SEASONAL OCCURRENCE OF SOME BUTTERFLY SPECIES IN AHLON ENVIRONS, MONYWA TOWNSHIP

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Abstract

A total number on the collection of 1611 individuals of butterfly species belonging to 42 butterfly species and 25 genera representing four families of order Lepidoptera were recorded from Ahlon environs in Monywa Township from December, 2017 to September, 2018.Altogether 884 individuals with 42 butterfly species in wet season, 333 individuals with 22 butterfly species in cool season, 394 individuals with 30 butterfly species in hot season were recorded from Ahlon environs. Among them, *Cepora nerissa*, *Appias libythea*, *Ixias pyrene*, *Catopsilia pomona*, *C. pyranthe*, *Danaus chrysippus*, *Junonia lemoniass* and *Eurema hecabe* were found as the most abundance butterfly species. Pieridae and Nymphalidae species were recorded as dominant families in this area.

Keywords: Butterflies, abundance, and seasonal occurrences

Introduction

Insects are found in all types of environments and they occupy little more than two thirds of the known species of animal in the world. The butterflies and moths belong to the order Lepidoptera within the class Insecta. The butterflies are most beautiful, attracting individual for humans. In term of indicator organisms for biodiversity studies on butterflies is the excellent choice as they are common almost everywhere attractive and easy to observe. The butterfly diversity is high in the tropic compared to temperate regions of the world (Gowda *et al*., 2011).

The use of butterflies as indicator species as biological measure of ecosystem health motivates the quest to determine the best data collection in methods and model of population dynamics to aid in conservation and management of butterflies (Thomas, 2005). Life of butterflies mainly depends upon the all plants and water. They distribute geographically and seasonally (Scudder *et al*., 2007).

The Myanmar weather is divided into cool season (October to February), hot season (March to May), and wet season (June to September). There are more butterflies in wet and cold seasons than those of dry season in Ahlon environs. This paper investigated the butterfly species found in Ahlon environs and related the seasonal abundance of butterfly in nature.

Materials and Methods

Study site and study period

The butterfly specimens were collected from two study sites of Ahlon environs 11.27 km away from Monywa. Ahlon area is located of Latitude 20° 55' 0.8" N and Longitude 95° 14' 35.5" E. Site I is located beside the railway road of Ye U. Site II is situated near Chindwin Bridge (Plate 1).

Field method

Data collection was carried out in two study sites. Butterflies were collected by using transect method. A transect line was dawn in measurements 800 m in length with 5m on either

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side. Observation of butterflies was made walking along the transect route at a constant place according to Pollard, (1977). The collection of butterflies was done twice a month during day time at 7:30 to 11:00 am because they are lovers of sunshine.

Identification

The butterfly specimens were identified and classified according to Binghan (1907), Pinratana (1977-1983), Corbet (1992), Borror *et al.*, (1992) and Kinyon (2003).

Analysis of the data

The collected data were analyzed as following;

$$\text{Relative abundance} = \frac{\text{no.of individuals of a species}}{\text{Total no.of individuals of all the spec ies in a particular site}}$$

Uncommon (uC) = having relative abundance less than 0.01

Common (C) = having relative abundance greater than equal to 0.01 and less than 0.05

Very common (vC) = having relative abundance equal to 0.05 and above (Bisht, *et al.*, 2004)

Plate 1 Location map of study area

Result and Discussion

A total number of butterfly species belonging to 42 butterfly species and 25 genera under four families of order Lepidoptera were recorded from Ahlon environs in Monywa Township.

Table 1 Monthly abundance of butterflies studied in Ahlon Environs (Site I and site II), Monywa Township

Species	Cool season			Hot season			Wet season			Total
	Dec	Jan	Feb	March	April	May	June	July	Aug	
Papilio polytes romulus	3	1	1	0	0	3	5	2	3	18
P. demoleus malayanus	4	4	7	0	1	2	8	5	10	41
G. agameman	3	3	2	5	0	0	0	2	4	19
Delias pasithoe parthenope	1	0	0	2	0	0	3	0	4	10
D. descombesi eranthos	0	0	0	4	0	0	1	0	2	7
Leptosia nina nina	10	5	3	8	10	3	5	10	10	64
Cepora nerissa phryne	0	0	0	0	0	0	0	1	2	3
Cepora nerissa dapha	12	6	0	10	0	3	17	20	22	90

