



Nectar Plant Resource Visits by Butterflies on a Nandanvan Tah. Sironcha, Dist. Gadchiroli, (M.S)

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Abstract:

Nectar hosting plants and their visiting butterflies species diversity have been studied in an area of 7 acres Nandanvan of Tah. Sironcha, Dist. Gadchiroli. In which the 35 species of butterflies from five families that is, Papilionidae(4), Pieridae (10), Nymphalidae (9), Lycaenidae (10), and Hesperidae(2) were recorded during the course of study. In this a total of 20 nectar host plants were recorded which is belonging to 8 families; in this 11 were herbs, 3 were shrubs, and 1 trees. Visits of butterflies were more frequent to flower with the tubular corollas than to non-tubular, to flower of herbs and shrubs rather than tree, to flowers coloured yellow and red rather than white and pink. In this study we proved that the herbaceous nectar plant species richness is very important for the support of adult butterfly species maintenance. Therefore, the maintenance and the management of herbaceous plant species are most important for conservation of butterfly diversity in an area like Sironcha Tah.

Keywords: Sironcha, Nandanvan, resources, nectar plants, diversity, plant structure.

Introduction:

Biodiversity is one of the important needs of sustainable development and represents the biological wealth of a given nation. The world is currently facing its greatest ever biodiversity. Insects and plants are becoming extinct because of habitat loss, over-pollution, overpopulation and the threat of global climatic changes. Insects comprise the largest group of organisms and are involved in various ecosystem services like pollination.

Butterflies visitation appears to be based on both flower colour and nectar qualities. In general, visitation rates were greatest on the varieties that produced the most nectar and those having nectar containing relatively high amount of sucrose in relation to glucose and fructose. However, among butterfly visitation rates were lowest on variety having white or pale lavender flowers and greatest on those having red, pink, or lavender-pink flowers.

Flowers with a narrow corolla tube and flat rim (Boat-like) characterize typical butterfly flowers. Although butterflies utilize both tubular and non-tubular flowers, they show a strong favour for flower further most of the plant species produced trace (very small) amount of nectar but produced numerous flowers on daily basis at plant level.

Material and Methods:

The findings presented here are based on a field survey and investigation carried out on daily survey basis from 2013 to 2014 on Nandanvan, at Tah. Sironcha. The observations were made in the morning 8:00 am to 11:00 am which





is perfect time for butterfly activity. The specific observations were made upon each plant species visited by butterflies.

Identification of Butterfly species and their Nectar hosting plants:

Identification of the butterfly was primarily made in the field (Nandanvan). In critical condition specimens were collected only with handheld aerial sweep nets. Each specimen was placed in Plastic bottles for identification. At the time of an observation and collection butterfly were found on flowers for nectar feeding. Most of the butterflies were preferred flower nectar of different plants. For present study, plants were classed for habit (Tree, Herbs, Shrub), corolla shape (tubular and non-tubular), flowering period (all year or few months) and Flower colour.






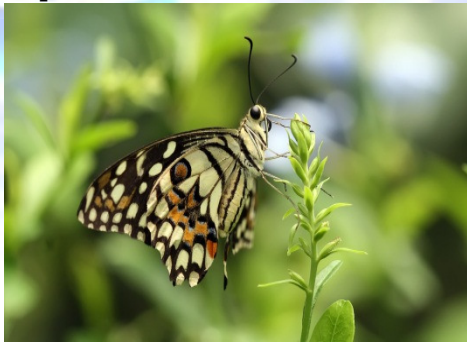

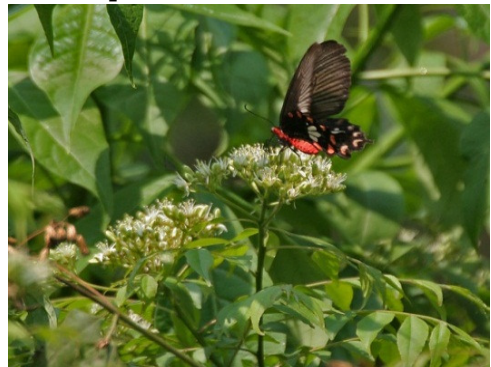
Table. 1- Nectar hosting plants and their floral characteristics of some butterfly species of Nandanvan at Tah. Sironcha.

