Butterflies of Mumbai

Nelson Rodrigues

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Butterflies of Mumbai

Nelson Rodrigues

Featuring 153 species, that are commonly seen all over India.

Printed and Published by : Maharashtra Nature Park Society

About the author:
A brief introduction to the author is given in the Foreword. Besides his passion for nature and macro photography, Nelson also loves reading, playing the guitar, travelling, cartooning, writing poems & short stories too.

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Butterfly philosophy

I asked a pretty butterfly called Mime
'Why are you so happy all the time?'
It danced a while under the blue sky
and then gave me this profound reply...

"My needs are simple and my heart is light,
just sunshine n flowers , fill me with delight!
And if you want to be happy, remember this:
Only in nature, will you find perfect bliss."

So while you chase your idols of money,
Remember, that life is only a short journey.
Enjoy it and make the very best of today,
For tomorrow the Master, may take you away!

Nel Rodrigues

Photo contributors to this book...

Some of the best nature photographers from Mumbai and other places, have contributed excellent images of butterflies and caterpillars to this book. My heartfelt gratitude to all of them.

Dr. Amol Patwardhan
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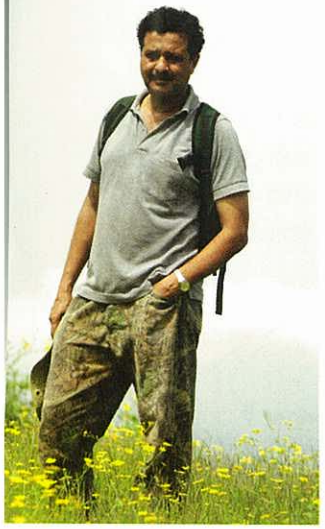


Foreword

Chasing butterflies has been an enjoyable pursuit. Though believed, this has never been a child's play. There was a time when collecting butterflies was a great pastime and a popular hobby among adults. Serious studies on Indian butterflies were undertaken when Europeans landed in India. With around 1500 species of butterflies in India, the subcontinent has been a paradise for butterfly enthusiasts.

India is one of the 12 mega-diverse countries of the world and hotspot for butterflies too. Butterflies like other wildlife are protected under the Wildlife Protection Act of India, 1972. Some of the butterflies are endangered like Bhutan Glory and Kaiser-e-Hind and get the same protection like the tiger, lion and elephant under this Act.

Today, we are witnessing a renewed interest in butterflies. With the advent of digital photography, butterflies are now popular subjects among adults as well as children. There is a great revival of interest in butterfly watching and photography.

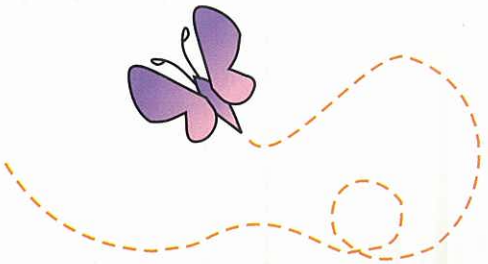
There are lot more interest groups on social networks and e-groups, in addition to excellent dedicated websites that provide and exchange information on butterflies. More and more studies undertaken by biologists highlight the significant role butterflies play to provide early warnings on climate change and deterioration of environmental quality around us.

Nelson Rodrigues has been chasing butterflies as his hobby after he joined BNHS as member eight years ago. To get the basic knowledge, he took up the Basic Entomology Course at the BNHS. In pursuit of these beauties, he has travelled far and wide across India, especially to the hotspots for butterflies like the North Eastern region and Western Ghats. He had the opportunity to survey the Namdapha National Park in Arunachal Pradesh and Tripura to document the butterfly fauna. Today, Nelson is a senior member of the e-group Butterfly India. He has documented the butterflies of the Maharashtra Nature Park (MNP) in Mumbai. This 4-year study has resulted in a booklet on butterflies of the MNP.

I must congratulate Nelson for bringing out such an excellent book on nature's flying jewels. After reading this book, people are surely going to 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.

Nelson is an excellent nature photographer and you will agree when you see his lovely images in this book. I am sure that after seeing the splendid images of colourful butterflies, this book is going to inspire several more to watch and chase butterflies with camera. And the best part is that, this book can be used anywhere in India as most butterflies shown in this book are found all over India.

Isaac Kehimkar,
General Manager (Programmes), BNHS
Joint Editor, Hornbill magazine, BNHS



Preface

Butterflies have always fascinated me since my childhood days. However, I never dreamt that one day I would be photographing and writing about them, with such zeal.

Over the past decade, I have visited some of the most remote wildlife sanctuaries and national parks in India; from Kerala to Andhra Pradesh, from Sikkim to Meghalaya, from Tripura to Arunachal Pradesh all in pursuit of these winged jewels and what a great learning experience it has been!

The idea for this book was born out of a stray comment from a friend about six years ago `I wish there was a book on the butterflies of Mumbai.' Deep down I liked the thought and felt I could do it. Next followed a herculean task of collecting images. After getting the 50th specimen, things got harder.

However I persisted Sunday after Sunday I visited Maharastra Nature Park, Yeoor Hills, Tungareshwar Wildlife Sanctuary, Sanjay Gandhi National Park, Nagla Block, and Conservation Education Centre (BNHS) at Goregaon. Slowly the list grew. Then I spent a long time studying the works of Winter Blyth, Evans and other experts like Krushnamegh Kunte, Isaac Kehimkar etc. I also got a lot of information from different websites like... I Found Butterflies, Flutters and Butterfly Host Plants. My personal observations too have all found its way in the data for the book.

Next, I had a questionnaire and asked lots of friends on what they would want in a very basic butterfly book. The answers ranged from... Bigger pictures, simple to read text, pictures of caterpillars and so on. Keeping all this information in mind, I formulated the strategy for the book.

Butterflies are always a visual delight, hence in phase two of this book, I replaced many of my images, with better pictures of my talented, photographer friends.

In virtually all butterfly books, butterflies are classified into families. To make this book more user friendly, I have mentioned the family to which the butterfly belongs; but have put them together on the basis of their predominant colour.
I presume this is a feature that most beginners will appreciate.

For this butterfly book I have used three check lists. My personal list comprised of 129 specimens, the list of Dr. Amol Patwardhan had something like 132 specimens and the list compiled by ZSI (Zoological Survey of India) many years ago, had 138 species. Plus many new species were sighted recently, hence I have a list of 153 butterflies in this book. However, I presume there must be about 159 species or more in Mumbai.

Although three butterfly experts and two proof readers have gone through all the pages of this book, there could still be a few errors; would appreciate if you bring them to my notice. That's all for now...
happy reading.

Nelson Rodrigues

Acknowledgments

The world of nature and wild life opened up to me in a big way soon after I joined BNHS about 8 years ago. I met so many experts, visited national parks and sanctuaries. Went out regularly on their Sunday outings and spent hours reading books in their library.

It was at one of our trips to Corbett National Park . I saw my friend, mentor and guide Isaac Kehimkar lying flat on the ground taking pictures of a butterfly. I was hooked ...
Yes, I am indeed very grateful to Isaac for having led me into this fascinating world of butterflies. It was around this time one of my clients Kirti Gandhi gifted me a small 3 megapixel compact camera. I started taking pictures with that camera. I discovered that I could take fairly decent pictures of butterflies.

After that I joined a Course on Entomology from BNHS conducted by Dr. Shubhalaxmi. Thanks to her and my batch mates I discovered lots of interesting things in the world of creepy crawlies. The third door that opened a lot of vistas for me was an e-group called Butterfly India started by Vijay Barve. Through this group I met scores of likeminded people who were passionate about butterflies.

I attended Butterfly Meets at Aralam in Kerala, Madhumilli in Andhra Pradesh, Jairampur in Assam. Thanks to these meets, I came in live contact with many beginners and experts. Many of those people I met then are still in close touch with me.

Caterpillars are the highlight of this book thanks to Balakrishnan, Dr. Saji, Milind Bhakare, Rudraprasad Das, Krushnamegh Kunte, Kalesh and Haneesh Km and others for enlightening me about the strange world of caterpillars.

I have dedicated a special page to all the photographers as their contribution has helped a lot to make this book more comprehensive.

My deep gratitude to Avinash Kubal, he has always kept the doors of Maharastra Nature Park open for me and gave me a lot of encouragement for bringing out this book.

Thanks to Balakrishnan Valappil, Isaac Kehimkar, Kishen Das, Haneesh Km, Dr Amol Patwardhan and Rudraprasad Das for going through the final dummy of my book; and suggesting changes in the text and format.

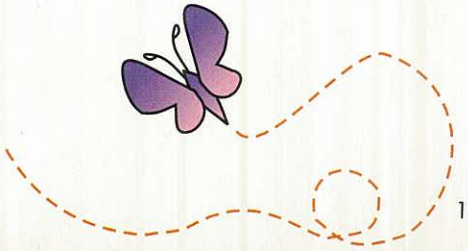
The artwork and design for this book was done by Ms. Aarti Thakur, over a period of more than one and half year, there were innumerable changes to be done but she did it with a smile. Special thanks to K.T. Bagli, Asha Albert and Gregory D'souza for proof reading this book.

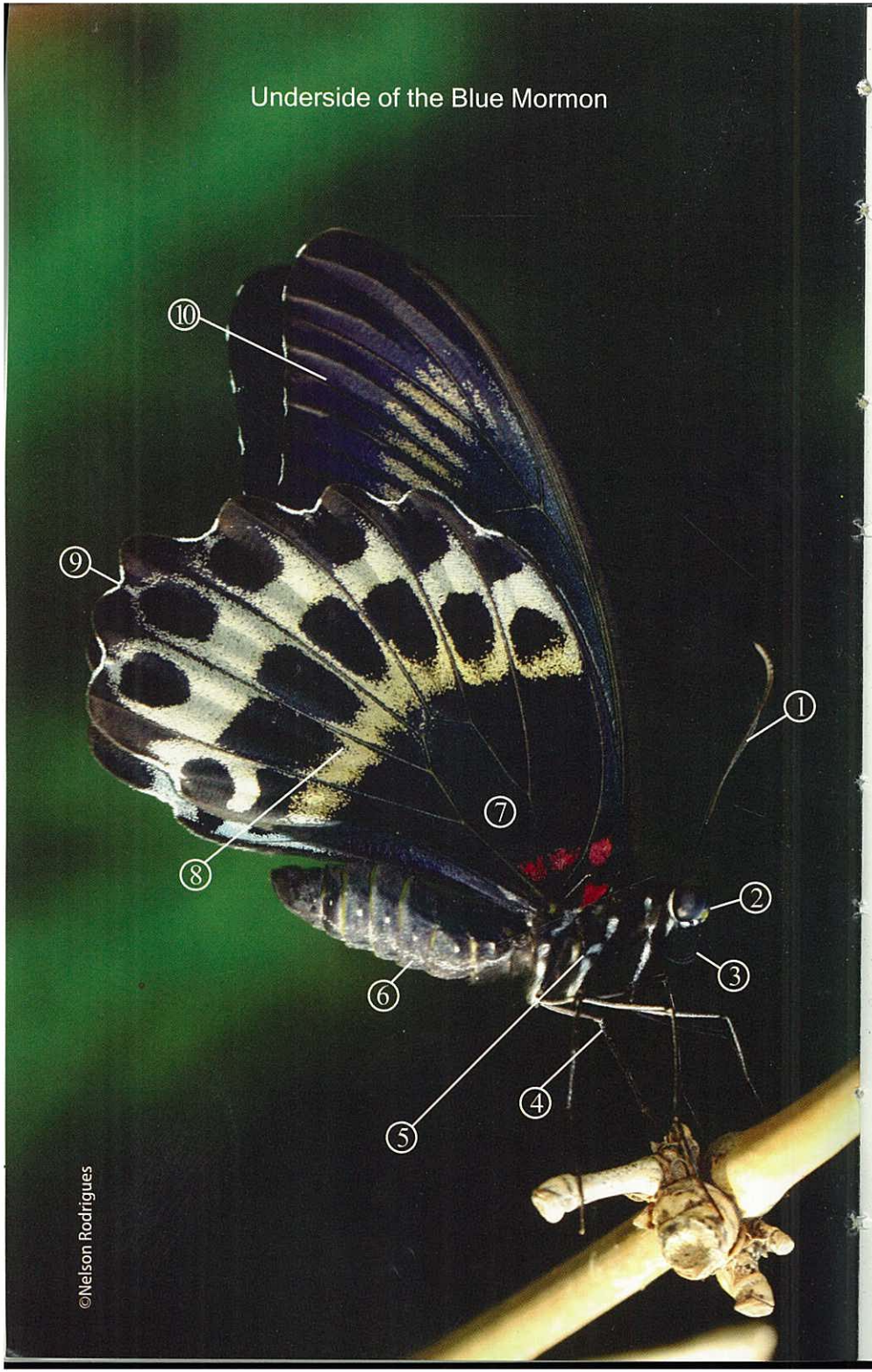
The late Dr. Chaturvedi from BNHS gave me the first guidelines to this book and shared his list of Mumbai Butterflies made with ZSI a few years ago. Thanks also to Dr. Amol Patwardhan for sharing his butterfly list with me.

Thanks to my wife Belissa Rodrigues, for holding the fort at home when I was away for all my butterfly trips. Also thanks to my sons Calvin and Irwin for their inputs in bringing out this book.

My deep gratitude to our sponsors Godrej, HSBC and MMR Environment Improvement Society your valuable help is deeply appreciated by me and nature lovers all over.

Nelson Rodrigues





The anatomy of a butterfly

1. Antennae ... They are used for detecting smells and for a sense of balance.

2. Compound Eyes... These are good for detecting colour and movement. The eye of a butterfly can see simultaneously in all directions. Their ultra violet vision helps them find flowers and mates.

3. Proboscis... This is a long straw-like tube used for drinking nectar or fluids. Normally coiled when not in use.

4. Legs... All butterflies have six segmented legs. A butterfly's feet also have sense organs to taste food and detect their host plants.

5. Thorax... The wings are attached to the thorax. This area contains the muscles that activate the legs and wings of the butterfly.

6. Abdomen... This contains a flexible tube-like heart, its digestive and reproductive organs. It also contains hole like structures called spiracles, which helps a butterfly to breathe.

7. Cell ... This is an area enclosed by the veins. The arrangement of the veins around the cells is helpful in the identification of different groups of butterflies.

8. Veins... These rib-like tubes support and strengthen the wings and take nourishment to them.

9. Hindwings... Lower wings close to the abdomen.

10. Forewings ... Upper wings , close to the head.

11. Underside... When a butterfly closes its wings, what you see is the underside of the butterfly.

12. Upperside... When a butterfly opens its wings, what you see is the upperside of the butterfly.

The life cycle of a butterfly

The life cycle of a butterfly is one of the most fascinating dramas in nature.

Egg stage

Most butterfly eggs are the size of a pin head. They are fixed to the leaf with a sticky adhesive like substance, which hardens rapidly. Hence these eggs can withstand the roughest winds and rains. These eggs have tiny holes called micropyles mainly to allow air and sperm to enter. The butterfly egg is initially of a bright colour but becomes darker as the larva develops inside. The outer shell of the egg is called chorion. It is lined with a thin coating of wax which prevents the egg from drying out. This stage generally lasts for about four days, providing the weather conditions are favourable.

Caterpillar stage

The first meal of the caterpillar is its eggshell. At this stage this wormlike creature is a wild, eating machine. Most caterpillars are herbivorous, however, some caterpillars eat aphids, scale insects and even ant larvae. Caterpillars go through several stages of development called instars. As the caterpillar grows at the end of that instar, it moults and gets a new skin. Butterflies generally go through about five instars. Some caterpillars have big false eyes which give it a snake like appearance. This acts as a defense mechanism. Several caterpillars also have an osmeterium which produces a pungent smell, which again repels some predators. The caterpillar stage generally lasts from one to six weeks.

Common Jezebel life cycle photographed by Dr. Milind Bhakare

Pupa stage

After the final instar the caterpillar discards its skin and gets into a bag like structure called the pupa, which is soft at first and then hardens into shape. At this stage, which may last for one to six weeks, the tissues and structures of the caterpillar are broken down and replaced with the wings and body parts of the adult butterfly. Some pupae look like dried leaves and twigs, hence they remain unnoticed on the plant.

Adult stage

When the butterfly emerges its wings are wet, soft and crumpled. The newly emerged butterfly needs time for the blood to flow to its wings and to let its wings dry, this may take an hour or two. The butterfly is very susceptible to attack and capture during this time. However, most butterflies emerge early in the morning and hence are able to fly at dawn, to find nectar, mate and continue the cycle of life.

Butterflies are classified into five families...

Common Jay

Papilionidae

Commonly known as 'Swallowtails'

Some of the biggest and most beautiful butterflies in India fall under this group. Most of these butterflies have tailed hindwings, (like the wings of a swallow) hence the name swallowtails. Almost all these butterflies have long slender legs and the males are often seen mud-puddling. The forewings are long and narrow but the hindwings are broad. Many of their caterpillars look like bird droppings in the early instars. They have a longer life span compared to the other butterflies and some of these swallowtails can live for months.

Blue Pansy

Nymphalidae

Commonly known as 'Brush footed butterflies'

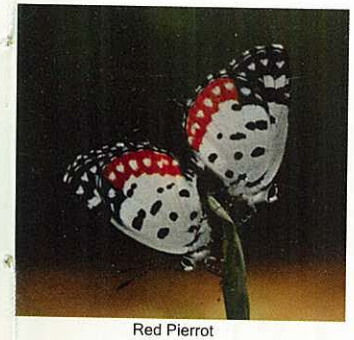
They are given this rather unusual name because their first pair of legs is smaller in size, covered with hair and are seldom used. Although many of this family come to flowers, there are many others in this group who prefer overripe fruit, urine, animal droppings and dead crabs. This group is among the largest butterfly families seen in India. Some of the butterflies in this group include the Rajahs, Nawabs and Evening Browns.

Common Grass Yellow

Pieridae

Commonly called 'Whites and Yellows'

These butterflies are called 'Whites and Yellows', because the underside of their wings are white and yellow in colour. Many of them also have red, yellow and black markings on them. They mostly bask with their wings closed or partially open. Many of the male butterflies of the Pieridae family are seen mud-puddling in large numbers , mostly during the summer months on drying riverbeds and other damp patches. Some of the butterflies of this group include Grass Yellows, Orange Tips, Emigrants and Albatrosses.



Red Pierrot

Lycaenidae

Commonly called 'Blues"

Some of the smallest and most delicate looking butterflies fall under this group. They are called the 'Blues' because they are mostly blueish in colour on the upperside. Many of the caterpillars of the Lycaenidae family are tended to and protected by ants. Strangely some of their caterpillars feed on aphids, scale insects and even ant larvae. Besides flowers they feed on damp patches and bird droppings too. The Pierrots, Flashes, Silverlines and Lineblues are some of the butterflies that belong to this family.

Dark Palm Dart

Hesperiidae

Commonly called ' Skippers'

These butterflies are mostly seen in the early hours of the morning or in the evening. They are commonly known as 'Skippers' because of their fast flight. Compared to the other butterflies, their bodies are stouter and heads larger in size. Their antennae too are somewhat different. Instead of the usual club shaped antennae, their antennae are hook-like in shape. Most of the butterflies of this family have a long proboscis, which helps them to get nectar from flowers that have long corolla tubes. The Awls, Palm Darts and Swifts are some of the butterflies that belong to this family.

©Susanth. C.

What danger does a butterfly face?

The butterfly is a harmless insect that can neither bite nor sting. However, its life is filled with danger. Hidden in the flowers and leaves are garden lizards and insects like praying mantises, robberflies and wasps. They often catch the butterflies by surprise. They either eat them or suck the juices out of them.

Crab spiders are often camouflaged within flowers and grasp the butterfly and paralyze them with their poison. Birds too take a heavy toll of butterflies and caterpillars. Even frogs some times capture butterflies.

Hundreds of caterpillars are parasitized by insects like wasps. They inject their eggs within the caterpillar. When their eggs hatch they feed on the insides of the caterpillar. Many caterpillars and pupae are destroyed this way.

However, the greatest destroyer of butterflies is man. Extensive use of pesticides and cutting down of forests destroy their habitats. Butterflies are an important part of the food chain and great pollinators that visit hundreds of flowers every day. Healthy forests depend on them, hence we need to conserve them.

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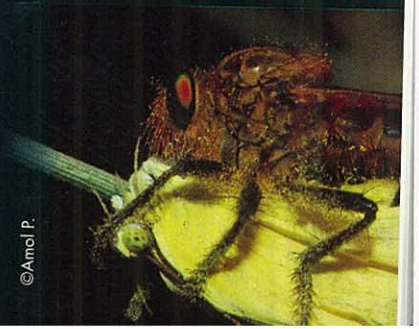
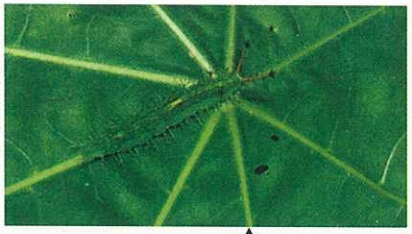


©Amol P.

Some amazing ways how caterpillars & butterflies protect themselves from danger

The butterfly has no sting or claws and appears to be a meek and defenseless creature. However, over a period of thousands of years, it has found unique ways to outwit the predators.



At the caterpillar stage

The colours of most caterpillars blend perfectly with the leaves they are feeding on. When they rest in the middle of the leaf, they are hard to spot even from two or three feet away. Many of them stay motionless during the day and only feed at night.

©Haneesh

The caterpillars of many skippers roll themselves into a leaf and conceal themselves from the eyes of all birds, wasps and other predators. These caterpillars come to feed mostly in the evening and night. Many of them also pupate inside these cells. Picture to the left is a leaf cell of the Giant Redeye.

Some caterpillars look like bird droppings, complete with uric stains. So naturally birds and other small creatures don't even attempt to go close to this distasteful thing. Some caterpillars and pupae look like dried leaves and twigs.

The caterpillars of some butterflies have fierce looking false eyes that scare away birds and other small insects.

The caterpillars of some swallowtails have an orange or green coloured Y shaped gland called the osmeterium (picture shown below). When threatened by wasps or other creatures, this gland releases a pungent odour, that acts as a very effective repellant.

©Yuwaraj. G

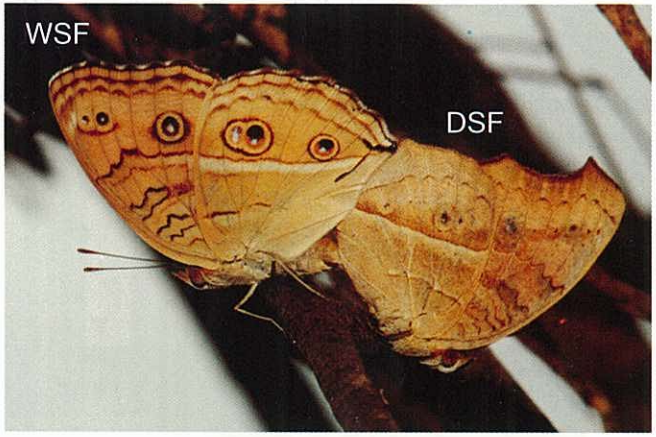
Most caterpillars of the 'Blues' have some glands at the end of their body which secrete a sweet solution, which is relished by the ants. In return for this sweet reward the ants fiercely guard them from parasitoids and small insect predators. Hence the butterflies of this group look for host plants, which have ants on them, thereby increasing their survival rate with the protection they receive.

©Balakrishnan Valappil

©Balakrishnan.V

At the butterfly stage

Butterflies depend on their wary nature and sheer speed to escape from most of their enemies. Butterflies like the Peacock Pansy or the Common Four or Five ring have eyespots on their uppersides. When they quickly close and open their wings, these spots startle the predators for a second or two, enough time for them to get away. Several butterflies have eyespots on their hindwings. Naturally, birds or lizards think, that's the place where the head is. When these predators take a quick peck at it, the butterfly escapes, loses a bit of its wing but lives to see another day.
Some butterflies when caught play dead or fall to the ground, but quickly get up and fly away after the danger is gone.



©Vedwati Padwal

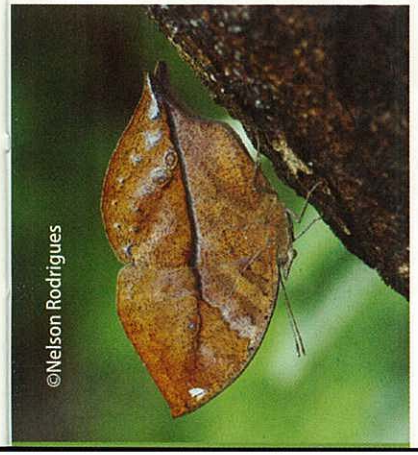
During the wet season many butterflies are colourful on their underside, however, as the dry season sets in, they become drab and colourless, so when they land on the leaf litter they are difficult to trace.
Seen above are the wet season and dry season forms of the Peacock Pansy.

