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Diversity and Hostplant Selection of Butterflies Species in and Around Chunkankadai, Nagercoil, Tamilnadu

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ABSTRACT
Butterflies are one of the most predictable bio-indicator organisms in the universe. During the four months of survey from February to May 2021in and around Chunkankadai, Nagercoil,.A total of 918 individuals and 30 species of butterfly belonging to 5 families were recorded in the study area. Maximum numbers of species were from the family Papilionidae followed by Nymphalidae..Maximum butterfly species abundance was noted when the temperature was close to the 28 ± 20^0 C range. The climate and host plant interactions of the study area as well as variation in species richness, were both associated. The goal of the current study is aimed to protect butterflies and create effective management plans.

KEYWORDS: Butterflies, bio-indicator, Papilionidae, Nymphalidae, conservation.

I.INTRODUCTION

Butterflies are one of the most fascinating insects and are attracted by their peculiar coloration and beauty[1]. Butterflies are distributed worldwide and a vastly studied group of insects. The butterflies constitute the second largest group under the order Lepidoptera and the Class Insecta having colourful wing patterns. Further, butterflies are good biological indicators of habitat quality as well as general environment health [2,4]. Studying of butterfly community needs various biotic as well as abiotic factors, which directly influence their distribution patterns, i.e. humidity, temperature, wind, host plants, etc.Butterflies play an immense role in pollination brings variations through kinds of pollen dispersion from one place to another place[8] .Although India has a rich butterfly fauna, but due to various reason such as habitat destruction, fire, use of pesticides and weedicides and illegal collection for trade, many species have become very and some are on the verge of extinction. Increase urbanization one of the main cause of decrease butterfly species richness, diversity and abundance[3,15].The present study reveals the seasonal pattern and abundance of butterfly diversity in the study area. A checklist of butterfly species with common name, scientific name, family name and number of individuals documented during the course of study.

II.METHODOLOGY

2.1 Study area and Sampling site

KanyakumariDistrict lies at the southern tip of the peninsular India where the Indian Ocean, the Arabian Sea and the Bay of Bengal confluence. It is situated at the extremity of the Western Ghats covering approximately 446.324sq.km.The district lies between 77^07 to 77^035^1Eand 8^003^1 to 8^035^1N. Chunkankadai is a small hilly village in the Kanyakumari district flourished with a wide variety of plants is located at a distance of 7km from Nagercoil town on the Kanyakumari Thiruvananthapuram Highway.It lies between 8^012^1 N and 77^022^1E and covers an area of about 1600h in Agastheswaramtaluk. The fieldwork was conducted in and aroundChunkankadai, Nagercoil, Tamiilnadu.

2.2 Survey Method

The field surveys on butterflies were carried out in the study area three times a week for the period of four months from February to May, 2021. Butterflies were accessed in the study area from 9am to 11am in the morning by random observations during walking through the three selected sites based on habitats present in the study area. In the field, photographs of the butterflies were taken with the aid of camera for the identification purpose[9].

2.3 Identification of the species of butterfly and host plants

The photographs of butterflies were used for the identification of the species of butterfly. Colour patterns, sizes and shapes as well as their

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designs were considered in identification of the species of butterfly with the help of entomologist expert and relevant available literature as well as photographs [10,12].The host plants of different species of butterflies were also identified.

III.RESULT AND DISCUSSION

3.1 Checklist of the species of butterfly in the study area

The checklist of the species of butterfly observed in the study area is presented in (Table 1). The results showed that a total of 918individuals and 30 species of butterfly belong to 5 families were recorded in the study area. Thirty species of butterflies representing five families have been recorded during the study (Table 1). Papilionidae showed the maximum species richness, comprising of 14 species followed by Nymphalidae (8 species), Hesperidae (4 species),Pieridae (2 species, 20%), and Lycaenidae (1 species) (Table 2). Among these 30 recorded species, Common mormon, Lime butterfly and Psyche were found in high frequencies in the study area. The rich diversity of butterflies, especially thePapilionidaeand Nymphalids indicates a varied assemblage of floral species. The flora in Chunkankadai is a mixed type with herbs and shrubs dominating the vegetation in the varies climate conditions. Trees are comparatively higher in number in Chunkankadaihills .

