200 m below current levels, uniting the islands of the Sundas (Morley and Flenley 1987). Palynological evidence reveals that during the last glacial maxima, upland plant species moved down, in response to temperature changes (Flenley 1997; Newsome and Flenley 1988).

Vegetational zonation for Borneo is arguably best known from Gunung Kinabalu (Kitayama 1991), the northern edge of Crocker Range, which has a largely intact vegetation. At about 1,200 m is the upper boundary of lowland rainforest, where the majority of emergent trees, comprises primarily the dipterocarps, disappear from the canopy (Beaman and Beaman 1998). The lower montane forest is five-layered, lacking emergents. The upper limit of the lower montane forest is 2,000–2,350 m, that of the upper montane forest, between 2,800–3,000 m. The upper montane forest has a dense herbaceous layer. The upper limit of the lower subalpine coniferous forests is 3,400 m, which is

sparse in undergrowth and lower in height. Unfortunately, not much is known of the ecological distribution of the montane fauna within these altitudinal ranges and even less so of their conservation status. Montane regions, particularly ranges at 1,200 m above sea level, because of their Paleohistory, have been centers for speciation and endemism. Because of the inaccessible nature of montane regions in terms of logistics, these have also remained one of the least known, and most generalizations stem from studies conducted in Gunung Kinabalu, the highest mountain in Borneo (see MacKinnon et al. 1996).

Adjacent to the Gunung Kinabalu National Park is the Crocker Range National Park, although the Kinabalu region is geologically and floristically part of the same range. Situated in northwestern Sabah, this is the largest protected area in East Malaysia, covering an area of 1,399 sq km. The Park is named for William Maunder Crocker (?–1899), a British administrator with the Rajah Brooke's Sarawak Civil Service, who introduced British administrative practice in what was then British North Borneo (now the Malaysian State of Sabah). The altitudinal variation of this Park is remarkable, in rising from near sea level to 1,670 m and extending from the base of Gunung Alab to the town of Tenom. The higher slopes are dominated by moss forests and by a profusion of rhododendrons and orchids. A general description of the site is in Briggs (1997:68). Preliminary studies on the herpetofauna of the Crocker Range National

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