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Documentation and Identification of Flora in the Butterfly Garden at Saint Gobain Industry Kanjikode, Palakkad

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Abstract: ***The present study focuses The documentation and identification of flora in the butterfly garden at saint gobain industry Palakkad district of Kerala. The study was conducted from November 2020 to April 2021 Plant species were collected and their morphological characters were analysed arranged according to the APG IV system of plant classification. Identification of specimens was done using regional floras and with the help of experts in taxonomy. During the exploration of floristic diversity of Butterfly Garden, 37 plants belonging to 23 families were collected. 7 belongs to Monocots and 30 belongs to Eudicots. The most dominant family among them is Asteraceae. The families are arranged based on the Benthem and Hooker System of Classification.***
Keywords: Butterflies, Larval Host Plants, Conservation.

I. INTRODUCTION

The present study focuses on the Angiosperm diversity of Kottayi Grama Panchayat, Palakkad district of Kerala. The study was conducted from November 2020 to April 2021 and explorations were extended in fifteen wards of the Panchayat. Plant species were collected and their morphological characters were analysed arranged according to the APG IV system of plant classification. Identification of specimens was done using regional floras and with the help of experts in taxonomy.

During the present investigation, 200 flowering plant species belonging to 69 families were recorded from the different wards of Kottayi Grama Panchayat. Analysis of the vegetation showed the dominance of Fabaceae (18 species), followed by Asteraceae (16species), Poaceae (12species) and Acanthaceae (12species). The dominant habits were recorded as herbs (97), followed by shrubs (42), trees (44) and finally climbers (17).

Through the present investigation of the unexplored area, a small tract with rich angiosperm diversity was revealed.Butterflies are among the most beautiful organisms in the universe, which have fascinated naturalists for centuries. There are approximately 20,000 species of butterflies distributed through out the world. India, with its diversified ecosystems ranging from the snow-cladded temperate forests in the Himalayas to the tropical wet evergreen forests of the Western Ghats, has a rich butterfly fauna. So far, about 1500 species of butterflies have been recorded from India, of which about 314 species are found in Kerala, which include a high proportion of rare and endemic species. All of these butterflies are found in the Western Ghats region as well. Butterflies being highly diversified in their habits require specific ecological condition for their survival. Natural forests, grass lands, canopies of trees as well as wet areas along the banks of rivers and streams are typical butterfly habitats. However, due to various reasons, particularly due to human intervention, the habitats of many butterflies have been altered. As a result, many species of butterflies that were ones vert common in our homesteads and country sides have vanished.

India is also recognized as one of the eight Vavilovian centers of origin and diversity of crop plants. One of the blessings to the country is the existence of the hill ranges of the Western Ghats also known as Sahyadri Hills, a global biodiversity hotspot with an exceptionally high level of biological diversity and endemism. The Western Ghats are composed of low chain mountains which covers an area of 140,000km^2 in a 1600km long stretch that extend along the West coast of India from the river Tapti in the north to the southern tip of India and transverse through the states of Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat. It is interrupted by a 30 to 40 km wide Palghat Gap between the Nilgiri and Anamali Hills in Kerala at around 11°N. With its vast diversity and endemism, Western Ghats perform important hydrological and watershed functions.

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II. MATERIALS AND METHODS

A. *Study Area*

The Western Ghats Mountain range covering an area of 140,000 km^2 is interrupted by the major break located between the Nilgiri hills and Anamalai hills about 32 to 40 km wide, the Palghat gap. The gap acts as the corridor between the two states by linking the Palakkad district of Kerala with the Coimbatore district of Tamil Nadu. Palakkad district lies on the gap and is the largest district bounded on the northwest by Malappuram district, southwest by Thrissur, north east by Nilgiris district, and east by Coimbatore district of Tamil Nadu with a land area of 4480 sq. km. The present study was conducted in Saint Gobain Industry Palakkad district, Kerala State. The total area of the butterfly garden is 25 cent. It has a latitude of 10.793311°N and a longitude of 76.741202°E. The region has a humid climate with an average annual temperature of 27.5°C.

B. *Field visit and floristic identification*

The floristic exploration was conducted from August 2023 to February 2024, flowering Plants and various stages were collected. For the preparation of herbarium, specimens with flowers, fruits, or vegetative parts were collected. The collected specimens were wrapped with newspaper and stored in polythene bags. Date of collection, locality, habit, habitat, altitude, morphological features, and collection number was recorded in the field book. Photographs were also taken from the field itself using oppo mobile camera.

C. *Herbarium Preparation*

To prepare herbarium, the collected specimens were dried by keeping them in newspapers with regular changing of newspapers in the first week. They were mounted on a clean herbarium sheet using glue with a label containing essential information regarding the collection date, locality, binomial, and collector's name.