Protective Mimicry

There are butterflies like the Plain Tiger and Crimson Rose that feed on poisonous plants at the caterpillar stage. Hence, some of the poisons of the leaves are stored in their bodies. When any bird tries to eat one of these butterflies, it ends up with a terrible stomach upset and hence this bird learns to leave these types of butterflies alone.
However, there are many butterflies that are absolutely palatable to birds but have cleverly imitated the colour and patterns of the unpalatable butterflies and so these harmless butterflies too are avoided by the birds. The former group of butterflies are called models and their imitators are called mimics. This form of mimicry is Batesian Mimicry. A mutual resemblance between two or more closely related species of unpalatable butterflies is called Mullerian Mimicry.

Crimson Rose

Common Mormon



©Nelson Rodrigues

Leaf Blue

The Blue Oakleaf and The Leaf Blue are two classics of camouflage. They look exactly like dried leaves and very difficult to trace when they land on the ground, amidst the leaf litter.

FAQ's on Butterflies

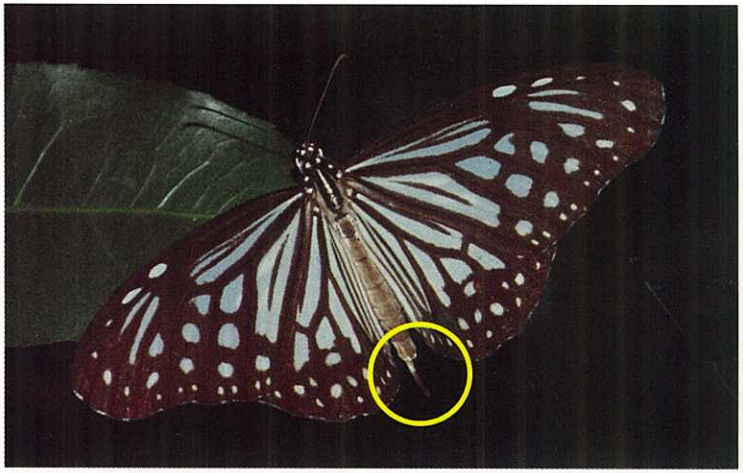
Q. How many species of butterflies are seen in India?
A. There are about 1500 species of butterflies seen in India. The maximum number of species are seen in the North East States of India. Mumbai has about 160 plus species of butterflies.

Q. Where are the best places around Mumbai to observe and photograph butterflies?
A. Mumbai has a few butterfly oriented parks dotted around the city. There is The Maharastra Nature Park, close to Sion Station (opp Dharavi Bus Depot). Then there is another butterfly park at Ovalekar wadi, Owala village on the Thane Godbunder road (open only on Sundays). At Vikhroli there is the S.P. Godrej Marine Ecology Centre. There are lots of butterflies also seen at Sanjay Gandhi National Park, Yeoor hills, Tungareshwar Wildlife Sanctuary and Nagla Block. The area near Vasai Fort is also good for spotting butterflies .

Q. Which are the best months to watch butterflies?
A. The maximum number of butterflies can be seen from August to November. In December, January and February their numbers begin to come down. Then there is another small surge in the month of March and April. From mid-February to end of March there are many spots in the forests of Mumbai, where lots of butterflies are seen mud-puddling on damp patches.

Q. Do butterflies grow in size during their life?
A. No, they remain the same size all their life... the food intake during its caterpillar stage determines its size. If there is a shortage of leaves on the plant then the growth of the caterpillar will be stunted and the butterfly will emerge smaller in size.

Q. How does one go about making a butterfly garden?
A. Some people think that if they grow a lot of flowers they can have a butterfly garden; but beside flowers, there are many other factors that attract butterflies to a place. The most important thing in this colourful venture is having some basic knowledge about butterflies, their preferences and their larval host plants. The place should be sunny, with rocks around. Plus there should be hedges and wind breakers where the butterflies can take shelter and hide from predators. Mud-puddling sites and plates of overripe fruits like bananas, pineapples and guavas also help. Get hold of a butterfly expert and he will show you the way.



What are hair pencils?
The males of some species like the Glassy Tiger have hair pencils jutting out of the abdomen. It is believed that these hair pencils aid in the dispensing of pheromones during a courtship flight.

Do butterflies bite or sting?
Many children are afraid of butterflies because they feel they could be bitten or stung by this insect. A butterfly has no jaw, teeth or sting, it only has a proboscis, so it is one of the most harmless creatures on earth.

Why do some butterflies migrate?

A. There are many butterflies like the Crows and Tigers which indulge in migratory behaviour. They all congregate in one place and then hundreds of them move in one direction. It is assumed that they are moving to new feeding grounds. The total journey could be a few miles to hundreds of miles. This flight is generally undertaken during sunny weather. After they move and breed in the new feeding grounds, it is assumed that the next generation comes back to the original place.

Do butterflies fight?

Butterflies do not have teeth or claws but they can push each other by flapping their wings. (Refer to the picture above) Butterflies like the Chocolate Pansy and the Indian Sunbeam are very possessive about their territories so they chase the other butterflies that invade their space.

Why do butterflies bask?

In the early morning or evening one often sees butterflies with their wings outstretched soaking in the sun. This behaviour is called basking. Since butterflies are cold blooded creatures, they need to warm up their flight muscles to the required temperature to fly with ease. This is one reason why you don't see many butterflies on a cold, cloudy day.

What is the normal life span of a butterfly?

Generally the smaller butterflies have a shorter life span of two to three weeks but the bigger swallowtails can sometimes live for months. However, the average life span is assumed to be between two to four weeks only.

Tiny Grass Blue

Eastern Grass Jewel

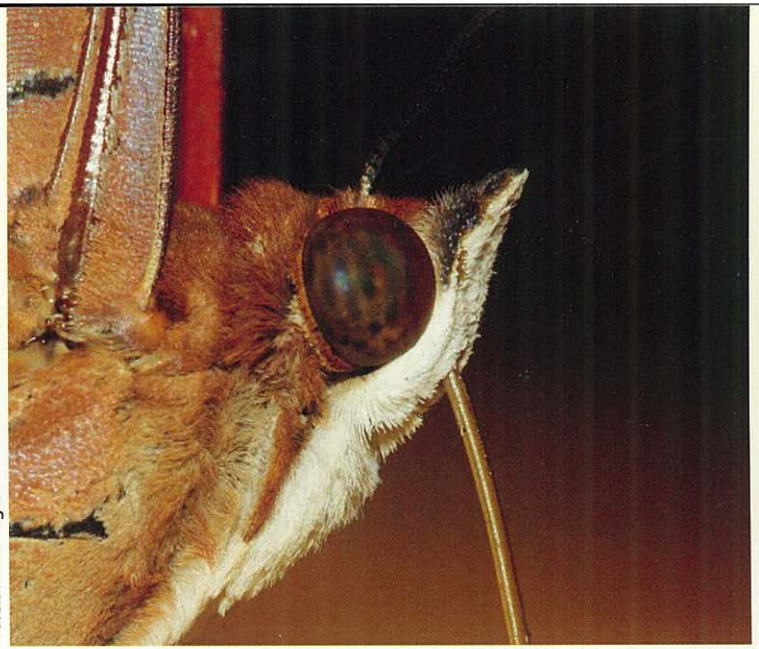
©Yuwaraj Gurjar

Q. Which is the biggest and smallest butterfly seen in India?

A. The biggest butterfly seen in India is the Southern Birdwing. (Many years ago this butterfly was seen in Mumbai.) The smallest butterflies are the Eastern Grass Jewel and Tiny Grass Blue. Both these butterflies are seen in Mumbai. The biggest butterfly presently seen in Mumbai is the Blue Mormon. This butterfly is mostly seen during and after the monsoon season.

Q. What is the main difference between a butterfly and a moth ?

A. Many people reply that moths fly at night and are dull in colour. However there are many beautiful, bright coloured day flying moths that can be seen in the forest. The main difference between true butterflies and moths is that moths have a feathery type of antennae and butterflies have a club shaped antennae.



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How is the vision of a butterfly different from human vision?

A butterfly has compound eyes, which comprises of hundreds of lenses. This enables the insect to see simultaneously in every direction. It also has an ultraviolet vision, which enables it to find flowers and mates. However, a butterfly cannot focus its vision like us, so what it sees is mostly a blurred image. The vision of a butterfly is very sensitive to movement, that helps it to escape from most of its potential predators. Male butterflies generally have bigger eyes and a better eyesight. The reason for this could be because they need to find mates and also ward off their rivals.

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What do butterflies feed on?

Most people think that butterflies feed only on flower nectar. However, there are plenty of beautiful butterflies that never visit flowers. Instead they feed on plant sap, urine, animal droppings, human sweat and even blood. They also feed on dead animals like snakes.

Evening Browns love beer. Rajahs and Nawabs are attracted to decaying prawns and crabs. Animal and bird droppings too are relished by many butterflies, especially the Blues. Barons, Rajahs and Castors are some of the butterflies that are attracted to overripe fruits.

Caterpillars feed on leaves, flower buds, and even fruits like guava and pomegranates.

Ceruleans feeding on a bird dropping

Caterpillar of the Guava Blue feeding on pomegranate

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Why do butterflies mud-puddle?

Butterflies are often seen on the river beds or on damp patches of sand, sucking liquid from the ground. This behavior is called 'mud-puddling' Most of the butterflies that indulge in this activity are male.

The assumed reason for this behavior is mostly linked to their salt requirement, as the normal diet of the butterflies which is nectar, tree sap etc does not contain sodium, which is essential for many physiological functions including digestion, excretion and mainly reproduction.

Sodium and amino acids are passed on to the females by the males during the mating process, in the spermatophore. Since males can mate multiple females with each copulation, their sodium stock is depleted, so it will have to mud-puddle again.

©Kishen Das

How to use this book

This book is primarily written for students, nature lovers, photographers and others who are new to the world of butterflies. Keeping this in mind the technical and taxonomic terms are kept to a minimum.

In virtually all butterfly books, the butterflies are grouped into families. In this book the family names are mentioned however, they have been grouped on the basis of their predominant colour. For instance all the yellow and orange colour butterflies are grouped together. With this colour coding system, even an absolute novice will most probably be able to identify the butterfly he or she has seen, in just a few minutes.

Note: In two or three species, the colours of the male and female are different. For the color coding in this case, I have used the colour of the butterfly that is seen more often.

On the page the butterfly and its caterpillar are given the same number. For people not familiar with symbols, ♂ indicates that it is a male butterfly. For the female the symbol is ♀ Also the caterpillars shown in this book, are mostly in their final instar before pupation. The index, with common and scientific names is at the end of the book.

Divine creation can be seen, painted on the canvas of a butterfly's wing.

K. D'Angelo

Butterflies
in shades of
yellow & orange.

©Nelson Rodrigues

Small Salmon Arab

Colotis amata

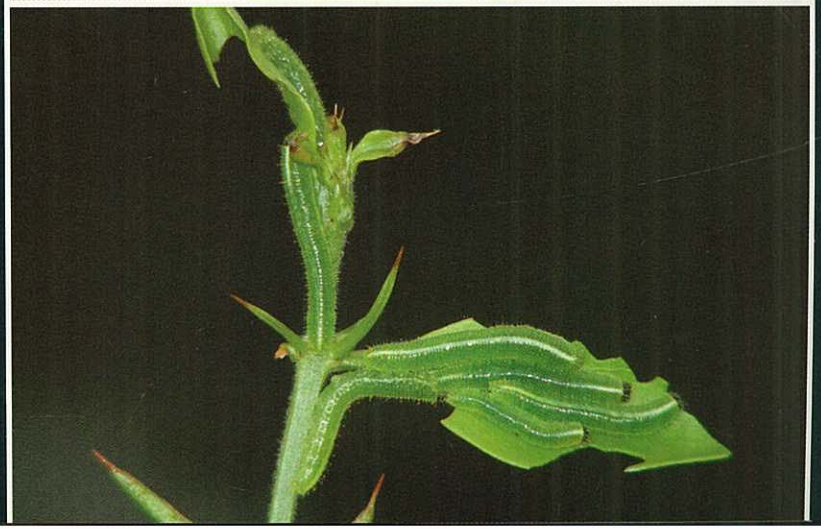
35 to 50mm

Pieridae

Mostly seen close to water bodies, where its host plant, Salvadora persica grows (This plant is popularly known as Meswak). Rarely seen in the forests. This is a rather active butterfly that can be seen flying even during the hottest part of the day. It basks with its wings partially open. The underside of the male is plain yellow while the female has many markings on the underside of its fore and hindwings. If you observe the picture to the right carefully you will see the butterfly laying a cluster of eggs. The caterpillars (shown at the bottom of the next page) are gregarious and often strip the leaves of the plant completely.

©Haneesh Km

©Haneesh Km



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1. Small Grass Yellow

Eurema brigitta

30 to 40mm
Pieridae

This butterfly is smaller in size than the Common Grass Yellow and does not have any distinct markings on the underside. It flies at a lower level and visits flowers. The dots on the wing margins are black in the wet season form and red in the dry season form.

2. Spotless Grass Yellow

Eurema laeta

30 to 45mm
Pieridae

This butterfly is seen less often than the Common Grass Yellow. In the dry season form the forewings are pointed and the underside is pale yellow, overlaid by light brown scales.

3. Common Grass Yellow

Eurema hecabe

40 to 50mm
Pieridae

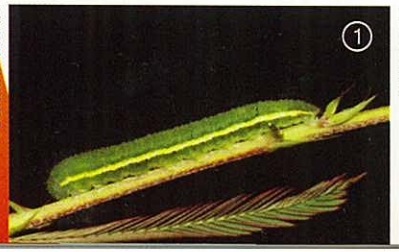
This sun loving butterfly is one of the commonest butterflies seen in India. Both the sexes look similar but the females are slightly larger and the males are brighter in colour.

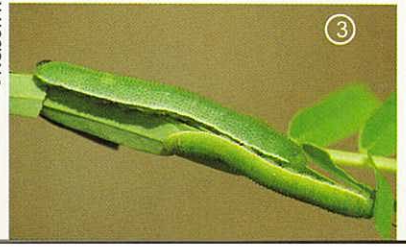
4. Three Spot Grass Yellow

Eurema blanda

40 to 45mm
Pieridae

Similar to Common Grass Yellow but it has three spots on the underside of its forewings. These markings are circled in red in the picture on the next page.





1. Chocolate Albatross

Appias lyncida
55 to 70mm
Pieridae

This is one of the rarest butterflies seen in Mumbai. The male is yellowish with a chocolate brown border and the female is white densely clouded with dark brown. It has a swift flight close to the ground. Males are common but the females are seldom seen. This butterfly prefers to remain in the undergrowth and bushes all the time. Males come to damp patches in large numbers. It lays eggs in batches. The caterpillar of this butterfly, is displayed on the next page.

2. Yellow Orange Tip

Ixias pyrene
50 to 70mm
Pieridae

The Yellow Orange Tip is mostly spotted in mixed deciduous forests and thorny scrub forests. Although it is seen throughout the year it is more common in the monsoon and post monsoon.

The female is white or light yellow with black markings. Males are faster fliers than the females. The caterpillar has a dark grass green body with many dull red spots.

1. Common Emigrant

Catopsilia pomona

55 to 80mm

Pieridae

The Common and Mottled Emigrant are mostly seen in the monsoon and the post monsoon. The Common Emigrant is also called the Lemon Emigrant. It is fast on the wing and basks with its wings closed.

The Common Emigrant has many colour variations and can be seen in virtually all habitats. It is active from early morning to late afternoon. The female catilla form (shown to the left) is rarely seen. It is yellow with purple blotches on the underside. The Common Emigrant caterpillar is yellowish green in colour, later it turns to leafy green and develops a longitudinal line.

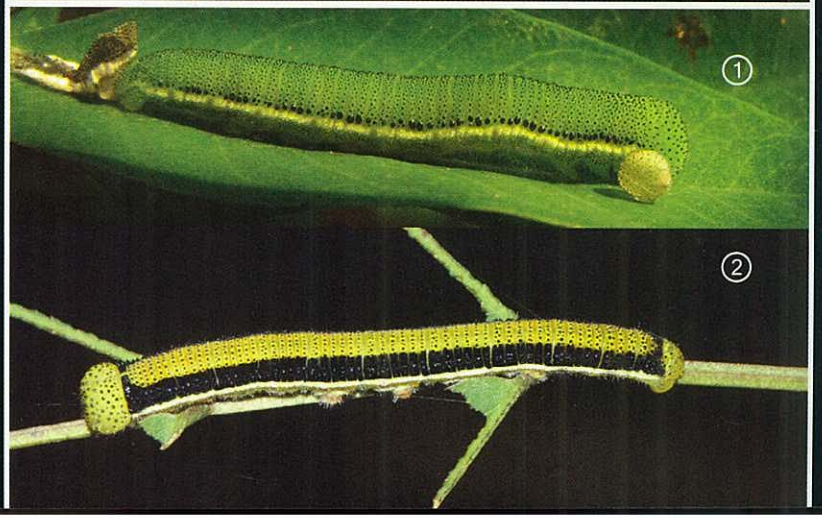
2. Mottled Emigrant

Catopsilia pyranthe

50 to 70mm

Pieridae

The Mottled Emigrant is seen more in dry areas. The male is greenish and the female is yellowish in colour. It has fine lines on the underside of wings, which gives it a mottled look. The caterpillar of the Mottled Emigrant is similar to the Emigrant but has a much broader black band on the side. Pupation of Emigrants generally takes place in the midst of dense foliage close to the ground.



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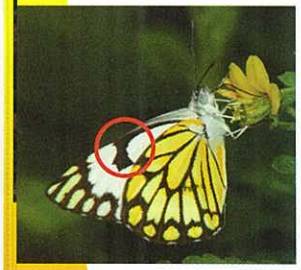
1. Pioneer

Belenois aurota

40 to 55mm

Pieridae

At first glance, this butterfly looks similar to the Common Gull. However, it has a prominent hockey stick marking on its forewings that differentiates the two. (Refer to the picture on the left)



The Pioneer is a fast flier and a known migrant. What is unusual about this butterfly is that it lays its eggs in clusters. A clutch size can be from twenty to over hundred eggs. Seen throughout the year. Caterpillar and pupa of this butterfly are shown on the opposite page.

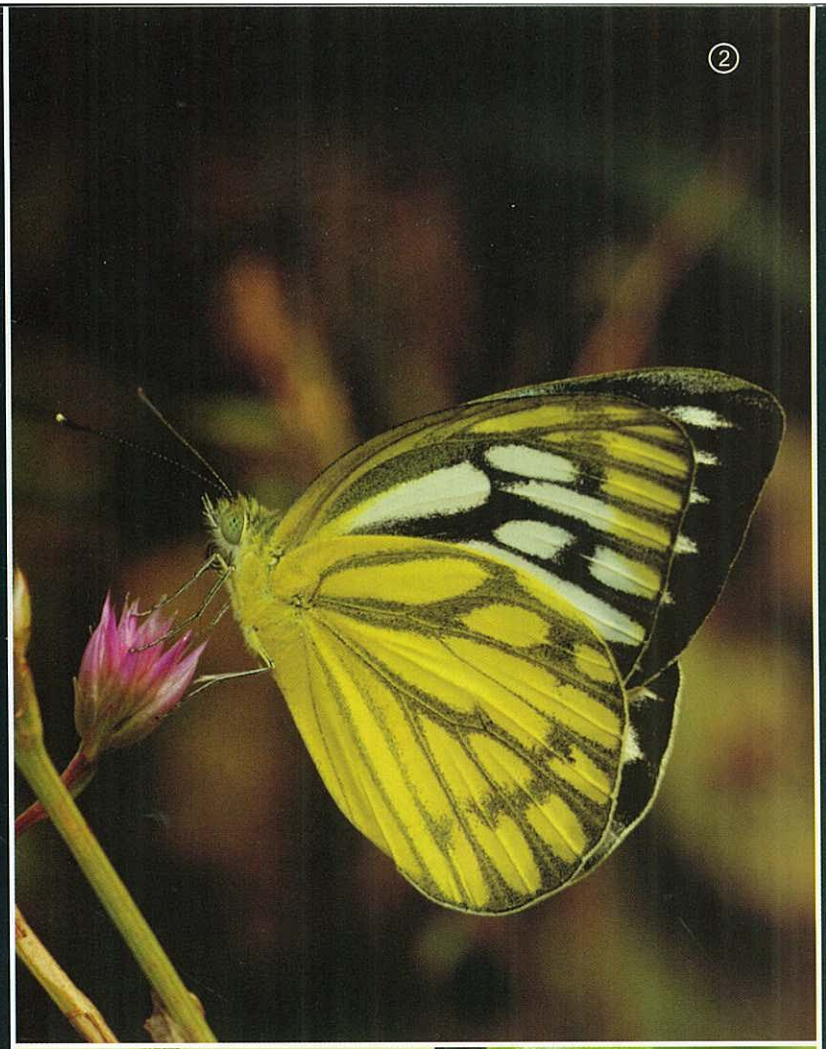
2. Common Gull

Cepora nerissa

40 to 65mm

Pieridae

A yellowish butterfly with black veins. Both the sexes look similar, but the female has more extensive black markings and rounded forewings. Generally keeps low to the ground and basks with its wings partially open. The wet season form of this butterfly is bright yellow with deep black lines, the dry season form is dull yellow. The caterpillar is dark leafy green in colour, rather sluggish and feeds mostly in the night. Pupa is green in colour and it mostly pupates in the middle of the leaf.



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Common Jezebel

Delias eucharis

66 to 83mm

Pierridae

This butterfly is one of the few butterflies, that has bright colours on its underwings. It is considered to be distasteful to birds. The female is more heavily marked than the male. It prefers to stay high up in the canopy but comes down for nectaring. This butterfly basks with its wings closed, the black lines on its wings help it to absorb the heat of the sun. Found all over India, except perhaps in the desert regions. Eggs are laid on parasitic plants of the Loranthus family. The Common Jezebel lays it eggs in batches of ten to twenty (sometimes more) on the underside of the leaves. All the eggs hatch at one time, however many caterpillars move far away from the plant to pupate. Their eggs are often parasitized by fleas.

The caterpillar is brown in colour with a black head and has many white hairs on it. The pupa (shown below) is whitish yellow with black spots on it .

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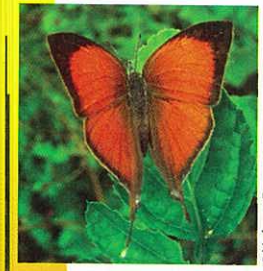
1. Yamfly

Loxura atymnus

35 to 40mm

Lycaenidae



©Nelson R.

One of the prettiest butterflies seen in the Western Ghats. Yellowish orange with a faint transverse band. It is a weak flier. The Yamfly has a beautiful tail which twirls in the breeze. Hindwings of the females are darker in colour. Mostly seen in the bamboo jungles especially in the vicinity of its host plants Yam and Smilax. The caterpillar (shown below) is greenish in colour with faint ridges on the back. It is attended to and guarded by ants.

©Kalesh S

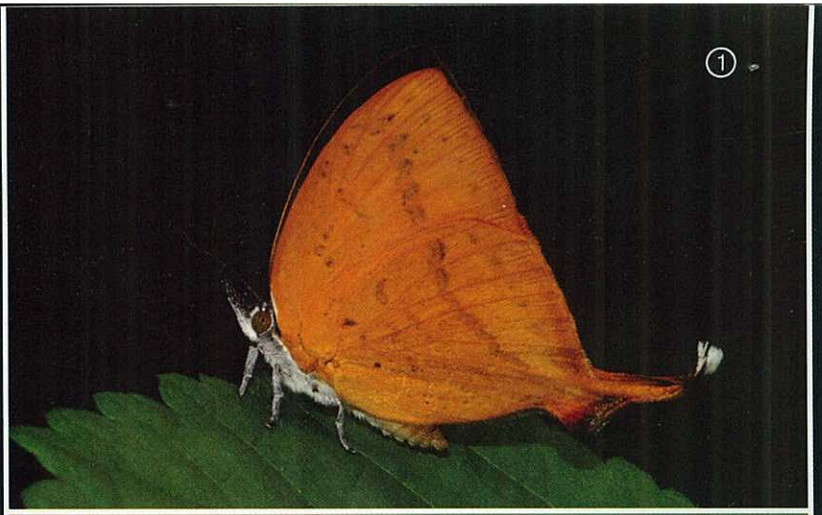
2. Tawny Coster

Acraea violae

50 to 65mm

Nymphalidae

A rather active butterfly mostly seen during and after the monsoon. Considered an unpalatable species so it does not appeal to any of the predators. It defends itself, by exuding an unpleasant oily liquid when captured or handled. The caterpillar is dark brown in colour with numerous spikes and an orange head. It has a beautiful white coloured pupa with many orange spots on it.



