



A Study of Butterfly Diversity in Paranda, District Dharashiv (M.S), India

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Abstract:

Butterflies are indicators to climate change. They are important food chain components of birds, reptiles, spiders and predatory insects. They are valuable pollinators in the local environment and help in pollinating more than 50 economically important crops. A present survey was carried out at two selected sites in the Paranda, district Dharashiv, region of Maharashtra, India, for a period of one month. A total of 08 species of butterflies were recorded during the study period. Nymphalidae was the richest family as compared with family Pieridae observed during this survey. The study area is rich in butterfly diversity and further research could be conducted to obtain more details and documentation on butterfly diversity for the conservation.

Key words: Butterfly, Diversity, Biodiversity.

Introduction:

Biodiversity is the total variety of life on the earth. The abundance and diversity of butterflies mainly depend upon various factors such as availability of host and larval food plants, foliage, humid climate Patel et al.(2021). Butterflies are perhaps the most conspicuous and colourful insects. Due to their attractiveness and omnipresence, they have acquired a poetry of various cultures. Therefore, they have made excellent subject for natural history observations and scientific studies. Butterflies are very useful to mankind because they help in pollinating the crop plants and other flowering plants, Budrukkar 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), Jana et.al (2009). Butterflies serve as important plant pollinators in the local environment and help to pollinate more than 50 economically important plant crops, Borges et.al, (2003). Butterflies serve the ecosystem especially by recycling nutrients (N, P and K) essential for crops, Schmidt and Roland (2006).

The aim of current study is to find out the current status of butterflies in Paranda, Anala (Latitude -18.432940, Longitude- 75.4318850) and Kandari (Latitude -18.3982180, Longitude-75.4519480) area of district Dharashiv and to prepare a checklist of butterflies of this region for the purpose of conservation of native species present in this area.

Materials and Methods

Study area:

The present study was carried out in the Paranda, district Dharashiv, region of Maharashtra, India. Two sampling sites were selected for the present study viz. Anala (Latitude -18.43294⁰, Longitude- 75.431885⁰) and Kandari (Latitude - 18.398218⁰, Longitude- 75.451948⁰).

Survey Method:

The field surveys on butterflies were carried out in the study area, two times a week for the period of one month(June 2023). Butterflies were accessed in the study area from 9 am to 10 am in the morning by random observations during walking through Anala and Kandari area sites based on habitats present in the study area. In the site, photographs of the butterflies were taken with mobile camera (One Plus 70) 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 (Gunanthilagaraj et al., 1998, Kunte, 2000). All scientific names follow (Varshney, 1979) and classifications with common English names are after (Kunte, 2000, Varshney and Smetacek, 2015). Sometimes we visit the Butterfly of India website.

Results and Discussion:



Photo : Survey site of Paranda, Anala (Latitude -18.43294⁰, Longitude- 75.431885⁰) and Kandari (Latitude -18.398218⁰, Longitude- 75.451948⁰)

Checklist of the species of butterfly in the study area:

The checklist of the species of butterfly observed in the Survey site of Paranda, Anala

(Latitude -18.43294⁰, Longitude- 75.431885⁰) and Kandari (Latitude -18.398218⁰, Longitude- 75.451948⁰) is presented in Table 1.

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

Sr. No	Common Name	Scientific Name	Family	Number of Individuals		Butterflies Total
				Site A	Site B	
1	Blue Tiger	<i>Tirumala limniace</i> (Cramer, 1775)	Nymphalidae	16	03	13
2	Blue -spotted crow	<i>Euploea midamus</i> (Linnaeus, 1758)	Nymphalidae	13	07	20
3	Great eggfly	<i>Hypolimnas bolina</i> (Linnaeus, 1758)	Nymphalidae	05	06	11
4	Plain Tiger	<i>Danaus chrysippus</i> (Linnaeus, 1758)	Nymphalidae	14	12	26
5	Common emigrant	<i>Catopsilia pomona</i> (Fabricius, 1775)	Pieridae	07	06	13
6	Common Grass Yellow	<i>Eurema hecabe</i> (Linnaeus, 1758)	Pieridae	12	09	21
7	Denaid eggfly	<i>Hypolimnas misippus</i> (Linnaeus, 1764)	Nymphalidae	03	03	06
8	Striped Tiger	<i>Danaus genutia</i> , (Cramer, 1779)	Nymphalidae	02	04	06
Total				72	55	127

Site A: Anala (Latitude -18.43294⁰, Longitude- 75.431885⁰)

Site B: Kandari (Latitude -18.398218⁰, Longitude- 75.451948⁰)

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The present survey indicates that the family Nymphalidae has a total of 08 species viz. Tirumala limniace (Cramer, 1775), Euploea midamus (Linnaeus,1758), Hypolimnas bolina (Linnaeus, 1758), Danaus chrysippus (Linnaeus,1758), Hypolimnas misippus (Linnaeus,1764), Danaus genutia,(Cramer, 1779) and family Pieridae has 34 species viz. Catopsilia pomona (Fabricius, 1775), Eurema hecabe (Linnaeus, 1758) were observed. A similar survey was carried out by Ganvir and Khaparde (2018) studied on butterfly diversity and found that Family-Nymphalidae carries the maximum number of species. Smilarly Kurve et.al., 2013, Ganvir et.al., 2017 found that the most dominant family was Nymphalidae followed by Lycaenidae, Pieridae, Hespriidae and Papillionidae. Similar studies reported by Singh and Chib (2014) on a preliminary checklist of butterflies that recorded 125 species of butterfly from 78 genera belong to 5 families.

In addition,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. Total 145 species of butterflies were recorded in and around Nagpur City including agricultural land. The highest number of butterflies was recorded belonging to the Nymphalidae (51 species) and least number of butterflies belong to family Papilionidae (9 species) and Tiple and Khurad (2009).The study revealed that most butterfly species were observed from the monsoon to early winter and contribute Nymphalidae was most dominating family comprised highest number of species but thereafter declined in early summer Kunte (1997).The results calculated so far clearly specify that the overall diversity of Butterflies in this region is quite good. The climatic conditions of Paranda area is favourable for butterfly diversity.This survey is quite helpful for the documentation and conservation of biological diversity.

Conclusion:

Based on the results obtained from the study on butterfly diversity in the study area viz. Paranda, Anala and Kandari, district Dharashiv, Maharashtra .Nymphalidae family was found maximum in number.Therefore, it is concluded that the study area is rich in butterfly diversity and further research could be conducted to obtain details and documentation on butterfly diversity for the conservation and butterfly parks

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