

DIVERSITY OF BUTTERFLIES (Lepidoptera: Rhopalocera) FROM ARUNAVATI DAM REGION, YAVATMAL, MAHARASHTRA (INDIA)**N.S. Labhsetwar*, N.A. Manwar and D.K. Dabhadkar**

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ABSTRACT

Butterflies are the most taxonomically studied group of insects and are also good indicators of environmental changes. The present work is aimed to study diversity and abundance of Butterflies species from Arunavati Dam region Tq- Digras, Dist-Yavatmal Maharashtra. This study has been carried out for six months from May 2016 to Oct 2016. We found five families of Butterflies and 25 species. Butterflies exhibit difference in diversity at different stations of the desired research area. The most diverse family was Nymphalidae comprising 09 species followed by Pieridae comprising seven species. The least diverse family was Lycaenidae, Papilionidae and Hesperidae comprising of three species each. Species richness (S), Relative abundance (P) and Species diversity was also recorded.

Keywords: Diversity, abundance, Arunavati Dam, Butterfly

1) Introduction

Insects consist of more than half of earth's species diversity (May, 1992). Butterflies are the most evident group among insect fauna on relation of their large size, beautiful colors, flying capability and generally diurnal habit. Butterflies are taxonomically well studied groups and have received a realistic amount of attention throughout the world (Ghazoul, 2002). Together with about 80 percent found in tropical regions, globally there are more than 28,000 species of butterflies recorded. The human crash on the global environment has triggered a crowd extinction incident of importance on a geological time scale and causing prevalent changes in the worldwide distribution of organisms (Chapin et al. 2000; Thomas et al. 2004). They are highly sensitive to changes in the environment and are easily affected by even relatively minor alteration in the habitat, hence they are considered as indicators of environment quality and health of an ecosystem (Nimbalkar, 2018). Because of the function they play in the food chain, butterflies are an important part of biodiversity and ecologically significant (Singh, 2011).

Butterflies are treated as a noteworthy model group in ecology and preservation (Ehrlich and Hanski, 2004). Several native plants and in tropical regions, Butterflies act as a pollinators, at which there is abundance and great diversity of butterflies; also they contribute to growth, development and preservation of flora (Bonebrake et al., 2010). They also have been used as models to supervise chronological changes in plant-insect interactions, because climate change induces phenological divergence between butterflies and their exploited plant species which can produce changes in trophic webs (Parmesan, 2006; Altermatt, 2010; Kocsis and Hufnagel, 2011). The India bearing a diverse topography, climate and vegetation hosts about 1,504 species and only Vidarbha records about 167 species of butterflies belonging to 90 genera representing 5 families (Tiple, 2011). Yet there are no previous records of Diversity of butterflies of Arunavati Dam region, Yavatmal (Maharashtra). We are representing here butterfly diversity of Arunavati Dam region, Yavatmal (Maharashtra), India.

2) Material and Methods

2.1 Study area

Arunavati Dam lies at 20.1313238°N latitudes and 77.7493107°E longitudes in Yavatmal District. Arunavati Dam is a major irrigation project across river Arunavati a tributary of river Penganga in Godavari basin. The dam is located near Digras taluka in Yavatmal district, Maharashtra. The CCA of the project is 25295 hectare and the ultimate irrigation potential of the project is 25155 hectare. The surrounding region of the Dam dry deciduous type forest and is rich in faunal and floral diversity. This study has been carried out for six months from May to Oct 2016.

2.2 Sampling

For better survey and analysis we sighted the area into four regions namely east, west, north and south regions. Diversity at each region was studied. Most of the butterfly species were identified on sight by using the field guides, whereas, some species which could not be identified in the field were collected with the help of an insect collecting net and identified through the handbook by Kehimkar (2008) and standard references such as Wynter Blyth (1957) and Evans (1932).

2.3 Data analysis

The occurrence status was studied and recorded on the basis of number of encounters of the species in the study sites as: Very Rare (VR), Rare (R), Uncommon (UC) and Common (C) (Table 1).

3) Results and Discussion

The faunal survey of the butterflies of Arunavati Dam region has revealed a total of 25 species in 21 genera of 5 families (Table 1). Among the different types of butterflies found here (Figs. 1), family Papilionidae is represented by 03 species, family Pieridae by 07 species, family Nymphalidae by 09 species, family Lycaenidae by 03 species and family Hesperidae is represented by 03 species of butterflies (Table 1). Some of Very Common (VC) species sampled during the study were 08. Some Less Common (LC) species were 11. The Rare (R) species of this region were 07. The Very Rare (VR) species of this region were 02 (Figs. 2). The present study, for the first time ever, aims at Arunavati Dam region. The results calculated so far clearly specify that the overall diversity of Butterflies in this region is quite good. This study reveals that the Butterflies at different regions of the desired area show high diversity. This diversity of butterfly species is may be due to the correlation to their host plants and adult nectar plants.

Table 1: List of butterflies recorded from different families Arunavati Dam region with their status.