Species	**Cool season**			**Hot season**			**Wet season**			**Total**
	Dec	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	
Appias lyncida	0	0	0	0	0	0	7	4	2	13
Appias libytheca olferna	10	10	10	22	10	10	25	25	20	142
Ixias pyrene verna	15	6	12	16	7	0	15	14	10	95
Catopsilla pomona crocale	0	0	0	0	0	0	8	8	4	20
C. pomona pomana	13	6	0	16	0	20	25	19	17	116
C. pyranthe pyranthe	12	6	0	0	6	4	15	15	15	73
pareronia anais	1	1	1	0	1	0	2	1	0	7
Eurema simulatrix	0	0	0	0	0	0	10	3	12	25
E. hecabea	17	8	4	36	0	0	30	25	35	155
Danaus chrysippus	12	6	11	10	8	5	10	10	15	87
D. genutia	5	4	6	5	8	11	7	10	6	62
D. limniace	0	0	2	1	0	0	2	0	3	8
Euploea midamus	0	0	0	0	0	0	1	2	0	3
Melanitis leda	0	0	0	3	2	1	1	0	5	12
M. phedima	0	0	0	0	0	0	0	3	2	5
Mycalesis visala	3	0	1	1	0	0	2	5	0	12
M. intermedia	0	0	0	0	3	0	5	7	5	20
Ypthima horsfieldii	0	0	0	0	0	0	6	6	9	21
Acracea terpsicore	18	8	5	0	0	10	11	12	8	72
Ariadne ariadne	0	0	0	5	0	7	5	1	2	20
Cethosia cyane	0	0	0	3	0	0	0	3	2	8
C. perthesilea	0	0	0	2	0	3	2	1	0	8
Junonia atlites	0	0	0	0	4	0	2	0	3	9
J. lemonias	7	8	2	18	2	10	14	12	12	85
J. almana	0	0	0	0	0	0	3	2	5	10
J. hierta	0	0	0	0	0	0	1	2	4	7
J. orithya	0	0	0	0	0	0	5	4	7	16
Hypolimnas misippus	2	2	0	0	3	0	5	3	2	17
H. bolina	0	0	0	0	0	0	7	10	5	22
Neptis hylas	3	3	0	6	9	2	0	4	7	34
Arhopola muta	0	8	1	4	4	6	9	5	10	47
Castalius rosimon	4	3	0	12	2	5	10	11	6	53
Chilade pandava	0	0	0	0	0	0	8	5	4	17
Chilades pandava	8	4	0	8	10	2	14	7	5	58

Table 2 Abundance of butterflies found in Site I and Site II, Ahlon Environs

Species	Sites		Individuals	RA	Abundance Code
	I	II			
Papilio polytes romulus		18	18	0.011	C
P. demoleus malayanus		41	41	0.025	C
G. agameman		19	19	0.011	C
Delias pasithoe parthenope		10	10	0.006	uC
D. descombesi eranthos		7	7	0.004	uC
Leptosia nina nina	35	29	64	0.039	C
Cepora nerissa phryne		3	3	0.001	uC
C. nerissa dapha	54	36	90	0.055	vC
Appias lyncida	10	3	13	0.008	uC
A. libytheca olferna	71	71	142	0.088	vC
Ixias pyrene verna	59	36	95	0.058	vC
Catopsilla pomona crocale	11	9	20	0.012	C
C. pomona pomana	66	50	116	0.072	vC
C. pyranthe pyranthe	44	29	73	0.045	vC
pareronia anais		7	7	0.004	uC
Eurema simulatrix tecmessa	18	7	25	0.015	C
E. hecabea	84	71	155	0.096	vC
Danaus chrysippus	49	38	87	0.054	vC
D. genutia genutia	34	28	62	0.038	C
D. limniace limniace		8	8	0.004	uC
Euploea midamus chole		3	3	0.001	uC
Melanitis leda		12	12	0.007	uC
M. phedima ganopati		5	5	0.003	uC
Mycalesis visala		12	12	0.007	uC
M. intermedia		20	20	0.012	C
Ypthima horsfieldii	6	15	21	0.013035	C
Acracea terpsicore	38	34	72	0.044693	C
Ariadne ariadne		20	20	0.012415	C
Cethosia cyane euanthes		8	8	0.004966	uC
C. perthesilea methypsea		8	8	0.004966	uC
Junonia atlites atlites		9	9	0.005587	uC
J. lemonias lemonias	42	43	85	0.052762	vC
J. almana almana		10	10	0.006207	uC
J. hierta hierta		7	7	0.004345	uC
J. orithya ocyale		16	16	0.009932	uC
Hypolimnas misippus		17	17	0.010552	C
Hypolimnas bolina jacintha		22	22	0.013656	C
Neptis hylas	23	11	34	0.021105	C
Arhopola muta maranada	23	24	47	0.029174	C
Castalius rosimon	30	23	53	0.032899	C
Talicada nyseus	7	10	17	0.010552	C
Chilades pandava	30	28	58	0.036002	C
	734	**877**	**1611**		

uC = Uncommon, 16 C = Common, 18 vC = Very Common, 8

Discussion

Butterfly species and the number of individual in Ahlon environs were found change of seasonally. According to the results, 21 species of butterflies in cool season, 30 species of butterflies in hot season and 42 species of butterflies in wet season were recorded in the study area. The high numbers of butterfly species were found in wet season because their feeding plants were most abundant in this season. Among the study species, *Cepora nerissa*, *Appias libythea*, *Ixias pyrene*, *Catopsilia pomona*, *C. pyranthe*, *Danaus chrysippus*, *Eurema hecabe* and *Junonia lemonias* were very common species found in study area. Family Nymphalidae was found as dominant species in study area.

