WINGED JEWELS

LET'S UNFOLD THEIR GRACEFUL WINGS



UDAYA KUMAR K, BHARATH S & NAGARAJ SHASTRI S

YOUTH FORUM FOR NATURE (YOFONA)

COLLEGE OF FORESTRY, SIRSI





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Udaya Kumar K Bharath S Nagaraj Shastri S

Youth Forum for Nature (YOFONA)

College of Forestry, Sirsi University of Agricultural Sciences, Dharwad

Prepared by: Udaya Kumar K.*, Bharath S. and Nagaraj Shastri S.

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*Author for correspondence: udayakumark556@gmail.com, Mobile No.: 8618372446

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Foreword



Prof. K. N. Ganeshaiah School of Ecology and Conservation, GKVK, UAS, Bengalooru 560 065

For a serious student of forestry, understanding all aspects of the biological diversity, from local to the global level, is very essential. While 'watching birds' is more popular and relatively well established, 'butterfly watching' and recording their diversity is relatively new area of out-door activity. However, failing to watch these winged jewels is like ignoring a vast, bigger and more colorful part of natural beauty.

The e-Book "Winged Jewels" offers a perfect introduction to the world of butterflies in and around the College of Forestry, Sirsi Campus. Being situated in the heart of the Western Ghats, this campus itself is a wonderful place to learn about butterflies. Reader can really enjoy the glorious pictures, learn natural history of butterflies and also use the printed version outdoors to identify flying jewels. It is easy.

Using this book over different seasons makes oneself familiar with the changing species composition of these tiny marvels. With time, the butterflies around the campus would become your friends.

The students of College of Forestry have passionately watched butterflies, meticulously recorded their diversity and neatly executed the production of this book. I commend their hard work and congratulate them for being an inspiration to the students of other campuses.

I am sure this book would become the means of adding many happy hours of purest enjoyment in the lives of forestry students and lure them into the fields and woods of the out-door world.

I am delighted to see that the student members of the Youth Forum for Nature of the College of Forestry, Sirsi have brought out this very informative e-book on the butterflies found in and around their campus. Today I see a renewed interest in studying insects like butterflies, moths and dragonflies all over India, and I am glad that the student of the College of Forestry, Sirsi have taken a good lead in this pursuit.

I must congratulate the student members of the Youth Forum for Nature for bringing out such an excellent e-book on butterflies found in the Western Ghats. After reading this book on the flying jewels, I am sure people will surely fall in love with nature. And once they start appreciating nature, they will surely strive hard to protect nature, which is now the need of the hour.



Isaac Kehimkar
Director
iNaturewatch Foundation
Navi Mumbai

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A Few Opinions



B. P. Ravi, IFSAPCCF & Member Secretary
Zoo Authority of Karnataka

"Glad to see these students bringing out an e-book, titled 'Winged Jewels' on 176 species. Identification & documentation of flora and fauna is critical to understand rich diversity of our landscape, specially at the times of climate change & its effects on bio-diversity. When most of us concentrate on bigger & fashionable wild animals, the young authors have done a commendable work of documenting butterflies in their surroundings. I appreciate this special attitude, interest & efforts of young budding researchers. Good photographs, brief description, easy narration in the e-book adopted by the authors are very handy to understand these little natural beauties of the jungle. Definitely this e-book is helpful to create awareness and curiosity about butterflies, especially among children of the area. Learning & getting good grades is important while studying, but these young guys are terrific that they lay their hands-on documentation of local bio-diversity. Hats off to them."

"I am happy to see educational institutions and students forming partnerships to come out with publications which are a visual delight along with educational value. The book on butterflies is one such and I wish the team many more such publications. The layout and format is simple and is a great reference point for nature lovers as a field guide. The quality of the photographs and text is exceptional. Hope this book serves all nature lovers to hone their natural history skills with respect to butterflies of the Western Ghats"



Vijay Mohan Raj V., IFS Chief Conservator of Forests Chikkamagalooru Circle



Manojkumar, IFS
Member Secretary
Karnataka State Pollution
Control Board, Bengalooru

"Butterflies have always been quite fascinating creatures and ecologically sensitive. When we are children the sight, color and activity of butterflies creates a sense of curiosity. As we grow older we tend to loose the sight of these winged jewels that once created curiosity and fascination. Because of their sensitivity towards the climate the population is fast dwindling especially in urban environment. At the same time it requires very little effort to create an enabling atmosphere where the butterflies can thrive. Therefore this e-guide prepared by our students can be a wonderful work in creating awareness and encouraging people to appreciate the beauty and significance of the butterflies in our ecosystem. My sincere gratitude and heartfelt congratulations to all those who are involved in this endeavor."

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Acknowledgement

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I thank Keshava Murthy V. C. and Girish Kumar for sharing their knowledge with us and helping us in all stages of development of this book.

Our beloved seniors Shravankumar Nalwad, Vinayak Pai, Charan G. S., Shabaz Noori, Shanmukha D. M., Gulshir Nadaf and Praveen R. Barki were along with us, lending all the support and encouragement. I thank them for their unconditional love and support.

I extend my gratitude to my classmates Adarsh U. G., Sankar Thampuran M. V., Krishna N. B., Arun Kumar B. K., Shrikrishna D. Gurava, Amith J., Karthik N. J., Rudregowda B. V., Pramod Kanavi, Shiva Kumar B. H., Manjunath Gugad, Honnesh B. S., Vijay G., Nagaraj Adur, Basavaraj and my juniors Balabheema A. G., Hanumantha B. Karigar, Guruprasad D., Chetan Pujari, Manjunath Rahutar, Anand Meherwade and Chandan C. for their constructive share in the development of this book.

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Udaya Kumar K. Senior Author, on behalf of YOFONA.

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Introduction

Butterflies are the indicators of ecological well being. They have fascinated humankind from times immemorial. Coming under the large insect group called Lepidoptera; Butterflies pollinate plants; are integral part to the food chain and also indicate climate change and degradation or well being of the environment. In the world there are about 17,000-20,000 or more species of butterflies, and in India, 1502 species. Our Western Ghats alone supports 330 species of these magnificent creatures. In Karnataka, this number is about 318 species.

College of Forestry, Sirsi

Our campus, College of Forestry, Sirsi, is situated at an elevation of 600m above MSL, having the coordinates 14° 35′59′′N; 74° 50′58′′E. This lush green campus though small in area is rich in its biodiversity, housing many endemic and endangered species of flora and fauna. The landscape around our campus comprises of degraded forests, moist deciduous and dry deciduous forests as well as Acacia plantations, which all contribute towards having a biologically diverse natural environment for our studies.





College of Forestry, Sirsi, rich in its butterfly wealth, is home to some of the most amazing species of flora and fauna creating enthusiasm to learn about them in us, the students.

To understand this butterfly diversity, compilers were out in the field, within the college campus and to a radius of 3 km, the area was surveyed and the butterflies observed were listed. This included anecdotal observations and the duration of compilation was about 5 years.

Totally 176 butterfly species belonging to six families were recorded in and around our campus through visual observations of their wing color, patterns and also referring to the field guides. Nymphalidae family consists of maximum number (56) of butterfly species followed by Lycaenidae (52), Hesperiidae (36), Papilionidae (16), Pieridae (15) and Riodinidae (1). Among them 18 species Endemic to Western Ghats; and 5,18 and 2, species in Schedule I, II, IV of the Wildlife (Protection) Act, respectively.

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Morphology

Morphology of an adult butterfly can be explained and studied by dividing its body into 3 parts, namely **Head**, **Thorax** and **Abdomen**

Head

Head, the anterior portion of the body carries the most important sensory organs- A pair of club ended antennae, the receptors of scent and a pair of compound eyes for vision. Also present besides the antennae are two sensory palps acting as the organ of touch and also shielding the eyes.

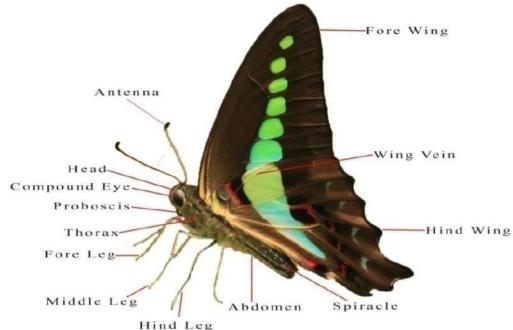
Thorax

Thorax to which the head is joined by a thin, short and membranous neck is a portion made of three segments fused together –the **Pro**, **Meso** and **Meta-thorax** each segment carrying a pair of legs.