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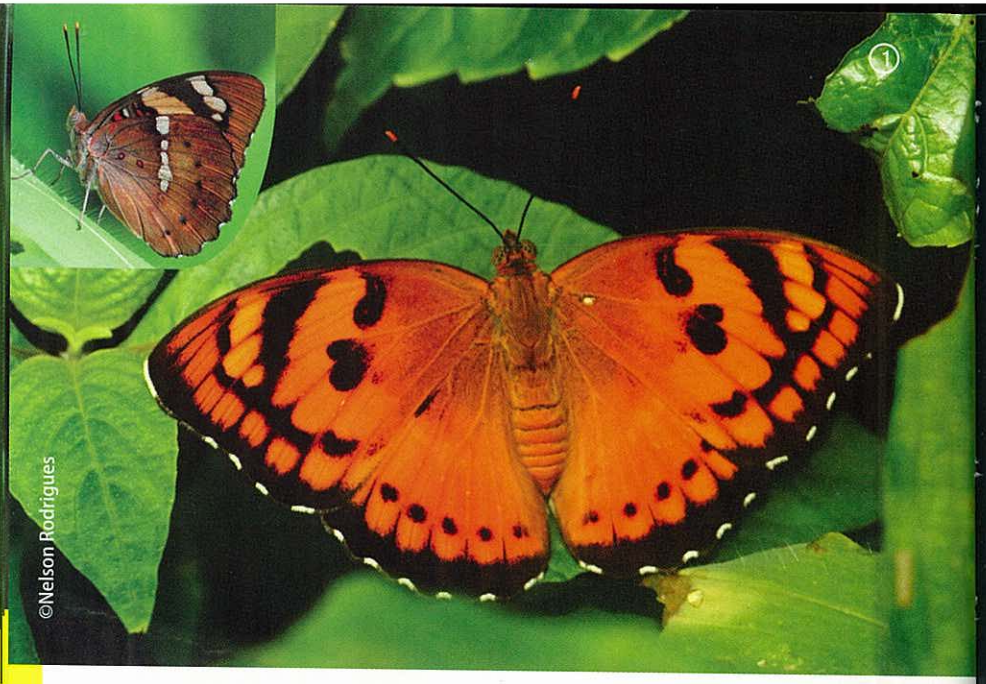


1. Baronet

Euthalia nais

60 to 70mm

Nymphalidae

The Baronet generally flies low on the ground and settles with its wings flat. If disturbed it flies and settles a little distance away. It is a sun lover that is fond of alcohol-rich fruit and tree sap. Mostly seen in forested areas. Its rather attractive multicoloured caterpillar is found on Ebony and Sal trees.

2. Common Leopard

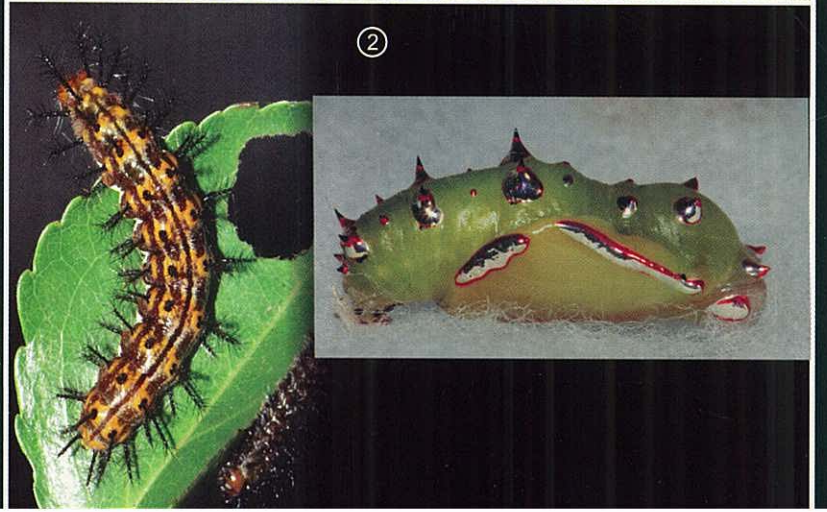
Phalanta phalantha

50 to 60mm

Nymphalidae

The Common Leopard is a tawny coloured very active butterfly that loves the sunshine and avoids the shade. Its favourite flowers are Lantanas and Durantas. It generally settles with its wings half open. Flies at a low level and is very possessive about its territory.

The Common Leopard lays its eggs on the underside of tender Flacourtia leaves. The caterpillar is rather active and is seen feeding at all times of the day. It has many spines which are black in colour. Pupa is bright green with red, black, golden and white markings.



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1. Yellow Pansy

Junonia hierta

45 to 60mm

Nymphalidae

The Yellow Pansy more or less shares the same habitats as the Blue Pansy. It has two blue eye marks, which are more prominent in the females. It flies fast at a low height. It's favourite flower is Marigold. Pugnacious by nature it chases other butterflies from its territory. This is a rather wary butterfly, when approached it flies a few feet and settles down again. It is difficult to find this butterfly once it settles down in a dry grassy area. The caterpillar is dark brown with black spines and its head is yellowish orange.

2. Peacock Pansy

Junonia almana

60 to 65mm

Nymphalidae

This butterfly gets its name from the prominent eyespots on its hindwings. Females are generally larger than the males. The undersides are somewhat paler but the eyespots are still prominent in the wet season form. Mostly seen near fresh water bodies. Males are very territorial by nature. Its caterpillar, looks similar to the Lemon Pansy.

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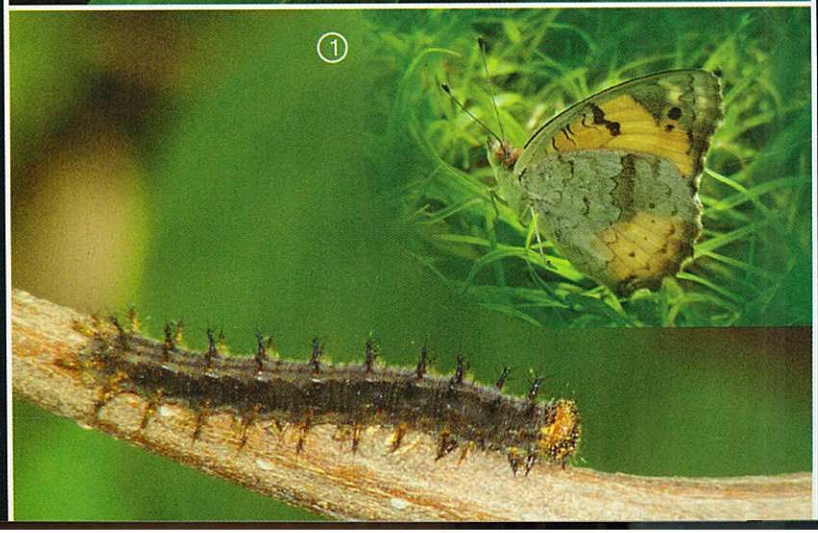

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1. Striped Tiger

Danaus genutia

72 to 100mm

Nymphalidae

A tawny coloured butterfly with broad black veins. Male has a black and white spot on the underside of the hindwing. Males visit plants like Crotalaria and Heliotropium that provide them with the alkaloids required for reproduction. It is mimicked by the Common Palmfly. Its caterpillar is velvet black marked with blueish white and yellow spots. Its pupa is green marked with golden dots.

2. Plain Tiger

Danaus chrysippus

70 to 80mm

Nymphalidae

One of the commonest butterflies seen here. Male is smaller than the female and has a scented pouch in the centre of the hindwing. Birds generally avoid this evil tasting butterfly due to the fact it imbibes unpalatable alkaloids from its host plants like Rui at the caterpillar stage. It is mimicked by the Danaid Eggfly. At first the caterpillar is yellowish with black bands and later turns dark chocolate brown with alternate white and yellow bands.

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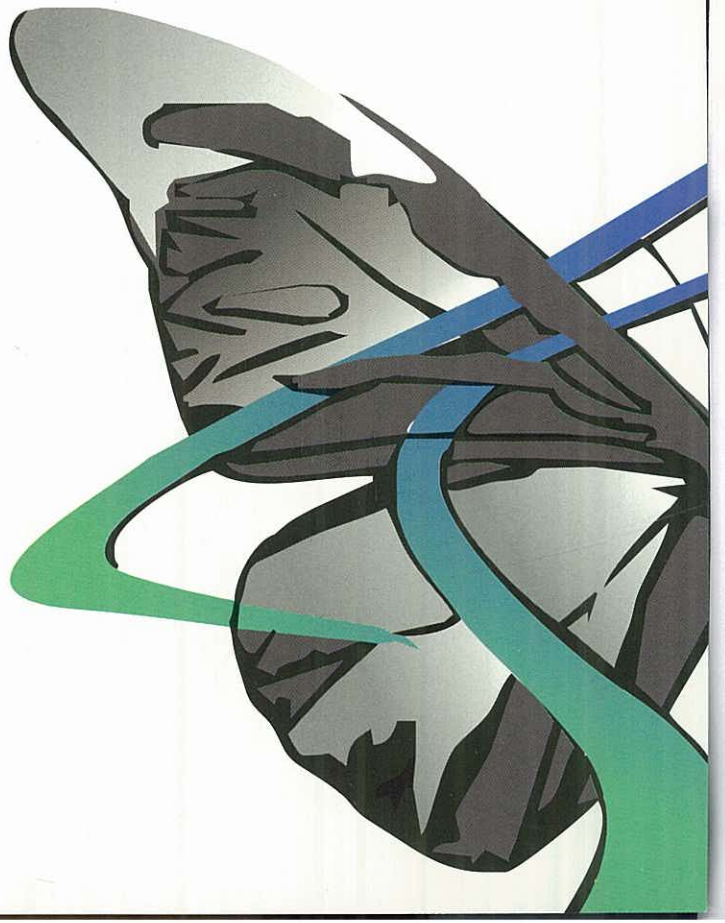
©Balakrishnan Valappil

No garden truly blooms until butterflies have danced upon it.

K.D' Angelo

Butterflies
in shades of
blue & green.



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Common Bluebottle

Graphium sarpedon

80 to 90mm

Papilionidae

A very skittish butterfly that hovers quickly from flower to flower seldom stopping to take a rest. It could be easily mistaken for the Common Jay. Its ground colour is black. However, its markings are somewhat glassy and transparent, with a greenish blue central band. The female is duller greenish blue and has slightly broader wings. Bluebottles are fond of mud-puddling and animal droppings.

It is also called the `Blue Triangle' in some countries. Unlike the Common Jay the Common Bluebottle is seen only in the forested areas. It spends most of its time in the canopy of trees but comes down for nectaring. (Picture below shows the Common Bluebottle and the Common Jay mud-puddling together)

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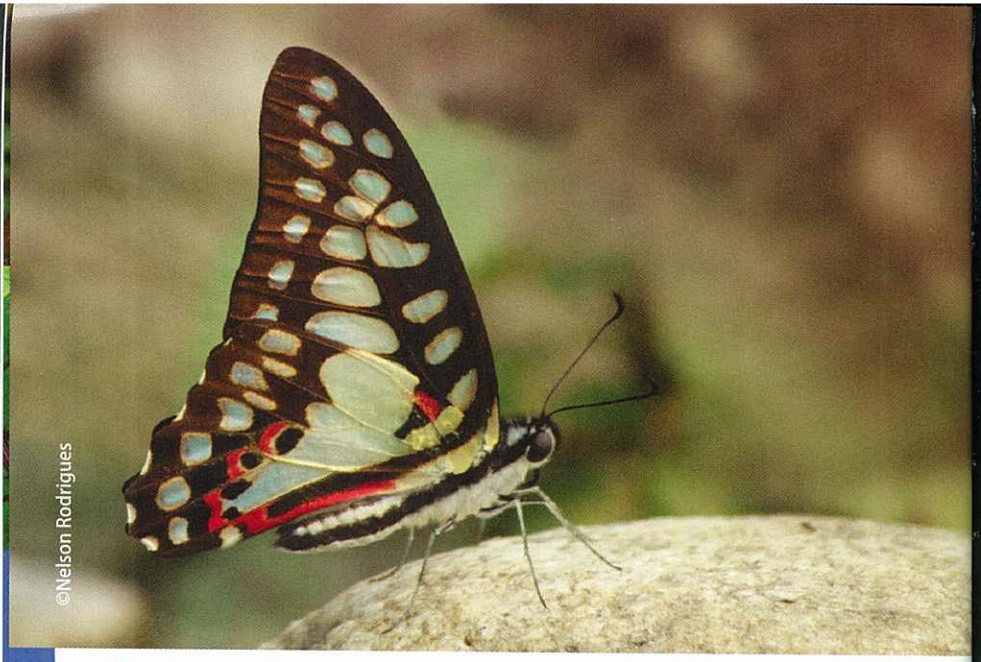

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Common Jay

Graphium doson

70 to 80mm

Papilionidae

This is a tailless swallowtail. A fast flying species often mistaken for the Common Blue Bottle (which is more greenish blue and also lacks the series of spots on the wing). The Common Jay is a very restless butterfly whose wings are in constant motion almost all the time. At rest the wings are closed over the back but the hindwings do not cover the forewings. The Common Jay is seen in varied habitats, in the primary as well as in the secondary forests. It is also seen in the urban areas of Mumbai.

Common Jay males are often seen mudpuddling in the company of Common Bluebottles. Both the sexes look alike and are active throughout the year. A grown caterpillar is either dark brown or green surrounded by lemon yellow rings.

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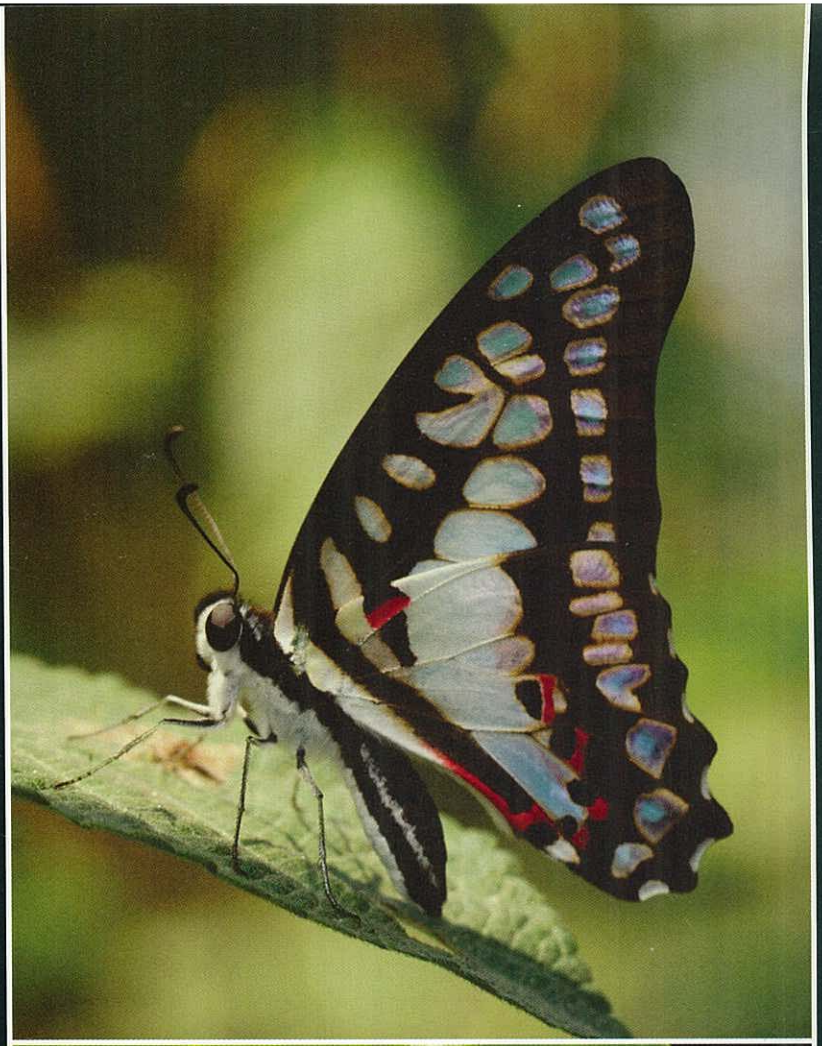

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Blue Pansy

Junonia orithiya

45 to 60mm

Nymphalidae

One of the prettiest butterflies seen in Mumbai. Mostly sighted at low elevations, especially in the dry arid regions. This is generally quite a wary butterfly and it is difficult to approach it. The female is larger with more prominent eyespots on the upper hindwings. It also has more black basal area than the male. This sun loving species is active even during the hottest part of the day. The Blue Pansy shares more or less the same habitats and host plants as the Yellow Pansy. In some countries this butterfly is called `Eyed Pansy' and `Blue Argus'. Most Pansy caterpillars look alike. The caterpillar of the Blue Pansy is shiny black with an orange band.

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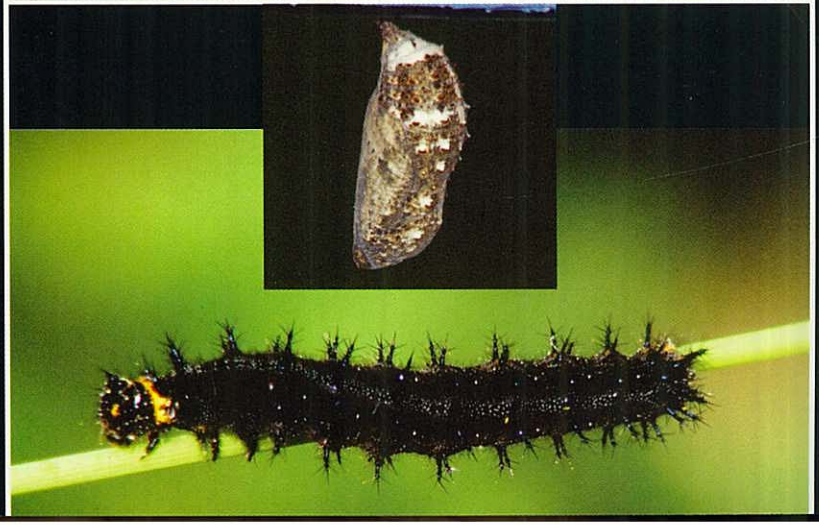

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Common Wanderer

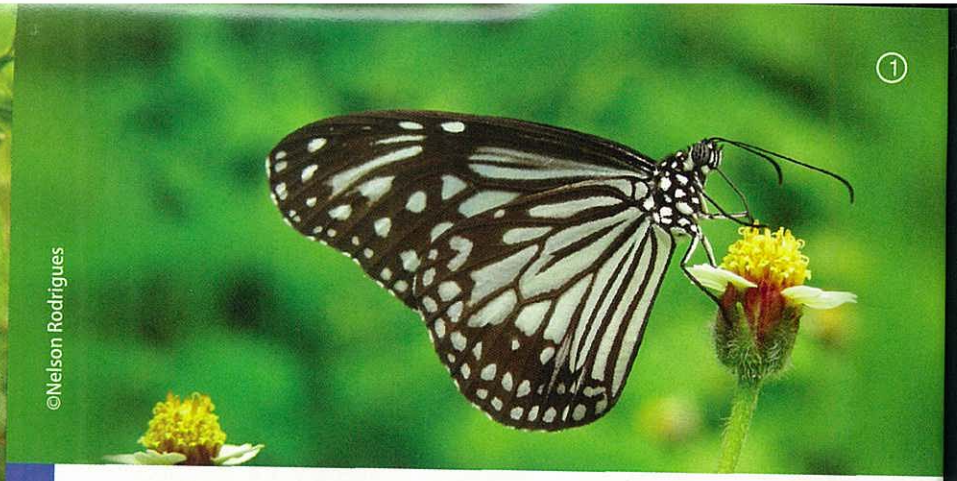
Pareronia valeria

65 to 80mm

Pieridae

True to its name you will see the Wanderer always in a hurry, going from one place to another with barely any rest. The male is sky blue with black margins and veins. The female has broader margins and veins. The female philomela form is rarely seen, it has a yellowish tinge on the upperside. The Common Wanderer prefers to feed on flowers with long corolla tubes, but it does feed on smaller flowers like Lantanas too.

Flight of the male is quite swift and close to the ground level. The female is a mimic of the Blue Tiger, her flight is slower than the male and is not seen often as the male. Eggs are laid in batches. The caterpillar is dark green and sometimes may be marked with brown diagonal lines. It sits on the midrib of the leaf and moves to feed mostly after sunset. The Caterpillar and pupa of the Common Wanderer are shown below.



1. Glassy Tiger

Parantica aglea

70 to 85mm

Nymphalidae

Most beginners have some difficulty differentiating between a Blue Tiger and a Glassy Tiger, however the Glassy Tiger is more blackish in colour and has pure white markings which are much broader in size. Seen more in the hilly regions and is considered a weaker flier, compared to the other Tigers. Its caterpillar is shown on the next page.

2. Dark Blue Tiger

Tirumala septentrionis

75 to 95mm

Nymphalidae

This butterfly looks very similar to the Blue Tiger but has finer markings. (Refer to the picture below) Seen mostly in the forested areas of Mumbai. Generally smaller in size than the Blue Tiger. They are known for long distance migration.

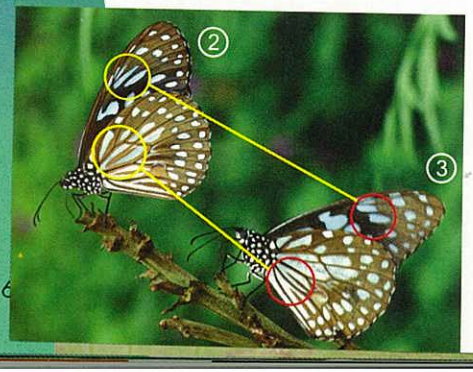
3. Blue Tiger

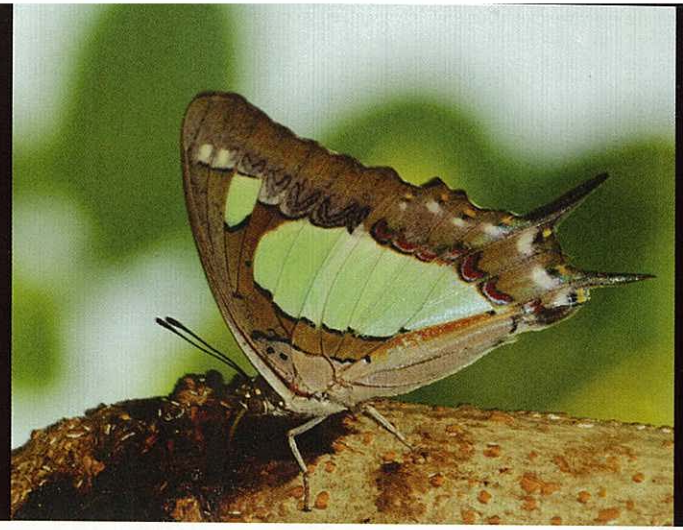
Tirumala limniace

90 to 100mm

Nymphalidae

Like the other Tigers this butterfly too is distasteful to the birds, hence they avoid it. Since these butterflies need pheromones they frequent Crotalaria and Heliotropium plants. The male has a brush at the tip of the abdomen. It uses it to stroke the pouches of scent scales on its hindwings to scatter the scents which attract the females. The caterpillar is banded with black and white rings. The main differences between the Blue Tiger and the Dark Blue Tiger are circled in the red and yellow in the picture that is shown to the left. The caterpillar of this butterfly is shown on the next page.





©Isaac Kehimkar

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1. Anomalous Nawab

Polyura agraria

95 to 100mm

Nymphalidae

The Anomalous Nawab looks very similar to the Common Nawab. However, it is slightly paler in colour, has a more acute forewing and the green band on the forewing is a little broader than the Common Nawab. It has two white spots near the apex of its forewings. Other characteristics of this butterfly are similar to the Common Nawab.

2. Common Nawab

Polyura athamas

60 to 75mm

Nymphalidae

This beautiful butterfly is mostly seen in the heavily forested regions. Although it flies high in the tree canopy it comes down to feed on dead crabs, insects, animal droppings and overripe fruit. It also comes to damp patches. Nawabs rarely visits flowers. The caterpillar to the right is of the Common Nawab, perfectly camouflaged in the leaves of the Acacia tree. It is green in colour, has four horns and yellow bands on the body.

©Abhay Soman

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Tailed Jay

Graphium agamemnon

85 to 100mm

Papilionidae

This is a fairly common butterfly seen here as its host plant the False Ashoka tree has been planted all over Mumbai. A normal specimen has pale green spots but these spots are fluorescent green in newly emerged specimens. It is difficult to photograph this butterfly as its wings are constantly in motion. Females have longer tails. The Tailed Jay has long, narrow pointed wings which help it acquire a speedy flight. The Tailed Jay is a rather restless butterfly that is active from early morning to late afternoon. At night it rests on a leaf with its wings folded above its abdomen. This butterfly is seen throughout the year.