D. *Identification and Taxonomic Description*

The plants which can be identified in the field were recorded and all other specimens were checked with descriptions available in regional floras and with the help of experts in this field. Most species identification was done using 'The Flora of Presidency of Madras' (Gamble 1915 –1936). Citations and nomenclature of the taxa were obtained from the databases such as International Plant Names Index (IPNI) (http://www.ipni.org),'Tropicos' (http://www.tropicos.org) and The Plant List (http://www.theplantlist.org) available online.

E. *Presentation of data*

The plants of the study area were tabulated along with botanical descriptions and arranged according to the APG IV system of plant classification and the species and genera were arranged in alphabetical order under each family. Detailed description of species was noted and photos were also plated. The correct name of the species is followed by the author/s name and original publication. The description of the species is in the following sequence: 'habit, leaves, inflorescence, flower, calyx, corolla, stamens, ovary, fruit and seed'. The flowering and fruiting periods are also noted. Status of the species in relation to conservation, occurrence in the study area, vegetation type, medicinal properties etc. were also recorded.

III. RESULTS AND DISCUSSION

Out of 37 species collected the dominant family was Asterceae (6), Rubiaceae (3), Apocynaceae (3), Acanthaceae (3), Verbenaceae (3)

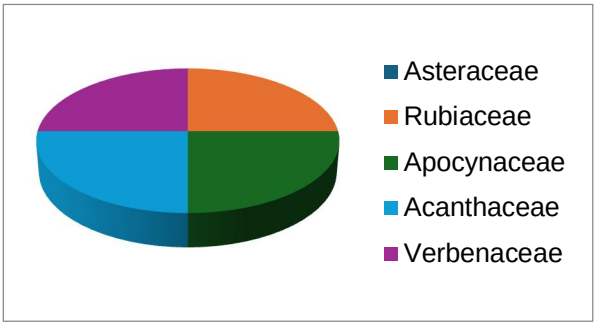


Figure 1: Relative dominance of top five families in Butterfly Garde

Sl.no	Name of the plant	Family	Habit	Larval host plant or Nector feeding	Name of the Butterfly
1.	*Hibiscus rosa-sinensis L.*	Malvaceae	Shrub	Nector feeding	Papilio demoleus
2.	*Malpighia glabra L.*	Malpighiaceae	Tree	Larval host plant	Ochlodes sylvanus
3.	*Averrhoa carambola L.*	Oxalidaceae	Tree	Larval host plant	Zesius chrysomallus
4.	*Crotalaria pallida Aiton*	Fabaceae	Herb	Larval host plant	Lampides boeticus
5.	*Caesalpinia Pulcherrima L.*	Fabaceae	Shrub	Nector feeding	Cethos cyane
6.	*Kalanchoe brasiliensis Camb.*	Crassulaceae	Herb	Larval host plant	Talicada nyseus
7.	*Pentas lanceolata (Forssk.)Deflers*	Rubiaceae	Shrub	Nector feeding	Pachliopta aristolochiae
8.	*Mussaendra frondosa L.*	Rubiaceae	Shrub	Larval host plant	Athyma inara
9.	*Leptopetalum biflorum L.*	Rubiaceae	Herb	Nector feeding	Pachliopta aristolochiae
10.	*Zinnia elegans*	Asteraceae	Shrub	Nector feeding	Vanessa cardui
11.	*Centratherum punctatum cass*	Asteraceae	Herb	Nector feeding	Papilio polytes
12.	*Emilia sonchifolia (L.)*	Asteraceae	Herb	Larval host plant	Vanessa cardui
13.	*Cosmos sulphureus Cav.*	Asteraceae	Herb	Nector feeding	Junonia coenia
14.	*Syndrella nodiflora (L.)Gaertn.*	Asteraceae	Herb	Nector feeding	Parantica aglea
15.	Tridax procumbens L.	Asteraceae	Shrub	Nector feeding	Acraea terpsicore
16.	Plumbago auriculata Lam.	Plumbaginaceae	Shrub	Larval host plant	Leptotes plinius
17.	Manilkara zapota (L.)	Sapotaceae	Tree	Larval host plant	Virachola isocrates
18.	Nerium oleander L.	Apocynaceae	Tree	Larval host plant	Euploea core
19.	Plumeria rubra L.	Apocynaceae	Shrub	Larval host plant	Psuedosphinix tetrio
20.	Tabernaemontana divaricata	Apocynaceae	Shrub	Nector feeding	Udaspes folus
21.	Cordia sebestena L.	Boraginaceae	Shrub	Nector feeding	Parthenos sylvia
22.	Psuederanthemum reticulatum(W.Bull)Radlk.	Acanthaceae	Shrub	Nector feeding	Danaus chrysippus
23.	Psuederanthemum variabile (R.B.)Radlk.	Acanthaceae	Herb	Nector feeding	Doleschallia bisaltide
24.	Ruellia simplex C.Wright	Acanthaceae	Herb	Larval host plant	Zizula hylax
25.	Duranta erecta L.	Verbenaceae	Shrub	Nector feeding	Dione vanillae
26.	Lantana camara L.	Verbenaceae	Shrub	Nector feeding	Telicota ssp.
27.	Chascanum pinnatifidium(L.f) E.Mey.	Verbenaceae	Herb	Nector feeding	Vanessa cardui
28.	Clerodendron paniculatum L.	Lamiaceae	Shrub	Nector feeding	Tajuria cippus
29.	Otacanthus caeruleus Lindl.	Plantaginaceae	Herb	Larval host plant	Morpho didius
30.	Ficus benjamina L.	Moraceae	Tree	Larval host plant	Chiomara georgina
31.	Alternanthera pungens Kunth	Amaranthaceae	Herb	Larval host plant	Zizeeria knysna
32.	Daphne cneoram L.	Thymelaeaceae	Shrub	Nector feeding	Papilio glaucus
33.	Jatropa integerrima Jacq.	Euphorbiaceae	Shrub	Nector feeding	Graphium agamemnon
34.	Hippeastrum reticulatum	Amaryllidaceae	Herb	Nector feeding	Spodoptera picta
35.	Phoenix roebelenii O'Brien	Aracaceae	Tree	Larval host plant	Hyarotis adrastus
36.	Anthurium andraeanum Linden ex Andre'	Araceae	Herb	Nector feeding	Laparus doris
37.	Heliconia latispatha	heliconiaceae	Herb	Nector feeding	Greta nero