The first two segments i.e. Prothorax and Mesothorax each carry a pair of wings, the forewings and hindwings.

Abdomen

Abdomen of an adult butterfly consists of ten segments, and is cylindrical, slim and fairly long. The abdomen consists of organs for digestion, excretion, respiration and reproduction. Out of ten, only seven or eight are visible with last two or three modified to form reproductive parts. Butterfly exhibit tracheal respiration in which oxygen is supplied directly to tissue through tubules called tracheae which open to the outside through spiracles. A tubular heart at the back keeps the blood moving between the tissues with no blood vessels.



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Life cycle of a Butterfly

1. EGG:

Soon after mating, the adult female starts its search for an appropriate food plant for egg laying. Butterflies lay their eggs singly or in batches. According to the species the eggs vary in shape, texture and size. The egg shell or chorion is tough, made up of of chitin and coated with an adhesive for sticking to the leaf surface. Micropyle, a minute opening at the top of the egg allows exchange of gases for the developing caterpillar.



2. Caterpillar:

The fertilized egg takes from 3-7 days for hatching. The caterpillar emerges by biting through the egg shell and its first food is the empty eggshell. Later it feeds only on its food plant, eating leaf, bud, flower and shoot that come in its way. This is the only stage of growth in the life of a butterfly, though caterpillar body grows rapidly, its skin does not grow along with the body, but stretches to accommodate the growing body to a limit.



3. Pupa:

On attaining full growth, the caterpillar ceases to feed and begins to wander restlessly on the food plant or moves away to some other plant or ground. Soon the undigested food is thrown out clearing the digestive tract. Finally the caterpillar settles down on a suitable spot. Each type or species form a pupa of its own peculiar shape and pattern, appearing almost lifeless and inert, but inside there is great activity and metamorphosis .The Tissues and structures of the caterpillar are broken down and replaced with those of the adult butterfly. The duration of the pupal stage depends upon the prevailing weather and vegetational season; some may go for hibernation or diapause if climate is not suitable.



4. Adult:

The sight of emergence of the butterfly is one of the fascinating moments in nature. The pupal case becomes transparent the night before emergence, making the colours of the wings to be seen and by morning, the colours darken and the pupal case splits open at the head. On exposure to the air, the soft wings gradually become stronger. After resting thus for half an hour or so, the newly emerged butterfly first starts flapping its wings a few times and then takes off. (Life cycle of Commonder butterfly)



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Interesting facts on Butterflies

I. Butterfly Behavior

Patrolling: Exhibited by male butterflies, they fly up and down in different probable areas like streams, flower patches, etc to find a female.

Basking: Being cold blooded, butterflies relay on solar radiation to absorb heat energy to maintain their metabolism. Hence they bask in the sunlight with their wings widely opened to maximize the heat absorption.

Courtship: In courtship flight, the male flies near the female vibrating his wings and dispersing airborne pheromones to make the female receptive for mating.

Roosting: You can find butterflies sitting on the tip of grass blades or under the leaf surface to take an overnight rest after its day time activity.







Courtship



Roosting

Mud puddling: Newly born males are often found puddling in damp places to absorb salts and minerals required for pheromone and sperm production.

Hill topping: The male butterfly can usually be found on top of hills or tree tops from which it has a clear view and waits for female to make an appearance. At the same time he can guard his territory.

Hibernation: In extreme climatic condition butterflies can go into a stage of diapauses till favorable conditions are achieved. This is usually exhibited during developmental stage.



Mud puddling

II. Adaptations

Speed: Faster the butterfly flights, lesser the chance of predation.

Camouflage: An anti-predatory adaption by which the butterfly can remain undetectable to its predator by resembling its surrounding.



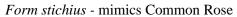
Camouflage

Butterfly mimicry: An adaption, in which a butterfly survives from its predators by resembling an unpalatable or toxic species.

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Batesian mimicry- In this, a butterfly which is palatable escapes its predator by resembling an unpalatable or toxic one (Example: Common Mormon female)







Form romulus - mimics Crimson Rose

Mullerian mimicry- A form of mimicry in which all members of a group have similar appearance and are unpalatable, which act as shared protective device.



Blue Tiger



Dark Blue Tiger



Glassy Tiger

Flash colouration: Prominent eye spots on the upper side of different butterflies help them to startle the predator.



Peacock Pansy



Blue Oakleaf

Warning colouration: Bright colouration and pattern on wings which warns the predator about a prey that is unpalatable, toxic or dangerous.



Danaid Eggfly



Plain Tiger

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III. Variation

Seasonal forms: As an adaptive response to changing season providing protection against predators.



Wet Season Form (WSF)



Dry Season Form (DSF)

Dimorphism: Existence of two different forms within a species.



Form dissimilis



Form clytia

Sexual Dimorphism: Phenomenon in which male and female of a species are morphologically different.



Female



Male

Polymorphism: Some butterflies exhibit more than two forms, like in case of Common Mormon wherein females have 3 different forms - namely, *form stichius* - mimicing Common Rose, *form romulus* - mimicing Crimson Rose and *form cyrus* - mimicing male of the same species.

Migration: Butterflies tend to move from one geographical area to another either as response to adverse climatic conditions or in search of food.

Short distance migration and Long distance migration

Lifespan: The lifespan of most butterflies ranges from two to four weeks (even upto 8 months as in case of some Nymphalids and Swallowtails) depending on the species. The larger the size, the longer will be the lifespan.

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Common Mime

Chocolate Albatross

Cruise

HESPERIIDAE (SKIPPERS)

HESPERIIDAE -

The skipper family derives their name from their Skipping nature i.e. the rapid flight, enabling their fast movement. They have stout bodies and relatively small angular wings making their appearance different from other butterfly families. Most Hesperiidae members have their antennae tip modified to a narrow hook like projection and are equipped with long proboscis for taking nectar from tubular flowers.

Skippers either rest holding their wings open flat or closed with forewings partially open. Most of the skippers lay dome shaped eggs either singly or in batches, which on hatching, cylindrical caterpillar with flat belly and narrow anterior and posterior ends comes out. Caterpillars of skippers are usually leaf folders or leaf rollers with nocturnal feeding habit. Chrysalis formed is long and tapering.

Most Skippers are monophagous, depending on monocotyledons, especially grasses, bamboos, palms etc. Others depend on dicotyledons such as *Grewia, Terminalia, Dalbergia*.













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Hesperiidae Skippers

1. Common name: Common Banded Awl Scientific name: *Hasora chromus*

Wingspan : 45-50mm

Status : Common





2. Common name: Brown Awl

Scientific name: Badamia exclamationis

Wingspan : 50-55mm

Status : Not rare





3 .Common name: Indian Skipper Scientific name: Spialia galba Wingspan : 20-27mm

Status : Common





4. Common name: Common Spotted Flat Scientific name: Celaenorrhinus leucocera

Wing span : 45-55mm

Status : Common





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Hesperiidae Skippers

5. Common name: Common Small Flat **Scientific name:** *Sarangesa dasahara*

Wing span : 26-35mm

Status : Common





6. Common name: Fulvous Pied Flat **Scientific name**: *Pseudocoladenia dan*

Wing span : 40-46mm

Status : Common





7. Common name: Tricoloured Pied Flat Scientific name: Coladenia indrani

Wing span : 40-46mm

Status : Common





8. Common name: Suffused Snow Flat Scientific name: *Tagiades gana* Wing span : 45-50mm

Status : Not rare





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9. Common name: Water Snow Flat **Scientific name**: *Tagiades litigiosa*

Wing span : 37-44mm

Status : Not rare





10. Common name: Chestnut Angle

Scientific name: Odontoptilum angulata

Wing span : 40-45mm

Status : Not rare





11. Common name: Golden Angle

Scientific name: Caprona ransonnetti

Wing span : 35-45mm

Status : Not rare





12. Common name: Tamil Grass Dart

Scientific name: Taractrocera ceramas

Wing span : 23-30mm

Status : Locally Abundant





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13. Common name: Indian Dartlet **Scientific name:** *Oriens goloides*

Wing span : 24-28mm

Status : Common





14. Common name: Dark Palm Dart **Scientific name**: *Telicota ancilla*

Wing span : 33-36mm

Status : Common





15. Common name: Pale Palm Dart **Scientific name:** *Telicota colon* **Wing span** : 32-36mm

Status : Not rare





16. Common name: Oriental Straight Swift

Scientific name: Parnara bada Wingspan : 32-38mm

Status : Common





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17. Common name: Rice Swift
Scientific name: Borbo cinnara
Wing span : 30-36mm

