

Species diversity, elevational distribution and reproductive modes in an amphibian community at the Matang Range, Sarawak (Borneo)

INDRANEIL DAS¹, ANDRÉ JANKOWSKI², MOHD. IQBAL B. MAKMOR³ & ALEXANDER HAAS²

¹Institute of Biodiversity and Environmental Conservation, Universiti Malaysia Sarawak, 94300, Kota Samarahan, Sarawak, Malaysia. E-mail: idas@ibec.unimas.my.

²Biozentrum Grindel und Zoologisches Museum, Universität Hamburg, Martin-Luther-King-Platz 3, 20146 Hamburg, Germany.

³Department of Zoology, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300, Kota Samarahan, Sarawak, Malaysia.

ABSTRACT. – We present an inventory of the amphibian fauna of the Matang Range, including Kubah National Park and the Matang Wildlife Centre areas of western Sarawak, East Malaysia (Borneo). A total of 55 species is reported, including 53 Anura and two Gymnophiona. Relative abundance and diversity of anuran amphibians was also examined along an elevational transect. The transect was divided into four altitudinal bands of < 200 m, 201-400 m, 401-600 m, and 601-800 m elevations, all coinciding with mixed dipterocarp forests. Relative abundance and species diversity decreased with elevation in general and was the highest below 200 m. Nine distinct reproductive modes are shown by the fauna, the most common being Mode 1 (eggs and feeding tadpoles in lentic water, with 12 species) and Mode 2 (eggs and feeding tadpoles in lotic water, with 19 species). Variation in reproductive modes shown by the anuran amphibian fauna at Matang is suspected to be the causal reason for the high regional species richness, helping reduce competition via resource partitioning.

KEYWORDS: Amphibia, Matang Range, Sarawak, Malaysia, Borneo, biodiversity, species turnover, elevation, reproductive modes.

Introduction

The Matang Range (Figs 1-2) rises about 22 km to the north-west of the city of Kuching, and includes two protected areas– Kubah National Park (Park Headquarters at 01°36'41.7"N, 110°11'47.1"E) and the Matang Wildlife Centre (Park Headquarters at 01°36'33.8"N, 110°09'35.3"E). The summit of this massif, Gunung Serapi, is 911 m asl. The range is the primary catchment area for Sungei (= river) Rayu, and consists of sand and mud deposited alluvium, along fairly steep terrain, with streams and drains on the flanks, the altitude under protected areas lying between 20-777 m asl. The summit region lies within the jurisdiction of Telecom Malaysia. Vegetation represented includes mixed dipterocarp forest and *kerangas* (Bornean heath forest). An account of the location, vegetation and geology of the area can be found in HAZEBROEK & BIN A. MORSHIDI (2000).