S.N.	FAMILY	COMMON NAME OF SPECIES	SCIENTIFIC NAME OF SPECIES	STATUS			
				VC	LC	R	VR
1	NYMPHALIDAE	Tawny Coster	<i>Acraea terpsicore</i> (Fabricius)			+	
2		Plain Tiger	<i>Danaus chrysippus</i> (Linnaeus)	+			
3		Blue Pansy	<i>Junonia orithiya</i> (Linnaeus)		+		
4		Peacock Pansy	<i>Junonia almana</i> (Linnaeus)			+	
5		Lemon Pansy	<i>Junonia lemonias</i> (Linnaeus)			+	
6		Common Leopard	<i>Phalanta phalanta</i> (Drury)			+	
7		Common Crow	<i>Euploea core</i> (Cramer)		+		
8		Blue Tiger	<i>Tirumala limniance</i> (Cramer)		+		
9		Great Eggfly	<i>Hypolimnas bolina</i> (Linnaeus)	+			
10	PIERIDAE	Large Cabbage White	<i>Pieris brassicae</i> (Linnaeus)				+
11		Small Grass Yellow	<i>Eurema brigita</i> (Cramer)	+			
12		Common Emigrant	<i>Catopsilia pomona</i> (Fabricius)		+		

13		Mottled Emigrant	<i>Catopsilia pyranthy</i> (Linnaeus)		+		
14		Common Gull	<i>Cepora nerrisa</i> (Fabricius)		+		
15		Common Jezebel	<i>Delias eucharis</i> (Drury)		+		
16		Three-Spot Grass Yellow	<i>Eurema blanda</i> (Boisduval)	+			
17	HESPERIIDAE	Conjoined Swift	<i>Pelopidas conjuncta</i> (Herrich-Schaffer)				+
18		Straight Swift	<i>Parnara guttata</i> (Bremer & Grey)				+
19		Rice Swift	<i>Borbo cinnara</i> (Wallace)				+
20	LYCAENIDAE	Forget-Me-Not	<i>Catochrysops strabo</i> (Fabricius)	+			
21		Gram Blue	<i>Euchrysops cnejus</i> (Fabricius)		+		
22		Pale Grass Blue	<i>Pseudozizeeria maha</i> (Kollar)	+			
23	PAPILLIONIDAE	Common Yellow Swallowtail	<i>Papilio machaon</i> (Linnaeus)		+		
24		Common Grass Yellow	<i>Eurema hecabe</i> (Linnaeus)	+			
25		Common Mormon	<i>Papilio polytes</i> (Linnaeus)			+	

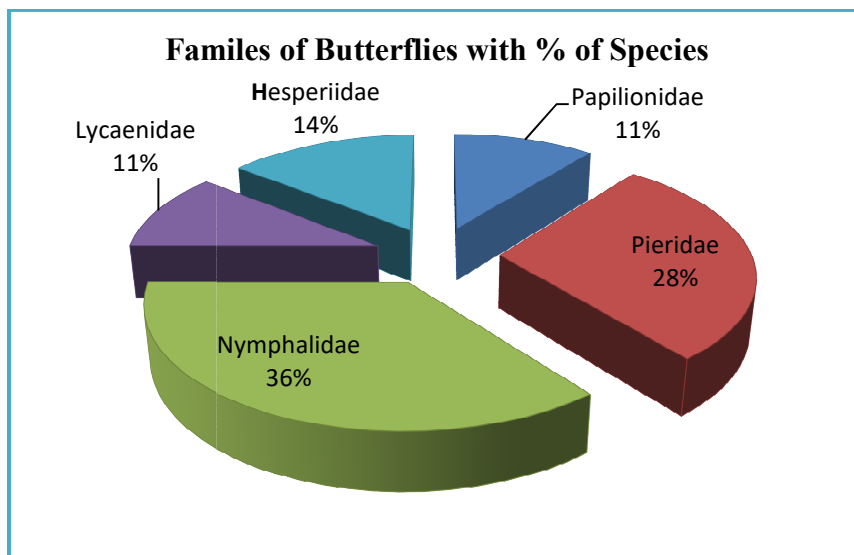


Fig 1: Distribution of Butterfly Families at Arunavati Dam region

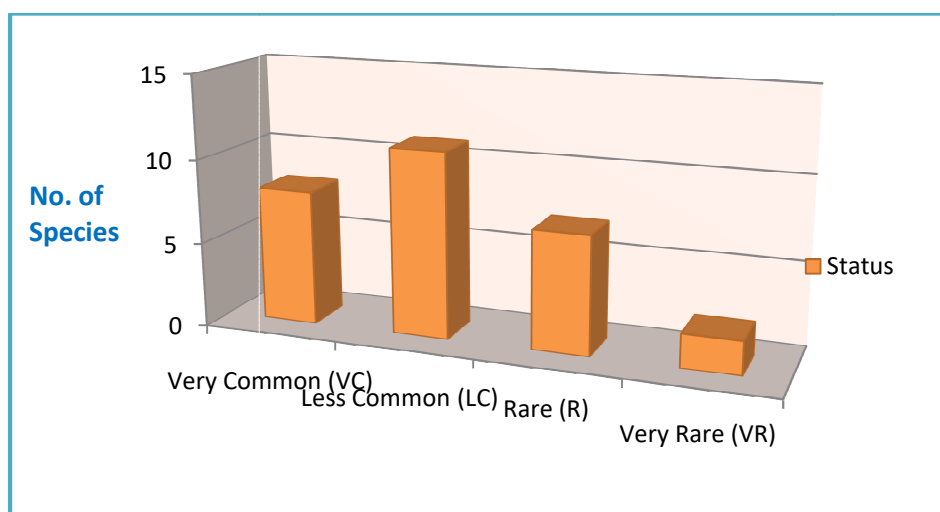


Fig 2: Status of Butterfly species at Arunavati Dam region

4) Conclusion

This study provides the basic data for the butterflies of Arunavati Dam region of Yavatmal district of Maharashtra which will help for additional details work on its distribution, diversity and to identify the potential threats. The study sites had various habitats ranging from natural forest to

agriculture lands and plantation. The butterfly diversity was also varied in these habitats but the pattern of the variation was different. The present study of butterfly diversity is not conclusive and exhaustive and future exploration will be continued to update this checklist.

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