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Monsoon Butterflies In Mysore Region

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Abstract

Butterflies are included under insects as the Papilionoidea superfamily. They are attracted by their bright and beautiful appearance. They have classified many species depending upon their habitat, behaviour and nature. This paper gives a brief data about the butterflies present in Mysore, Karnataka, India in Monsoon season during the month from May to July. The article aims at giving the importance of butterflies in nature and their role in maintenance of the ecosystem with specific points. Furthermore, there are a number of different butterflies mentioned which belong to different families with explanations about their characteristics and nature in the surrounding area. Thus, this data plays a vital role as a guide for the identification of butterflies. The photography was done from the month May to July-2025 in Mysore Region.

Index term:Butterflies, Ecosystem, Red Pierrot, African Monarch, Mottled Emigrant Butterfly, Chocolate Pansy.

Introduction:

Butterflies are winged insects belonging to Papilionoidea superfamily. They are mainly characterized by bright coloured wings that attracts the most. The origin of butterflies is the most curious part where the butterfly fossil has been dated to the Palaeocene, to about 56 million years ago, likely to be originated in the Cretaceous. They are the most beautiful insects found all around the world, learning about the types of butterflies not only helps in building our knowledge but also improves our understanding of the diverse species found in nature. Each butterfly has unique pattern, colour and characteristics that make them special (1).

Butterflies have four stages in life cycle, winged adult lay eggs on plant foliage on which their larvae known as caterpillars will feed (2). The caterpillars grow and when fully developed, pupate in a chrysalis and when the metamorphosis is complete, the pupal skin opens and adult insect comes out with wings and develops to fly. Many butterflies in the tropical area have several generations in a year and others have single generation. But a few in cold locations may take several years to pass through their entire life cycle. This is how the characteristics and nature of the species differ from one area to another. Mostly all butterflies are diurnal, they have bright colours and often cryptically which shows camouflaged coloured. The butterflies are sexually dimorphic usually have ZW sex determination system where females are heterogametic sex with ZW chromosomes and males are homogametic with ZZ chromosomes (3).

Their beauty is just not the most interesting part of the butterflies but also, they play a very significant role in ecologically balance and ecosystem. The top reasons about their role as an ecologically friendly species includes: (3).

1. **They are a part of the food chain**: the butterflies grow from eggs to caterpillars and cocoons; they finally transform to butterflies. Butterflies act as food to other organisms at all the stages in their life cycle. (4-5)
2. They act as Natural pest control: in their caterpillar stage, they eat certain pests and behave as pest controller. For example: many caterpillars feed on aphids, which are small insects that spoils the garden. (5)
3. They are Environment Indicators: The presence of butterflies acts like an environment litmus test as the presence of butterflies is a good sign of a healthy surrounding and its absence shows a negative remark about the environment. So, the presence of butterflies can help biologists and ecologist know the overall situation of an ecosystem. They are an excellent choice for monitoring the habitat quality. (6)
4. They are pollinators: Butterflies play a very important role at helping to pollinate many species of wildflowers and flowering plants in parks, gardens and overall surrounding (7). They carry the nectar; pollen will stick to them and are spread all over where the butterfly flies. Butterflies are the valuable pollinators in the local environment and help in pollinating more than 50 economically important crops. They are one of the best insects studied groups and are highly sensitive to habitat disturbances and they are commonly used as indicator of environmental quality (8).

5. Among insect's, butterflies occupy a prominent place in the ecosystem and their occurrence and their diversity are considered as good indicators of the health of terrestrial biota (9).
6. Butterflies act as a source of food to number of animals such as birds, reptiles, amphibians and caterpillars provide an occasional meal for scorpions and ants. Eggs of some flies and wasps live as parasites inside caterpillar's body and other animals that reply on them as food source will also reduce. (10)
7. Birds plan their whole breeding season around when caterpillars will be most abundant. If the caterpillars and butterflies are less in number then there will be less food for developing chicks.
8. The butterflies are sensitive to climate and chemical changes. It is important to test the variation in butterfly family and habitat dynamics to establish diversity patterns.
9. Most of the butterflies are seasonal and they prefer particular place for habitat for living and they also play a very important role in maintaining of forest ecosystem because of their versatile diversity, wide distribution, vegetation type, taxonomic countability, statistically significant abundance of sampling, butterflies have been considered useful organisms to monitor the environmental changes (11).
10. Butterflies are referred as "insects of the sun" with their eye-catching colour and charisma. They are also used as important group as 'model' organisms to investigate many areas of biological research in the field of navigation, pest control, Embryology, mimicry, Evolution, Genetics, population dynamics and biodiversity conservation.

11. Apart from its scientific importance, From the ancient times. The butterfly form has been celebrated in the art and poetry of many different cultures. Many legends and beliefs have become incorporated into the folklore of many countries, for example; the Brazilian dance to honour the dead once, in which the dancer assumes the character of a giant Morpho butterfly. (12)
12. It is at most curiosity that the ancient writers on natural history, including great historians like Aristotle and Pliny, mention few butterflies in their book as they believed the emergence of the adult butterfly from its pupa represented a personification of human soul.
13. In Christian art the metamorphosis of the butterfly became a symbol of the Resurrection (13).

