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THE BUTTERFLIES (LEPIDOPTERA: RHOPALOCERA) RECORDED IN AND AROUND THE SIME DARBY OIL PLANTATION PROPERTIES IN SABAH, MALAYSIA

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ABSTRACT

A total of 61 species belonging to 37 genera and five families of butterflies were recorded from two oil palm plantation of Sime Darby Bhd near Tawau, Sabah, Malaysia and their surrounding areas. Of these species, one (*Appias libythea*) is a new record for Sabah and Borneo.

Key words: Butterfly, Lepidoptera, new record, Sabah, Borneo, Malaysia

ABSTRAK

Sejumlah 61 spesies daripada 37 genera dan lima famili kupu-kupu telah direkodkan dari dua lading kelapa sawit Sime Darby Bhd di

tawau. Sabah, Malaysia dan sekitarnya. Satu spesies, (*Appias libythea*) telah berjaya direkodkan buat pertama kalinya di Sabah dan Borneo.

Kata kunci: Kupu-kupu, Lepidoptera, rekod baru, Sabah, Borneo, Malaysia

INTRODUCTION

Very few studies have examined biodiversity across landscapes especially monoculture plantations. This includes diversity patterns of well known taxa such as birds. We are mostly wholly ignorant of the diversity patterns of lesser-known taxa (i.e. insects). The objective of this work was to assess the diversity of butterflies in an oil-palm plantation in Sabah, Malaysia. The butterfly inventory work was carried out as part of a biodiversity assessment within oil palm plantation properties of Sime Darby Bhd in two sites i.e. Kunak and Tawau, Sabah, Malaysia. This work would provides a baseline data on the butterfly fauna of the areas as studies on butterfly's communities in plantation areas in general and in Sime Darby's properties in Sabah in particular, have never been carried out.

METHODS

Samplings were made around the Tasik Impian Golf Resort and trails inside the plantations in Mostyn and Tiger Hill and several other areas in Kunak, Tawau, Sabah, Malaysia using aerial net and baited traps. Sampling using aerial net was carried out daily from 30 Jan to 10 February 2008 (0900 to 1600 h) while baited traps was following Owen (1971) which was improvised by Mohd-Fairus (2000). Each trap was baited using decaying and overripe bananas. When collection was impossible due to difficulties in the terrain, vegetation cover and the nature in movements of certain species, observation of species positively identifiable on the wings were included in the list (Table 1).

RESULTS AND DISCUSSION

A total of 61 species from 37 genera and five families (Papilionidae, Pieridae, Nymphalidae, Lycaenidae and Hesperiidae) were collected and/or observed (Table 1). Butterflies from the families of Lycaenidae and Hesperiidae were not well collected due to difficulties in capturing them.

Most of the butterflies collected were characteristics to the urban and secondary growth environment with satyrinae and pierids being the dominant groups (Eliot, 1992; Otsuka, 2001). The Palm King (*Amathusia phiddipus*), the largest member in the genus *Amathusia* was a common sight. The Golden birdwing, *Troides amphrysus* on the other hand was only observed once near Kunak hotsprings during the collection work.

Another interesting feature of the area was that the butterflies from the genus *Elymnias*, which could be seen flying low near the ground. *Elymnias* are generally rare butterflies but to observed congregation of them possibly indicate ample resources for their larvae (i.e. food plants) (Eliot, 1992). These butterflies, together with members of the genus *Amathusia* feed on the leaves of oil-palm.

One unexpected discovery was *Appias libythea*, a common species in peninsula Malaysia but has been not reported from Borneo (Eliot, 1992). The discovery of this species here in Kunak (Mostyn Plantation) is a new distributional record for this species. This has increased the total number of Bornean *Appias* butterflies to 10 species (Otsuka, 2001).

CONCLUSION

Despite the low number of species collected in both areas e.g. in comparison to Tabin Wildlife Reserve (Mohd-Fairus et al., 1999) and in Brunei's Kuala Belalong (Orr & Hauser, 1996) this preliminary work is undoubtedly valuable to those who are interested in protecting and managing the area. The outcome of the preliminary work carried out here was more than expected (with one new record for Sabah and Borneo) and future work in the area will probably unveil new records. For areas that have

been intensively cultivated with industrial crops on a large scale, opportunities to maintain a certain set of faunal diversity still remain; this could be enhanced by creating suitable habitats. The existence of forest reserves close to these areas ensures the availability of refuge and population sources.