Plant species	Habit	Flowering period	Flower colour	Corolla shape
[A]Acanthaceae				
1. Justicia quinquangularis	Herb	7-11	Yellow	NT
B]Apocynaceae				
2. Carissa carandus	Shrub	1-4	White	T
[C]Amaranthaceae				
3. Alternanthera sessilis.	Herb	YL	Yellow	NT
4. Celosia argentic	Herb	8-12	Pink	NT
[D]Asteraceae				
5. Tradax procumbens	Herb	YL	Yellow	T
6. Cosmos bipinnatus	Herb	11-2	Yellow	T
7. Bluemea lacera	Herb	11-3	Yellow	T
8. Legascea mollis	Herb	11-4	White	T
9. Sonchus Sp.	Herb	11-3	Yellow	T
10. Zinnia linearis	Herb	7-10	Pink	T
[E] Malvaceae				
11. Sida cordata	Herb	9-2	Yellow	NT
[F] Mimosaceae				
12. Acaciactechu	Shrub	7-2	White	NT
[G] Rubiaceae				
13. Anthocephalus cadamba	Tree	1-4	White	NT
[H] Verbenaceae				
14. Lanthana cadamba	Shrub	YL	Yellow	T
15. Phyla nodiflora	Herb	1-5	Pink	T









Observations: YL-Flowering all year; number indicate months of flowering 1-12; Corolla shape; T-tubular ,NT-non tubular.





Table. 2- Butterfly species of Nandanvan ,Tah. Sironcha : with their common name, scientific name ,images and their status: VC-Very common, C-common, NR-Not rare, R-rare.

Common name	Scientific name	Status
Family: Papilionidae		
1.Common Jay 	Graphiumdoson 	Common
2.Taild Jay 	Graphiumagamemnon 	Common
3.Lime Butterfly 	Papiliodemoleus 	Very common
4.Common Rose 	Pachlioptaaristolochiae 	Common











Family: Pieridae		
5.Common Gull 	Ceporanerissa 	Common
6.Common Emigrant 	Catopsiliapomona 	Very common
7.Mottled Emigrant 	Catopsiliapyranthe 	Very common
8.Small Grass Yellow 	Euremabrigitta 	Very common











<p>9. Spotless Grass Yellow</p> 	<p>Euremalaeta</p> 	<p>Very common</p>
<p>10. One-Spot Grass Yellow</p> 	<p>Euremaandersonii</p> 	<p>Rare</p>
<p>11. Common Grass Yellow</p> 	<p>Euremahecabe</p> 	<p>Very common</p>
<p>12. Common Wanderer</p> 	<p>Pareroniavalera</p> 	<p>Common</p>











<p>13.Common Jezebel</p> 	<p><i>Delias eucharis</i></p> 	<p>Rare</p>
<p>14.Pioneer</p> 	<p><i>Anaphaeisaurota</i></p> 	<p>Common</p>
<p>Family: Lycaenidae</p>		
<p>15.Common Pierrot</p> 	<p><i>Castaliusrosimon</i></p> 	<p>Common</p>
<p>16.Lime Blue</p> 	<p><i>Chiladeslaius</i></p> 	<p>Very common</p>










<p>17. Pea Blue</p> 	<p>Lampides boeticus</p> 	<p>Common</p>
<p>18. Dark Grass Blue</p> 	<p>Zizeeria karsandra</p> 	<p>Common</p>
<p>19. Lesser Grass Blue</p> 	<p>Zizeeria otis</p> 	<p>Very common</p>
<p>20. Pale Grass Blue</p> 	<p>Pseudozizeeria maha</p> 	<p>Rare</p>





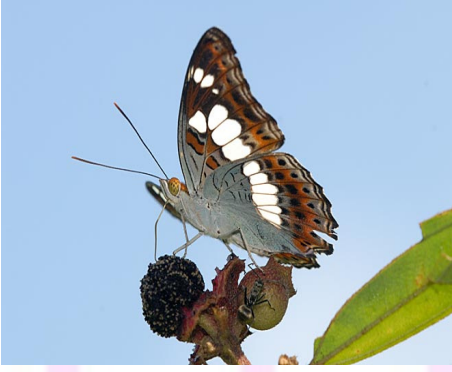





<p>21. Tiny Grass Blue</p> 	<p>Zizulahylax</p> 	<p>Very common</p>
<p>22. Grass Jewel</p> 	<p>Freyeriatrochylus</p> 	<p>Common</p>
<p>23. Gram Blue</p> 	<p>Euchrysops snejus</p> 	<p>Not rare</p>
<p>24. Forget me not</p> 	<p>Catachrysops strabo</p> 	<p>Very common</p>