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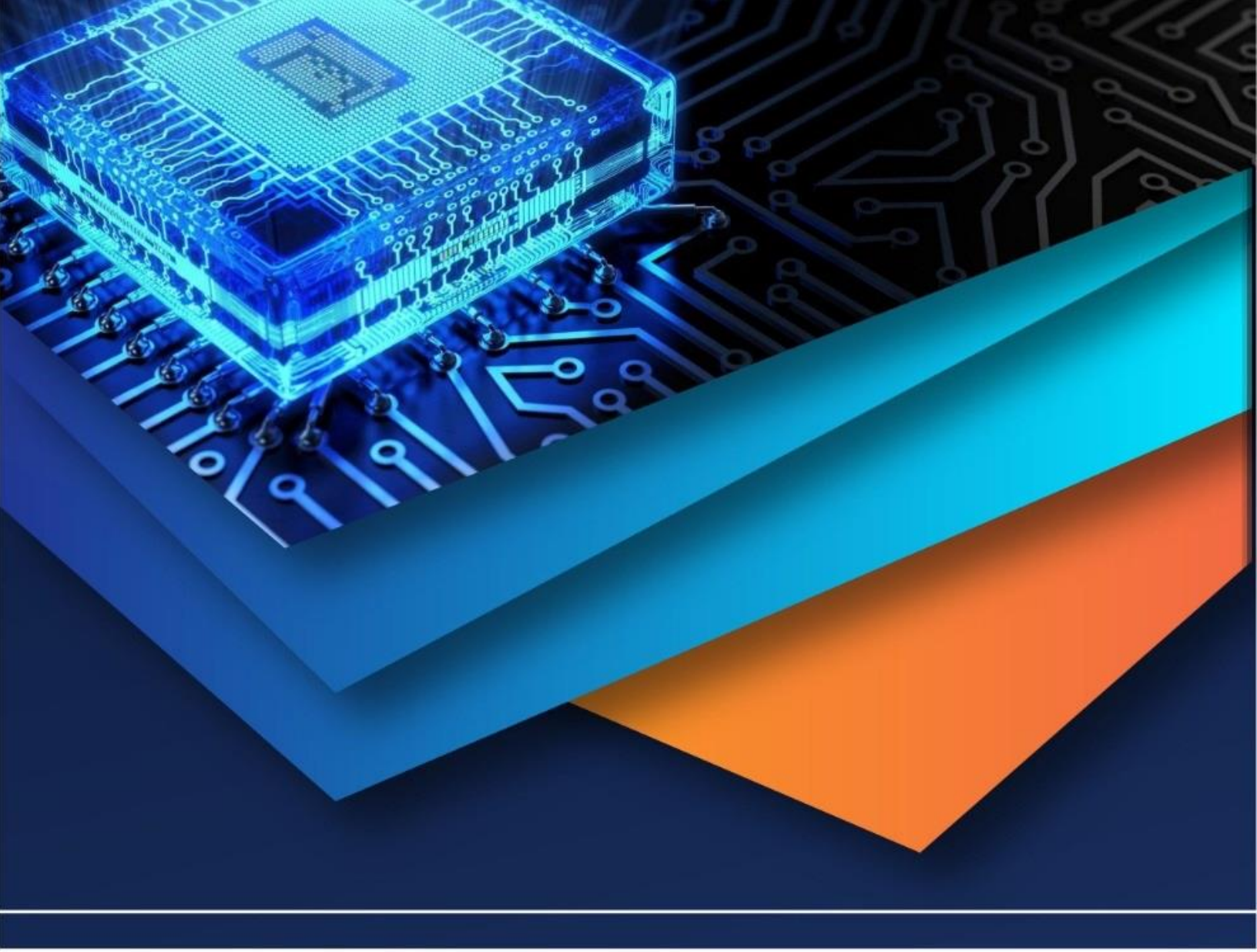
The plants recorded from the study area shows different phytogeographical affinities. The critical evaluation of the affinities showed that most of the elements have an IndoMalesian range in distribution followed by Central and South American region, Pantropics Tropical Africa and Tropical Australia. The present floristic investigations provide reliable information about the nomenclature, distribution, ecology and utility of various plant species. These results contribute to the valorization of the wild phytogenetic resources for efficient in situ conservation and sustainable use.

