



A preliminary assessment of butterfly diversity from Mantha, district Jalna (M.S), India.

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Abstract

In the present study, butterfly diversity from study area was studied. A total of 148 species of butterflies were recorded from the five study sites, out of which maximum 36 butterflies were observed from Site A (Mantha) followed by site E (Shambhu mahadev). Based on family wise composition of checklist of the species of butterfly, Nymphalidae family was described as the highest number. The study area is rich in butterfly diversity and further research could be conducted to obtain more details on butterfly diversity for the conservation.

INTRODUCTION.

Biodiversity is the total variety of life on the earth. Among insects, butterflies are the most eminent group and they occupy a vital position in biodiversity. Their presence and diversity is considered to be a sign of good condition of any terrestrial biotope (Aluri and Rao, 2002).They are also very sensitive indicators of climatic change (Venkat Raman, 2010).Most of the butterflies are strictly seasonal and they prefer only a particular type of habitat (Kunte, 1997).

Butterflies are very useful to mankind because they help in pollinating the crop plants and other flowering plants (Budrukhar and Deshmukh, 2017).They are potentially useful ecological indicators of urbanization because sensitive to changes in microclimate, temperature (Thomas et al,1998) and extremely important components of the bio-indicators of the world (Chakravarthy et.al., 1997). The abundance and diversity of butterflies depend upon several factors such as availability of host, vegetation, tropical features and larval food plants etc (Jana et.al, 2009).Since butterflies are dependent on these factors, disturbance in any of the above will directly affect their status. (Patil et.al,2017.) documented 19238 species of butterflies in the world (Heppner,1998) Later, (Gaonkar 1996)

reported 1504 species in Indian subcontinent.(D'Abreau,1931) reported about 177 species of butterflies in Central Provinces.(Tiple,2011) recorded a total of 167 species of 90 genera from Vidarbha region. A total of 92 species of butterflies were reported in Gorewada International Biopark situated in Central India (Patil and Shende, 2014).

The aim of current study is to find out the current status of butterflies and to prepare a checklist of butterflies of the above region for the purpose of conservation of butterfly species present in this area.

MATERIALS AND METHODS.

Study area:

The present study was carried out in the Mantha, district Jalna, region of Maharashtra, India. Five sampling sites were selected for the present study viz. Mantha, Nangartas, Hatwan,Gosavi Pangri and Shambhu Mahadev area.

Survey Method.

The field surveys on butterflies were carried out in the study area, two times a week for the period of June month. Butterflies were accessed in the study area from 9 am to 10 am in the morning by random observations. In the site, photographs of the butterflies were taken with mobile camera (One Plus 70 and Redmi 8) for the identification purpose.

Identifications of butterflies.

Butterflies were primarily identified directly in the field with the help of Colour patterns, size and shapes as well as their designs. Identification of Butterflies with the help of entomologist expert from Department Of Zoology. Shikshan Maharshi Guruwarya R.G Shinde Mahavidyalaya, Paranda and relevant available literature described by (Kunte, 2000.,Varshney, 1979., Varshney and Smetacek, 2015). Sometimes we visit the Butterfly of India website.

The checklist of the species of butterfly observed in the study area viz. Mantha, Nangartas, Hatwan,Gosavi Pangri and Shambhu Mahadev is presented in (Table 1and 2). The results showed that a total of 148 individuals and 13 species of butterfly belong to 5 families were recorded in the study area.

Nymphalidae was the richest family in the study area that comprised (07) species of butterfly followed by Pieridae with (02) species, Papilionidae (02) ,Lycaenidae (02) and Hesperidae (02) families were the lowest species indicated in Table 1 and 2. Nymphalidae family was described as the highest in the study area.

RESULTS AND DISCUSSION.

Table 1: Checklist of the species of butterfly recorded in the study area.

