Tropical Natural History 12(1): 29-41, April 2012

Preliminary Morphometric Analysis of *Aethalops aequalis* Populations in Sabah and Sarawak, Malaysian Borneo

R. C. T. TINGGA[1,2,*] AND M. T. ABDULLAH[2]

[1]*Centre for Pre-University Studies, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, MALAYSIA.*
[2]*Molecular Ecology Laboratory, Department of Zoology, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, MALAYSIA*
* Corresponding author. E-mail: rchaya84@gmail.com
Received: 28 July 2011; Accepted: 3 November 2011

ABSTRACT.– ***Aethalops aequalis*** **was previously recorded as a subspecies of** ***A. alecto*** **in Borneo. They are difficult to distinguish by external morphology as Malaysian** ***Aethalops*** **species are similar in size. The objective of this study was to characterize the morphological differences within the Malaysian** ***A. aequalis*** **populations based upon the evaluation of seven selected populations in Borneo. To this end, 11 skull and 11 dental characters were examined and analyzed using SPSS software. Six of these characters were found to be polymorphic across populations, with CM1 being the strongest character in most of the extracted functions followed by IM1, both of which are dental characters that relate to the lower jaw length. Character CM1 was generally shorter in most of the Southwest Sarawak populations compared to the Northeast Sarawak and Sabah populations.** ***Aethalops aequalis*** **from Sabah and Sarawak possessed a single skull morphotype and mountain isolation is, or has not yet been a sufficient barrier to lead to morphological divergence. The body and skull sizes were not affected by altitude or elevations, with** ***A. aequalis*** **possessing a single morphotype in Malaysian Borneo. In conclusion, little morphological variation was detected within and among the different geographical populations of** ***A. aequalis*** **in Sabah and Sarawak. The few differences found are likely to have arisen via natural selection driven adaptation to the new environment.**

KEY WORDS: Morphometric, ***Aethalops aequalis*****, Malaysian Borneo, skull, dental, single morphotype**

INTRODUCTION

Aethalops aequalis, or the Bornean pigmy fruit bat, is endemic to mountaintops in Borneo and is found at elevations of more than 1000 m above seal level (Kitchener et al., 1990). *Aethalops aequalis* differs morphologically from *A. alecto*, although it was previously classified as a subspecies of *A. alecto* (see Faisal et al., 2008a). However, the two species are difficult to differentiate from each other by observation of the external morphology alone, especially for specimens from Malaysia as both of them are very similar in size. *Aethalops aequalis* is also easily confused with the indigenous sister genus species, *Chironax melanocephalus*. The most obvious visible character to distinguish between C. *melanocephalus* and *A. aequalis* is that *A. aequalis* has a single pair of lower incisors whilst *C. melanocephalus* has two pairs.

Aethalops aequalis are endemic to Borneo Island (Kitchener et al., 1993; Maharadatunkamsi and Zein, 2006) and are widely distributed across the Malaysia Borneo region (Faisal et al., 2008a; Tingga, 2010). The difference in the abundance of *A. aequalis* between moun-tains ranges is most probably due to the differences in food resources. Indeed, food abundance, or the availability of specific food items, has been suggested to be one of the important factors limiting the species diversity of local fruit