In the present study, the butterfly species of *Appias lyncida*, *Captopsilia pomona*, *Eurema simulatrix*, *Ypthima horsfieldii*, *Talicada nyseus* were not found in cool and hot seasons and the rest species were found in three seasons in Site I. Only 20 butterfly species were found in study area of Site I because the large trees were found in this area.

In the present study of Site II, the butterfly species, *Cepora nerissa dapha*, *Appias lyncida*, *Captosilia pomona*, *Eurema simulatrix*, *Euplooea midamus*, *Melanitis phedima*, *Ypthima horsfieldii*, *Junonia almanac*, *J. hierta*, *j. orithya*, *Hypolimnas bolina*, and *Chilades pandava* were not found in cool and hot seasons. *Delias descombesi*, *Melanitis leda*, *Mycalesis intermedia*, *Ariadne ariadne*, *Cethosia cyane auanthes*, *C. penthesilea methypsea*, and *Junonia atlites atlites* were not found in cool season. The rest butterfly species were found in all seasons. A total number of 42 butterfly species were found in Site II because trees, bushes, flowering plants, and their feeding plants were more abundance in this area.

Butterfly diversity varies with seasons. *Melanitis leda* and *Junonia almana* from family Nymphalidae, wet season butterflies were more active in general than in the dry season. The adult butterflies were spents long period during the dry season (Brakefield and Larsen, 1984).

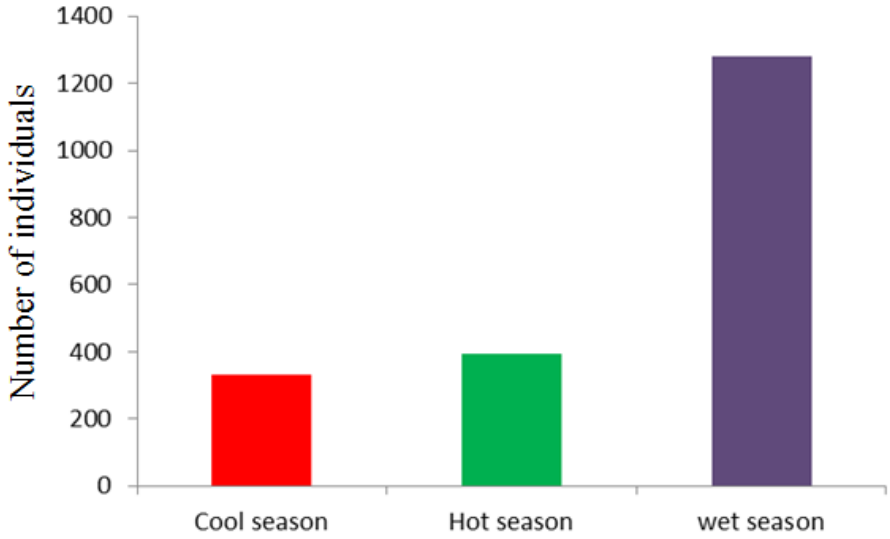

Figure 1 Seasonal occurrence of butterfly species in study area


(A)*Papilio polytes*


(B) *Papilio demoleus*


(C)*Graphium Agamemnon*


(D) Delias pasithoes


(E) *Laptosia nina*


(F)*Cepora nerissa dapha*


(G) *Appias libythea*


(H) *Ixias pyrene*


(I)*Captopsilia pomon*

Plate 1 Recorded butterfly species of families Papilionidae and Peridae


(A) *Pareronia anais*


(B) *Eurema simulatrix*


(C) *Eurema hecabe*


(D) *Danaus chrysippus*


(E) *Danaus limniace*


(F) *Euploea midamus*


(G) *Melanitis leda*


(H) *Mycalesis intermedia*


(I) *Ypthima horsfieldii*


(J) *Acraea terpsicore*


(K) *Ariadne ariadne*


(L) *Cethosia cyane*


(M) *Junonia atlites*


(N) *Junonia lemonias*


(O) *Junonia almana*

Plate 2 Recorded butterfly species of families Pieridae and Nymphalidae

(A) *Hypilimnas*

(B) *Neptis hylas*

(C) *Arhopola muta*

(D) *Castalius rosimon*

(E) *Talicada nyseus*

(F) *Chilades pandava*

Plate 3 Recorded butterfly species of families Nymphalidae and Lycaenidae

Conclusion

Butterfly species were mostly found in the area where many of trees, shrubs and flowering plants were grown. In this area, Butterfly species are more abundance found in wet season than cool and hat seasons because they are sensitive to change in the habitat and climate which influences their distribution and abundance.

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