Status : Common





18. **Common name**: Small Branded Swift **Scientific name**: *Pelopidas mathias*

Wing span : 32-38mm

Status : Common





19. **Common name**: Conjioned Swift **Scientific name**: *Pelopidas conjuncta*

Wing spa : 45-52mm

Status : Not rare





20. **Common name**: Blank Swift **Scientific name**: *Caltoris kumara*

Wing span : 42-46mm

Status : Common





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21. **Common name**: Karwar Swift **Scientific name**: *Caltoris canaraica*

Wing span : 41mm

Status : Common

***** Endemic to Western Ghats





22. **Common name**: Bicolor Ace **Scientific name**: *Sovia hyrtacus*

Wing span : 36mm

Status : Rare

***** Endemic to Western Ghats





23. **Common name**: Vindhyan Bob **Scientific name**: *Arnetta vindhiana*

Wing span : 25-32mm

Status : Not rare





24. **Common name**: Indian Palm Bob **Scientific name**: *Suastus gremius*

Wing span : 32-45mm

Status : Common





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25. Common name: Tree Flitter

Scientific name: *Hyarotis adrastus*

Wing span : 38-48mm

Status : Not common

Schedule IV Species





26. Common name: Common Redeye Scientific name: *Matapa aria* Wing span : 40-55mm

Status : Common





27. Common name: Chestnut Bob Scientific name: *Iambrix salsala* Wing span : 26-30mm

Status : Common





28. **Common name**: Restricted Demon **Scientific name**: *Notocrypta curvifascia*

Wingspan : 38-50mm

Status : Common





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29. Common name: Common Banded Demon

Scientific name: Notocrypta paralysos

Wing span : 33-40mm

Status : Locally Common





30. Common name: Grass Demon **Scientific name**: *Udaspes folus* **Wing span**: 40-48mm

Status : Common





31. Common name: Bush Hopper

Scientific name: Ampittia dioscorides

Wing span : 22-28mm

Status : Locally Common





32. **Common name**: Pygmy Scrub Hopper **Scientific name**: *Aeromachus pygmaeus*

Wing span : 20-22mm

Status : Common





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33. Common name: Indian Ace Scientific name: *Halpe homolea* Wing span : 30-36mm

Status : Common

Schedule II Species





34. Common name: Moore's Ace Scientific name: Halpe porus Wing span : 32mm

Status : Not rare





35. **Common name**: Madras Ace **Scientific name**: *Thoressa honorei*

Wing span : 30-38mm

Status : Not common

Schedule IV Species

***** Endemic to Western Ghats





36. Common name: Southern Spotted Ace **Scientific name:** *Thoressa astigmata*

Wing span : 39mm

Status : Not rare

***** Endemic to Western Ghats





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PAPILIONIDAE (SWALLOWTAILS)

PAPILIONIDAE-

This brightly coloured group of butterflies can attract anyone with their mesmerizing colouration. They get the name swallowtail as most of them are with tailed hindwings. This family comprises of the largest butterflies of the world. In swallowtails, bases of the antennae are close together.

Swallowtails lay large spherical eggs. The egg hatches to give stout, cylindrical caterpillar which feeds on the egg shell as their first diet. Papilionid larvae have a fork shaped defensive organ called 'Osmeterium' in the prothoracic segment which can be everted, emitting pungent smell, when the larvae feels threatened. Pupa is of different forms but usually curved backward. It is attached in perpendicular position by the tail and secured by a silk loop round the middle.

Southern Birdwing (140-190mm), India's largest butterfly comes under this family.













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<u>Papilionidae</u> Swallowtails

37. **Common name**: Common Bluebottle **Scientific name**: *Graphium sarpedon*

Wing span : 80-90mm

Status : Common





38. Common name: Common Jay **Scientific name**: *Graphium doson* **Wing span** : 70-80mm

Status : Locally Common





39. Common name: Tailed Jay

Scientific name: Graphium agamemnon

Wing span : 85-100mm

Status : Common





40. Common name: Spot Swordtail **Scientific name**: *Graphium nomius*

Wing span : 75-90mm

Status : Locally Common





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Papilionidae Swallowtails

41. Common name: Common Mime **Scientific name**: *Chilasa clytia* **Wing span** : 90-100mm

Status : Not rare





form dissimilis





form clytia

42. Common name: Common Mormon **Scientific name**: *Papilio polytes* **Wing span** : 90-100mm

Status : Very Common





Male





form stichius

Female

form romolus

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Papilionidae Swallowtails

43. Common name: Malabar Raven **Scientific name**: *Papilio dravidarum*

Wing span : 80-120mm

Status : Uncommon

***** Endemic to Western Ghats





44. Common name: Red Helen **Scientific name**: *Papilio helenus* **Wing span** : 110-130mm

Status : Common





45. Common name: Blue Mormon **Scientific name**: *Papilio polymnestor*

Wing span : 120-150mm

Status : Not rare

State butterfly of Maharashtra





46. Common name: Lime Butterfly **Scientific name**: *Papilio demoleus*

Wing span : 80-100mm

Status : Very Common





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<u>Papilionidae</u> Swallowtails

47. Common name: Paris Peacock Scientific name: *Papilio paris* Wing span : 90-140mm

Status : Not rare





48. Common name: Malabar Banded Peacock

Scientific name: *Papilio buddha* **Wing span** : 90-100mm

Status : Rare

***** Endemic to Western Ghats

Schedule II Species

State butterfly of Kerala





49. Common name: Common Rose

Scientific name: Pachliopta aristolochiae

Wing span : 80-110mm

Status : Common





50. Common name: Malabar Rose

Scientific name: Pachliopta pandiyana

Wingspan : 100-130mm

Status : Locally Common

***** Endemic to Western Ghats





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Papilionidae Swallowtails

51. Common name: Crimson Rose **Scientific name**: *Pachliopta hector*

Wing span : 90-110mm

Status : Common

❖ Schedule I Species





52. Common name: Southern Birdwing **Scientific name**: *Troides minos* **Wing span** : 140-190mm

Status : Not Rare

***** Endemic to Western Ghats

* State butterfly of Karnataka

❖ The Largest Butterfly of India





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PIERIDAE (WHITES AND YELLOWS)

PIERIDAE-

Whites and Yellows, as the name suggests have white and yellow colouration, with black, red or orange markings. Being strong fliers, most of them prefer open lands as their habitat. The males can be spotted gregariously during mud-puddling when they imbibe salts from moist soils. Most Pieridae members exhibit sexual dimorphism with male and female differing in the pattern and number of black markings.

Spindle shaped eggs are laid singly or in batches. On hatching, the early instar larvae usually feed together in groups. The caterpillar is greenish in colour with a smooth and cylindrical body. The Pierids have their pupae held at an angle by a silk girdle running at the first abdominal segment.

Most of them exhibit seasonal variation in colouration, i.e., different wet and dry season forms. As a protective mechanism against predators, a few Pierids have unpalatable nature derived from chemicals obtained from host plants and warning colourations.













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53. Common name: One Spot Grass Yellow Scientific name: Eurema andersoni

Wing span : 38-45mm

Status : Not rare

Schedule II Species





54. Common name: Three-Spot Grass Yellow

Scientific name: Eurema blanda Wing span : 40-50mm

Status : Common





55. Common name: Small Grass Yellow Scientific name: Eurema brigitta

: 30-40mm Wing span

Status : Common





56. Common name: Common Grass Yellow

Scientific name: Eurema hecabe Wing span : 40-50mm

Status : Common





Winged Jewels **24** | Page **57. Common name**: Spotless Grass Yellow

Scientific name: Eurema laeta Wing span : 30-45mm

Status : Common





58. Common name: Common Emigrant **Scientific name**: *Catopsilia pomona*

Wing span : 55-80mm

Status : Common





59. Common name: Mottled Emigrant **Scientific name**: *Catopsilia pyranthe*

Wing span : 50-70mm

Status : Common





60. Common name: Great Orange Tip **Scientific name**: *Hebomoia glaucippe*

Wing span : 80-100mm

Status : Common





61. Common name: Common Wanderer **Scientific name**: *Pareronia valeria*

Wing span : 65-80mm

Status : Common





Male Female

62. Common name: Chocolate Albatross

Scientific name: *Appias lyncida* **Wingspan** : 55-70mm

Status : Locally Common

❖ Schedule II (part II) Species





63. Common name: Common Albatross

Scientific name: *Appias albina* **Wingspan** : 60-75mm

Status : Common





64. Common name: Common Gull **Scientific name**: *Cepora nerissa*

Wingspan : 40-65mm

Status : Common





Winged Jewels

65. Common name: Common Jezebel **Scientific name**: *Delias eucharis* **Wing span** : 66-83mm

Status : Common





66. Common name: Oriental Psyche Scientific name: *Leptosia nina* Wing span : 35-50mm

Status : Common





67. Common name: Pioneer

Scientific name: Belenois aurota

Wingspan : 40-55mm

Status : Common





Winged Jewels 27 | Page

LYCAENIDAE (BLUES)

LYCAENIDAE-

Blues, the second largest family comprises of small to medium sized butterflies which are brightly coloured, usually with a metallic tinge. Many Lycaenids despite having the name blue have no blue colouration on their wings. Adult individuals often have hairy antenna-like tails complete with black and white annulated (ringed) appearance. The dark spots at the end of tail provides decoy from potential predator, making the predator unable to recognize the true head.

