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DIVERSITY OF BUTTERFLY AS AN ENVIRONMENTAL INDICATOR IN MARATHWADA REGION.

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ABSTRACT

Butterflies are taxonomically well studied group of insects and sensitive to change environmental changes in habitats. Butterflies are considered as a great indicator of ecosystems change and to predict various environmental alterations .The survey was conducted to prepare a preliminary checklist of butterflies in Marathwada region. Selected four sites were used in the study area for the surveys of butterflies, a total of 148 individuals and 13 species of butterflies belong to 5 families were recorded. The study area is rich in butterfly diversity and further research could be conducted to obtain more details on butterfly diversity for the conservation.

KEYWORDS: Butterfly, Conservation, Environmental Changes

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INTRODUCTION

Butterflies enhance earth's beauty due to their diverse colors on their wings (Sparks,1997). Due to their beauty and ecological significance butterflies are a well-studied group throughout the world (Ghazoul,2002) Butterflies are a vital part of the ecosystem and they are the ideal population of organisms for exploration of insect phenology because they are relatively conspicuous and are of more interest to humans than most other insects because of their color structure and size which leads to observation and collection (Sparks,1997). Butterflies are good indicators of climatic conditions, seasonal and ecological changes, they can also serve in formulating strategies for conservation. Hence butterflies play a vital role in ecosystem and co-evolutionary relationship between them and plants as well as their lives are interlinked (Ghazanfar et al., 2016). Butterflies are considered an important organism since they are not only a good pollinator (Abaynew et.al. 2018) but also a good indicator of environment quality (Kim, 1993).There is a need for the documentation of butterfly species from some selected Marathwada region, under the issues of seasonal variations. Hence, the present study was undertaken to provide baseline information on the checklist of butterflies and their diversity in the study area.

MATERIALS AND METHODS

Study area

The present study was carried out in the study area: Mantha, Paranda, Dharashiv and Jintur region of Maharashtra, India.

Survey Method and Identifications

The field surveys on butterflies were carried out in the study area. Regular survey were conducted from June to August by visual observation. Butterflies were accessed in the study area Mantha: Nangartas, Hatwan,Gosavi Pangri and Shambhu Mahadev area,.Dharashiv: Khanapur Talav and Hatlaidevi devi Temple.Latitude -18.178719^0, Longitude- 76.005516^0 area, Paranda: Anala (Latitude -18.43294^0, Longitude- 75.431885^0) and Kandari (Latitude -18.398218^0, Longitude- 75.451948^0) area and Jintur : Nemgiri Digamber Jain Temple, Yeldari Dam and Van Udyan Yeldari (Forest Garden). from 9 am to 11 am in the morning by random observations.

Identification of species was done in the form of photographs taken by digital camera: One Plus 70 and Redmi 8. Photographs were taken in both positions (open and closed wings). Colour patterns, sizes and shapes as well as their designs were considered in identification of the species of butterfly. Butterflies were identified by referring to the websites as mentioned in the reference section and Kasambe Raju, 2018. Identification of Butterflies with the help of entomologist expert from Department Of Zoology. Shikshan Maharshi Guruwarya R.G Shinde Mahavidyalaya, Paranda.

RESULTS AND DISCUSSION

In order to understand the checklist of the species of butterfly observed in the study area and results are presented in the table no.1. It is clear from the results given in table 1 that A totally 15 species belonging to six families of butterflies recorded from study area. The Nymphalidae were more dominant family followed by Hesperiidae Lycaenidae, Pieridae, Papilionidae and Uraniidae. Four sites were used in the study area for the surveys of butterflies, a total of 122

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individuals recorded from study area A, 86 individuals recorded from study area B, 88 individuals recorded from study area C and 148 individuals recorded from study area D. Further it is noted that 15 species of butterflies belong to 5 families were recorded. Nymphalidae was the richest family in the study area followed by Hesperiidae Lycaenidae, Pieridae, Papilionidae and Uraniidae recorded in the table.2. The results are in accordance with the findings of (Singh and Chib, 2014) on a preliminary checklist of butterflies that recorded 125 species of butterfly from 78 genera belong to 5 families. Nymphalidae family was described as the highest in the study area. The result is supported by (Bubesh et al., 2012) who observed 50 species of butterfly belong to 5 families. Nymphalidae and Lycaenidae families were the highest number of the species of butterfly in the study area.