Initially the caterpillar is brownish green with green or yellow markings. Later it becomes completely green. It has a pair of spines on the thoracic and anal segment. Its pupa is often parasitized by wasps. The photo below shows the Tailed Jay emerging from its pupa.

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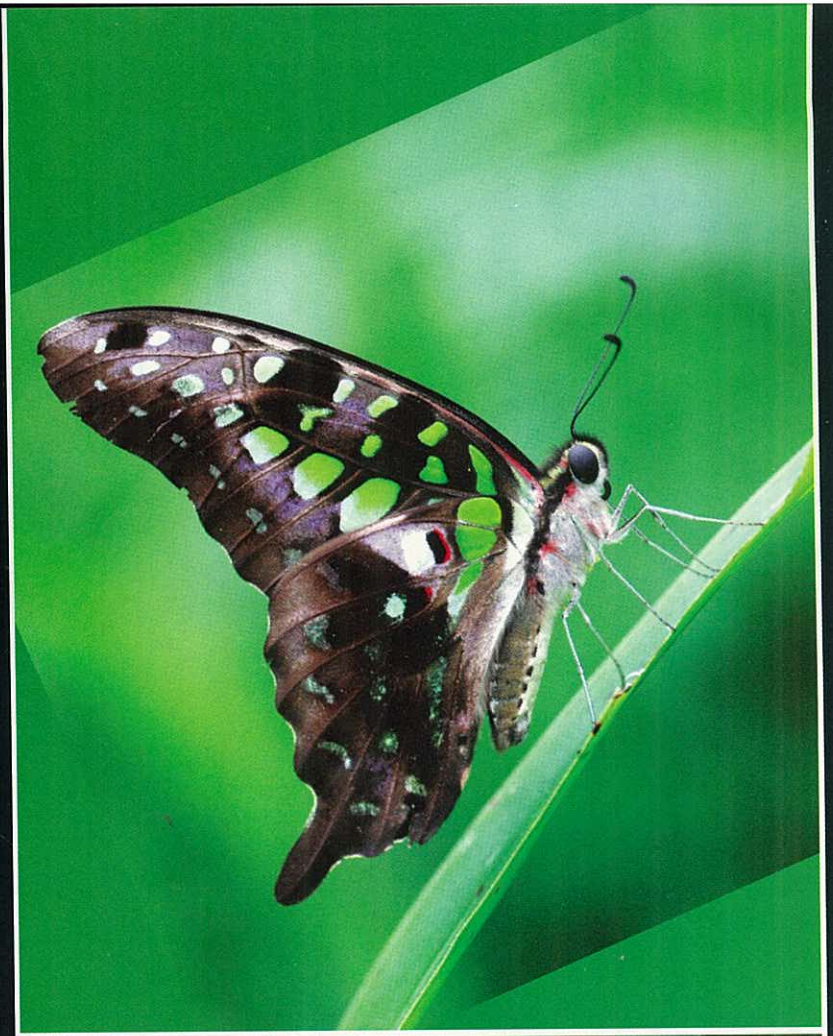

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Gaudy Baron

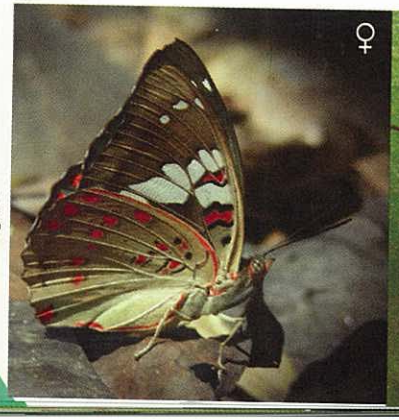
Euthalia lubentina

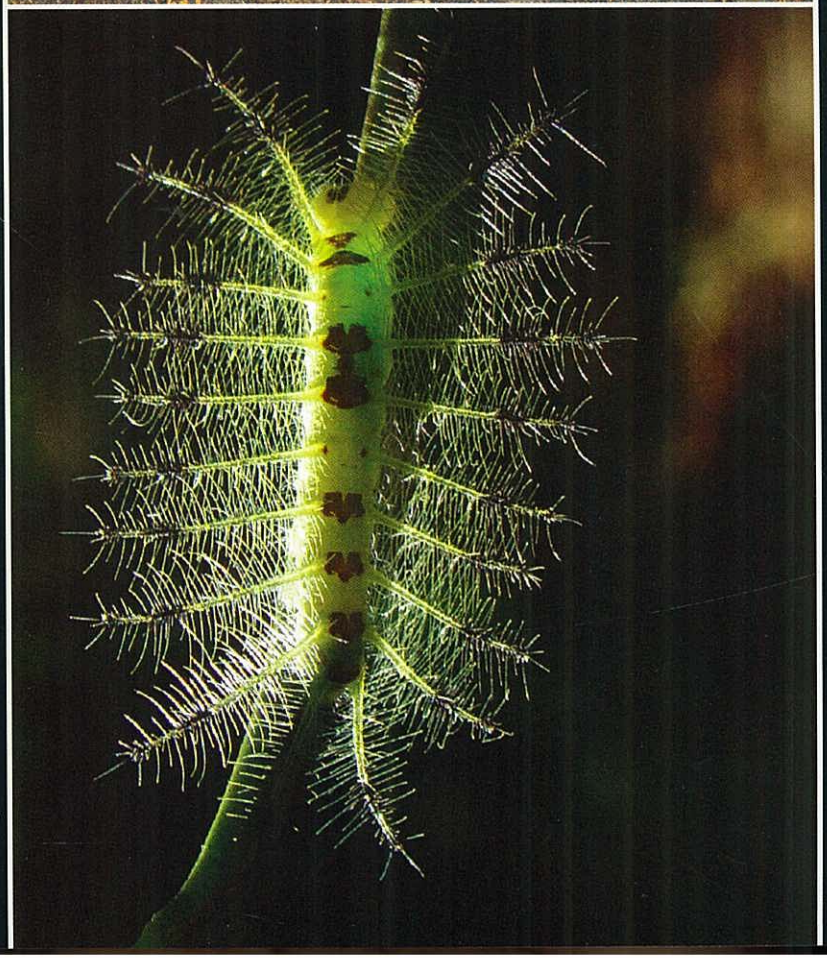
60 to 80mm

Nymphalidae

Unlike the Common Baron This dark beauty is seen more in the heavily forested areas. Similar in habits to the Common Baron. Does not visit flowers but prefers rotting fruit and tree sap. It has a strong and broad thorax which indicates that it is capable of a powerful flight. Mostly rests with its wings spread flat in a slanting position. The male has small white dots on the upperside. The female has a band of large irregular spots and is more colourful than the male.

This butterfly has one of the most beautiful life cycles. The caterpillar has ten pairs of spikes with delicately branched spines and some diamond shaped dots on its back. Pupa of this butterfly is shown below.





A butterfly counts not months but moments and has time enough.

Rabindranath Tagore

Butterflies
in shades of
brown.

Common Baron

Euthalia aconthea

55 to 80mm

Nymphalidae

This butterfly is sometimes seen at fruit stalls and on the streets. It does not visit flowers but prefers tree sap and overripe fruit. It has a green proboscis. Seen more often where its host plants cashew and mango trees are grown. The male is greyish brown with a row of white spots. The female is pale brown with a prominent band across its forewings. The Common Baron generally rests with its wings spread flat, in a slanting position. Mostly seen on the ground and often returns to the same place to feed. The female is larger than the male. Barons have broad thoraxes, this indicates that they are strong fliers.

The caterpillar has ten pairs of delicate branched spines. It positions itself along the mid rib of the leaf parallel to the leaf veins, hence it becomes very difficult to spot it on the plant. It has a beautiful jewel shaped pupa which is shown at the end of this page.

Tawny Rajah

Charaxes bernardus

85 to 110mm

Nymphalidae

The Tawny Rajah is mostly seen in the heavily forested regions at the tree top level. This is probably the fastest flying butterfly of peninsular India. It is difficult to differentiate the sexes on the underside but on the upperside the female has a white discal band that is absent in the male. The male is considerably smaller than the female.

The Tawny Rajah is an extremely wary butterfly that is very difficult to approach unless it is feeding on some dead snake, crab or animal dropping. Then it does not mind human presence even a few feet away. This butterfly seldom visits flowers. The green coloured caterpillar blends perfectly with the leaves of its host plant. It looks similar to the caterpillar of the Black Rajah with a convex head and four horns. Its preferred host plants include Tamarind trees and Dalbergia.

©Nelson Rodrigues

1. Common Evening Brown

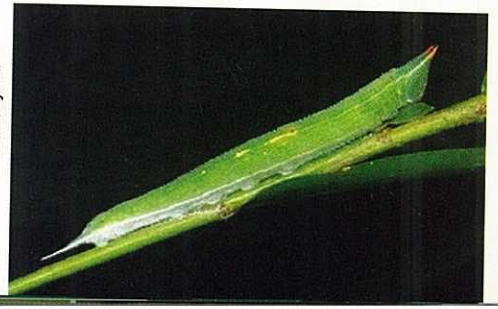
Melanitis leda
60 to 80mm
Nymphalidae

Often seen in residences in the evening time. In the forest it mostly moves in the undergrowth. The wet season form has prominent eyespots but these spots are greatly reduced in the dry season form. Fond of alcohol-rich fruit, beer and tree sap and occasionally comes to flowers. Eggs are laid on the underside of grass. Caterpillar is bright green, at first the head is black and then turns green. It has two maroon coloured horns on it head.

2. Bamboo Treebrown

Lethe europa
65 to 75mm
Nymphalidae

A rather elusive butterfly that is seen mostly in bamboo jungles. Comes readily to rotting fruit, dead crabs and cow pelts. It is most active in the mornings and evenings. It flies in a hopping manner and mostly remains close to the ground. The male has a pale yellow discal band, in the female this band is white in colour. (Its caterpillar is displayed below.)



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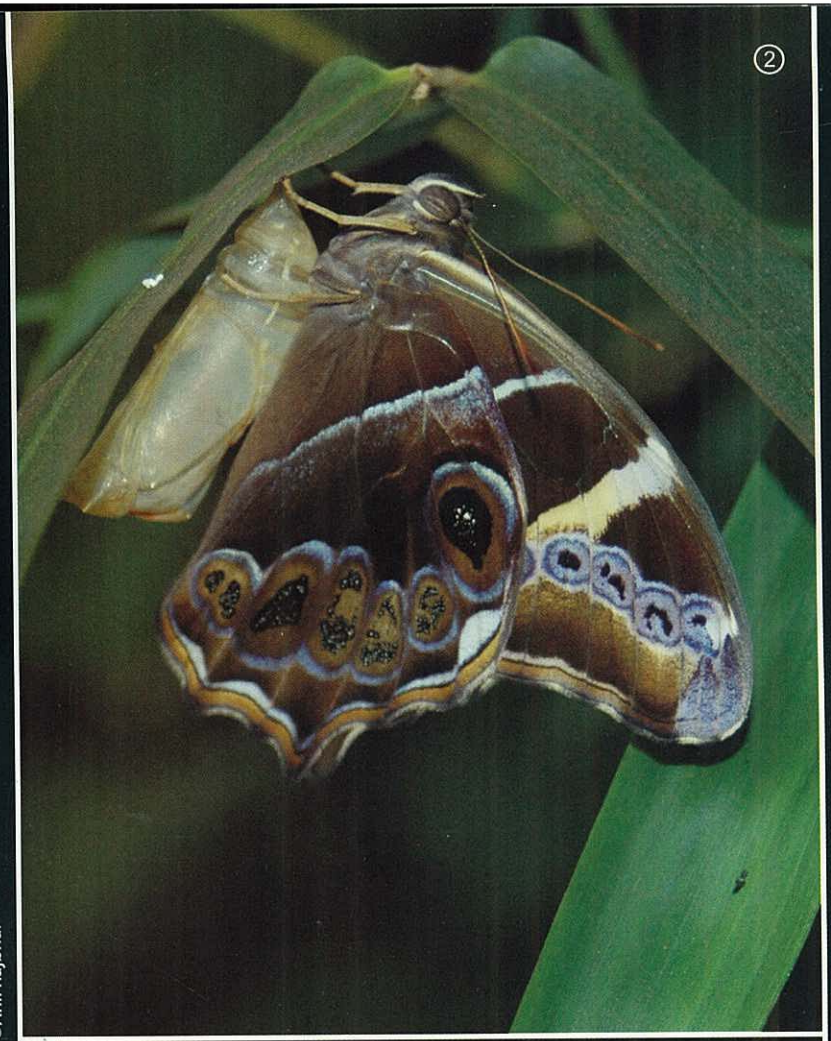

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1. Common Castor

Ariadne merione

45 to 60 mm

Nymphalidae

One of the commonest butterflies seen in India because its host plant Castor grows everywhere. It basks with its wings spread horizontally but rests with its wings closed. Castors are weak fliers. Its flight is short and it often returns to the same spot. Castors like overripe fruit and tree sap. Eggs are generally laid under the leaf. The caterpillar is green in colour with a longitudinal, dorsal brown band.

2. Angled Castor

Ariadne ariadne

45 to 60 mm

Nymphalidae

The upperwing edges of the Common Castor are rounded, while those of the Angled Castor are more angular and the hindwing edges are more wavy. This butterfly is not seen as often as the Common Castor. The caterpillar of this butterfly is dark brown with a broad white dorsal stripe.

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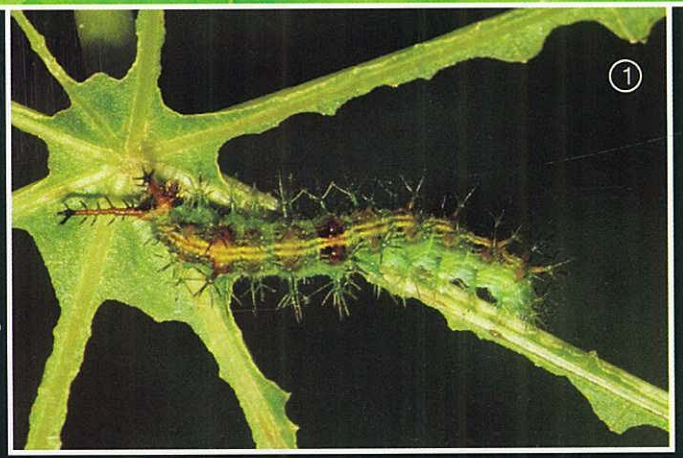

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Common Palmfly

Elymnias hypermnestra

60 to 80mm

Nymphalidae

The Common Palmfly is seen in many places around Mumbai.The female is a mimic of the Striped Tiger and is seen less often than the male. Comes readily to plant sap and rotting fruit.

The Common Palmfly has a slow flapping flight and cannot travel long distances without stopping. Male butterflies are often seen chasing each other for a long time. This butterfly is seen more in the shade than in the sun. Seldom seen with wings opened, specimen below had just emerged from the pupa and was drying it wings.

The caterpillar is green in colour with many bristles. It has a rather large head with two horns. The pupa is bright green in colour with many yellow spots on it. The images are shown on the next page.

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1. Plum Judy

Abisara echerius

40 to 50mm

Lycaenidae

The Plum Judy is a reddish brown butterfly with green eyes, which prefers the shadier parts of the forest. It often rotates round and round hence it is sometimes referred to as 'Dancing Judy.' This is a kind of defensive behaviour that helps to evade predators by causing confusion as to where the head is. It is more active during the evening hours. Upperside of male is purplish brown with obscure markings. Upperside of the female is brown in colour. This butterfly cannot close its wings completely as the plane of its wing is slightly curved.

Caterpillar is olive green with dark green and white lateral lines. Sometimes it draws leaves together, joins it with its silk and then stays in such pockets.

1. Commander

Moduza procris

60 to 75 mm

Nymphalidae

The Commander is seen in the entire Oriental region, especially where there is heavy or moderate rainfall. This butterfly generally sits with its wings spread, while it is basking or feeding. It is fond of tree sap and fermenting fruit. Both the sexes look alike. Its caterpillar is shown on the next page, on the leaves of a kadamb tree.

2. Painted Lady

Vanessa cardui

55 to 70 mm

Nymphalidae

The Painted Lady is probably the most widely distributed butterfly in the world. It prefers the meadows and open spaces and is seen most frequently during and after the monsoon. Although it is very visible while nectaring once it lands on the ground, its cryptic colouring helps to camouflage it completely. Its caterpillar is shown on the next page.

©Nelson Rodrigues

1. Blue Oakleaf

Kallima horsfieldi

85 to 110mm

Nymphalidae

One of the most fascinating butterflies seen in Mumbai. It looks like a dry leaf and is easily camouflaged on the ground or on the tree trunk. It has a brilliant blue upperside. It is fond of overripe fruit, a rather wary butterfly that is difficult to approach. It has a beautiful counterpart called the Orange Oak Leaf which is seen mostly in the Northeast. The caterpillar in the final instar is chocolate brown in colour with many spikes on it.

2. Leaf Blue

Amblypodia anita

45 to 52mm

Lycaenidae

The Leaf Blue could easily be mistaken for a dried leaf. It is a fast flier and seen mostly in the forested regions. On the upperside, the male is deep purple while the female is dark brown with bright purple discal areas. Its caterpillar is shown on the opposite page.

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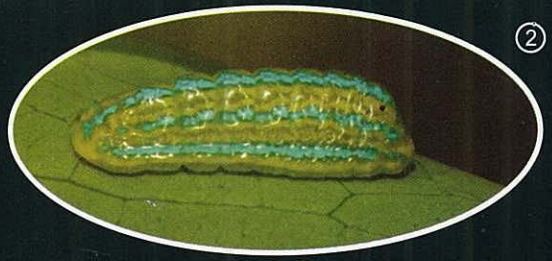

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form clytia *form dissimilis*

Common Mime

Papilio clytia
90 to 100mm
Papilionidae

The Common Mime has two forms, dissimilis which mimics the Blue Tiger (shown above to the right) and the clytia which mimics the distasteful Crow. Both the sexes look similar. The yellow spots on the hindwings are a characteristic feature of this butterfly. This is perhaps the slowest flying swallowtail seen here.

The Common Mime is seen flying at all levels, sometimes at the eye level and sometimes at the canopy level. Although this butterfly is seen in the hilly regions, it is also found at low elevations. Mostly seen from March to June. It is a wary butterfly that is difficult to approach. Often seen mud-puddling in the summer months. In the final instar, the caterpillar is reddish brown in colour with many red and white markings on it. The pupa (shown below) is perfectly camouflaged on the plant, as it looks exactly like a broken twig.

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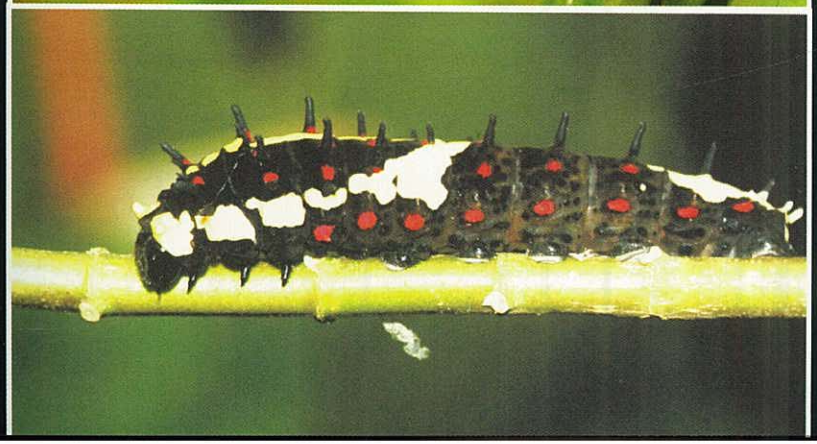

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1. Common Crow

Euploea core

85 to 95mm
Nymphalidae

This Butterfly has a variety of host plants so it is seen in virtually every habitat of India. Crows gather on damaged plants of the Crotalaria to the replenish the pheromones required for reproduction. Males often sail in the air with extended powder puff like yellow hair pencils and attract females by dispersing their scent scales in the air. The caterpillar has a faint colour but as it grows it becomes more colourful with alternate white, brown and black rings. The pupa has a metallic shine.

2. Brown King Crow

Euploea klugii

85 to 100mm
Nymphalidae

The Brown King Crow is similar to the Common Crow. However, it has no white spot in the cell of the hindwing. Like the Common Crow its wings are bordered with a series of marginal and sub marginal white spots.

3. Double-Branded Crow

Euploea sylvester

95 to 105mm
Nymphalidae

It is larger in size than the Common Crow. The Common Crow has only one brand, whereas the male Double-branded Crow has two prominent brands on the upper forewings. (Refer to the picture below)

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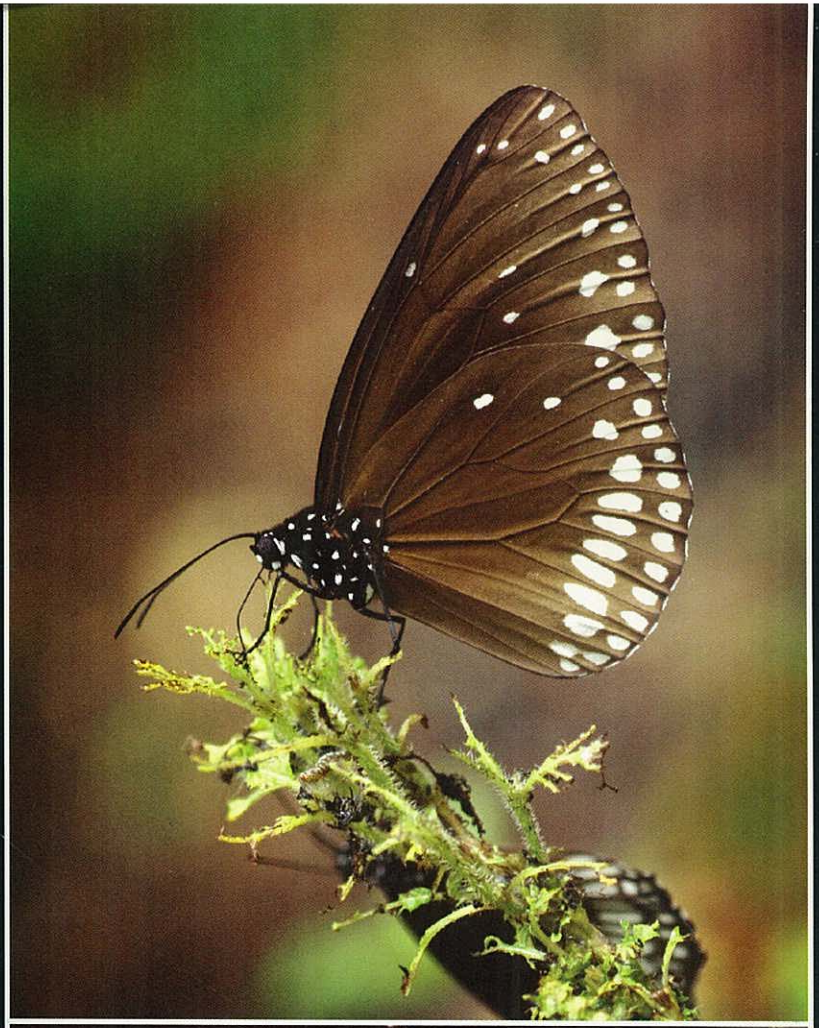

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1. Chocolate Pansy

Junonia iphita

55 to 80mm
Nymphalidae

One of the commonest butterflies of Mumbai, seen in the wooded and urban areas. When the dry season form butterfly closes its wings it looks like a dried leaf. Most Pansies are seen in bright sunlit areas but the Chocolate Pansy prefers the more shaded places. It is fiercely protective about its territory, perhaps that could be the reason why it is also called the `Chocolate Soldier'.