Lycaenid eggs are turban shaped with both ends flattened and slightly cylindrical with smooth or pitted surface. Larvae are often flattened with segmented body and retractable head having glands that produce secretions that attract and subdue ants. Pupation occurs in ground (leaf litter) or tree cervices with the pupae existing in association with ants in many cases.

Lycaenids are diverse in their food habits and apart from phytophagy, some of them are entomophagous feeding on aphids, scale, insects and ant larvae.

Grass jewel (15-22mm), the smallest butterfly of India comes under this family.













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LycaenidaeBlues

68. Common name: Common Apefly **Scientific name**: *Spalgis epius* **Wing span** : 20-30mm

Status : Not Common





69. Common name: Indian Sunbeam Scientific name: *Curetis thetis* Wing span : 40-48mm

Status : Not rare





70. Common name: Angled SunbeamScientific name: Curetis acutaWing span : 35-42 mm

Status : Not rare





71. Common name: Western Centaur Oakblue **Scientific name**: *Arhopala pseudocentaurus*

Wing span : 53-62mm

Status : Not common

\$ Largest Lycaenid of Western Ghats





Winged Jewels 29 | Page

72. Common name: Large Oakblue **Scientific name**: *Arhopala amantes*

Wing span : 45-57mm

Status : Locally Common

❖ 2nd largest Lycaenid of Western Ghats





73. Common name: Kanara Oakblue **Scientific name**: *Arhopala alea* **Wingspan** : 44-45mm

Status : Locally Common

❖ Schedule I Species

***** Endemic to Western Ghats





74. Common name: Indian Purple Leafblue **Scientific name**: *Amblypodia anita*

Wingspan : 45-52mm

Status : Not rare





75. Common name: Yamfly

Scientific name: Loxura atymnus

Wing span : 36-40mm

Status : Common





Winged Jewels 30 | Page

76. Common name: Common Onyx Scientific name: *Horaga onyx* Wing span : 27-33mm

Status : Locally Common

❖ Schedule II (part II) Species





77. Common name: Monkey Puzzle **Scientific name**: *Rathinda amor* **Wing span** : 26-28mm

Status : Not rare





78. Common name: Common Imperial **Scientific name**: *Cheritra freja* **Wing span** : 38-42mm

Status : Locally Common





79. Common name: Peacock Royal **Scientific name**: *Tajuria cippus* **Wingspan** : 31-45mm

Status : Uncommon

Schedule II Species





Winged Jewels 31 | Page

80. Common name: Banded Royal Scientific name: *Rachana jalindra*

Wingspan : 36-44mm

Status : Rare to Very Rare

Schedule II Species





81. Common name: Fluffy Tit Scientific name: *Zeltus amasa* Wing span : 28-32mm

Status : Not Common





82. Common name: Orchid Tit Scientific name: *Chliaria othona* Wing span : 24-27mm

Status : Rare

Schedule I Species





83. Common name: Common Guava Blue **Scientific name**: *Deudorix isocrates*

Wingspan : 34-50mm

Status : Common





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84. Common name: Large Guava Blue **Scientific name**: *Deudorix perse* **Wingspan** : 48-52mm

Status: Not rare





85. Common name: Cornelian

Scientific name: Deudorix epijarbas

Wing span : 34-44mm

Status : Not common





86. Common name: Indian Red Flash **Scientific name**: *Rapala iarbus* **Wing span** : 33-41mm

Status : Common





87. Common name: Slate Flash Scientific name: *Rapala manea* Wing span : 30-33mm

Status : Common





Winged Jewels 33 | Page

88. Common name: Indigo Flash Scientific name: *Rapala varuna* Wing span : 28-29mm

Status : Not rare

Schedule II (part II) Species





89. Common name: Malabar Flash **Scientific name**: *Rapala lankana* **Wingspan** : 38-41mm

Status : Rare

***** Endemic to Western Ghats





90. Common name: Common Tinsel **Scientific name**: *Catapaecilma elegans*

Wingspan : 28-32mm

Status : Not rare





91. Common name: Long-banded Silverline

Scientific name: *Spindasis lohita* **Wing span** : 30-42mm

Status : Common

❖ Schedule II Species





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92. Common name: Common Silverline **Scientific name**: *Spindasis vulcanus*

Wing span : 26-34mm

Status : Common





93. Common name: Scarce Shot Silverline

Scientific name: *Spindasis elima* **Wingspan** : 28-42mm

Status : Not Common

Schedule II Species





94. Common name: Pointed Ciliate Blue **Scientific name**: *Anthene lycaenina*

Wing span : 24-29mm

Status : Not rare





95. Common name: Angled Pierrot **Scientific name**: *Caleta caleta* **Wingspan** : 26-32mm

Status : Not rare





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96. Common name: Banded Blue Pierrot **Scientific name**: *Discolampa ethion*

Wing span : 26-30mm

Status : Locally Common





97. Common name: Common Pierrot **Scientific name**: *Castalius rosimon*

Wing span : 24-34mm

Status : Common





98. Common name: Zebra Blue Scientific name: *Leptotes plinius* Wing span : 22-30mm

Status : Common





99. Common name: Dingy Line Blue **Scientific name**: *Petrelaea dana* **Wing span** : 24-28mm

Status : Not rare





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100. Common name: Transparent Six-Lineblue

Scientific name: Nacaduba kurava

Wing span : 30-38mm

Status : Not rare





101. Common name: Common Lineblue **Scientific name**: *Prosotas nora* **Wing span** : 18-25mm

Status : Common





102. Common name: Tailless Lineblue

Scientific name: Prosotas dubiosa indica

Wing span : 22-26mm

Status : Common





103. Common name: Dark Cerulean **Scientific name**: *Jamides bochus*

Wing span : 25-34mm

Status : Common





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104. Common name: Common Cerulean **Scientific name**: *Jamides celeno* **Wing span** : 27-40mm

Status : Common





105. Common name: Metallic Cerulean **Scientific name**: *Jamides alecto* **Wing span** : 30-44mm

Status : Locally Common





119. Common name: Forget-Me-Not **Scientific name**: *Catochrysops strabo*

Wing span : 25-35mm

Status : Common





106. Common name: Pea Blue

Scientific name: Lampides boeticus

Wing span : 24-36mm

Status : Common

❖ Schedule II Species





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107. Common name: Dark Grass Blue **Scientific name**: *Zizeeria karsandra*

Wing span : 18-24mm

Status : Common





108. Common name: Pale Grass Blue **Scientific name**: *Pseudozizeeria maha*

Wing span : 26-30mm

Status : Common





109. Common name: Grass Jewel **Scientific name**: *Freyeria trochylus*

Wing span : 15-22mm

Status : Locally Common

***** The Smallest Butterfly of India





110. Common name: Lesser Grass Blue

Scientific name: Zizina otis **Wing span** : 19-26mm

Status : Common





Winged Jewels 39 | Page

111. Common name: Tiny Grass Blue **Scientific name**: *Zizula hylax* **Wing span** : 16-24mm

Status : Common





112. Common name: Red Pierrot **Scientific name**: *Talicada nyseus* **Wing span** : 30-36mm

Status : Locally Common





113. Common name: Quaker

Scientific name: Neopithecops zalmora

Wing span : 16-30mm

Status : Common





114. Common name: Malayan

Scientific name: Megisba malaya

Wing span : 19-30mm

Status: Not rare





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115. Common name: Gram Blue **Scientific name**: *Euchrysops cnejus*

Wing span : 25-33mm

Status : Common

❖ Schedule II (part II) Species





116. Common name: Common Hedge Blue **Scientific name**: *Acytolepis puspa*

Wing span : 28-35mm

Status : Common





117. Common name: Plains Cupid **Scientific name**: *Chilades pandava*

Wing span : 25-35mm

Status : Locally Common





118. Common name: Lime Blue **Scientific name**: *Chilades lajus* **Wing span** : 26-30mm

Status : Common

❖ Schedule II (part II) Species





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RIODINIDAE (Metalmarks)

RIODINIDAE-

Earlier treated as a subfamily under Lycaenidae, Riodinidae consists of members with metallic markings on their wings, hence the name Metalmarks. They are small reddish brown bodied with yellowish green eyes. Being active fliers, they exhibit short hopping flight and can be observed usually in motion. Male butterflies are devoid of scent scales.

