

SHORT COMMUNICATION

Species Diversity of Fruit-feeding Butterflies (Lepidoptera: Nymphalidae) in Adis Buan, Bau, Sarawak

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ABSTRACT

Species diversity of nymphalid butterflies is one of the most studied topics as the nymphalids are easily sampled and identified. Ten days of field sampling; five continuous days in two sampling periods, were conducted in Adis Buan, Bau. By using 20 baited traps and two aerial nets, 186 individuals representing 36 species of nymphalid butterfly were recorded. The most diverse subfamily was Satyrinae (H' : 2.399) and the most abundant species was *Mycalesis anapita fucentia* with a total of 48 individuals. Satyrinae was also recorded with the highest species richness between subfamilies comprising 24 species of total butterfly sampled which could probably due to their unique characteristic as the slow flying butterfly and being attracted to the shady areas. Shannon diversity index revealed that the diversity index of nymphalid butterfly collected in November 2018 was significantly higher than that in January 2019. In this study, documentation on nymphalid butterfly in heath forest was conducted but further documentation would be recommended as there is still lack of previous studies especially in heath forest.

Keywords: aerial net, baited trap, heath forest, nymphalids, species diversity

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In modern studies, butterfly is the most common taxonomically studied (Kumar *et al.*, 2017) especially on species diversity. This may be due to their morphology that is varied in colour pattern and their characteristic as a good biological indicator to the ecosystem (Pandit *et al.*, 2018). The previous study conducted by Pawar and Deshpande (2016) concluded that the diversity of butterfly depends on the adaptability of a species to microhabitat and availability of host plant. According to Pandit *et al.* (2018), species diversity of butterfly often influenced by factors such as rainfall, wind speed, temperature and the availability of host plants.

Nymphalid butterfly is one of the most dominant families of butterfly and easily sampled using baited trap and comprises of seven subfamilies which are Danainae, Satyrinae, Nymphalinae, Libytheinae, Amathusiinae, Charaxinae and Apaturinae (Abang, 2006). Nymphalidae is also known as fruit-feeding butterfly because they feed on fruits such as rotten pineapple, banana, honeydew, tree sap and many

more. An unique characteristic of Nymphalidae is they have a reduced foreleg and only use two pairs of leg for walking (Wolfe *et al.*, 2011). Other than that, some of the subfamilies of Nymphalidae have distinctive characteristics including distinctive eyespots, ringlets, unpleasant juices to attack enemies and fast fliers (Abang, 2006). According to Ghazanfar *et al.* (2016), lepidopteran especially butterflies have many important values in economy, education and ecosystem functioning. Their role as a pollinating agent in most agricultural areas has contributed to economic values. A complete life cycle of butterflies also gives a proper understanding on the developmental stages in most insects as they undergo a complete metamorphosis starting from the eggs, larvae, and pupa until they become an adult butterfly. Butterfly diversity has also been greatly affected by climate change (Menéndez *et al.*, 2007).

Recent studies on species diversity of butterfly were mainly conducted in mixed dipterocarp forest, and there is still lack of published studies