Sr.No.	Scientific Name	Number of Individuals					Total
		Site A	Site B	Site C	Site D	Site E	
1	Tirumala limniace (Cramer, 1775)	03	04	01	02	02	12
2	Euploea midamus (Linnaeus,1758)	05	04	02	02	04	17
3	Hypolimnas bolina (Linnaeus, 1758)	03	03	02	01	05	14
4	Danaus chrysippus (Linnaeus,1758)	04	02	02	02	01	11
5	Catopsilia pomona (Fabricius, 1775)	02	02	02	04	04	14
6	Eurema hecabe (Linnaeus, 1758)	10	11	08	06	10	45
7	Hypolimnas misippus (Linnaeus,1764)	01	01	01	02	02	07
8	Danaus genutia, (Cramer, 1779)	02	00	02	02	00	06
9	Pinceps demoleus (Linn, 1758)	01	00	00	02	01	04
10	Junonia lemonias (Linnaeus, 1758)	01	00	01	02	02	06
11	Papilio polytes (Linnaeus, 1758)	01	01	01	00	01	04
12	Castalius rosimon (Fabricius, 1775)	03	01	01	01	01	07
13	Potanthus Omaha (Evans 1949)	00	00	01	00	00	01
		Total= 148					

Site A: Mantha, Site B: Nangartas, Site:C Hatwan, Site:D Gosavi Pangri, Site:E Shambhu Mahadev.

Also this observation is related with the findings of (Charn, 2015) who listed 54 species of butterfly belong to 7 families from the forest strip of Punjab. Nymphalidae family indicated as dominant during the study period with the highest number of the species of butterfly.

The results are in accordance with the findings of (Kanagaraj and Kathirvely, 2018) who recorded and categorized various species of

butterfly as very common (6), common (28), less common (16) and rare (2) respectively. Also similar observation was made by Bora and Meitei (2014) who find out diversity of butterflies in Assam University campus and observed very common (20), common (34), uncommon (29), rare (9) and very rare (4) of the species of butterfly in the study area. (Kunte, 1997).



Photo: Photographs of the butterfly species observed in Mantha, Nangartas, Hatwan, Gosav, Pangri and Shambhu Mahadev area of district Jalna, Maharashtra, India.

Table 2: Local status of butterfly recorded in the study area.

Sr.No	Common Name	Scientific Name	Family	Local Status
1	Blue -spotted crow	<i>Euploea midamus</i> (Linnaeus, 1758)	Nymphalidae	CO
2	Blue Tiger	<i>Tirumala limniace</i> (Cramer, 1775)	Nymphalidae	OO
3	Common emigrant	<i>Catopsilia pomona</i> (Fabricius, 1775)	Pieridae	CO
4	Common Grass Yellow	<i>Eurema hecabe</i> (Linnaeus, 1758)	Pieridae	CO
5	Common Mormon	<i>Papilio polytes</i> (Linnaeus, 1758)	Papilionidae	CO
6	Common Pierrot	<i>Castalius rosimon</i> (Fabricius, 1775)	Lycaenidae	CO
7	Denaid eggfly	<i>Hypolimnas misippus</i> (Linnaeus, 1764)	Nymphalidae	CO
8	Great eggfly	<i>Hypolimnas bolina</i> (Linnaeus, 1758)	Nymphalidae	CO
9	Lime butterfly	<i>Pinceps demoleus</i> (Linn, 1758)	Papilionidae	CO
10	Lenon pansy	<i>Junonia lemonias</i> (Linnaeus, 1758)	Nymphalidae	OO
11	Lesser dart	<i>Potanthus Omaha</i> (Evans 1949)	Hesperiidae	RE
12	Plain Tiger	<i>Danaus chrysippus</i> (Linnaeus, 1758)	Nymphalidae	CO
13	Striped Tiger	<i>Danaus genutia</i> , (Cramer, 1779)	Nymphalidae	CO

R: Rare, O: Occasional, C: Common.

The results calculated so far clearly specify that the overall diversity of Butterflies in this region is quite good. The climatic conditions of Mantha, Nangartas, Hatwan, Gosavi Pangri and Shambhu Mahadev area is favourable for butterfly diversity. This survey is helpful for the documentation and conservation of biological diversity.

CONCLUSION.

The present study is a preliminary record of butterfly diversity from Mantha, Nangartas, Hatwan, Gosavi Pangri and Shambhu Mahadev area of district Jalna, Maharashtra, India. Family Nymphalidae is the most dominant one followed by Pieridae, Papilionidae, Lycaenidae and Hesperidae. Butterflies are considered as ecologically important organisms since these are good pollinator and also good indicator of environmental quality, (Brereton et al, 2011., Fleishman & Murphy, 2009). Hence further studies must be conducted to conserve the diversity and their natural habitat.

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