Riodinid eggs are round with smooth surface. On hatching, hairy larvae with its body covered with setae comes out. Life histories of Riodinid butterflies are poorly known.

120. Common name: Double Banded Judy **Scientific name**: *Abisara bifasciata*

Wing span : 40-50mm

Status : Common





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NYMPHALIDAE (Brush-footed)

NYMPHALIDAE-

The largest family of butterflies, this group has members with four legs reduced to a small hairy brush, giving the name Brush-footed butterflies. The fore legs are held pressed against the underside of the thorax, giving a fore legged appearance. Size of Nymphalids ranges from medium to large, with a vast majority being in medium size. Brush-footed butterflies vary greatly in colouration.

Size and shape of egg vary considerably within the family. The caterpillars are hairy or spiky with projections on head. Chrysalids having shiny spots are suspended free from the anal hook or cremaster without any silken girdle.

Nymphalids exhibit powerful and energetic flight and feed on animal droppings, urine, and carcasces, nectar and even overripe fruits.













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Nymphalidae

121. Common name: Blue Tiger

Scientific name: Tirumala limniace

Wing span : 90-100mm

Status : Common





122. Common name: Dark Blue Tiger

Scientific name: Tirumala septentrionis

Wingspan : 75-95mm

Status : Common





123. Common name: Striped Tiger **Scientific name**: *Danaus genutia* **Wing span** : 72-100mm

Status : Common





124. Common name: Plain Tiger

Scientific name: Danaus chrysippus

Wing span : 70-80mm

Status : Common





Winged Jewels

Brush-footed Butterflies

125. Common name: Glassy Tiger **Scientific name**: *Parantica aglea*

Wing span : 70-85mm

Status : Common





126. Common name: Double-Branded Crow

Scientific name: Euploea sylvester

Wing span : 95-105mm

Status : Locally Common





127. Common name: Brown King Crow **Scientific name**: *Euploea klugii* **Wingspan** : 85-100mm

Status : Locally Common





128. Common name: Common Indian Crow

Scientific name: *Euploea core* **Wing span** : 85-95mm

Status : Common





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Winged Jewels

Nymphalidae

129. Common name: Malabar Tree Nymph

Scientific name: *Idea malabarica* **Wing span** : 110-160mm

Status : Locally Common

***** Endemic to Western Ghats





130. Common name: Common Nawab **Scientific name**: *Polyura athamas*

Wing span : 60-75mm

Status : Common





131. Common name: Blue Nawab **Scientific name**: *Polyura schreiber*

Wing span : 90-100mm

Status : Rare





132. Common name: Southern Duffer **Scientific name**: *Discophora lepida*

Wing span : 85-110mm

Status: Uncommon

***** Endemic to Western Ghats

Schedule II Species





Brush-footed Butterflies

133. Common name: Common Evening Brown

Scientific name: *Melanitis leda* **Wing span** : 60-80mm

Status : Common





134. Common name: Dark Evening Brown **Scientific name**: *Melanitis phedima*

Wing span : 60-85mm

Status : Not rare





135. Common name: Bamboo Treebrown

Scientific name: *Lethe europa* **Wing span** : 65-75mm

Status : Common





136. Common name: Tamil Treebrown **Scientific name**: *Lethe drypetis* **Wing span** : 65-70mm

Status : Common

***** Endemic to Western Ghats





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Brush-footed Butterflies

137. Common name: Common Bushbrown **Scientific name**: *Mycalesis perseus*

Wing span : 38-55mm

Status : Common





138. Common name: Dark-brand Bushbrown

Scientific name: Mycalesis mineus

Wing span : 40-50mm

Status : Common





139. Common name: Glad-eye Bushbrown

Scientific name: Mycalesis patnia

Wing span : 40-45mm

Status : Common

***** Endemic to Western Ghats





140. Common name: Tailed Palmfly **Scientific name**: *Elymnias caudata*

Wing span : 65-80mm

Status : Common

***** Endemic to Western Ghats





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Winged Jewels

Nymphalidae

141. Common name: Medus Brown (Nigger) **Scientific name**: *Orsotrioena medus*

Wing span : 45-55mm

Status : Common





142. Common name: Common Five-ring **Scientific name:** *Ypthima baldus* **Wing span** : 32-48mm

Status : Common





143. Common name: Common Four-ring **Scientific name**: *Ypthima huebneri*

Wing span : 30-40mm

Status : Common





144. Common name: Tawny Coster **Scientific name**: *Acraea violae* **Wing span** : 50-65mm





Nymphalidae

145. Common name: Tamil Lacewing Scientific name: Cethosia nietneri

Wing span : 80-95mm

Status : Locally Common

Endemic to Western Ghats





146. Common name: Cruiser

Scientific name: *Vindula erota* **Wing span** : 72-110mm

Status : Not rare





Male

Female

147. Common name: Tamil Yeoman **Scientific name**: *Cirrochroa thais* **Wing span** : 60-75mm

Status : Locally Common

***** Endemic to Western Ghats

State butterfly of Tamil Nadu





148. Common name: Rustic

Scientific name: Cupha erymanthis

Wing span : 50-60mm

Status : Common





Winged Jewels

Brush-footed Butterflies

149. Common name: Common Leopard **Scientific name**: *Phalanta phalantha*

Wing span : 50-60mm

Status : Common





150. Common name: Commander **Scientific name**: *Moduza procris* **Wing span** : 60-75mm

Status : Common





151. Common name: Common Sergeant Scientific name: Athyma perius Wing span : 60-70mm

Status : Locally Common





152. Common name: Blackvein Sergeant

Scientific name: *Athyma ranga* **Wing span** : 60-70mm

Status : Not Common

❖ Schedule II (part II) Species





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Nymphalidae

153. Common name: Colour Sergeant Scientific name: Athyma nefte Wing span : 55-70mm

Status : Not rare





154. Common name: Common Lascar **Scientific name**: *Pantoporia hordonia*

Wing span : 45-50mm

Status : Common





155. Common name: Chestnut-Streaked Sailer

Scientific name: *Neptis jumbah* **Wing span** : 60-70mm

Status : Common





156. Common name: Common Sailer **Scientific name**: *Neptis hylas* **Wing span** : 50-60mm





157. Common name: Clear Sailer **Scientific name**: *Neptis nata* **Wing span** : 45-60mm

Status : Rare



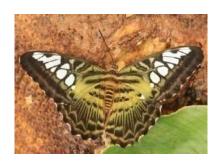


158. Common name: Clipper

Scientific name: *Parthenos sylvia* **Wing span** : 95-130mm

Status : Rare

❖ Schedule II Species





159. Common name: Guady Baron **Scientific name**: *Euthalia lubentina*

Wing span : 60-80mm

Status : Common





160. Common name: Common Baron **Scientific name**: *Euthalia aconthea*

Wing span : 55-80mm





Brush-footed Butterflies

161. Common name: Baronet **Scientific name**: *Euthalia nais* **Wing span** : 60-70mm

Status : Locally Common





162. Common name: Grey Count **Scientific name**: Tanaecia lepidea **Wing span** : 65-80mm

Status : Rare

Schedule II (part II) Species





163. Common name: Redspot Duke **Scientific name**: *Dophla evelina* **Wing span** : 81-113mm

Status : Not Common

❖ Schedule II (part II) Species





164. Common name: Common Castor **Scientific name**: *Ariadne merione*

Wing span : 45-60mm

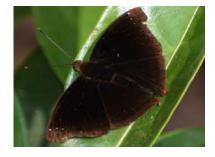




165. Common name: Black Prince **Scientific name**: *Rohana parisatis*

Wing span : 45-50mm

Status : Not rare





Male Female

166. Common name: Painted Lady **Scientific name**: *Vanessa cardui* **Wing span** : 55-70mm

Status : Common





167. Common name: Blue Pansy **Scientific name**: *Junonia orithiya*

Wing span : 45-60mm

Status : Common





168. Common name: Yellow Pansy **Scientific name**: *Junonia hierta* **Wing span** : 45-60mm





169. Common name: Chocolate Pansy **Scientific name**: *Junonia iphita* **Wing span** : 55-80mm

Status : Common





170. Common name: Grey Pansy **Scientific name**: *Junonia atlites* **Wing span** : 55-65mm

Status : Locally Common





171. Common name: Peacock Pansy **Scientific name**: *Junonia almana* **Wing span** : 60-65mm

Status : Common





172. Common name: Lemon Pansy **Scientific name**: *Junonia lemonias*

Wing span : 40-60mm





Nymphalidae

173. Common name: Great Eggfly