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TABLE 1. A list of butterflies recorded at Sime Darby plantation, Sabah, Malaysia

No.	Family	Spesies	Mostyn	Kunak
1	Papilionidae	*Troides amphrysus*	0	+
2	Papilionidae	*Pachliopta aristolochiae*	+	0
3	Papilionidae	*Papilio demoleus*	+	+
4	Papilionidae	*Papilio helenus*	+	0
5	Papilionidae	*Papilio memnon*	+	+
6	Papilionidae	*Papilio nephelus*	+	0
7	Papilionidae	*Graphium Agamemnon*	+	0
8	Papilionidae	*Graphium sarpedon*	+	+
9	Papilionidae	*Graphium delessertii*	0	+
10	Papilionidae	*Graphium antiphates*	0	+
11	Pieridae	*Eurema nicevillei*	+	0
12	Pieridae	*Eurema blanda*	0	+
13	Pieridae	*Eurema hecabe*	+	+
14	Pieridae	*Appias nesaea*	+	0
15	**Pieridae**	***Appias libythea***	+	+
16	Pieridae	*Leptosia nina*	+	0
17	Pieridae	*Catopsilia Scylla*	+	+
18	Pieridae	*Catopsilia Pomona*	+	+
19	Nymphalidae	*Danaus genutia*	+	0
20	Nymphalidae	*Euploae leucostictos*	+	0
21	Nymphalidae	*Euploea mulciber*	+	0
22	Nymphalidae	*Idea stolli*	+	0
23	Nymphalidae	*Parantica agleoides*	+	0
24	Nymphalidae	*Parantica aspasia*	+	+
25	Nymphalidae	*Amathusia phidippus*	+	0
26	Nymphalidae	*Discophora necho*	+	0
27	Nymphalidae	*Elymnias nesnea*	+	0
28	Nymphalidae	*Elymnias panthera*	+	+
29	Nymphalidae	*Faunis stomphax*	0	+
30	Nymphalidae	*Melanitis leda*	+	+
31	Nymphalidae	*Mycalesis anapita*	+	+
32	Nymphalidae	*Mycalesis horisfieldi*	+	0

Table 1 continue…

...Table 1 continued

33	Nymphalidae	*Mycalesis mineus*	0	+
34	Nymphalidae	*Mycalesis orseis*	+	0
35	Nymphalidae	*Ragadia makuta*	+	0
36	Nymphalidae	*Ypthima baldus*	+	0
37	Nymphalidae	*Ypthima fasciata*	+	+
38	Nymphalidae	*Ypthima pandocus*	+	0
39	Nymphalidae	*Athyma nefte*	0	+
40	Nymphalidae	*Cupha erymanthis*	0	+
41	Nymphalidae	*Doleschallia bisaltide*	0	+
42	Nymphalidae	*Dophla evelina*	+	0
43	Nymphalidae	*Hypolimnas anomala*	+	0
44	Nymphalidae	*Hypolimnas holina*	+	0
45	Nymphalidae	*Junonia iphita*	0	+
46	Nymphalidae	*Neptis hylas*	0	+
47	Nymphalidae	*Neptis omeroda*	0	+
48	Nymphalidae	*Vindula dejone*	0	+
49	Lycaenidae	*Nacaduba sp.1*	+	0
50	Lycaenidae	*Nacaduba sp.2*	0	+
51	Lycaenidae	*Lampides bocticus*	0	+
52	Lycaenidae	*Jamides caeruleus*	0	+
53	Lycaenidae	*Jamides sp.2*	0	+
54	Lycaenidae	*Jamides sp.3*	0	+
55	Lycaenidae	*Rapala varuna*	0	+
56	Lycaenidae	*Zizina otis*	0	+
57	Lycaenidae	*Miletus sp 1*	0	+
58	Lycaenidae	*Miletus sp.2*	+	0
59	Hesperiidae	*Tagiades japetus*	0	+
60	Hesperiidae	*Koruthaialos sp*	+	0
61	Hesperiidae	*Notocrypta sp*	+	0
	TOTAL		**39**	**34**

[1] *Appias libythea* is new record for Sabah and Borneo.