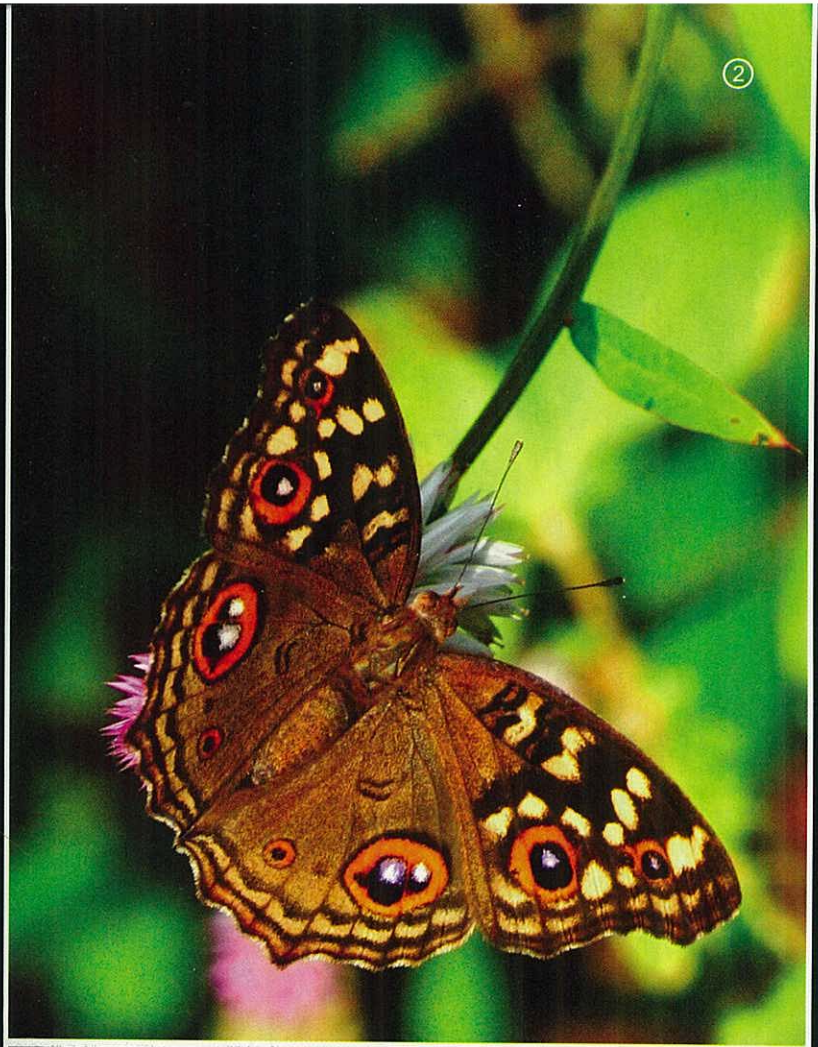
2. Lemon Pansy

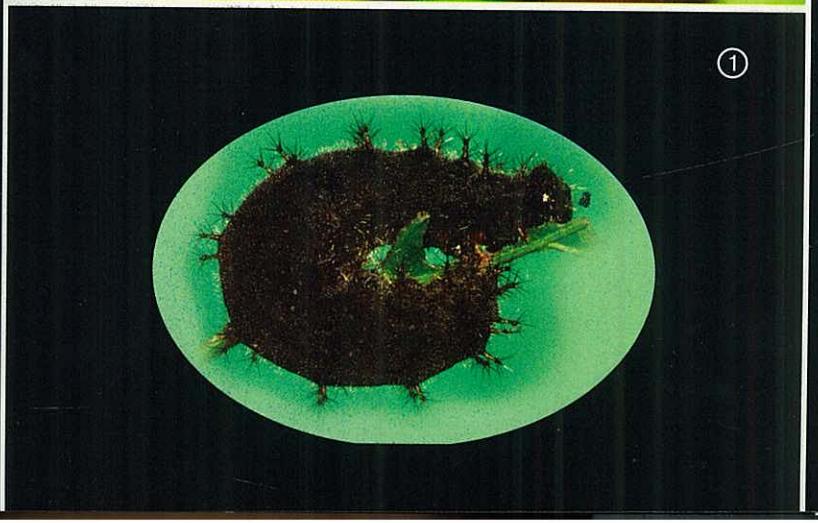
Junonia lemonias

40 to 60mm
Nymphalidae

This sun loving butterfly is considered one of the commonest of the Pansies. It has large eyespots on either side of the wings. Often seen basking on the ground or amidst low foliage. In the dry season form, the markings are paler thereby helping it in the camouflage game.

The caterpillars of both the above butterflies are dark brown with spines on their bodies. Pupation takes place close to the ground.





1. Common Four-ring

Ypthima huebneri

30 to 40mm

Nymphalidae

The Common Four-ring is found in drier and more open areas compared to the Common Five-ring. It has four prominent rings on its hindwings. Mostly seen from the month of March to November. Both the Common Four-ring and Common Five ring butterflies are modest fliers and cant go far without stopping a few times, always keeping rather close to the ground.

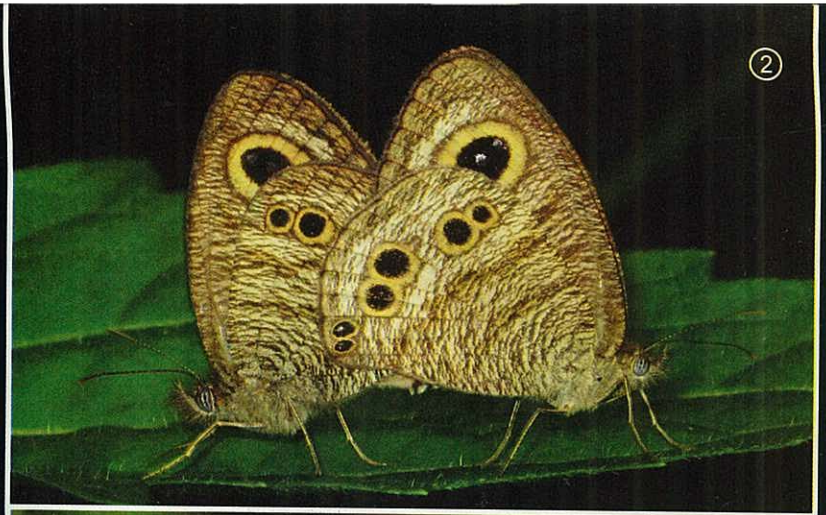
2. Common Five-ring

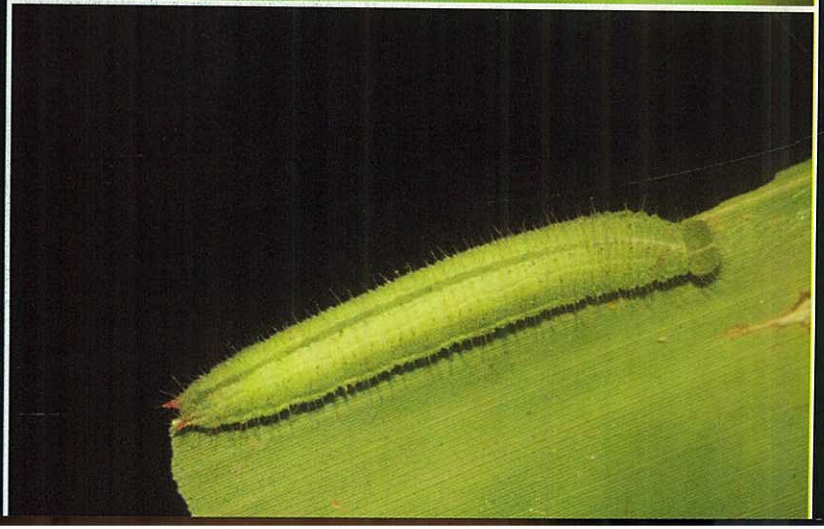
Ypthima baldus

32 to 48mm

Nymphalidae

A light brown butterfly with whitish streaks on it. On the fore wing it has a large eyespot enclosed in a golden yellow ring. On the hind wing it has six eyespots in three pairs. These eyespots are reduced to mere dots in the dry season form. The Five-ring is more commonly seen in the secondary forests. Unlike most of the Browns both the Four and Five-rings are frequent visitors to flowers. Eggs are laid below grass blades. The caterpillar is yellowish green with faint longitudinal lines. It is displayed on the opposite page.





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1. Common Bushbrown

Mycalesis perseus

38 to 55mm

Nymphalidae

The Bushbrown is seen in deciduous, semi evergreen, evergreen and bamboo forests. It can be spotted throughout the year, especially during the monsoons. Like the Evening Brown it prefers to stay in the shade. It is fond of tree sap and rotting fruit, it is also seen on animal droppings. The dry season form has no eyespots on the underside and looks completely different from the wet season form.

2. Long - Brand Bushbrown

Mycalesis visala

45 to 55mm

Nymphalidae

One of the commonest Bushbrowns seen here. Looks similar to the Dark-brand Bushbrown but slightly larger in size. In the dry season form the apex is sharply pointed but more rounded in the wet season form. The inset picture clearly shows the brand of this butterfly on its upperside.

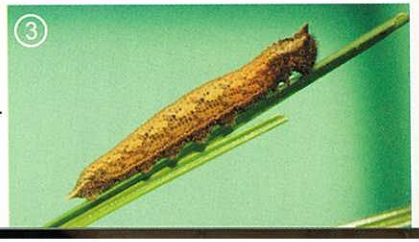
3. Dark - Brand Bushbrown

Mycalesis mineus

40 to 55mm

Nymphalidae

A distinguishing mark of this species is that all the eyespots are in a series, on the hindwing in a line. Sexes look alike but the male has a salmon pink oval on the upper hindwing.



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1. Silverstreak Blue

Iraota timoleon

40 to 48mm

Lycaenidae

A chocolate brown butterfly, with white patches. Its wings are marked with glistening silver spots and lines. Can be seen more easily along water bodies in the dense and evergreen forests of the Western Ghats. Male has one tail while the female has two. Male is bright blue on the upperside while the female is dark brown. Caterpillars are known to feed on tender ficus leaves, this gives the caterpillar its pinkish red colour.

2. Western Centaur Oakblue

Arhopala pseudocentaurus

53 to 62mm

Lycaenidae

One of the biggest lycaenids of South India which is sometimes mistaken for the Large Oakblue. Does not come to flowers but visits damp patches. Caterpillars are tended to by lot of ants. Male is dark blue on the upperside, female is paler blue and has a broader wing border.

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1. Golden Angle

Caprona ransonnetti

35 to 45mm
Hesperiidae

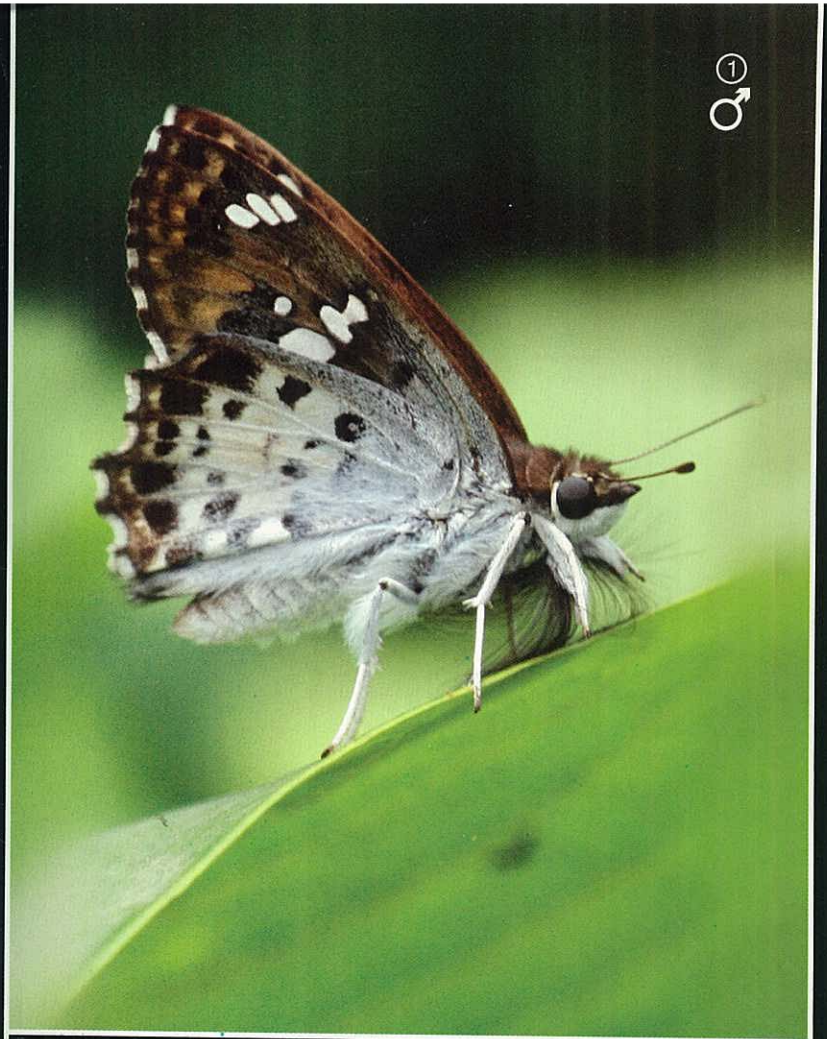
A dark brown butterfly, with marginal brown areas and a few semi-transparent white dots. In the dry season form the yellow brown markings are more extensive. This is one of the flats that is not shy of sunshine. It has a rather fast flight but never sustained. Unlike the other skippers the Golden Angle always sits with its wings outstretched. Wings are sometimes held at a 45 degree angle but never closed completely. Male has a prominent brush which gives it a bearded appearance. The caterpillar is furry white and it is shown on the opposite page.

2. Angled Flat

Tapena twaithesi

35 to 40mm
Hesperiidae

Sometimes called the Black Angle, can be seen along the forest streams or mudpuddling. The colour is variable, pale brown or dark purple brown. The outer margins are black and the wings are angled. Both sexes have three semi-transparent white sub apical spots. Its caterpillar is milky white with a brown head.



1. Fulvous Pied Flat

Pseudocoladenia dan

40 to 46mm

Hesperiidae

The Fulvous Pied Flat is mostly seen during the monsoon time. This butterfly feeds with its wings outstretched. It has a long proboscis, which helps it get nectar from flowers with long corolla tubes. On the forewings are large semi-transparent spots which are yellowish in the male and colourless in the female. The caterpillar makes a cell out of the leaf and lives there. The caterpillar is greenish in colour and is shown at the bottom of this page.

2. Tricoloured Pied Flat

Coladenia indrani

40 to 46mm

Hesperiidae

This butterfly can be easily be mistaken for the Fulvous Pied Flat. However it has a marginal row of yellow opaque spots on the hind wing which distinguishes it from the former. A fast flier but prefers the shade to sunny spots. Both the sexes look similar. The caterpillar is creamish in colour and has a prominent black head. It is shown on the next page.

1. Giant Redeye

Gangara thyrsis

70 to 76mm

Hesperiidae

This butterfly is considered to be the largest amongst the skippers. However, it is seldom seen as it is active in the early morning or late evening. Its caterpillar (shown below) is white in colour and has a very hairy appearance. It mostly lives and pupates within a leaf cell.

2. Common Redeye

Matapa aria

40 to 55 mm

Hesperiidae

Mostly seen in the bamboo jungles, flies in clearings in the early mornings or late evenings. It has a quick flight at a low-level which is difficult to follow. Its most striking features are its red eyes. Mostly seen before and during the monsoon season. It basks with its wings closed but exposes maximum wing surface by keeping body perpendicular to the sun. Visits lantanas and other low growing herbs. Its caterpillar is white with a brown head. The pupa is generally formed in a cell within a leaf.

©Hemant Ogale

1. Orange Awlet

Bibasis jaina

60 to 70mm

Hesperiidae

A rather rare butterfly seen in the forested regions of Mumbai. It is a fast flier so it is difficult to follow its flight path. Mostly seen in the early mornings and late evenings. Rests on the underside of the leaf with its wings closed. Male has central dark brand on the upperside. Comes to flowers, sweat and bird droppings.

©Balakrishnan V

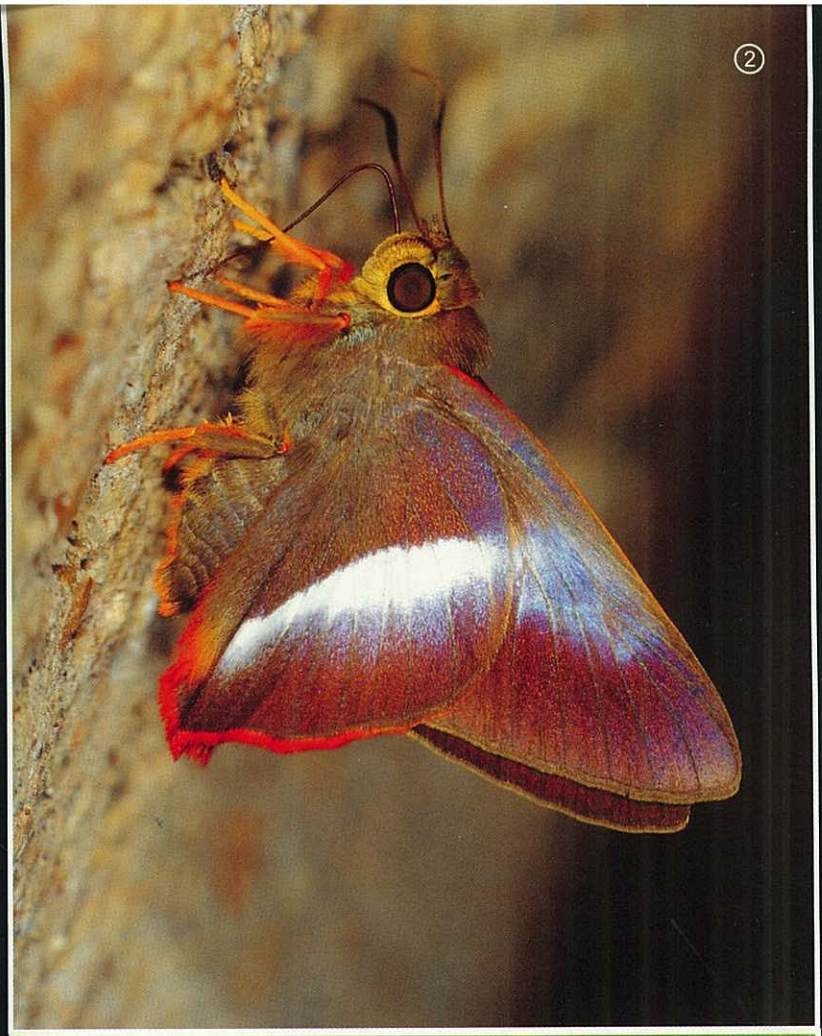
2. Orange-Tail Awl

Bibasis sena

42 to 50mm

Hesperiidae

One of the prettiest butterflies seen in Mumbai, with only about two sightings reported to date. The Orange-Tail Awl is dark brown in colour with a bright orange fringe on the abdomen. It has a pure white discal band on the underside of its hindwing. This Awl has a rather rapid flight which is difficult to follow. Most active in the early morning or late evening hours. This butterfly is seldom seen on flowers but sometimes seen on bird droppings and damp patches. The caterpillar of the Orange-Tail Awl and the Orange Awlet look similar, but the former is smaller in size. This caterpillar is displayed on the next page.



©Yuwaraj Gurjar

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1. Dark Palm Dart

Telicota ancilla

33 to 36mm
Hesperiidae

This skipper is black with orange bands on the forewings which narrow towards the apex. There is a pale orange band on the hindwings too. Eggs are laid on the upperside of bamboo and palm leaves. Caterpillar is green in colour with black head.

2. Pale Palm Dart

Telicota colon

32 to 36mm
Hesperiidae

The Pale Palm Dart looks very similar to the Dark Palm Dart. However in the Pale Palm Dart the veins on the forewings are yellow. It has a stout thorax that shows that it is capable of a fast flight.

3. Tamil Grass Dart

Taractrocera ceramas

23 to 30mm
Hesperiidae

This is small skipper with dark brown wings marked with yellowish orange spots. The upper hindwing has four spots in pairs. It has a rather weak flight close to the ground. It comes to flowers and damp patches. The upperside of this butterfly and its caterpillar is displayed at the bottom of this page.

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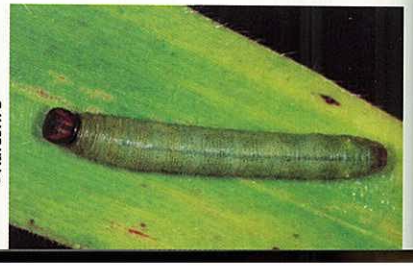

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©Amol Patwardhan

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1. Brown Awl

Badamia exclamationis

50 to 55mm
Hesperiidae

A uniformly brown butterfly with prominent black bands on its abdomen. Its wings are extremely long in proportion to its body. Considered a fast flier. Rests on the underside of leaves, with its head pointing downwards.

2. Common Awl

Hasora badra

50 to 55mm
Hesperiidae

This butterfly is mostly seen in the early mornings and in the evening time. It has a very fast flight and normally rests under the leaves. It visits flowers and bird droppings. It lacks the white band of other awls. The male has a black spot on the anal lobe.

3. Plain Banded Awl

Hasora vitta

45 to 55mm
Hesperiidae

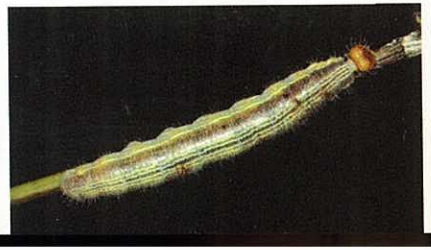
This butterfly could easily be mistaken for the Common Banded Awl. However, the main difference is that the white band on the hind wing is broader and more diffused.

4. Common Banded Awl

Hasora chromus

45 to 50mm
Hesperiidae

The Common Banded Awl is seen all over India both in the forests and the countryside. The female has two very small semi transparent spots in the discal areas. Retires on the undersides of leaves and comes to flowers and damp patches. Its caterpillar is shown below.



1. Vindhyan Bob

Arnetta vindhiana

25 to 32mm
Hesperiidae

The Vindhyan Bob is endemic to South and Central India. Its preferred habitat is wet grasslands but it is also seen in deciduous forests. It comes to flowers, bird droppings and wet patches.

2. Chestnut Bob

Lambrix salsala

26 to 30mm
Hesperiidae

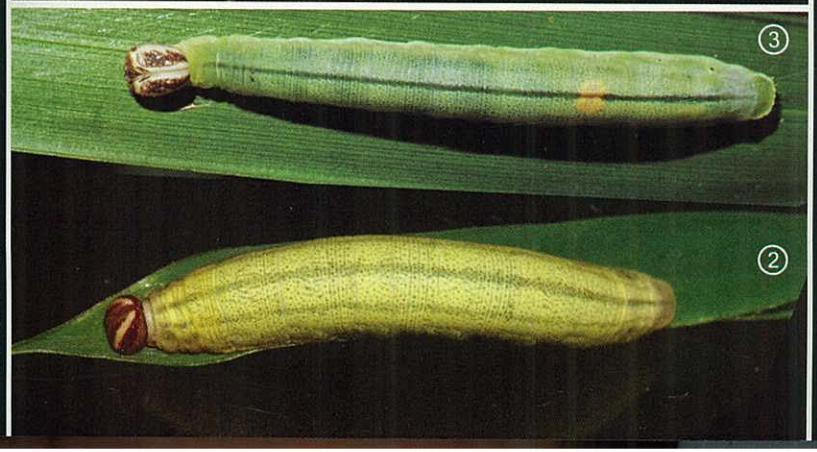
A dark brown butterfly with a prominent silver spot in the centre of the underside of its hindwing. Its winged tips are curved outwards, so they never meet each other when the wings are closed behind its back. Eggs are laid under blades of grass. The caterpillar is light green in colour with dark green stripes. It has a dark brown head and is shown below on the next page.

3. Indian Palm Bob

Suastus gremius

32 to 45mm
Hesperiidae

This is a rather common, sun-loving butterfly that likes to visit flowers, damp patches and bird droppings. Its hindwings are brown in colour and overlaid with grey scales. Both the sexes look similar. It has a fast flight that is rather difficult to follow. In the early instars the caterpillar is red in colour and gradually changes its colour to green in the final instars.



©Vedwati Padval

1. Malabar Spotted Flat

Celaenorrhinus ambareesa

45 to 55 mm
Hesperiidae

This is a dark brown butterfly with a series of semi-transparent white dots. The Malabar Spotted Flat has rows of pale yellow dots on the hindwings and a hairy fringe on the wings is checkered with black and white. This butterfly is likely to be found in the proximity of logs and boulders in the forest. It feeds on flowers, bird droppings and occasionally visits damp

2. Common Small Flat

Sarangesa dasahara

25 to 35mm
Hesperiidae

This flat is mostly seen in the forested areas of Mumbai. It has a stronger preference to stay in wetter habitats. It visits both flowers and bird droppings. Prefers to remain on the underside of leaves, when it is not feeding or basking.

3. Spotted Small Flat

Sarangesa purendra.

25 to 35mm
Hesperiidae

Looks similar to the Common Small Flat but is usually seen in drier habitats. It has a quick flight but often returns to the same spot after a while. Its upper side is mottled with dark patches and the fringe along the hind wing is checkered.

4. Common Spotted Flat

Celaenorrhinus leucocera

45 to 55mm
Hesperiidae

This is a shade loving butterfly which has a fast flight at a low level. Very territorial in nature. It has many semi-transparent white spots across its fore wings. Male has a white antennae and the female has a plain brown antennae with a white club.