Scientific name: Hypolimnas bolina

Wing span : 70-110mm

Status : Common





Male





Female

174. Common name: Danaid Eggfly

Scientific name: Hypolimnas misippus

Wing span : 70-85mm

Status : Common







Female





Male

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Brush-footed Butterflies

175. Common name: Blue Oakleaf **Scientific name**: *Kallima horsfieldi*

Wing span : 85-110mm

Status : Locally Common

***** Endemic to Western Ghats





176. Common name: Autumn Leaf

Scientific name: Doleschallia bisaltide

Wing span : 75-85mm

Status : Rare

❖ Schedule II Species





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Butterfly watching

Butterflying/Butterfly watching is an interesting pursuit for butterfly lovers, to be out in the field observing these delightful creatures flying around us. Butterflies are commonly found and are easily approachable making it easier to do. Unlike birds, butterflies rise late in the morning, usually an hour after the Sun has set in. Butterfly observation can be usually done with binoculars or with the help of a camera.



Best time to watch Butterflies:

Butterflies start their activity late in the morning, often basking in the morning rays to raise their body temperature, making it easier to approach them during this time for a closer look than during the hours of peak activity. At late evening after the peak hours of activity, butterflies tend to move into the shade and undergrowth. During monsoon, with the host plants grown luxuriantly butterfly populations increase from August to early December making it the best time for an observer to watch butterflies.

Places to observe:

Sun loving butterflies are often found at the edges of woodlots hovering in the sun rays like Blues, Grass yellows, Pansies etc. Butterflies like Emigrants, Albatross, Common Bluebottle, Common Gull etc, can be seen in groups during mud-puddling in damp places. Most Swallowtails and Tree Browns are forest dwellers found the tree patches. The Common Evening Brown found in undergrowth and fallen leaves and its activity peak at late evening. All butterflies are visitor to flower patches to meet their diet.



Nectaring on Cosmos flowers



Mud-puddling



Nectaring on Leea indica

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Mobile Photography:

Though it needs patience, Mobile Photography can be used as the best tool for observing and recording butterflies surround us. A good mobile phone with a decent camera is something which we all carry with us 24×7, which can be efficiently employed as a tool of butterfly watching. It is unlikely to have a professional camera with us every time we run into a rare butterfly and it's always our phone that comes as a handy tool. While taking a mobile photograph we also get a closer look at the morphology of the winged jewel.





ETHICS OF BUTTERFLY WATCHING

- ➤ Do not collect butterflies, their larvae or eggs. By doing so you might hinder the ecological balance.
- Try to be in camouflage, the butterflies should not sense an alien presence.
- Always carry with you, paraphernalia for observing and recording the butterflies.
- As always in forest, maintain silence. Do not disturb the pious and calmnesss of the environment.
- Never take a butterfly onto your hand; you will harm their delicate wings and tender body.
- Never disturb a butterfly or the developmental stages for the sake of getting a photograph.
- ➤ Your love for butterflies should not make you harm other creatures. A butterfly is also a part of food chain.

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Butterfly gardening: some tips

By planting of nectar plants and larval host plant, you can attract the winged jewels in our urban environment to our backyard and at the same time save them from the ever growing threat of habitat destruction. This proves to be an excellent hobby for nature lovers.

While selecting the area for butterfly gardening, keep in mind that it should be sunny with no heavy wind movements. The food plants and the nectar plants require a few hours of sunlight for their luxuriant growth and abundant flowering, thus resulting in excellent activity of butterflies. The area should be free from pesticides or any other toxic components.

Specific larval host plants and nectar plants preferred by butterflies of your locality must be planted. The more you care for the plants the better your butterfly garden will become.

Butterfly Garden, College of Forestry, Sirsi

For conserving butterflies in a human dominated landscape or any institutional campus, planting and maintaining high plant diversity and different types of habitat is a good option. Keeping this in view, we the students of College of Forestry created a small garden as an initiation to butterfly gardening by planting species like *Crotalaria retusa*, *Aschlepias currassavica*, *Bryophyllum pinnatum*, *Murraya koenigii*, *Plumbago zeylanica*, *Wendlandia thyrsoidae* etc.

As a result, congregation of Danaine butterflies on *Crotalaria retusa* happened during the month of December 2018. This is a success story of butterfly gardening in our campus.



A few of the butterfly species recorded in the garden during the congregation were Blue tiger, Dark blue tiger, striped tiger, Plain tiger, Common crow, Slate flash etc.

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We started out by planting *Crotalaria retusa* seedlings which were raised from seeds brought during our visits. First raised in polybags, they were transplanted to our garden site with utmost care during the monsoon, and they grew up well to our expectations.



Regular watering and weeding was done in the garden ensuring better establishment. Other Food and Nectar plants such as *Aschlepias currassavica, Bryophyllum pinnatum, Murraya koenigii, Plumbago zeylanica,* etc. were also added to the garden to attract more species of butterflies.



Crotalaria retusa started flowering during the month of October, inviting different butterfly species to our campus which gave an opportunity for us to observe and study butterflies closely.



We could observe congregation of Danaine butterflies on *Crotalaria retusa* during the month of December 2018. Danaine butterflies are attracted to and feed on withered plants like *Crotalaria retusa* which have the presence pyrrolizidine alkaloids required by the males as a precursor for biosynthesis of pheromone components.



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Butterfly – larval host plants			
Sl.No	Common Name	Scientific Name	Host(s)
1	Common Banded Awl	Hasora chromus	Ricinus communis Pongamia pinnata
2	Brown Awl	Badamia exclamationis	Combretum albidum Terminalia bellerica
3	Indian Skipper	Spialia galba	Hibiscus spp. Sida rhombifolia
4	Common Spotted Flat	Celaenorrhinus leucocera	Asystasia gangetica Carvia callosa Eranthemum roseum
5	Common Small Flat	Sarangesa dasahara	Asystasia spp. Blepharis asperrima
6	Fulvous Pied Flat	Pseudocoladenia dan	Achyranthes aspera
7	Tricolored Pied Flat	Coladenia indrani	Mallotus philippinensis Desmodium spp. Grewia microcos
8	Suffused Snow Flat	Tagiades gana	Dioscorea oppositifolia Dioscorea alata
9	Water Snow Flat	Tagiades litigiosa	Dioscorea oppositifolia Dioscorea alata Smilax sp.
10	Chestnut Angle	Odontoptilum angulata	Ceiba sp. Urena lobata Allophyllus cobbe
11	Golden Angle	Caprona ransonnetti	Helicteres isora, Urena lobata
12	Tamil Grass Dart	Taractrocera ceramas	Grass species, including Oryza sativa
13	Indian Dartlet	Oriens goloides	Axonopus compressus
14	Dark Palm Dart	Telicota ancilla	Calamus sp. Imperata cylindrical
15	Pale Palm Dart	Telicota colon	Bambusa striata Ochlandra travancorica
16	Straight Swift	Parnara bada	Oryza sativa Saccharum officinarum
17	Rice Swift	Borbo cinnara	Andropogon sp. Cymbopogon sp.
18	Small Branded Swift	Pelopidas mathias	Cymbopogon nardus Imperata cylindrical
19	Conjioned Swift	Pelopidas conjuncta	Andropogon sp. Bambusa spp.
20	Blank Swift	Caltoris kumara	Bambusa spp.
21	Karwar Swift	Caltoris canaraica	Bambusa spp.
22	Bicolor Ace	Sovia hyrtacus	Kydia calycina
23	Vindhyan Bob	Arnetta vindhiana	Grass species

