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BUTTERFLIES

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ABSTRACT

Study on butterflies was carried out at 18 hills during the preliminary survey and four selected sites during the comprehensive study in the Bau Limestone Area. The three-man-day sampling method using telescopic aerial nets was used for this purpose. In total, 194 species and 779 individuals from five families were collected. Nymphalidae with 100 species (51.8% of the total species) represented the most diverse butterfly family from the study area. The other families, namely Lycaenidae, Hesperidae, Papilionidae and Pieridae were represented by 45, 18, 17 and 14 species, respectively. The most abundant butterfly species in the Bau Limestone Area was *Cupha erymanthis* (Nymphalidae), represented by 39 individuals. This was followed by *Gandaca harina* (Pieridae), *Ideopsis vulgaris* (Nymphalidae) and *Terinos clarrissa* (Nymphalidae), which were represented by 26, 24 and 22 individuals, respectively. The protected Rajah Brooke's Birdwing, *Trogonoptera brookiana*, could be considered as very rare in the Bau Limestone Area as only one individual was recorded throughout this study. Site B (Gunung Aup, Gunung Poing and Gunung Stulang), representing the less disturbed site in the Bau Limestone Area, had the highest number of species as well as individuals during the comprehensive study.

Keywords: limestone, butterflies, Bau, Sarawak

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INTRODUCTION

Butterflies are highly dependent on particular host plants during the larval stage. The adults play an important role as pollinators. They are sensitive to changes in temperature and light levels (Kirton, 1991; Warren, 2001). Therefore, changes in their geographical distribution and population are indicators of healthy or unhealthy ecosystem (Otsuka, 2001). They are fairly

diverse, day flying, conspicuous and widespread (Warren, 2001). Compared with other insect groups, butterfly is taxonomically well known (Kirton, 1991; Warren, 2001). They are also high in aesthetic value, and people care about their survival more than any other insect group which makes them important in any conservation project (Chey, 2000).

A study on butterflies in limestone areas of Sarawak was done by Holloway (1984) in Gunung Mulu National Park during the Royal Geographical Society Mulu Expedition. His study however is not directly comparable as it was not focused on limestone area only but combined with other habitats such as mixed dipterocarp, alluvial and kerangas forests. A total of 276 species was recorded from the Gunung Mulu National Park over five-month study. Other than Holloway (1984) no other study was conducted on butterflies in limestone areas of Sarawak. Thus, it was the aim of this study to describe butterfly species diversity and composition in limestone areas particularly in the Bau Limestone Area. The effect of disturbed habitat on butterfly diversity was also considered during the present study.

MATERIALS AND METHODS

Study on butterflies was carried out from September 2001 to November 2002, in the Bau Limestone Area, Sarawak, Malaysia. Two phases of assessments, which included preliminary survey and comprehensive study, were conducted for this purpose. The preliminary survey was carried out from 22 September 2001 until 12 April 2002 with the aim to obtain baseline data on the biodiversity of the area. Eighteen hills of the Bau Limestone Area were surveyed during this phase, namely Gunung Kawa, Gunung Meraja, Gunung Aup, Gunung Poing, Gunung Stulang, Gunung Podam, Gunung Batu Payong, Gunung Apin, Gunung Tai Ton, Gunung Krian, Gunung Pambor, Gunung Tongga, Gunung Ropih, Gunung Batu, Gunung Doya, Gunung Jebong, Gunung Tabai and Gunung Lanyang. Sampling was carried out for three continuous days at each hill during the preliminary survey.

Comprehensive study was conducted at four selected areas – Site A (Gunung Kawa, Gunung Meraja and Gunung Ropih); Site B (Gunung Aup, Gunung Poing and Gunung Stulang), located further southwest from the other Bau Limestone Areas; Site C (Gunung Doya); and Site D (Gunung Tabai, Gunung Apin and Gunung Umut). The four sites were selected from the preliminary study based on their high flora and fauna diversity, easy to access, and representative of the scattered Bau Limestone Area. The comprehensive study was conducted from 6 May 2002 until 1 November