Table 1: List of butterflies recorded during the study period

Family	**Family**	**Common Name**
Papilionidae	*Papiliodemoleus*	Common lime butterfly
	Papiliopolymnestor	Blue Mormon
	Papiliopolytes	Common Mormon
	Graphiumagamemnon	Tailed Jay
	Papiliohelenus	Red Helen
	Tirumalaseptentrionis	Dark Blue Tiger
	Junoniaalmana	Peacock Pansy
	Junoniaiphita	Chocolate Pancy
	Pachliopta hector	Crimson rose
	Troidesminos	Southern Birdwing
	Atrophaneurapandiyana	Malabar Rose
	Graphiumnomius	Spot sword tail
	Graphiumteredon	Narrow banded blue bottle
	Graphiumdoson	Common jay
Nymphalidae	*Danausgenutia*	Striped Tiger
	Danauschrysippus	Plain Tiger
	Euploea core	Common Indian Crow
	Leptosianina	Psyche
	Catopsiliapomona	Common Emigrant
	Catopsiliapyranthe	Mottled Emigrant
	Melanitisleda	Common Evening Brown
	Charaxessolon	Black Rajah
Pierideae	*Pierisrapae*	Small Cabbage White
	Euremahecabe	Common Grass Yellow
Hesperiidae	*Borbocinnara*	Rice Swift
	Suastusgremius	Indian palm bob
	Pelopidas mathias	Small branded swift
	Tagiadeslitigiosa	Water Snow Flat
Lycaenidae	*Castaliusrosimon*	Common Pierrot

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Kumar P*et al* (2021) studied the Seasonal Diversity and Distribution of Butterflies in G.Venkataswamy Naidu College Campus, Kovilpatti, Tuticorin District, Tamil Nadu[5]. The study was conducted to prepare a baseline inventory, seasonal population trends and status of butterfly inhabiting the campus of G. Venkataswamy Naidu College, Kovilpatti, Tuticorin. The survey yielded 309 individuals of 48 butterfly species, belonging to the families Nymphalidae, Pieridae, Lycaenidae, Papilionidae and Hesperiidae. Nymphalidae were found to be the dominant family during all seasons. Species abundance was highest during the northeast monsoon and winter periods.

Table-2 Relative abundance of butterfly species seen during the study period

Family	No:of species	No:of individuals
Papilionidae	14	524
Nymphalidae	8	210
Pierideae	2	104
Hesperidae	4	55
Lycaenidae	1	25

Table 3 depicts the host plants host plants selected by butterflies during the study period . The majority of species and individuals were observed, the possible reasons include increased availability and variety of host plants. The distribution and diversity of butterflies varies depends upon the seasons. They are abundant in some months and absent during months[6,7]. The greatest number butterflies in the study area might be the adequate distribution of larval host plants and nectar [13,14] and vegetation cover and good food sources for many butterfly species[11].

Table 3: List of host plants selected by butterflies during the study period

Family	**Butterfly species**	**Host plants**
Papilionidae	*Papiliodemoleus*	*Citrus aurantifolia*
	Papiliopolymnestor	*Paramigynamonophylla*
	Papiliopolytes	*Murrayakoenigii*
	Graphiumagamemnon	*Annonamuricata*
	Papiliohelenus	*Zanthoxylumtetraspermum,*
	Tirumalaseptentrionis	*Calotropisgigantea*
	Junoniaalmana	*Hygrophilaauriculata*
	Junoniaiphita	*Hygrophilacostata*
	Pachliopta hector	*Aristolochiaindica*
	Troidesminos	*Pachlioptaaristolochia*
	Atrophaneurapandiyana	*Thotteasiliquosa*
	Graphiumnomius	*Polyalthialongifolia*
	Graphiumteredon	*Cinnamomumzeylanicum*

	Graphiumdoson	*Annonamuricata,*
Nymphalidae	*Danausgenutia*	*Cynanchumtunicatum*
	Danauschrysippus	*Calotropisprocera*
	Euploea core	*Nerium oleander*
	Leptosianina	*Cardaminehirsuta*
	Catopsiliapomona	*Buteamonosperma,*
	Catopsiliapyranthe	*Cassia fistula*
	Melanitisleda	*Oryzasativa*
	Charaxessolon	*Calliandrahaematocephala*
Pierideae	*Pierisrapae*	*Brassica oleracea*
	Euremahecabe	*Abrusprecatorius*
Hesperiidae	*Borbocinnara*	*Setariabarbata*
	Suastusgremius	*Phoenix acaulis*
	Pelopidas mathias	*Axonopuscompressus*
	Tagiadeslitigiosa	*Dioscoreaalata*
Lycaenidae	*Castaliusrosimon*	*Galinsogaparviflora*

The overall observations made in the present study suggest that seasonal complexity and distribution of butterflies associated with each seasons might act as major drivers and determinants of the patterns of butterfly assemblages in the study area.

