

Phylogenetic Relationships of Fruit Bats (Family: Pteropodidae) in Malaysia Inferred from partial mtDNA Cytochrome *b* gene

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Abstract

The taxonomic relationships of the Old World fruit bat family, Pteropodinae, by Anderson (1912) using morphological characters have been challenged by several authors. Previous studies using mitochondrial DNA (mtDNA) found major disagreement between morphology and molecular data in inferring the phylogeny of the fruit bats. Fifty-eight samples from 14 species of the Malaysian fruit bats (Family: Pteropodidae) was used in this study to examine on the phylogenetic relationship between species of fruit bats using 395 base pairs of partial mtDNA cytochrome *b* (*cyt b*) gene. Our phylogenetic analysis using neighbour-joining and maximum parsimony methods failed to support the monophyly of both the rousettine and cynopterine groups of the Subfamily Pteropodinae.

Keywords: Pteropodinae, mitochondrial DNA, phylogeny, Malaysia

1.0 Introduction

Bats are the members of the Order Chiroptera is widely distributed and the second most numerous groups after rodents in the world [1]. Chiroptera is divided into two distinct suborders, Megachiroptera and Microchiroptera, consist of 188 modern genera and about 977 modern species [2]

Megachiroptera includes all frugivorous bats, feeding on fruits, flower, nectar and pollen, while Microchiroptera consists of insects eating and carnivorous species bats [1, 3, 4]. According to Nowak (1994), the suborder of Megachiroptera consists of only one family, the Pteropodinae, with 42 genera and 166 species recorded worldwide. Pteropodids consist of all flying foxes and Old World fruit bats which are further divided into four subfamilies, namely, the diverse subfamily Pteropodinae, subfamily Macroglossinae (which consist of six genera of blossom bats, dawn bats, long-tongued fruit bats and relatives), the aberrant subfamily Harpyionycterinae, and the subfamily Nyctimeninae [2]. The Malaysia pteropodids consist the subfamily Pteropodinae, which are specialized fruit and flower eating genera and the subfamily Macroglossinae, which contains the genera that are specialised on diet of pollen and nectar [2].

The classical taxonomy by Andersen (1912) had categorised the subfamily Pteropodinae into three sections, namely, rousettine, epomophorine and cynopterine; and in the subfamily

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