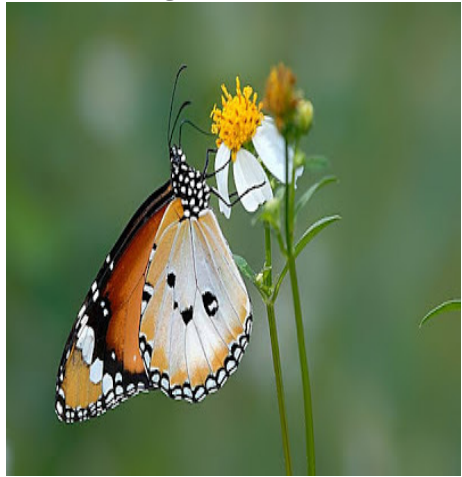







Family: Nyphalidae		
25.Common Leopard 	Phalantaphalantha 	Common
26.Gray Pansy 	Junoniaatlitres 	Common
27.Peacock Pansy 	Junonia almanac 	Common
28.Chocolate Pansy 	Junoniaiphita 	Common



<p>29.Lemon Pansy</p> 	<p>Junonialemonias</p> 	<p>Very common</p>
<p>30.Blue Pansy</p> 	<p>Junoniaorithya</p> 	<p>Common</p>
<p>31.Commandar</p> 	<p>Moduzaprocris</p> 	<p>Common</p>
<p>32.Blue Tiger</p> 	<p>Tirumalalimniace</p> 	<p>Very common</p>



<p>33.Plain Tiger</p> 	<p>Danauschrysippus</p> 	<p>Very common</p>
<p>Family: HesperIIDae</p>		
<p>34.Rice Swift</p> 	<p>Borbocinnara</p> 	<p>Very common</p>
<p>35.Dark Palm Dart</p> 	<p>Telicotaancila</p> 	<p>Common</p>

Relationship between butterflies and their nectar plant:

Thirty five butterfly species belonging to five families were found on the floral nectar of 15 plant species belonging to 8 plant families. Among these 11 were herbs, 3 shrub and 1 tree plants. The flowers of 9 plants were having tubular corolla shape and remaining 6 plants were with non-tubular corolla shape flowers. About 8





plants were recorded with yellow coloured flowers, 3 with pink, 4 with white and 1 was with red colour flowers. List of nectar host plants, habit, flowering period, flower colour and corolla shape are presented in Table-1.

In Nandanvan butterfly species were recorded to visit the shrub, herb and tree plants for floral nectar, but visit to herb and shrubs were more frequent than to flowering tree. Nectar plants with flowering period yearlong visited more than the seasonal ones. Flower shape also influenced the visits for nectar, tubular shaped corollas were most preferred than non-tubular shaped corollas. The yellow colour flowers were strongly preferred by butterfly species than the other colour that is, white, red, and pink. In Nandanvan the butterfly showed strong preference to some plant that is, Lantana camara, Acacia catechu, Tridax procumbens and Antiocephalus cadamba. This plant regularly visited by most of the butterfly species.

Result and Discussion:

In present study we observed that the nectar resource use by adult butterflies is mainly as herbaceous plant and such herb resource use by adult butterflies. On the basis of the status of record butterflies in the study area it can be shown that there is a relationship between butterfly diversity and adult nectar plants. Thenectar plant species richness is an important factor for protecting adult butterfly species richness at the study site rather than total species richness of plant.

Thus it can be concluded that richness of herbaceous nectar plant species is one of the most important factors for determining the structure and attribute of adult butterflies. The presence of herbaceous plant species in a habitat has a central role in its nectar plant richness is a highly important factor governing and supporting its adult butterfly species richness. Hence the maintenance and management of herbaceous plant species is very important.

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