IV.CONCLUSION

This study reveals that to enrich the information and knowledge available on the butterflies ofChunkankadai,Nagercoil. The rich diversity of butterflies, especially the Papilionidaeand Nymphalids in the study area indicates a varied assemblage of floral species.The finding of the present study is to recommend the importance of rich flora as a preferred habitat for butterflies like endemic and protected species. This information will help in future research work on butterfly host plants preference for initiating conservation strategies.

REFERENCES

[1]. Arya, M.K, Dayakrishna and Chaudhary, R. Species richness and diversity of butterflies in and around Kumaun University, Mainital, Uttarkhand, India. Journal of Entomology and Zoology Studies, 2(3): 153-159,2014.

[2]. Chakaravarthy, A.K., Rajagopal, D. and Jagannatha, R. Insects as bio indicators ofconservation in the tropics. Zoo's Print Journal, 12: 21-25,1997.

[3]. Dash, M.C. Fundamentals of Ecology. Tata McGraw Hill Publishing Company Limited, New Delhi, 42-44,1998.

[4]. Eswaran, R. and Pramod, P. Structure of butterfly community of Anaikatty hills, Western Ghats. Zoo's print Journal, 20: 1939-1942,2005.

[5]. Kumar P, Makesh Kumar. B. Seasonal Diversity and Distribution of Butterflies in G.Venkataswamy Naidu College Campus, Kovilpatti, Tuticorin District, Tamil Nadu.Advances in Zoology and Botany, Vol. 9, No. 5, pp. 91 – 99,2021..

[6]. Majumder, J., Lodh, R. and Agarwala, B.K. Butterfly species richness and diversity in the Trishna Wildlife Sanctuary in South Asia. Journal of Insect Science, 13: 79,2013.

[7]. Murugesan, M, Arun, P.R. and Prusty, B.A.K. The butterfly community of an urban wetland system - a case study of Oussude Bird Sanctuary, Puducherry, India. Journal of Threatened Taxa, 5(12): 4672-4678,2013.

[8]. Prasad, M. Migration of butterflies in Keeriparai, Kanyakumari District. Tamilnadu.The Daily Hindu (Tamil edition, dated 19thApril, 2017).

[9]. Qureshi, A.A., Rayees, A.D., Shaheen, I.T. and Bhagat, R.C. Butterfly-fauna of Gulmarg, Kashmir, J&K State. Journal of Agriculture and Veterinary Science 2(5): 40–45,2013..

[10]. Saikia, M.K., Kalita, J. and Saikia, P.K. Ecology and conservation needs of nymphalid butterflies in disturbed tropical forest of EasternHimalayan biodiversity

hotspot, Assam, India. International Journal of Biodiversity and Conservation, 1(7): 231-250,2009.

[11]. Sharmila, J.E. and Thatheyus, J. Diversity of butterflies in Alagarhills, Tamilnadu, South India.Current Biotica, 6(4): 473-479,2013.

[12]. Thomas, J.A. Monitoring change in the abundance and distribution of insects using butterflies and other indicator groups. Philosophical Transactions of the Royal Society B: Biological Sciences, 360:339-357,2005.

[13]. Tiple, A.D. Butterflies of Vidarbha region, Maharashtra State, central India. Journal of Threatened Taxa, 3(1): 1469-1477,2011.

[14]. Tiple, A.D., Deshmukh, V.P. and Dennis, R.L.H. Factors influencing nectar plant resource visitsby butterflies on a university campus: implications for conservation. Nota Lepidopteralogica. 28: 213-224.,2006.

[15]. Tiple, A.D., Khurad, A.M. and Dennis, R.L.H. Butterfly diversity in relation to a human-impact gradient on an Indian university campus. Nota Lepidoperoogica, 30 (1): 179-188,2007.