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Sl.No	Common Name	Scientific Name	Host(s)
24	Indian Palm Bob	Suastus gremius	Calamus spp. Caryota urens
25	Tree Flitter	Hyarotis adrastus	Calamus spp. Phoenix spp.
26	Common Redeye	Matapa aria	Bamboo spp. Bambusa striata
27	Chestnut Bob	Iambrix salsala	Bamboo and grass species
28	Restricted Demon	Notocrypta curvifascia	Costus speciosus Curcuma decipiens
29	Common Banded Demon	Notocrypta paralysos	Ginger and turmeric species of Family Zingiberaceae
30	Grass Demon	Udaspes folus	Curcuma aromatic
31	Bush Hopper	Ampittia dioscorides	Oryza sativa
32	Pygmy Scrub Hopper	Aeromachus pygmaeus	Grasses
33	Indian Ace	Halpe homolea	Bamboo spp.
34	Moore's Ace	Halpe porus	Bamboo spp.
35	Madras Ace	Halpe honorei	Bamboo spp.
36	Southern Spotted Ace	Thoressa astigmata	Data deficient
37	Common Bluebottle	Graphium sarpedon	Alseodaphne semecarpifolia Cinnamomum camphora Polyalthia longifolia
38	Common Jay	Graphium doson	Plants of the families Annonaceae, Lauraceae, Magnoliaceae
39	Tailed Jay	Graphium agamemnon	Polyalthia longifolia Polyalthia cerasoides Annona squamosa, A. reticulate
40	Spot Swordtail	Graphium nomius	Miliusa tomentosa Polyalthia longifolia
41	Common Mime	Chilasa clytia	Cinnamomum verum Alseodaphne semecarpifolia
42	Common Mormon	Papilio polytes	Aristolochia bracteolate
43	Malabar Raven	Papilio dravidarum	Murraya koenigii Glycosmis pentaphylla
44	Red Helen	Papilio helenus	Toddalia asiatica Glycosmis pentaphylla Toddalia asiatica Zanthoxylum rhetsa
45	Blue Mormon	Papilio polymnestor	Atalantia racemosa, Atalantia wightii Glycosmis arborea
46	Lime Butterfly	Papilio demoleus	Cultivated lime, orange and lemons (Family Rutaceae)
47	Paris Peacock	Papilio paris	Citrus spp., Toddalia asiatica Zanthoxylum rhetsa

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Sl.No	Common Name	Scientific Name	Host(s)
48	Malabar Banded Peacock	Papilio buddha	Zanthoxylum rhetsa
49	Common Rose	Atrophaneura aristolochiae	Aristolochia bracteolate Thottea siliquosa
50	Malabar Rose	Atrophaneura pandiyana	Thottea siliquosa
51	Crimson Rose	Atrophaneura hector	Aristolochia indica Aristolochia bracteolate Thottea siliquosa
52	Southern Birdwing	Troides minos	Aristolochia indica Aristolochia tagala Thottea siliquosa
53	One Spot Grass Yellow	Eurema andersoni	Data deficient
54	Three Spot Grass Yellow	Eurema blanda	Cassia spp. Delonix regia Moulluva spicata
55	Small Grass Yellow	Eurema brigitta	Cassia kleinii Smithia sensitiva
56	Common Grass Yellow	Eurema hecabe	Cassia tora Abrus precatorius Sesbania sesban
57	Spotless Grass Yellow	Eurema laeta	Cassia pumila Chamaecrista mimosoides
58	Common Emigrant	Catopsilia pomona	Cassia spp Butea monosperma Cassia fistula
59	Mottled Emigrant	Catopsilia pyranthe	Cassia spp. (e.g., C. fistula, C. auriculata, C. occidentalis, C. tora)
60	Great Orange Tip	Hebomoia glaucippe	Capparis sepiaria Capparis roxburghii
61	Common Wanderer	Pareronia valeria	Capparis zeylanica, C. rheedii
62	Chocolate Albastross	Appias lyncida	Crateva adansonii Capparis roxburghii
63	Common Albatross	Appias albino	Drypetes oblongifolia Drypetes roxburghii
64	Common Gull	Cepora nerissa	Capparis zeylanica
65	Pioneer	Belenios aurota	Capparis zeylanica Cadaba fruticosa
66	Common Jezebel	Delias eucharis	Dendrophthoe falcata Helicanthes elastic
67	Oriental Psyche	Leptosia nina	Cleome viscose
68	Common Apefly	Spalgis epius	Capparis zeylanica Feeds on scale insects and mealy bugs
69	Indian Sunbeam	Curetis thetis	Caterpillars are carnivorous. Abrus precatorius
70	Angled Sunbeam	Curetis acuta	Pongamia pinnata Pongamia pinnata
71	Western Centaur Oakblue	Arhopala pseudocentaurus	Terminalia paniculata Lagerstroemia microcarpa

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Sl.No	Common Name	Scientific Name	Host(s)
72	Large Oakblue	Arhopala amantes	Terminalia alata, T. catappa, T. paniculata, Lagerstroemia microcarpa
73	Kanara Oakblue	Arhopala alea	Syzygium spp. Hopea ponga
74	Purple Leaf blue	Amblypodia anita	Olax imbricate Olax scandens
75	Yamfly	Loxura atymnus	Dioscorea pentaphylla Smilax zeylanica
76	Common Onyx	Horaga onyx	Coriaria nepalensis
77	Monkey Puzzle	Rathinda amor	Ixora spp. Mangifera indica Schleichera oleosa
78	Common Imperial	Cheritra freja	Cinnamomum spp. Xylia xylocarpa
79	Peacock Royal	Tajuria cippus	Dendrophthoe falcata Helicanthes elastic
80	Banded Royal	Rachana jalindra	Dendrophthoe falcate Helicanthes elastic
81	Fluffy Tit	Zeltus amasa	Data deficient
82	Orchid tit	Chilaria othona	Cottonia peduncularis, Aerides maculosa
83	Common Guava Blue	Deudorix isocrates	Psidium guajava Gardinia gummifera Strychnos nux-vomica
84	Large Guava Blue	Deudorix perse	Gardinia gummifera
85	Cornelian	Deudorix epijarbas	Punica granatum Aesculus indica Sapindus marginatus
86	Indian Red Flash	Rapala airbus	Ougeinia dalbergioides, Melastoma malabathricum
87	Slate Flash	Rapala manea	Quisqualis indica Antidesma acidum Trema orientalis
88	Indigo Flash	Rapala varuna	Quisqualis indica Ziziphus rugosa Sapindus laurifolia
89	Malabar Flash	Rapala lankana	Acacia spp.
90	Common Tinsel	Catapaecilma elegans	Terminalia paniculata
91	Long-banded Silverline	Spindasis lohita	Terminalia paniculata Xylia xylocarpa Smilax spp,
92	Common Silverline	Spindasis vulcanus	Cadaba fruticosa Ziziphus mauritiana Canthium coromandelicum
93	Scarce-shot Silverline	Spindasis elima	Data deficient
94	Pointed Ciliate Blue	Anthene lycaenina	Buchanania lanzan, Bridelia retusa

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Sl.No	Common Name	Scientific Name	Host(s)
95	Angled Pierrot	Caleta caleta	Zizyphus rugosa
96	Banded Blue Pierrot	Discolampa ethion	Zizyphus spp.
97	Common Pierrot	Castalius rosimon	Ziziphus jujuba, Z. mauritiana, Z. rugosa
98	Zebra Blue	Leptotes plinius	Albizia lebbeck, Sesbania bispinosa Plumbago zeylanica
99	Dingy Lineblue	Petrelaea dana	Mallotus philippensis
100	Transparent Six Lineblue	Nacaduba kurava	Ardisia humilis, Embelia robusta
101	Common Lineblue	Prosotas nora	Acacia catechu, A. tora Mimosa spp. Pithecellobium dulce
102	Tailless Lineblue	Prosotas dubiosa indica	Acacia spp., Mimosa pudica Leucaena spp
103	Dark Cerulean	Jamides bochus	Butea monosperma Crotalaria spp. Pongamia pinnata
104	Metallic cerulean	Jamides alecto	Elettaria cardamomum
105	Common Cerulean	Jamides celeno	Saraca asoca, Abrus precatorius Butea monosperma
106	Pea Blue	Lampides boeticus	Butea monosperma Crotalaria spp. Pisum sativum,
107	Dark Grass blue	Zizeeria karsandra	Amaranthus spinosus Polygonum plebeium
108	Pale Grass Blue	Pseudozizeeria maha	Oxalis corniculata Strobilanthes spp.
109	Lesser Grass Blue	Zizina otis	Desmodium heterophyllum, Sesbania bispinosa
110	Tiny Grass Blue	Zizula hylax	Lantana camara Ruellia simplex, R. tuberose
111	Grass Jewel	Freyeria trochylus	Heliotropium strigosum Indigofera spp.
112	Red Pierrot	Talicada nyseus	Kalanchoe laciniata, K. pinnata (Syn. Bryophyllum pinnatum
113	Quaker	Neopithecops zalmora	Glycosmis pentaphylla
114	Malayan	Megisba malaya	Allophyllus cobbe Mallotus philippensis
115	Gram blue	Euchrysops cnejus	Butea monosperma Ougeinia dalbergioides Pisum sativum
116	Common Hedge blue	Acytolepis puspa	Xylia xylocarpa Peltophorum pterocarpum Schleichera oleosa