Sr. No	Scientific Name	Common Name	Family	Study Area				Local Status
				A	B	C	D	
1	Potanthus Omaha (Evans, 1949)	Lesser dart	Hesperiidae	00	00	00	01	Rare
2	Castalius rosimon (Fabricius, 1775)	Common Pierrot	Lycaenidae	00	00	00	07	Rare
3	Tirumala limniace (Cramer, 1775)	Blue Tiger	Nymphalidae	19	13	07	12	Occa-sional
4	Hypolim-nas bolina (Linnaeus, 1758)	Great eggfly	Nymphalidae	11	11	08	14	Common
5	Junonia lemonias (Linnaeus, 1758)	Lenon pansy	Nymphalidae	00	00	06	06	Common
6	Danaus chrysippus (Linnaeus, 1758)	Plain Tiger	Nymphalidae	26	00	12	11	Common
7	Danaus genutia, (Cramer, 1779)	Stripted Tiger	Nymphalidae	06	08	06	06	Common
8	Hypolim-nasmisip-pus (Linnaeus, 1764)	Danaid eggfly	Nymphalidae	06	09	00	07	Occa-sional
9	Euploea core (Cramer, 1780)	Common Crow	Nymphalidae	00	00	11	00	Common
10	Euploea midamus (Linnaeus, 1758	Blue-spot-ted crow	Nymphalidae	20	20	00	17	Common
11	Papilio polytes (Linnaeus, 1758)	Common Mormon	Papilionidae	00	00	10	04	Common
12	Pinceps demoleus (Linn, 1758)	Lime butterfly	Papilionidae	00	00	03	04	Common
13	Eurema hecabe (Linnaeus, 1758)	Common Grass Yellow	Pieridae	21	25	22	45	Common
14	Catopsilia pomona (Fabricius, 1775)	Common emigrant.	Pieridae	13	00	03	14	Occa-sional
15	Micronia aculeate (Guenee, 1857)	Grey Swallow-tail Moth	Uraniidae	00	00	00	00	Rare
			Total	122	86	88	148	

Study Area: A =Paranda, B=Dharashive, C=Jintur, D=Mantha.

Table 1: Checklist of the species of Butterfly recorded in the study of Area.

CONCLUSION

The present study is a preliminary record of butterfly diversity fromselected Marathwada region. Family Nymphalidae is the most dominant and richest family in the study area followed by, Hesperiidae Lycaenidae, Pieridae, Papilionidae and Uraniidae. Butterflies are considered as ecologically important organisms since these are good pollinator and also good indicator of environmental quality (Brereton et.al. 2010). Hence further studies must be conducted to conserve the diversity and their natural habitat.

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REFERENCE

1. Abaynew J and Emana G. (2018). Diversity of butterfly communities at different altitudes of Menagesha-Suba state forest Ethiopia. Journal of Entomology and Zoology Studies, 6(2):2197-2202.
2. Brereton T, Roy D, Middlebrook, I ,Botham, M and Warren M. (2010). The development of butterfly indicators in the United Kingdom and assessments in 2010. Journal of Insect Conservation, 15:139-15.
3. Bubesh GM, Chalapathi RPV, Srinivas, RD, Sekhar, MS and Madhu BP. 2012. A preliminary observation on butterflies of Seshachlam biosphere reserve, Eastern Ghats Andhra Pradesh, India. World Journal of Zoology, 7(1): 83-89.
4. Ghazanfar M, Malik MF, Hussain M, Iqbal R and Younas M.(2016). Butterflies and their contribution in ecosystem: A review. Journal of Entomology and Zoology Studies, 4(2): 115-118.
5. Ghazoul J. (2002) Impact of logging on the richness and diversity of forest butterflies in a tropical dry forest in Thailand. Biodivers Conserv.11:521-541.
6. Kasambe Raju. 2018. Butterflies of western ghats, E-book, pp. 1-372
7. Kim KC. (1993). Biodiversity, conservation and inventory; why insects matter. Biodiversity and Conservation, 2(3):191-214.
8. Singh IJ and Chib M. 2014. A preliminary checklist of butterflies (Lepidoptera: Rhopalocera) of Mendrelgang, Tsirang district, Bhutan. Journal of Threatened Taxa, 6(5): 5755-5768.
9. Sparks T H, Yates TJ. (1997). The effect of spring temperature on the appearance dates of British butterflies 1883–1993. Ecography: 20:368–374.

Websites for identification

1. Butterflies of India- https://www.ifoundbutterflies.org/
2. Butterfly conservation- https://butterfly-conservation.org/butterflies/identify-a-butterfly?
3. Butterflies identification guide- https://www.discoverlife.org/mp/20q?guide=Butterflies ,https: // owlcation.com/stem/b.