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The world of Swifts

This is one of the most difficult groups of butterflies from the Hesperiidae family, that can fox even the most seasoned butterfly watchers. Here is a general description. Swifts are small to medium size skippers named so, because of their swift flight. They are mostly drab coloured with multiple white and yellow dots. Many of them look identical so its difficult to identify them with ease.

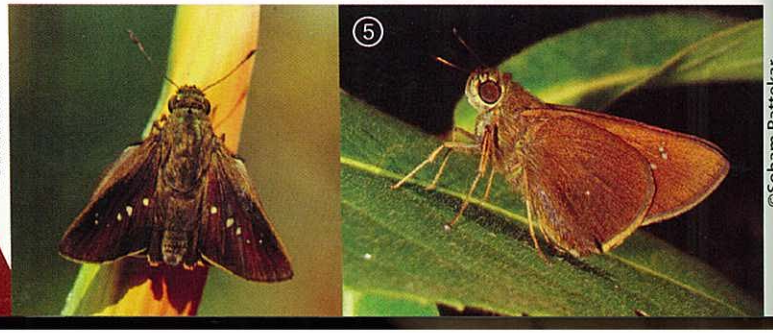
1. Rice Swift
Barbo cinnara
30 to 36mm

2. Small Branded Swift
Pelopidas mathias
32 to 38mm

3. Conjoined Swift
Pelopidas conjuncta
45 to 52mm

4. Straight Swift
Parnara guttatus
32 to 38mm

5. Blank Swift
Caltoris kumara
42 to 46mm



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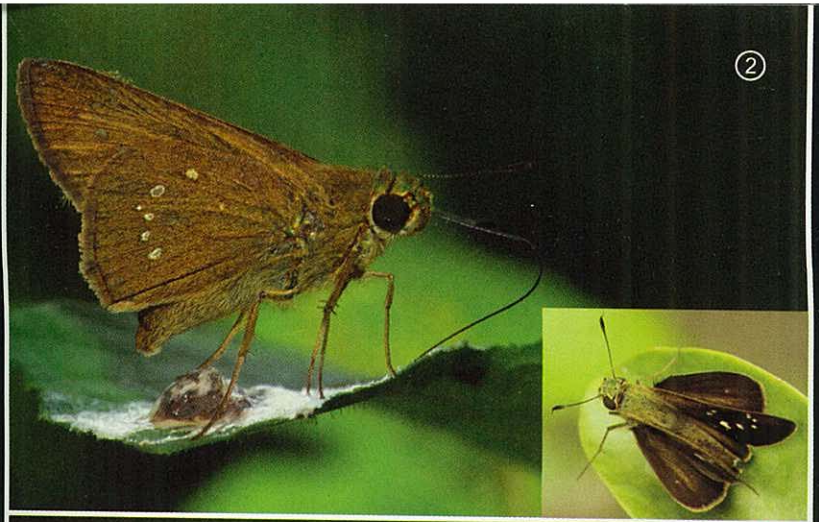

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1. Monkey Puzzle

Rathinda amor

26 to 28mm
Lycaenidae

The Monkey Puzzle has an interesting pattern on its hindwings. Both sexes look alike. It has three tails of which the middle one is the longest. It has a rather weak flight and cannot fly for long without alighting. As per Evans the caterpillar resembles a monkey's head, hence the name. The caterpillar is yellowish in colour with pink spikes.

2. Common Tinsel

Catapaecilma elegans

28 to 32mm
Lycaenidae

This butterfly is a rare sighting in Mumbai. Its hindwing has three tails. On the underside it has silvery edged bands and spots. The male is dark violet blue on the upperside and the female is a bit paler, with a broader dark border.

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1. Long-banded Silverline

Spindasis lohita

30 to 42mm
Lycaenidae

There are eight species of Silverline in India. Four of them are seen here. In the Long-banded Silverline the band that starts at the base of the hind wing on the underside always touches the central long band.

2. Common Shot Silverline

Spindasis ictis

27 to 35mm
Lycaenidae

The Shot Silverline a dull, yellowish brown butterfly with only a few traces of gold and yellow lines. The first line on the underside of the wings is broken into three spots.

3. Common Silverline

Spindasis vulcanus

26 to 34mm
Lycaenidae

This butterfly prefers the open plains to wooded country. It has a quick flight which is difficult to follow. Feeds on small flowers and bird droppings. The caterpillar is green in colour and lives within a cell. It makes many trips in and out of this cell to feed. It also pupates within the cell that is mostly on the host plant itself. Crematogaster ants generally look after and protect the caterpillars from predators.

4. Abnormal Silverline

Spindasis abnormis

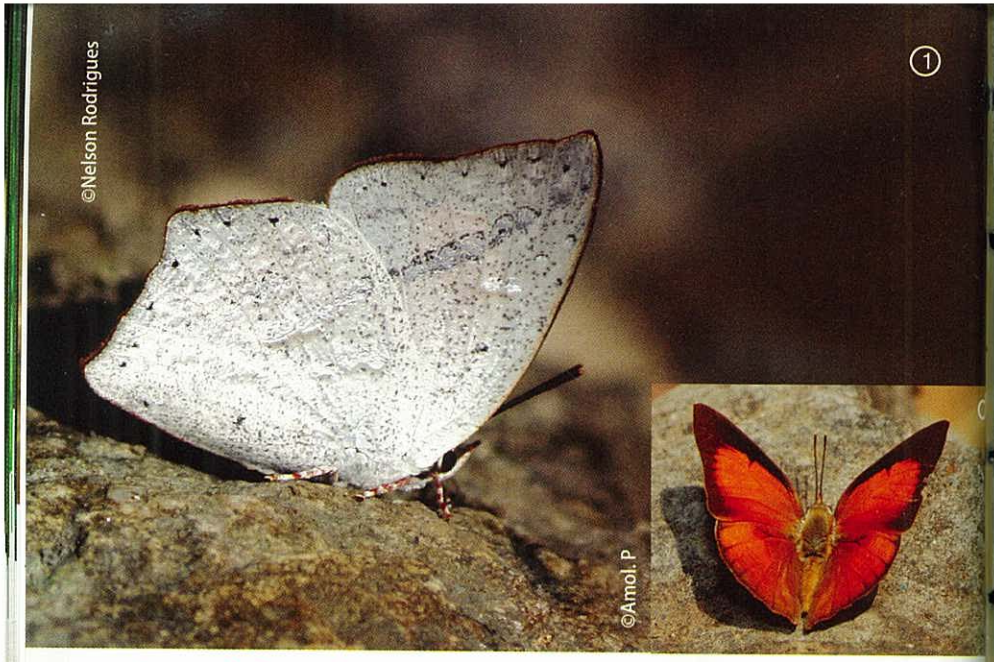
40 to 44mm
Lycaenidae

This rare Silverline was spotted at Yeor Hills. On the underside the outer basal band is broken into three spots.

Know that rainbows and butterflies are
God's gift to your joy.

Jonathan Lockwood

Butterflies
in shades of white,
light grey to light brown.



1. Angled Sunbeam

Curetis acuta

35 to 42mm

Lycaenidae

The Angled Sunbeam is more rarely seen than the Indian Sunbeam. It has a black spine line projection midway on the upper forewing. It is more angular in shape than the Indian Sunbeam. It is a swift and powerful flier, which is fond of bird droppings and visiting damp patches.

2. Indian Sunbeam

Curetis thetis

40 to 48mm

Lycaenidae

This milky white butterfly is a fast and powerful flier and is seen more frequently before and after the rains. It prefers damp patches and bird droppings to flowers. The upperside of the male is orange red while the upperside of the female is white with a black border. Very pugnacious the Indian Sunbeam chases away any intruding butterfly from its territory. The caterpillar is dark green in colour and has horns. Its caterpillar and pupa are seen on the next page.

1. Tufted White Royal

Pratapa deva

32 to 40mm

Lycaenidae

One of the rarest butterflies seen in Mumbai. This butterfly is generally seen in the hilly regions and the plains. On the upperside the male is blue and the female is greyish blue. Like the Peacock Royal this butterfly too lays its eggs on parasitic creepers of the Loranthus family. Its caterpillar is displayed on the next page.

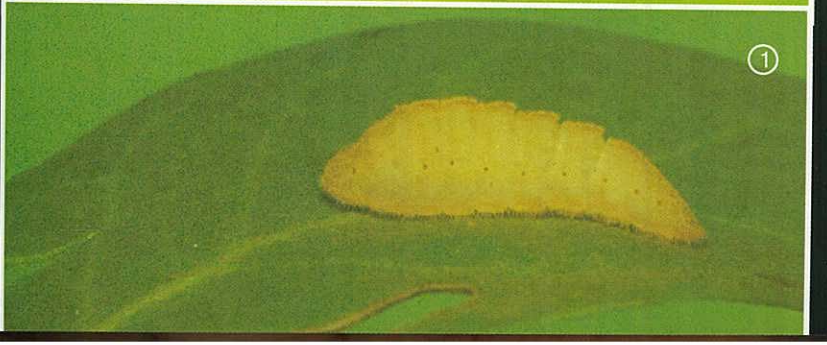
2. Peacock Royal

Tajuria cippus

31 to 45mm

Lycaenidae

An attractive butterfly that is mostly spotted during the monsoon season. It is attracted to flowers and bird droppings. It has two white tipped tails. At the base of the hindwings are two prominent black spots bordered by orange. It has a metallic blue upperside. Its caterpillar (shown on the next page) is perfectly disguised as a bird dropping.



1. Plain Puffin

Appias indra

60 to 70mm

Pieridae

The Plain Puffin is one of the rarer butterflies seen in Mumbai. Males are generally seen in larger number than the females. This butterfly is white in colour, with a black border. This border is narrow in the male and broader in the female. It comes to flowers and damp patches. Males are often seen mudpuddling with others of its kind during the summer months.

2. Common Albatross

Appias albina

60 to 75mm

Pieridae

The Common Albatross is a forest insect that is mostly seen in the post monsoon season. The male is milky white while the costal margin of their wings maybe lined in black. The female is somewhat smaller with some white spots on the black margin of the forewings. Males are fond of mudpuddling, in flight this butterfly could be mistaken for an Emigrant.

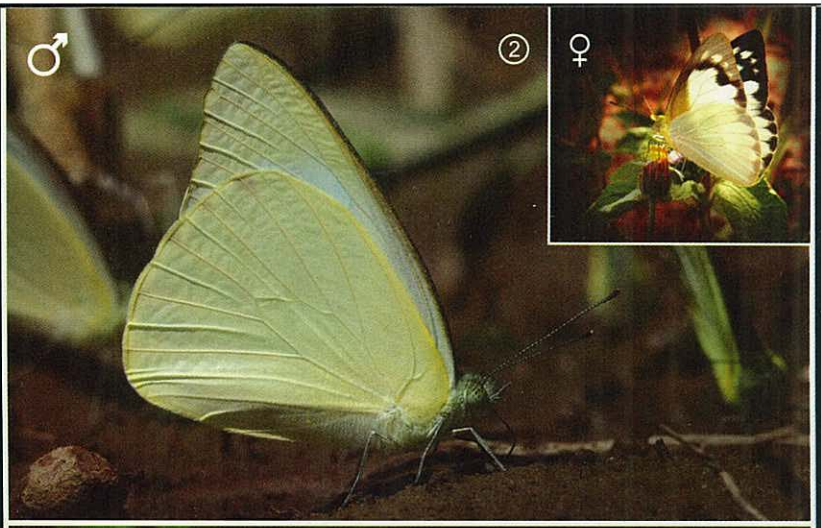
3. Striped Albatross

Appias libythea

50 to 60mm

Pieridae

This butterfly looks very much like the Common Albatross and can be distinguished only in enlarged photographs or close physical examination of the wing venation. However the Common Albatross is an inhabitant of dry deciduous forests but the Striped Albatross is found in evergreen or semi evergreen forests.



1. Redspot

Zesius chrysomallus

38 to 44mm

Lycaenidae

Although it is common in South India, it is only rarely seen here. It has a fast flight and the males are very territorial by nature. Male has two tails and the female has three. Redspots do not visit flowers; but are often seen on moist patches. Females are rarely seen. Eggs are laid in the vicinity of the nest of red ants as these insects look after the larvae and the pupae. Pupation often takes place in the ants nest.

2. Red Pierrot

Talicada nyseus

32 to 36mm

Lycaenidae

A small charming multicolour butterfly that is very commonly seen especially in the vicinity of its food plant Kalanchoe. It has a weak flight close to the ground. However, it keeps flying till late evening. The caterpillar generally bores inside the thick Kalanchoe leaves. The pupa is whitish in colour with many black dots on it. Pupation takes place outside, above or under the leaf or on the ground.

©Nelson Rodrigues

1. Angled Pierrot

Caleta caleta

25 to 32mm

Lycaenidae

The Angled Pierrot can be seen more often during the monsoon season. It has black bands that are broader in size than the Common Pierrot. Markings are smaller and narrower in the dry season form. Unlike the Common Pierrot that is seen everywhere this butterfly is seen more in the forested regions.

2. Rounded Pierrot

Tarucus nara

23 to 28mm

Lycaenidae

Seen less often than the other Pierrots. It has three green metallic spots on the underside of the hindwing. Its black markings are more like streaks than rounded dots. The male is violet blue and the female is brownish on the upperside. Seen more often in the drier habitats.

3. Common Pierrot

Castalius rosimon

24 to 34mm

Lycaenidae

This is a small white coloured butterfly with many black spots. The central region in the hindwings has no markings. Most Pierrots are weak fliers and keep close to the ground. They mostly visit flowers, however they also come to damp patches and bird droppings. Caterpillars of the Angled, Rounded and Common Pierrot are all displayed below.

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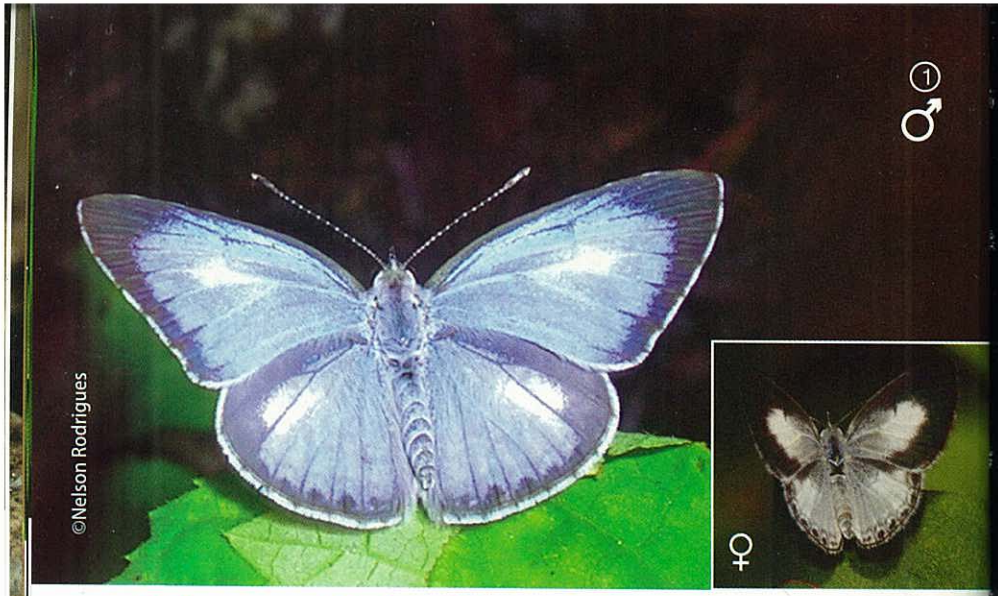


1. Common Hedge Blue

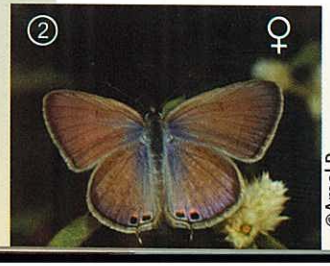
Acytolepis puspa
28 to 35mm
Lycaenidae

This butterfly is commonly seen all over India. The upperside of the male is shiny, violet blue, whereas the female has much less blue and some distinctive white patches. (Refer to the pictures above) The Common Hedge Blue prefers to feed on small flowers and bird droppings.

2. Gram Blue

Euchrysops cnejus
25 to 33mm
Lycaenidae

This fast flier is mostly seen in open fields, scrub jungles especially where crops like mung bean, cow pea and black gram are grown, which are its larval host plants. This is a low flying, sun-loving butterfly. It prefers nectar from small flowers like Tridax and Plumbago. The caterpillar is green in colour with dark markings on its back. It feeds on flowers after they fall off, then it goes within the developing pods and begins eating the tender seeds.



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1. Psyche

Leptosia nina
35 to 50mm
Pieridae

This dainty butterfly is sometimes called the "Wandering Snowflake". Perhaps because of its colour and rather leisurely flight, it has light green lines which are more prominent on the hindwings. It prefers the shade to sunlight. One of the few butterflies that flies even when it is cloudy. Seen all around India except in the desert areas. Its caterpillar is shown on the left.

2. Apefly

Spalgis epius
20 to 30 mm
Lycaenidae

The Apefly is seen in urban and forested areas. The forewing of the male is more pointed than that of the female. The Apefly has one of the most fascinating life cycles. While most butterfly larvae are herbivorous this one is not. It has no preferred host plants. Eggs are laid in the proximity of mealy bugs. After they hatch they move into the mealy bug colonies and feed on them. They disguise themselves by placing mealy bug fluff on their back. The caterpillar also feeds on scale insects. The Apefly gets its name from the supposed resemblance of its pupa to the face of an ape. Refer to the picture shown on the next page.

1. Indian Cupid

Everes lacturnus

22 to 28mm

Lycaenidae

The Indian Cupid is almost pure white on the underside with two prominent orange spots on the underwing. The upperside of the male is a brilliant blue whereas the upperside of the female is brown or black with or without blue discal areas.

2. Malayan

Megisba malaya

19 to 30mm

Lycaenidae

It is easy to mistake this butterfly for the Common Hedgeblue. However, the position of the prominent black spots on the undersides of the wings distinguish the two. It is a weak flier, that is often seen on bird droppings and animal dung. The Tailless Malayan (which is considered a sub-species is also seen here) Its picture is displayed on the next page.

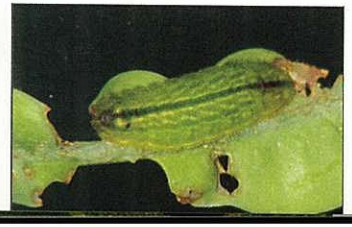
3. Plains Cupid

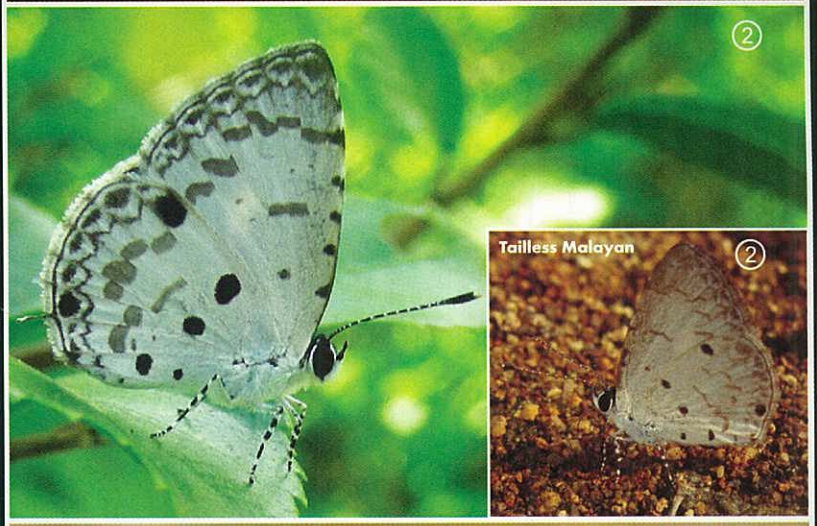
Chilades pandava

25 to 35mm

Lycaenidae

A grey coloured butterfly with well marked lines and spots. Males visit damp patches and flowers. It prefers wooded regions and the caterpillars are tended to by ants. Its caterpillar is shown below.





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1. White Orange Tip

Ixias marianne

50 to 55mm

Pieridae

This is a butterfly of low elevations, seen in open plains, scrub jungles and mixed deciduous forests. It is fond of mud-puddling and a known migrant. Appears to be a more wary butterfly than the Yellow Orange Tip. Both these butterflies have similar food plants. The female of the White Orange Tip has black spots in the apical orange patch. Comes to damp patches and flowers. Caterpillar is green in colour with a lateral white band.

2. Plain Orange Tip

Colotis eucharis

40 to 55mm

Pieridae

The Plain Orange Tip is much smaller in size than the White or Yellow Orange Tip. It is mostly seen flying at a low level amidst the bushes. The male has a broad orange apical patch on the upper forewing. The female has black apical area at the fringe of three or four elongate spots. Thanks to the cryptic colouration of its hindwings, once the butterfly settles on the ground, it is very difficult to find it.

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Great Orange Tip

Hebomoia glaucippe

80 to 100mm

Pieridae

The largest of the `Whites' in India, The Great Orange Tip is a very strong flier and a rather wary butterfly that is difficult to approach. It generally flies high above the ground but comes down for nectaring. The female has a prominent row of discal spots on the hindwing. When it settles, the forewings are merged into the back wings, the dark protective markings on the hindwing makes it difficult to see it on the ground. Mostly seen during and after the monsoon. In the summer males mudpuddle in the company of other butterflies like Emigrants. The caterpillar is blueish green with a beaded white lateral line. When handled it mimics the snake effectively raising its head revealing blue eyespots that are concealed when it is at rest.

©Amol. Patwardhan

1. Large Guava Blue

Deudorix perse

48 to 52mm

Lycaenidae

Has similar habits as the Guava Blue but is seen more in the forested areas and hilly regions. The caterpillar of this butterfly also pupates within fruits like guava.

2. Guava Blue

Deudorix isocrates

34 to 50mm

Lycaenidae

The Guava Blue is seen all over India except in the desert regions. It has a rather swift flight and both sexes settle on flowers and bird droppings. Females are generally larger than males. The upperside of the male is violet blue but the upperside of the females is brownish and darker towards the end cell. The caterpillars can be seen mostly in guava and pomegranate plantations. Ants don't tend to the caterpillar of this butterfly, which mostly pupates within the fruit.

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Grey Pansy

Junonia atlites

55 to 65mm

Nymphalidae

A creamish grey coloured butterfly with a row of black spots near the wing margin. It is very fond of marigold flowers. Flies close to the ground, the dry season form is of a lighter colour. Mostly seen near water bodies in the vicinity of its host plants. The markings on the females are darker and more distinct. Like the Chocolate Pansy this butterfly is also territorial by nature.

The caterpillar is velvetty black with a dull greenish neck, and covered with branched spines and fine white hairs. Caterpillars of most Pansies are not seen because they hide behind the leaves and the drop to the ground when disturbed. They return to the host plant after the danger is over.

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1. Black Rajah

Charaxes solon

70 to 80mm

Nymphalidae

This rather regal butterfly has a presence almost all over India. Seen on the plains, hills, jungle and open country. Not easily seen at the eye level as it mostly hovers and basks on the tops of trees. It has a broad thorax which is an indicator of its fast flight. It is very territorial by nature and is likely to chase any passing butterfly before returning to its perch. It rests with its wings closed.

The Black Rajah is seldom seen on flowers. Instead it prefers overripe fruits like papaya, guavas and the fruits of the Kadamba tree (refer to the picture above) It also likes tree sap, dead insects, urine and animal droppings. One of the most wary butterflies, that is extremely difficult to approach unless it is feeding. The caterpillar is similar to that of the Common Nawab. Green in colour it blends well with the tamarind leaves. It has a convex head with four horns.

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Spot Swordtail

Graphium nomius

75 to 90mm

Papilionidae

A characteristic feature of this butterfly is its sword-like tail. It visits flowers and the males are often seen mudpuddling on damp patches. Both the sexes look similar. It is a powerful flier that is mostly seen from February to June. This is a rather wary butterfly that takes off at the slightest disturbance. Mostly seen in the forested areas of Mumbai.

The caterpillar is brownish in colour with a subspiracular yellow line. It is rather sluggish and mostly feeds only in the evening or night. If in the pupal stage shortly before the monsoon, it may remain in the dormant stage till the next breeding season.

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1. Indigo Flash

Rapala varuna

28 to 30mm

Lycaenidae

The underside of this butterfly has a purplish gloss and a band on the underside of the forewing that is darker than the Slate Flash. It is seen both at the low elevations and in the hills, but not in the desert regions. Like the other Flashes the caterpillars prefer to feed on the flowers of the host plant. They are attended to by ants.