Butterfly gardening is a way to create, improve, and maintain habitat for lepidopterans including butterflies, skippers, and moths. Butterflies have four distinct life stages-egg, larva, chrysalis, and adult. In order to support and sustain butterfly populations, an ideal butterfly garden contains habitat for each life stage. Butterflies, often regarded as delicate and beautiful creatures, play a surprisingly crucial role in shaping our planet's ecological balance. Beyond their aesthetic appeal, these fluttering insects have far-reaching impacts on the environment and climate. In this detailed study, we will delve into the multifaceted significance of butterflies in promoting a better climate and planet.

REFERENCES

[1] Anonymous, 1983. Managing Tropical Animal Resources: Butterfly Farming in Papua New Guinea. National Academy Press, Washington D.C.
[2] Berry, R.J. 1972. Conservation and genetical constitution of populations, pp. 117-206.ln: Duffey, E. and Watt, A.S. (Eds.). Scientific Management of Plant and Animal Communities for Conservation, Blackwell Scientific Publication, Oxford.
[3] Bloch, N. 1988. The business of butterflies. Earthwatch, 8(1): 28-35.
[4] Calvert. J. 1990. The horticultural aspects of butterfly houses. Int. Zoo Year Book, 29:1822.
[5] David, W.A. L. and Gardiner, B.O.C. 1965. Rearing Pieris brassica L. larvae on semisynthetic diet. Nature, Lond. 207: 882-883.
[6] Dempster. J.P. and Hall, M.L. 1980. An attempt at re-establishing the swallowtail butterfly at Wickcn Fen. Ecol. Ent., 5: 327-34.
[7] Ehrlich, P. R., Murphy, D.D., Singer, M.C., Sherwood, C.B., White, R.R. and Brown, I.L. 1980. Extinction, reduction, stability and increase: the responses of checker spot butterfly (Euphydryas) populations to the California drought. Oecologia, 46: 101-105.
[8] Ehrlich, P.R. 1984. The structure and dynamics of butterfly populations. In: Vane- Wright, R.1. and Ackery, P.R. (Eds.) The Biology of Butterflies, pp. 25-40, Academic Press, London.
[9] Gardiner, B .O.C. 1974. On vanishing butterflies. Bull. Amat. Ent. Soc., 33: 145-151. Gilbert, L. E. and Singer, M.C. 1975. Butterfly ecology. Annual Review of Ecology and Systematics, 6: 365-397.
[10] GOI (Government of India), 1972. The Wildlife (Protection) Act, 1972. (Amendment, 1982), Controller of Publications, New Delhi.
[11] Hughes, D.G. and Bennett, P.M. 1991. Captive breeding and the conservation of invertebrates. Int. Zoo Year Book, 30: 45-51.
[12] Hutton, A.F. 1985. Butterfly farming in Papua New Guinea. Oryx, 19: 158-161.
[13] Balakrishnan. C.V. and Palot, J.M. 2004. A checklist of larval food plants of butterflies of Kerala, Proceedings of the National Seminar on butterfly diversity of Western Ghats, pp. 36-44.
[14] Khoshoo, T.N. 1984. Prospects of butterfly farming in India. In: Environmental Concerns and Strategies, pp. 236-252. Indian Environmental Society, Natraj Publishers, Dehra Dun.
[15] Mathew, G. 2001. Conservation of invertebrates through captive breeding- a study with reference to butterflies. KFRI Research Report No. 220, 74 pp.
[16] Mcleod, L. 1979. A ban on collecting Lepidoptera in the department of the Alpes de Haute - Province, France. J. Variation, 91: 37-41.

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