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Sl.No	Common Name	Scientific Name	Host(s)
117	Plains Cupid	Chilades pandava	Cycas circinalis, Cycas revoluta
11/	1		Acacia spp.
			Xylia xylocarpa
118	Lime Blue	Chilades lajus	Citrus aurantifolia, C. maxima
110			Murraya paniculata
119	Forget-Me- Not	Catochrysops strabo	Ougeinia dalbergioides
117			Desmodium elegans
120	Double Banded Judy	Abisara bifasciata	Embelia robusta
120	,	,	Ardisia spp.
121	Blue Tiger	Tirumala limniace	Asclepias currassavica
121			Tylophora indica
			Wattakaka volubilis
122	Dark blue Tiger	Tirumala septentrionis	Dregea volubilis
122		1	
123	Striped Tiger	Danaus genutia	Asclepias currassavica
1_0			Ceropegia sp.
124	Plain Tiger	Danaus chrysippus	Asclepias curassavica
121			Calotropis gigantea, C. procera
			Cryptolepis buchanani
125	Glassy Tiger	Parantica aglea	Calotropis sp.
123	, ,		Ceropegia sp.
			Cryptolepis buchanani
126	Double-Branded Crow	Euploea sylvester	Hoya sp.
120			Cynanchum sp.
127	Brown King Crow	Euploea klugii	Ficus hispid, Ficus tinctorea
100	Common Indian Crow	Euploea core	Nerium oleander,
128	Common mulan Crow	Еиріова соге	Asclepias curassavica
			Cryptolepis buchanani
			Hemidesmus indicus
120	Malabar Tree Nymph	Idea malabarica	Aganosoma cymosa,
129	Walabar Tree Tymph	Taea maiabarica	Parsonsia spiralis
120	Common Nawab	Polyura athamas	Caesalpinia bonduc
130	Common ivawao	1 Oi yura amamas	Delonix regia
121	Blue Nawab	Polyura schreiber	Moullava spicata
131	Bide Nawab	1 Oryura schreiber	Adenanthera pavonina
122	Southern Duffer	Discophora lepida	Bamboos
132	Southern Burier	Discopnora tepida	Duniooos
133	Common Evening Brown	Melanitis leda	Oryza sativa
133	<i>5</i>		Sorghum spp.
134	Dark Evening Brown	Melanitis phedima	Microstegium ciliatum
134	0 =	r	Setaria palmifolia
105	Bamboo Treebrown	Latha aurona	
135	Damooo Heedrown	Lethe europa	Bambusa spp. Migrostogium giliatum
12 =	Tomil Trochrous	Latha dmynatia	Microstegium ciliatum
136	Tamil Treebrown	Lethe drypetis	Bambusa arundinacea (Family Poaceae)
107	Common Bushbrown	Mycalesis perseus	Oryza spp. and Grasses
137	Common Busilotowii	пустемы регоень	oryzu spp. and Orasses
138	Dark-brand Bushbrown	Mycalesis mineus	Oryza spp. and Grasses
138	Dank Orang Dubilolowii	1.1 yeares is mineus	organ approach of the organization
139	Glad-eye Bushbrown	Mycalesis patnia	Oryza spp.
137	j 1 2=	, r	

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Sl.No	Common Name	Scientific Name	Host(s)
140	Tailed Palmfly	Elymnias caudata	Caryota urens Cocos nucifera
141	Medus Brown (Nigger)	Orsotrioena medus	Imperata spp. Oryza sativa
142	Common Fivering	Ypthima baldus	Grasses
143	Common Fourring	Ypthima huebneri	Axonopus compressus, Grasses
144	Tawny Coster	Acraea violae	Passiflora edulis Adenia hondala
145	Tamil Lacewing	Cethosia nietneri	Modecca palmate Passiflora edulis, P. subpeltata
146	Cruiser	Vindula erota	Adenia hondala
147	Tamil Yeoman	Cirrochroa thais	Hydnocarpus wightiana
148	Rustic	Cupha erymanthis	Flacourtia indica, F. montana
149	Common Leopard	Phalanta phalantha	Flacourtia montana, F. ramontchi
150	Commander	Moduza procris	Mitragyna parvifolia Mussaenda frondosa
151	Common Sergeant	Athyma perius	Glochidion lanceolairum, G. velutinum
152	Blackvein Sergeant	Athyma ranga	Ligustrum spp. Olea dioica
153	Colour Sergeant	Athyma nefte	Glochidion sp.
154	Common Lascar	Pantoporia hordonia	Acacia concinna Pithecellobium sp.
155	Chestnut-streaked Sailer	Neptis jumbah	Moulluva spicata Bombax ceiba
156	Common Sailer	Neptis hylas	Moulluva spicata Thespesia populnea
157	Sahyadri Clear Sailer	Neptis nata	Data deficient
158	Clipper	Parthenos sylvia	Tinospora cordifolia Adenia hondala
159	Common Baron	Euthalia aconthea	Anacardium occidentale Mangifera indica
160	Gaudy Baron	Euthalia lubentina	Dendrophthoe falcate
161	Baronet	Euthalia nais	Shorea robusta Diospyros melanoxylon
162	Grey Count	Tanaecia lepidea	Melastoma malabatricum
163	Red spot Duke	Dophla evelina	Careya arborea Anacardium occidentale
164	Common Castor	Ariadne merione	Diospyros melanoxylon, D. candolleana Ricinus communis
165	Black Prince	Rohana parisatis	Celtis cinnamomea, C. lycodoxylon
166	Painted Lady	Vanessa cardui	Artemisia, Girardinia diversifolia

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Sl.No	Common Name	Scientific Name	Host(s)
167	Blue Pansy	Junonia orithiya	Mimosa pudica
			Hygrophila auriculata
			Sida rhombifolia
168	Yellow Pansy	Junonia hierta	Barleria cristata
			Hygrophila auriculata
169	Chocolate Pansy	Junonia iphita	Carvia callosa,
			Hygrophila auriculata
170	Grey Pansy	Junonia atlites	Barleria cristata
			Hygrophila auriculata
171	Peacock Pansy	Junonia almana	Barleria cristata
			Hygrophila auriculata
172	Lemon Pansy	Junonia lemonias	Sida rhombifolia
			Corchorus capsularis
173	Great Eggfly	Hypolimnas bolina	Hibiscus sp.
			Sida rhombifolia
174	Danaid Eggfly	Hypolimnas misippus	Portulaca oleracea
			Barleria cristata
175	Blue Oakleaf	Kallima horsfieldi	Strobilanthes capitatus
176	Autumn Leaf	Doleschallia bisaltide	Eranthemum malabaricum
			Gratophyllum hortense.

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- 3. Milind Bhakare and Hemant Ogale, A Guide to the Butterflies of Western Ghats (India), 2018.
- 4. The Wildlife Protection Act, 1972, amended 2006.
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About the e-book

This is an e-book having information on 176 species of butterflies, observed and recorded in and around the College of Forestry campus, Sirsi. These species are pictorially depicted through photographs, majority of them with images of both upper and lower wing surfaces and a few with only the underside of the wing. In this book we have covered the most valid and relevant information on each species, making it helpful for field observations. We also took care to add in a few amazing behavioral facts of butterflies, some tips for butterfly gardening as a conservation tool, info on larval host plants and our tips for mobile photography of butterflies.

The family wise arrangement of butterflies in this e-book is in line with the Bible of butterfly enthusiasts, "The Book of Indian Butterflies" by Issac Kehimkar. For common names, wing spans and status of species, along with the above stated, we followed the latest versions of butterfly books, "A Guide to the Butterflies of Western Ghats (India)" by Milind Bhakare and Hemant Ogale; "Butterflies of Western Ghats (e-book)" by Raju Kasambe.

The present generation of nature lovers prefers those field guides that are handy and easy to use. Keeping this in mind, we have made this endeavor available for all free of cost, to be used in smart phones and computer.

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YOFONA (YOUTH FORUM FOR NATURE)
COLLEGE OF FORESTRY, SIRSI UTTARA KANNADA, KARNATAKA-581401
email: udayakumark556@gmail.com