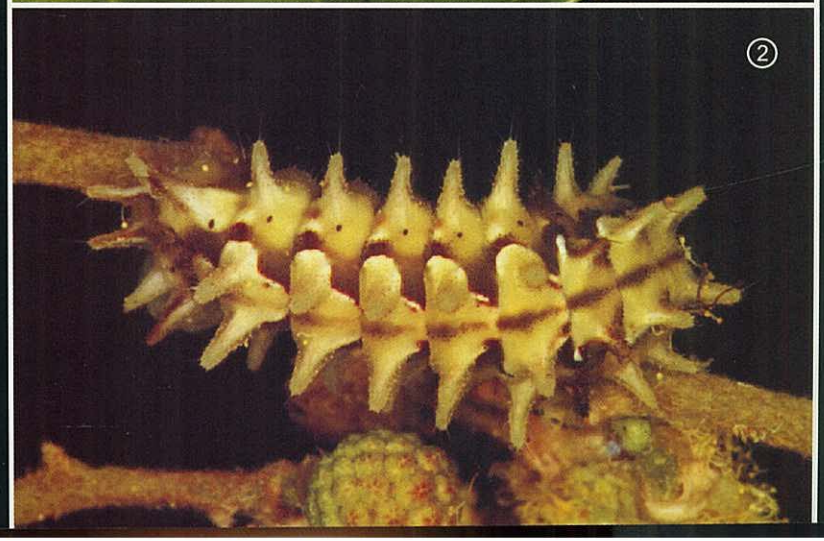
2. Indian Red Flash

Rapala iarbus

33 to 40mm

Lycaenidae

It is a fast flier more commonly seen on the plains than in the hills. Looks similar to the other Flashes. On the upperside the Female is dull coppery red with a dark brown border whereas the upperside of the male is red with a purplish sheen.



©Nelson Rodrigues

1. Large Oakblue

Arhopala amantes

45 to 57mm

Lycaenidae

This butterfly is seen only in the forested areas around Mumbai. Considered a fast flier, it flies in a zigzag manner amidst the trees. Once settled it is not easy to disturb it. It is seldom seen on flowers. Fond of plant sap, especially from the new leaves of mango trees. Its caterpillar is shown on the opposite page.

©Yuwaraj Gurjar

2. Slate Flash

Rapala manea

30 to 33mm

Lycaenidae

A strong flier. Its underside is brown marked with a darker band with a whitish margin. It has a black tail lobe. Due to its colour, speed and flight pattern it is difficult to follow. It is seen throughout the year. Often rests on the underside of leaves, the caterpillars are tended to by tree ants.

©Amol. P.

According to Balakrishnan Valappil the caterpillar of the Slate Flash is sometimes green, red or yellow depending on the leaves or fruit it is feeding on.

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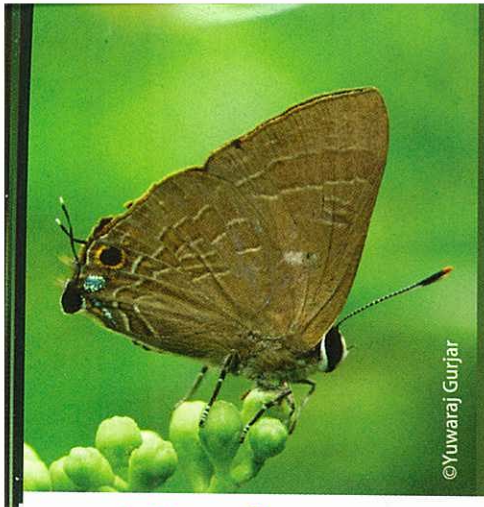
©Hemant Ogale



1. Cornelian

Deudorix epijarbas

34 to 44mm

Lycaenidae

A rather fast flier that is difficult to trace once it takes off. It is seen all over India except perhaps in the desert regions. The male is orange red on the upperside and the female is more brownish.

The caterpillar of the Cornelian feeds inside various fruits like the pomegranate and in the Himalayas it feeds on the insides of horse chestnut.

2. Forget-Me-Not

Catochrysops strabo

25 to 35mm

Lycaenidae

This butterfly looks similar to the Gram Blue. It is a fast flying insect mostly seen in dry habitats and deciduous forests. It comes to damp patches and also visits flowers. It has two black spots near the base of each hindwing.

3. Pointed Ciliate Blue

Anthene lycaenina

24 to 29mm

Lycaenidae

The Pointed Ciliate Blue is a fast flier that is seen more often in the hill forests. Males come to flowers and wet patches. The hind wing has three small tufts and forewings of both the sexes are rather pointed. It has a prominent spot on the hindwing.

1. Dark Cerulean

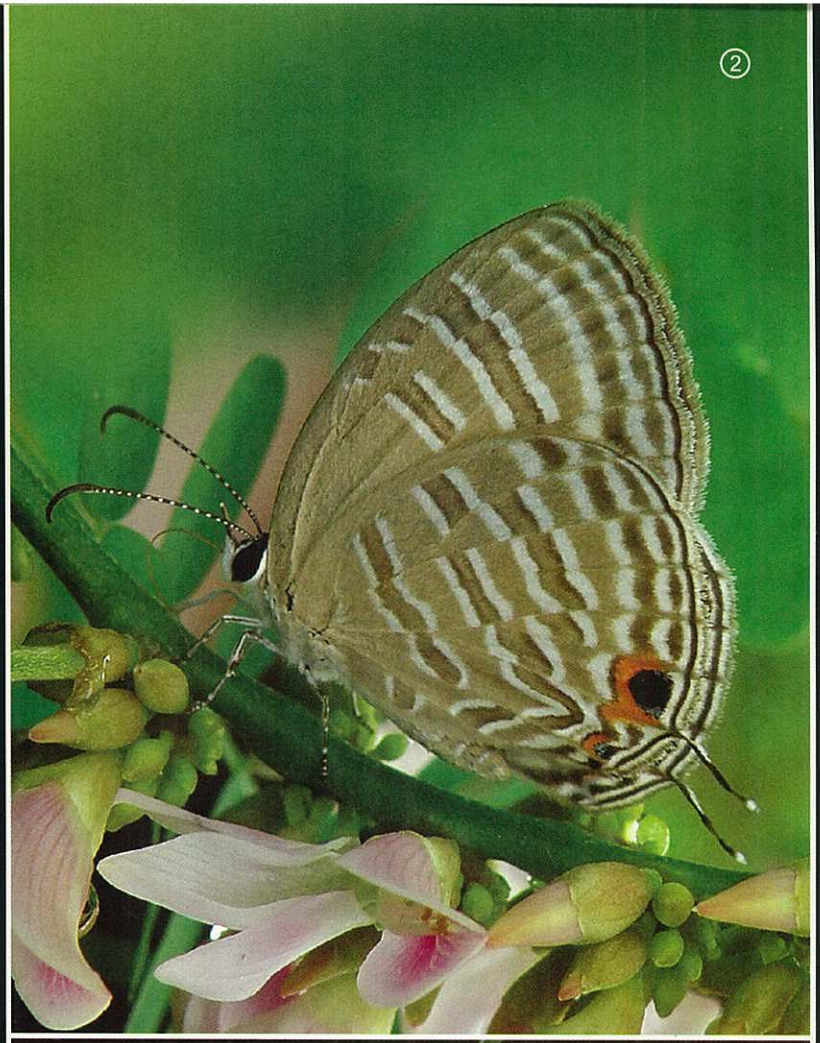
Jamides bochus
25 to 34mm
Lycaenidae

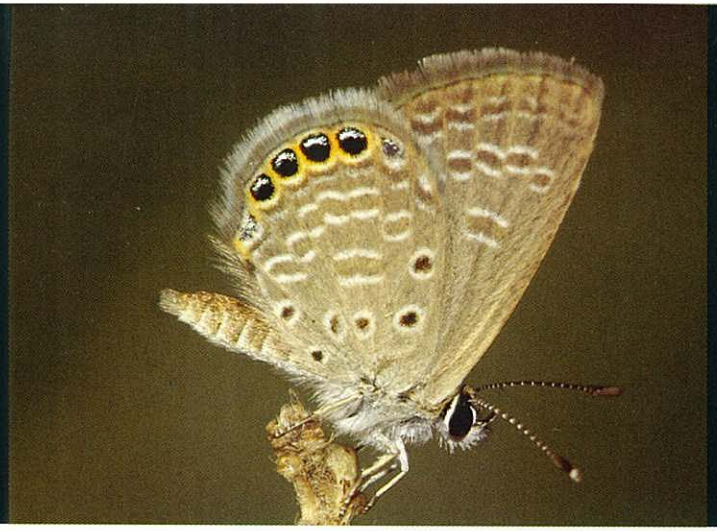
In the Dark Cerulean the lines on the underside are broken into smaller fragments. So it could easily be mistaken for a Common Lineblue. The Dark Cerulean has a smaller wingspan than the Common Cerulean. It is dark brown on the underside. The upperside of the male is a brilliant metallic blue. Upperside of the female is dull blue. Dark Ceruleans are commonly seen in various plantations. Females are seen more in the vicinity of their host plants.

2. Common Cerulean

Jamides celeno
27 to 40mm
Lycaenidae

This butterfly is seen virtually all round the year. The female is a bit paler in colour. It prefers partial shade to full sunshine. Ceruleans like to settle down on the tips of leaves and bask with their wings slightly closed. The wet season form is greyish white and the dry season form is pale brown. When it settles down it moves its wings up and down. Its caterpillar is grass green in colour and is tended to by ants. Pupation generally takes place near the ground or amidst the dry leaves of the plant.





©Yuvaraj Gurjar

1. Eastern Grass Jewel

Chilades putli

15 to 22mm
Lycaenidae

The Eastern Grass Jewel has a row of metallic spots on the underside of its wings. Flies close to the ground and basks with its wings partially open. It has a short proboscis, hence it prefers flowers like button coats.

2. Tiny Grass Blue

Zizula hylax

16 to 24mm
Lycaenidae

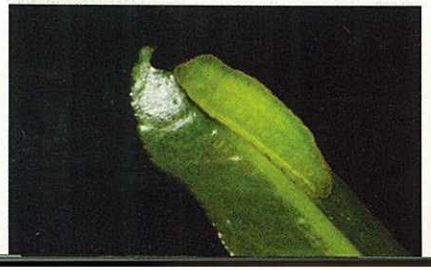
Besides the Eastern Grass Jewel, the Tiny Grass Blue is also one of the smallest butterflies seen in India. The upperside of the female is brown and the male has a pale blue upperside. Both have dark borders on the wings. It is found in a wide variety of habitats. It has a weak flight and stays within one metre from the ground.

3. Lime Blue

Chilades lajus

26 to 30mm
Lycaenidae

The Lime Blue is seen virtually throughout the year in forests, gardens and citrus orchards. A distinguishing feature of this butterfly is a pair of spots in the centre of its hindwing joined at a right angle. The male is purplish blue and the female is blackish brown on the upperside. (The caterpillar of this butterfly is shown below.)



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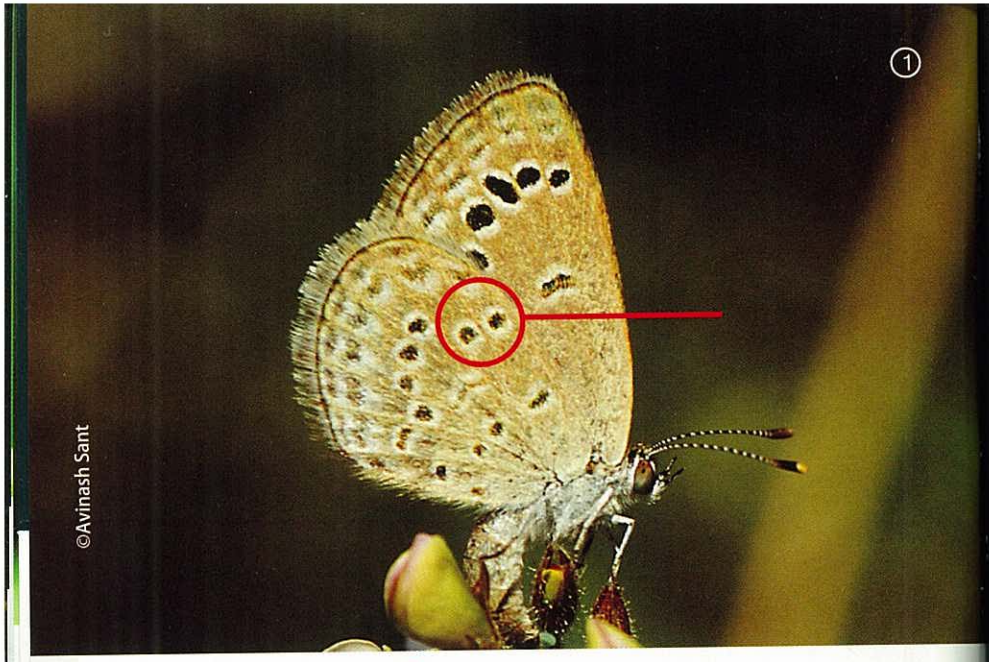

©Avinash Sant

1. Lesser Grass Blue

Zizina otis

19 to 26mm
Lycaenidae

In this butterfly the spots on the underwing are rounded and not very dark. The curve formed by the spots are broken by the first two spots. (Marked in red in the picture above) It flies close to the ground and lays its eggs in flower buds. Male is dark blue on the upperside and the females are brownish. It is fond of visiting flowers and bird droppings.

2. Pale Grass Blue

Pseudozizeeria maha

26 to 30mm
Lycaenidae

As the name suggests the spots on the underside are rounded and faint. They are seen on the wing almost throughout the year. It is somewhat bigger in size compared to the other Grass Blues. It has a rather weak flight and flies close to the ground.

3. Dark Grass Blue

Zizeeria karsandra

18 to 24mm
Lycaenidae

One of the commonest Blues seen here. It is smaller in size than the Pale Grass Blue and the spots on the underwing are round and very dark. These spots are arranged in a semi circle in the hind wings. A characteristic feature of the blues featured here is the way they all move their four wings side by side and finally sit down still. Grass Blues have small proboscises, so they can only visit flowers with short corolla tubes.

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1. Common Acacia Blue

Surendra quercetorum

30 to 40mm

Lycaenidae

Here is another butterfly that seldom visits flowers but often seen in the nectar glands of the acacia leaves. Although it is a strong flier it seldom flies long distances. The male is violet on the upperside with one pair of tails. The female is brownish on the upperside and has two pairs of tails. It lays its eggs in the shoots of Acacia tree and the caterpillars are attended to by ants.

2. African Babul Blue

Azanus jesous

20 to 25mm

Lycaenidae

This butterfly looks very similar to the Bright Babul Blue but has a spot in the end cell. It has similar habits like the Bright Babul Blue. Caterpillar feeds on pollen, anthers and stamens of flowers. Upperside of the male is violet blue and female is brownish on the upperside.

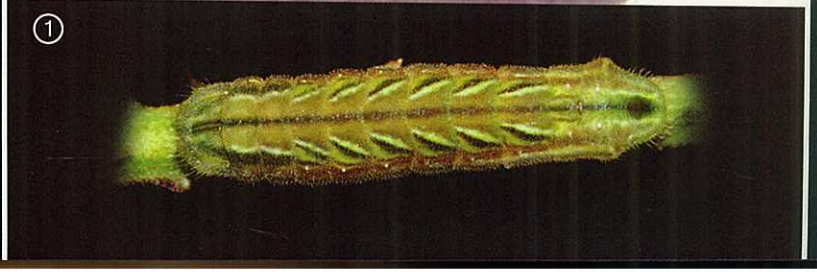
3. Bright Babul Blue

Azanus ubaldus

20 to 25mm

Lycaenidae

This butterfly is seen in arid habitats and in the plains from March to December. It can fly for a long time without resting. It is seen on flowers and wet patches too. Caterpillars feed on Acacia flowers and are tended to by ants.



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1. Pea Blue

Lampides boeticus

24 to 36mm

Lycaenidae

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Like the Painted Lady butterfly, this insect too is a persistent migrant. It can cover long distances in a single flight. So it is widely seen in many continents. It has a distinct white band near the outer margin of the hindwing. Eggs are laid on flower buds. When the flowers turn to pods, the caterpillars feed on the pods too. Host plants are various species of beans. One of the easiest butterflies to rear, as its caterpillar is sometimes seen when we shell peas.

2. Zebra Blue

Leptotes plinius

22 to 30mm

Lycaenidae

The Zebra Blue is often seen in the vicinity of its host plant Plumbago. It has a swift flight and more commonly spotted in the drier parts of the country. Its zebra like markings gives it the name of Zebra Blue. Eggs are laid in the buds of the flowering Plumbago plant. Ants do not attend to Zebra Blue caterpillars on Plumbago plants but on other plants ants may tend to it. The caterpillar is green in colour and difficult to locate on the host plant.

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2

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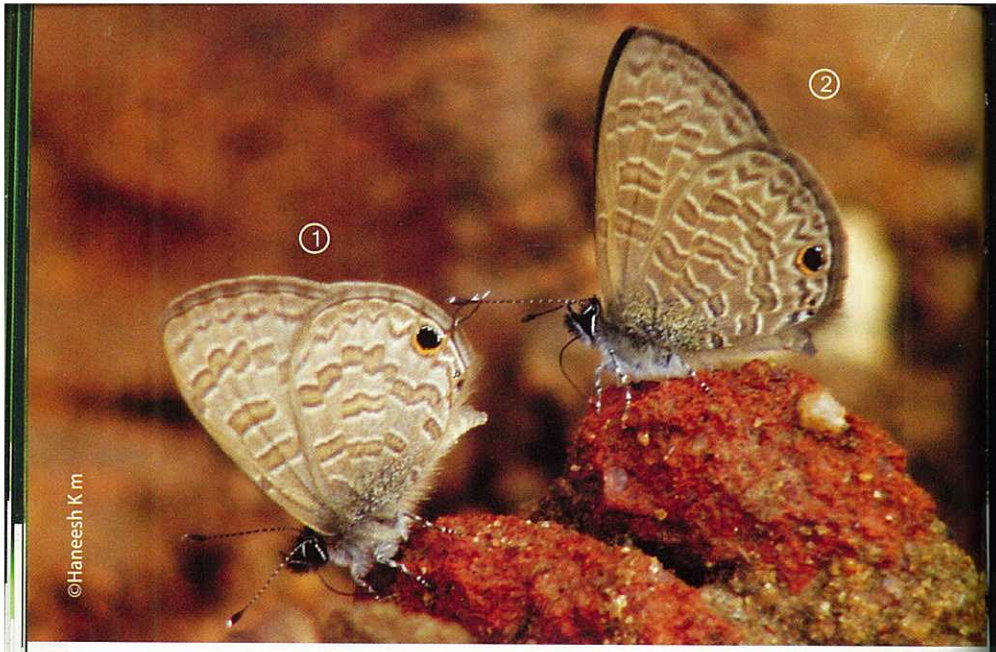

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1. Common Lineblue

Prosotas nora

18 to 25mm

Lycaenidae

One of the Blues that is seen throughout the year. It flies at all vegetation layers. Its thorax is small in size compared to the body and it is not a strong flier like many of the other Blues. Besides flowers, it also comes to bird droppings, animal scat and is also attracted to sweat. It lays eggs in flower buds of the Acacia tree

2. Tailless Lineblue

Prosotas dubiosa indica

22 to 26mm

Lycaenidae

The Tailless Lineblue similar to the Common Lineblue in appearance and behaviour but obviously lacks the tail of the Common Lineblue. It also shares the same range and habitats.

3. Transparent 6 - Lineblue

Nacaduba kurava

30 to 38mm

Lycaenidae

This Lineblue is seen more in evergreen and mixed deciduous forests. Underside pattern of the male can be faintly seen on the upperside.

4. Dingy Lineblue

Petrelaea dana

24 to 28mm

Lycaenidae

Somewhat smaller in size than the Transparent 6-Lineblue. Brownish grey on the underside and it has two uncapped tornal spots.

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We delight in the beauty of a butterfly...
but rarely admit the changes
it has gone through to achieve that beauty.

Maya Angelou

Butterflies
in shades of
black & multi colours

©Yuwaraj Gurjar

1. Moore's Ace

Halpe porus

32 to 36mm
Hesperiidae

Seen in wooded areas especially in bamboo thickets. It has a rather fast flight, high above the ground. It can be seen basking in the forest clearings in the morning but prefers to be in the shaded areas later. It is fond of fresh cow dung and bird droppings. Male has a brand on the upper forewing.

2. Grass Demon

Udaspes folus

40 to 48mm
Hesperiidae

The Grass Demon is seen more in the shade than in the sunlit areas. It is blackish in colour with semi-transparent white spots. It flies fast close to the ground. It has a very long proboscis which helps it obtain nectar from flowers with long corolla tubes.

3. Indian Skipper

Spialia galba

20 to 27mm
Hesperiidae

This black and white skipper is mostly seen in the monsoon and post monsoon. A low flying insect that generally settles on herbs and grasses. Both the sexes have identical markings and are seen throughout the Indian subcontinent. It is also called the Indian Grizzled Skipper.

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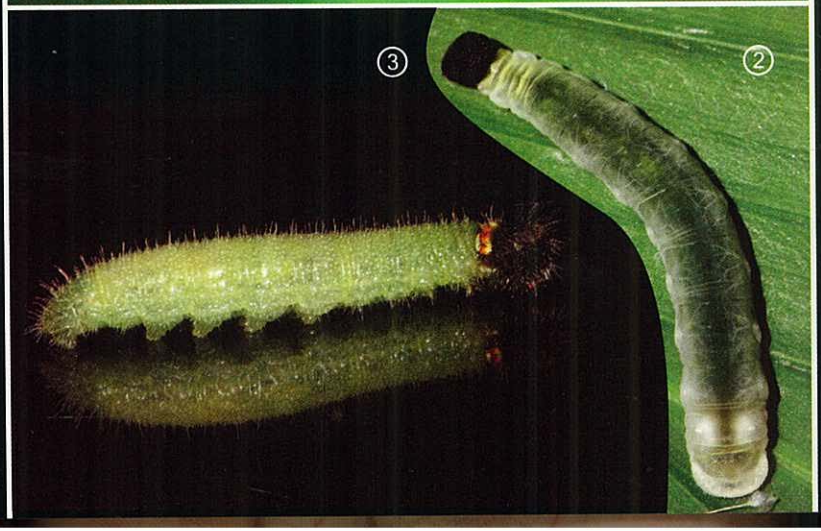

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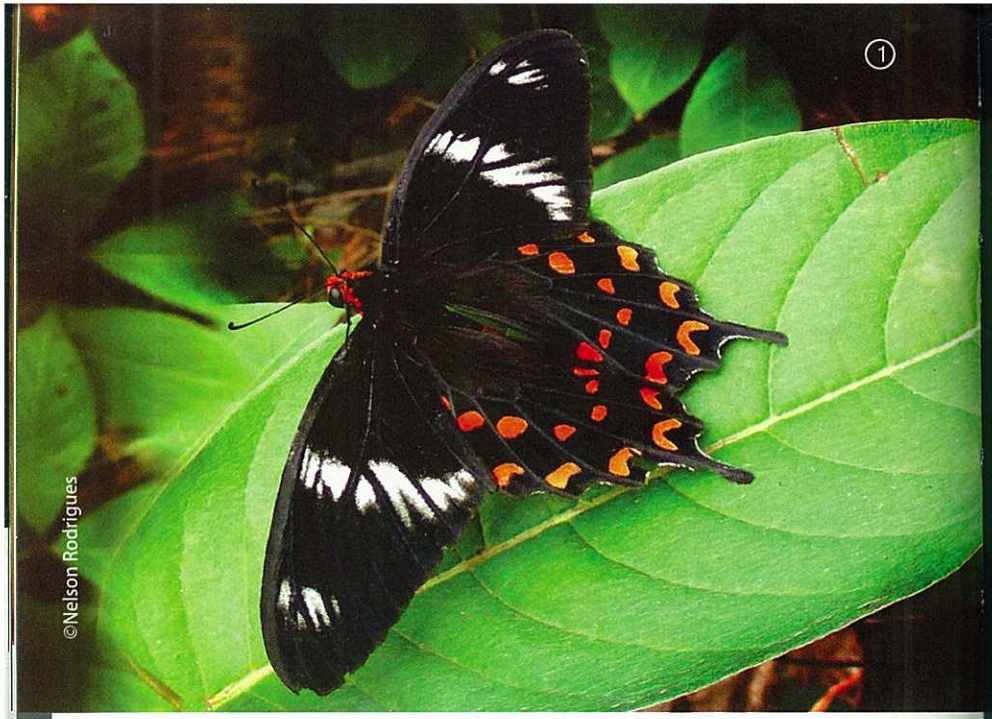


1. Crimson Rose

Atrophaneura hector

90 to 110mm

Papilionidae

The Crimson Rose is seen all over peninsular India. Its larvae feed on the poisonous Aristolochia plant, hence these butterflies are avoided by birds. The romulus form of the Common Mormon mimics this butterfly. It basks with its wings spread flat. When it rests its forewings are drawn between the hind wings. Caterpillar looks similar to that of the Common Rose but it has no white band in the middle.

