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## HERPETOFAUNA

Margarita Naming<sup>1</sup> and Indraneil Das<sup>2</sup>

<sup>1</sup>Sarawak Biodiversity Centre, Km 20 Jalan Borneo Heights, Semengoh,  
Locked Bag 3032, 93990 Kuching, Sarawak, Malaysia

<sup>2</sup>Institute of Biodiversity and Environmental Conservation,  
Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

## ABSTRACT

The Bau region of western Sarawak is known for its extensive limestone area, comprising a series of low hills, covered with largely intact tropical forest. This paper reports an inventory of the herpetofauna conducted in the region, between September 2001 and June 2003. A total of 34 species of anuran amphibians (representing 20 genera and five families), 18 species of lizards (representing 13 genera and five families), 13 species of snakes (representing 12 genera and four families) and two species of turtles (representing two genera and one family) were recorded from the 19 limestone hills sampled within the Bau Limestone Area. Among the amphibian fauna collected, the most abundant species locally was *Rana raniceps* (11 limestone hills, 48 specimens). The most abundant reptile species collected was *Cyrtodactylus consobrinus* (10 limestone hills, 17 specimens). Compared with other sites within Borneo, the Bau Limestone Area harbours a relatively rich amphibian fauna, but lacks endemics. The inventory of the reptile fauna is believed to be incomplete, and similarly lacks endemics. In addition, no limestone obligate species of herpetofauna were collected during these surveys.

**Keywords:** herpetofauna, limestone, biodiversity, inventory, Bau

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## INTRODUCTION

The Bau Limestone Area extends in a narrow belt from near the town of Bau in western Sarawak discontinuously to near Tebekang in the south-east, and comprises a mosaic of limestone outcrops, interspersed with swampy alluvium (Wilford, 1965a,b). The rocks are dated as Upper Jurassic to Lower Cretaceous, and are of marine origin, consisting of pale, massive, fine-grained poorly bedded and jointed rocks of high purity. The limestone flora

of Borneo is poorly-known and shows high endemism (Anderson, 1965; Kiew, 1991).

A total of 186 species of amphibians has been recorded from Malaysia (Berry, 1975; Inger and Stuebing, 1997; Das, 2002). When the first systematic review of the amphibians of Borneo was published about 37 years ago (Inger, 1966), 92 species were recorded. This figure has increased to 155 at present, of which 94 are endemic, and since the 1990s alone, 18 new species have been discovered (Inger and Stuebing, 1997; Stuebing and Wong, 2001; Das and Haas, 2003). Bornean anurans belong to six families: Bombinatoridae, Megophryidae, Bufonidae, Microhylidae, Ranidae and Rhacophoridae. All these families are widely distributed in south-east Asia except for the Bombinatoridae (only known to co-occur in the southern islands of the Philippines). Within Borneo, at least 155 species are known to occur, of which 93 are endemic. Nineteen of these are known only from the type series, emphasizing the rarity of some species and/or lack of surveys. The high endemism of the Bornean frog fauna is attributable to its isolation from mainland south-east Asia for at least five million years (Hall, 1996, 1998; Voris, 2000).

Compared to the amphibian fauna, research on Bornean reptiles has been rather limited. The fundamental review on the island's reptiles is that of De Rooij (1915, 1917). The snake checklist was subsequently revised by De Haas (1950) and Stuebing and Inger (1999). At present, at least 154 species of snakes from 10 families have been recorded from Borneo, of which about a third are endemic to Borneo (Stuebing and Inger, 1999). A recent work on the Bornean lizards is a checklist of the Sabah fauna by Tan (1993), and a field guide on lizards of Borneo (Das, 2004). In all, 109 species of lizards (in 35 genera from nine families) are now known from Borneo. The native non-marine turtle fauna of Borneo includes 11 species in as many genera and three families (Lim and Das, 1999). None of the species are considered endemic at the present time, although systematic knowledge of some populations require attention, including the batagurine genus *Cyclemys* and the trionychids *Amyda cartilaginea* and *Dogania subplana*.

This paper reports the results of an inventory of herpetofauna diversity conducted in the Bau Limestone Area, south-western Sarawak, Malaysia. The region is characterised by limestone outcrops and caves, although there are no indications of early human settlements as in the Niah Caves (Harrison, 1964; Eaton, 1967). The rocks of the Bau Limestone Area are whitish to grey in colour, of smooth texture, are of marine origin, and ca. 120 million years B.P. (Gorrie, 1966). The cave ecosystem is unique and supports a specialized cave fauna, including bats, swiftlets and several species of invertebrates (MOSTE, 1997).