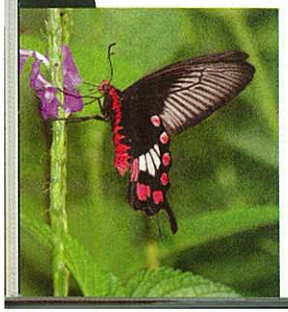
2. Common Rose

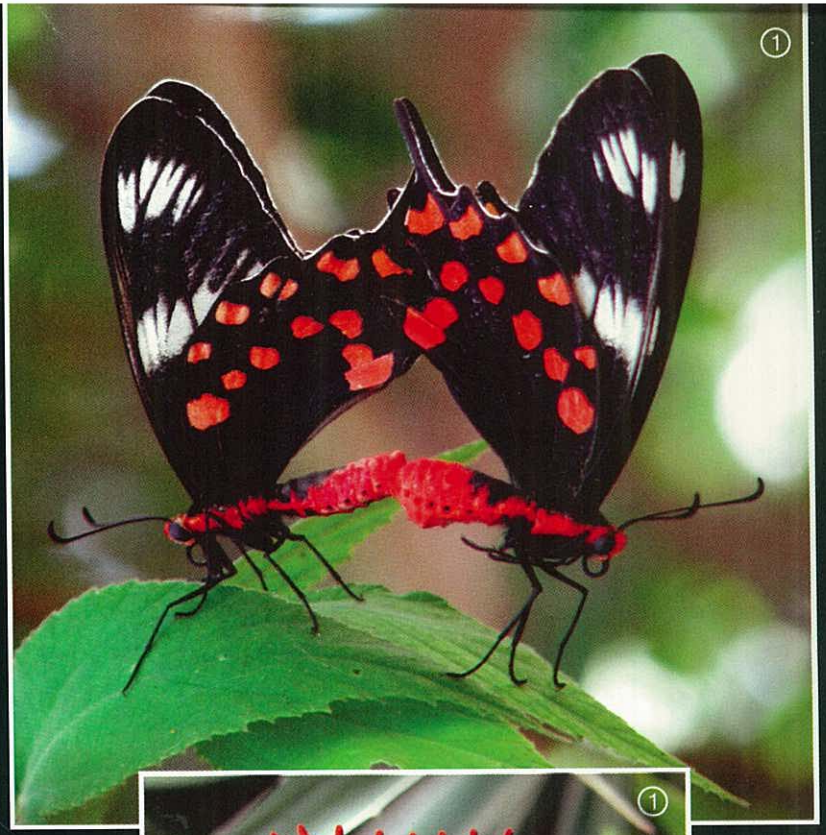
Atrophaneura aristolochiae

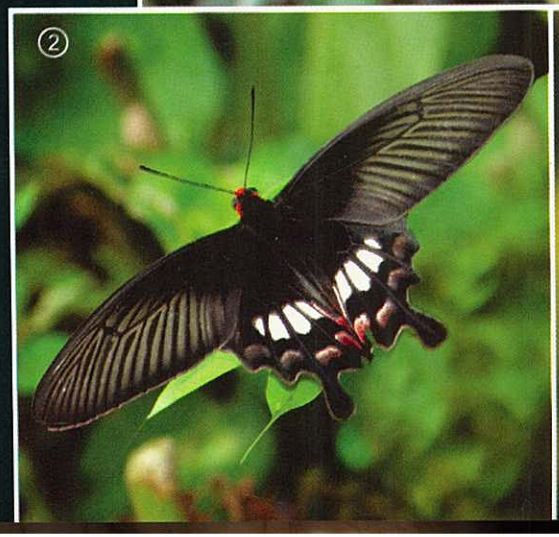
80 to 110mm

Papilionidae

The Common Rose is found in many habitats. It is one of the first butterflies you see in the morning and it is active till dusk. The Common Rose moves forward by flapping its forewings while the hindwings provide buoyancy and balance to its flight. It releases a nasty smelling substance when handled. Males are smaller in size, have narrower wings and reduced white markings on the forewing. Generally roosts about 10 to15 feet above the ground. The caterpillar is brightly coloured to warn potential predators regarding its unpalatability. The caterpillar is maroon in colour, with a white band in the middle.







Common Mormon

Papilio polytes

90 to 100mm

Papilionidae

One of the commonest swallowtails seen here. The male is black in colour with a row of white spots on the hindwing. Females have three forms. The form cyrus which mimics the male but has some red spots on the hindwing. The stichus and romulus forms mimic the Common and Crimson Rose effectively. The main difference between the models and the mimics is that the Mormons have black bodies and the Crimson and Common Rose have red bodies. The other striking difference is the Common Mormon flies at a low level and not as high as the Common or Crimson Rose. The Common Mormon prefers to frequent flowers with long corolla tubes. In the early stage the caterpillar resembles a bird dropping, the form is either grass green or greyish brown depending on the vegetation they are on. The caterpillar and pupa looks very similar to that of the Blue Mormon.

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Blue Mormon

Papilio polymnestor

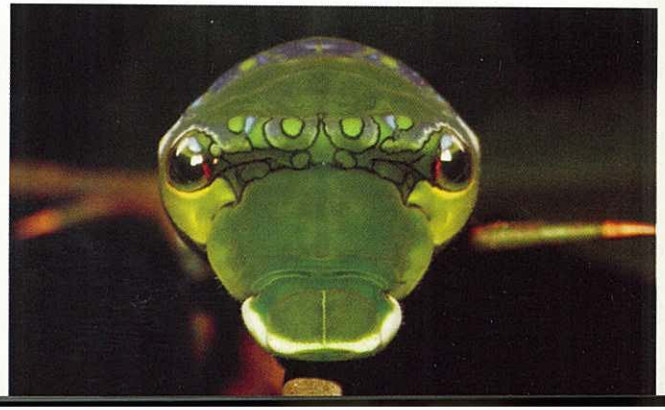
120 to 150mm

Papilionidae

This is the second largest butterfly in peninsular India and the largest seen in Mumbai. It prefers wooded areas and is a swift flier. It keeps its wings in continuous motion while nectaring.

The Blue Mormon frequents flowers with long corolla tubes, so it can gather larger nectar reserves. Most of the Blue Mormons seen are male, the females are larger than the males and much harder to find, as they stay in the thickets, most of the time.

The caterpillar in the early instars looks like a fresh bird dropping, complete with uric acid markings. Once it grows bigger and is more noticeable it stays on the underside of petioles and twigs. The caterpillar and the pupa of the Blue Mormon look similar to those of the Common Mormon.



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Lime Butterfly

Papilio demoleus

80 to 100mm

Papilionidae

This is one of the commonest swallowtails seen in India. The Lime Butterfly shows a marked preference for flowers of small herbs rather than large plants. It generally basks within one metre from the ground. The pale yellow markings turn to orange as the butterfly ages. It has a slower flight compared to other swallowtails. This is one of the few swallowtails that does not have a prominent tail, commonly seen both in urban gardens and in wooded country. It is also called `Chequered Swallowtail' in some countries.

Lime Butterflies are seen mud puddling in the early summer months, with other butterflies. Considered a minor pest in some citrus plantations as this butterfly lays its eggs on smaller saplings.

In the early instars the caterpillar looks like a wet bird dropping. Later as it grows bigger it turns uniformly green and seeks shelter in the secluded areas of the plant. Caterpillar appears to be similar to that of the Common Mormon.

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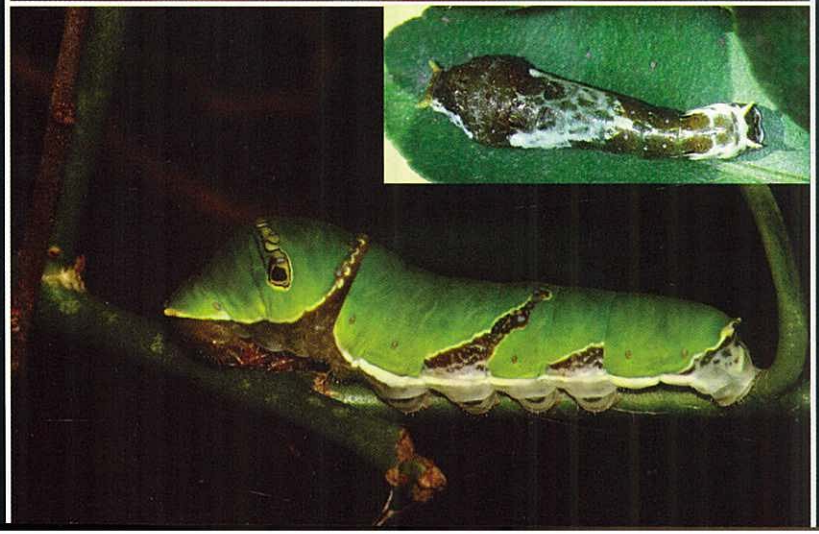

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1. Common Sailer

Neptis hylas
50 to 60mm
Nymphalidae

This butterfly has black coloured wings with two white bands composed of dots. Both the sexes look similar. Sailers are mostly seen in wooded or hilly regions. Among the Sailers listed here, this Sailer is the most commonly seen. Its caterpillar is brownish black in colour with a thin dorsal line and is shown below.

2. Short-banded Sailer

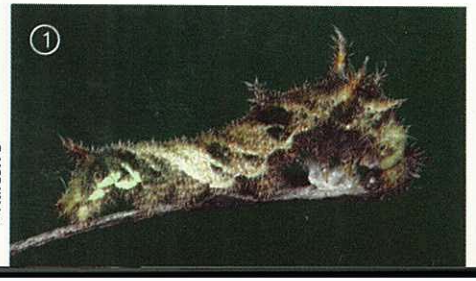
Phaedyma columella
60 to 70mm
Nymphalidae

This butterfly is larger in size than the Common Sailer. The markings on the forewings are also different. Seen on the wing from March to June, both in evergreen and deciduous forests.

3. Chestnut-streaked Sailer

Neptis jumbah
60 to 70mm
Nymphalidae

This butterfly is also bigger in size than the Common Sailer. It prefers mixed deciduous and evergreen forests. It is easy to identify this butterfly, in the upper hindwing the post discal row of white spots is either missing or reduced to line of narrow white spots. Its caterpillar is shown on the next page.



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Danaid Eggfly

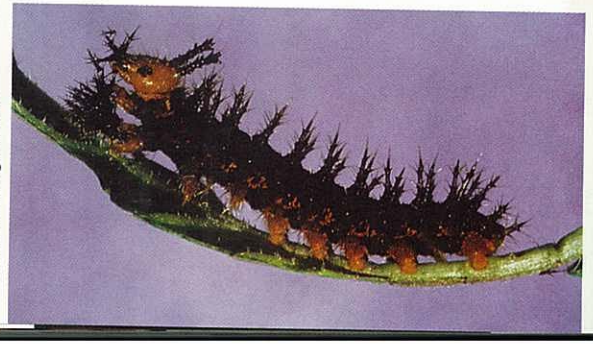
Hypolimnas misippus

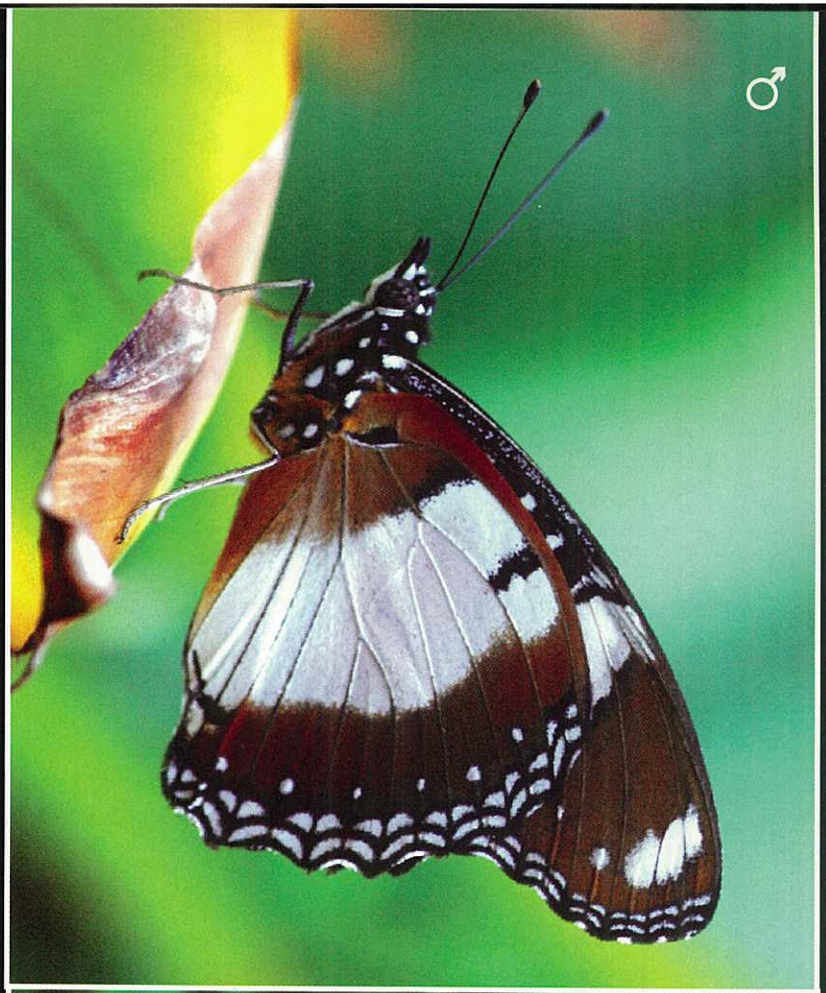
70 to 85mm

Nymphalidae

Commonly seen both in the urban and forested areas. The male is black in colour and can easily be mistaken for the Great Eggfly. However, the wings of the Danaid Eggfly are more pointed, also the white spots on its wings are pure white with a purple tinge while the oval spots of the Great Eggfly are suffused with purple.

The female is a great mimic of the Plain Tiger. However its wings are more reddish in colour and it has no black spots on the hindwing like the Plain Tiger. The border around the wings is also different in this butterfly. It shows a great site fidelity and can be seen for days in the same place. Eggs are generally laid on plants infested with aphids. The caterpillar is black in colour with an orange coloured head and has two black spiny horns.





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Great Eggfly

Hypolimnas bolina

70 to 100 mm

Nymphalidae

Commonly seen during the monsoon, the male looks somewhat similar to the Danaid Eggfly. However it has a series of white spots in the margins of the hind wings which is not there in the Danaid Eggfly. The purple in the ovals (on the upperside) is also more diffused than the Danaid Eggfly. The female is larger than the male and mimics the distasteful Common Crow, but it has two bands on the forewing and a wavy border which is absent in the Common Crow. The male is fast on the wing but the female has a more leisurely flight.

This butterfly is also called the 'Blue Moon butterfly 'in New Zealand. It is seen both in the urban and forested areas. Males are territorial by nature and are known to stay in one place for many days. The caterpillar of this butterfly is shown below.

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S. P. GODREJ
MARINE ECOLOGY CENTRE

The western bank of Thane creek in Mumbai is bestowed with a large expanse of mangrove forests. A major portion of these mangroves in Vikhroli area is being conserved and scientifically managed by the Soonabai Pirojsha Godrej Marine Ecology Centre (Popularly known as the Godrej Mangrove Park) since 1985.
Biologically diverse and well protected, covering a span of approximately 2000 acres these are one of the last surviving quality mangroves of the island city and is aptly reckoned as the second green lung of Mumbai city after the Sanjay Gandhi National Park. This sprawling greenery is beaming with fresh breeze, wild flowers, butterflies, reptiles, marine life and lots of birds. A truly out of the urban world experience for any visitor. All this in a nutshell , speaks volumes of how much the Godrej group cares for nature.

For Mangrove Nature Trails and other programmes
Please contact us on 022-6796 2077 during the weekdays from 9 am to 5 pm
Or email us at hvk @godrej.com or log on to www.mangroves.godrej.com

Maharashtra Nature Park, Dharavi

Spread over an area of 37 acres and situated in the heart of the Mumbai city is Maharashtra Nature Park. Looking at this beautiful place it's hard to imagine that many years ago this green lung of the city was a dumping ground. Today, MNP is the host of a unique open air butterfly garden for Mumbai city. This project was started in year 2005, and from there the number of butterflies (which was restricted to 34 till then) started increasing with more and more species sighted year after year. Today this number has reached to 78 and it is still increasing.

The process of creating an open air butterfly park involves creating a habitat for them. This process of creating habitat also results into improvement in the air quality, which is we feel a major advantage of creating butterfly parks. Therefore, now, Maharashtra Nature Park is encouraging more and more people to create their surroundings which can support the butterflies as in this process we end up having improvement in the quality of air that we breathe. This ensures good health for all of us. Inclusion of features like food plants, host plants, nectar plants, mud puddling areas, salt licks etc have contributed in making this butterfly park as one of the best in India. The success can be judged by a simple fact that the MNP though it is surrounded by urban habitat from all the sides, it still providing the best thriving condition for these flying jewels. Maximum number of butterflies can be seen at MNP from the month of July to November.

Besides butterflies, MNP is also known for best of its biodiversity richness, may it be birds, insects or reptiles, No wonders it fascinates hundreds of nature photographers and students to have their first lessons of conservation here.

Avinash Kubal
Deputy Director
Maharashtra Nature Park Society
Dharavi Mumbai (India)
Tel. 24079939/24077641

Larval Host Plants

Acacia pennata (L.) Willd.	Common Nawab, Common Acacia Blue.
Adenanthera pavonia Linn.	Common Nawab.
Aegle Mermelos Corr.	Lime Butterfly, Common Mormon.
Anacardium occidentale Linn.	Common Baron.
Annona reticulata Linn.	Tailed Jay.
Annona squamosa Linn.	Tailed Jay.
Anthocephalus cadamba Miq.	Commander.
Aristolochia bracteolata Lamk.	Common Rose.
Aristolochia indica Linn.	Common Rose, Crimson Rose.
Asclepias curassavica Linn.	Plain Tiger, Striped Tiger.
Barleria prionitis Linn.	Lemon Pansy, Yellow Pansy.
Bixa orellana Linn.	Tricolour Pied Flat.
Bombax ceiba Linn.	Common Sailer.
Butea monosperma (Lamk.) Taub.	Common Cerulean, Dark Cerulean, Pea Blue, Gram Blue, Common Emigrant.
Cadaba fruiticosa (L.) Druce	Common Gull, Pioneer, Commander, Common Silverline, Plain Orange Tip.
Cajanus cajan (Linn.) Hutch.	Dark Cerulean, Forget Me Not, Pea Blue.
Calotropis gigantea (L.) Br.	Plain Tiger, Striped Tiger, Common Crow.
Capparis zeylanica Hook.f. & Thoms.	Psyche, Common Wanderer, Pioneer, Common Gull.
Cappparis sepiaria Linn.	White Orange Tip, Yellow Orange Tip, Pioneer and Common Gull.
Carvia callosa (Nees) Bremek	Blue Oakleaf, Chocolate Pansy.
Cassia fistula Linn.	Emigrants, Common Grass Yellow, Three Spot Grass Yellow.
Michelia champaca Linn.	Tailed Jay, Common Jay.
Cinnamon Spp	Common Bluebottle, Common Jay, Common Mime.
Citrus spp.	Lime Butterfly, Common Mormon, Blue Mormon, Lime Blue.
Cleome rutidosperma DC.	Psyche, Striped Albatross.
Cocos nucifera Linn.	Giant Redeye, Common Redeye, Indian Palm Bob, Common Palmfly, Palm Darts.
Costus speciosus Sm.	Grass Demon.
Crotalaria pallida Ait.	Pea Blue.
Dendrotrophthoe falcata (Linn.f.) Etting	Common Jezebel, Peacock Royal, Tufted Royal, Gaudy Baron.
Drypetes roxburghii (Wall.) Hurusava	Common Albatross, Plain Puffin.
Flacourtia ramontchi L'Herit.	Common Leopard, Slate Flash.
Glycosmis arborea (Roxb.)DC.	Common Mormon, Lime Butterfly, Blue Mormon.
Hiptage benghalensis (L.) Kurz	Brown Awl, Orange Tail Awl.
Hygrophila schulli (Buch.-Ham.)	Grey Pansy, Peacock Pansy, Chocolate Pansy.
Indigofera linnaei Ali	Eastern Grass Jewel.
Ixora coccinia Osbeck	Monkey Puzzle.
Magnifera indica Linn.	Common Baron, Ciliate Blue, Monkey Puzzle.

Murraya koenigii Spr.	Common Mormon, Lime Butterfly.
Mussaenda frondosa Linn.	Commander.
Nerium oleander Linn.	Common Crow.
Oryza sativa Linn.	Common Evening Brown, Rice Swift, Bushbrowns, Bush Hopper, Swifts.
Oxalis corniculata Linn.	Pale Grass Blue.
Passiflora foetida Linn.	Tawny Coster.
Peltophorum pterocarpum (DC.) Baker	Common Hedge Blue.
Pithecellobium dulce (Roxb.) Benth.	Black Rajah, Common Grass Yellow, Three Spot Grass Yellow, Common Lineblue, Tailless Lineblue.
Plumbago zeylanica Linn.	Zebra Blue.
Polyalthia longifolia Benth. & Hook.f.	Common Jay, Tailed Jay, Spot Swordtail.
Pongamia pinnata Linn.	Indian Sunbeam, Common Banded Awl, Forget Me Not, Common Cerulean.
Portulaca oleracea Linn.	Great Eggfly, Danaid Eggfly.
Psidium Guajava Linn.	Guava Blue.
Punica granatum Linn.	Cornelian, Guava Blue.
Ricinus communis Linn.	Common Castor, Angled Castor.
Ruellia tuberosa Linn.	Peacock Pansy, Yellow Pansy, Blue Pansy, Tiny Grass Blue.
Salvadora persica Linn.	Small Salmon Arab.
Saraca asoka (Roxb.)	Common Cerulean, Western Centaur Oakblue.
Schleichera oleosa Oken.	Monkey Puzzle, Common Hedgeblue.
Sesbania bispinosa (Jacq.) Wight	Common Grass Yellow, Emigrant, Lesser Grass Blue, Zebra Blue
Sida rhombifolia Linn.	Indian Skipper.
Smilax zeylanica Linn.	Yamfly, Redspot.
Syzigium aqueum (Burm.f.) Alston	Slate Flash.
Tamarindus indicus Linn.	Black Rajah.
Tragia involucrata Linn.	Common Castor, Angled Castor.
Urena lobata Linn.	Indian Skipper, Common Sailer.
Wattakaka volubilis (L.f.) Sttapf	Blue Tiger, Dark Blue Tiger.
Zingiber sp.	Grass Demon.
Zizyphus rugosa Lamk.	Common Pierrot, Angled Pierrot.
Zizyphus mauritana Lamk.	Common Pierrot, Rounded Pierrot.
Zizyphus oenoplia Mill.	Common Pierrot, Slate Flash, Chestnut Streaked Sailer.

Thanks to Haneesh Km and Anil Rajbhar for their inputs in this section.

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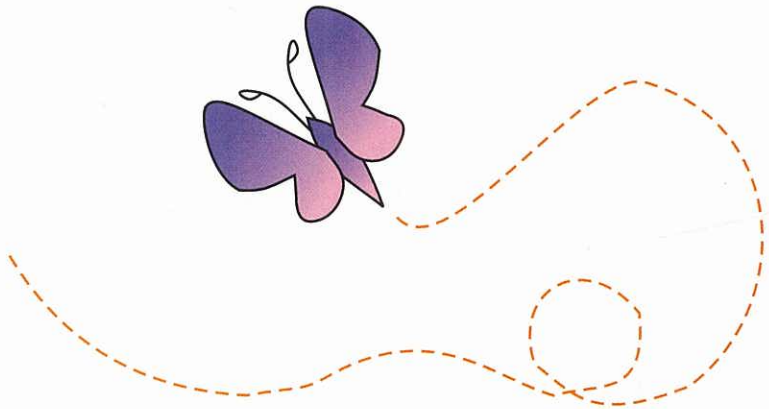

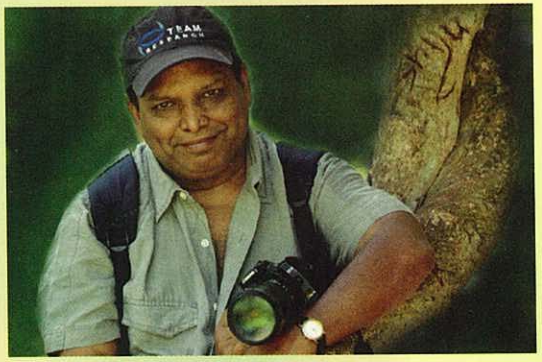

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