BUTTERFLIES FOUND IN MYSORE:

1.RED PIERROT:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family: Lycaenidea
Genus: Talicada
Species: *Talicada nyseus*

Fig 1: **Red Pierrot**

The Red Pierrot is a member of the Polyommatini tribe of the Lycaenidae family and the second-largest family of butterflies. The red Pierrot butterfly is a small and weak flier and it most of the time flutters close to the groung.it prefers shade to sun and forest areas. It is *undergrowth* to open areas (14). It keeps on the wing almost till dark when it settles on the undersides of leaves and twigs often in groups.it is sluggish early in the morning and late in the evening. It is dependent on flowers of short plants, especially of the families Amaranthaceae and Acanthaceae which depends on nectar. It always sits with its wings closed to display the bright markings of its undersides. Its fearlessness, weak flight and distinctive markings indicates that it is a protected butterfly. The butterfly has a wing span of 3 to 3.5cm (14).

2.PLAIN TIGER BUTTERFLY:

Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family: Nymphalidae
Genus: Danaus
Species:*Danauschrysippus*

Fig 2: **Plain Tiger Monarch**

Danaus Chrysippus also commonly known as the Plain Tiger or the African Monarch. This medium sized, non-edible butterfly is known for its bright colouration. This butterfly has widespread in Asia, Australia and Africa. It mainly consumes plants in the genus *Asclepias,* commonly called milkweed. (15)
the plain tiger inhabits a wide variety of habitats, although it is less likely to live in forest areas, it mostly lives in dry and wide-open areas.
The Plain tiger butterfly is believed to be one of the first butterfly adopted in art in ancient Egyptian era.
The wingspan is about 7-8cm. the body is black with white spots. The wings are brownish orange, the upper side brighter and richer than the underside. The hindwing has three black spots in the centre. This species exhibits slightly sexual dimorphism, as the male has large scent glands on the hindwings, and the females lack. They appear as a large black spot with a white centre if viewed from the underside. These butterflies obtain nectar from various flowering plants available depending on the area and season as few plants do not flower throughout the year (16).

3.MOTTLED EMIGRANT BUTTERFLY

Classification:
Phylum: Arthropoda

Class: Insecta
Order: Lepidoptera
Family:Pieridae
Genus: *catopsilia*
Species: *Catopsoliapyranthe*

Fig 3: Mottled Emigrant butterfly

*Catopsoliapyranthe(Fig. 3)*is commonly called the Mottles Emigrant, it is a medium sized butterfly, as its name itself says, it is strongly migratory in nature and can therefore be found in many habitats including Acacia scrub, dry open woodlands, beaches, gardens and wasteland (17).
the underwing is pale white with greenish-light blurry tinge. Forewing with a narrow black border at the apex and termen with cell spot. underside closely mottled with fine brown or green lines in both sexes and with or without red-ringed silver spits in it. Its habitat is mostly in dense forest and meadows.

4. ZEBRA BLUE BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Lycaenidae
Genus: *Leptotes*
Species: *Leptotesplinius*

Fig 4: zebra Blue Butterfly

Leptotes Plinius, commonly called the Zebra blue or Plumbago blue Butterfly is found in India. The food plants of caterpillars include woolly glycine, Indian fig tree,Ceylon leadwort, Alfalfa plant and Indigofera argentea (18).

Male upper side is dark violet with white and blue suffusion, enclose here and there small brownish markings, terminal markings as on the fore wing but the subterminal spots larger, the apical one especially so, the tornal two spots jet-black and each enriched by a glittering slender ring of metallic green scaled. (Fig. 4)
In global distribution, it is found in India, Sri Lanka, Myanmar, Australia and Africa. In India, it has wide habitat in Assam, Arunachal Pradesh, Nagaland, Tripura, West Bengal and Southern states.

5.COMMON EVENING BROWNBUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Nymphalidae
Genus: *Melanitis*
Species: *Melanitisleda*

Fig.5: **Common Evening Brown Butterfly**

Butterflies of the genus *Melanitis*are commonly known as Evening Browns due to their crepuscular behaviour. It has wide range of variation in the underside colouration and pattern and exhibits pronounced seasonal dimorphism. The wet season morph is pale brown with numerous dark spots.in the dry season morph the ocelli are greatly reduced or may be entirely absent.
Leda is found across most of the African region including Madagascar, Arabia, the Indian Subcontinent. South-east Asia and Northern Australia.
Leda is found in degraded forest, plantation areas, parks and gardens. The butterflies are generally found single when disturbed from their resting areas in the forest. They fly in the early part of the evening and they are also attracted by artificial lighting. (19)

6.CHOCOLATE PANSY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Nymphalidae
Genus: *Junonia*
Species: *Junoniaiphita*

Fig 6: **Chocolate Pansy**

Junoniaiphita(Fig.6), the chocolate pansy or chocolate soldier, is a butterfly found in Asia. Individuals maintain a territory and are usually found close to the ground level. The upper side of both sexes is brown of varying depths of colour. the wavy lines on the underside of the wings vary from wet to dry seasons. Head clothed with short bristles, body covered with nine longitudinal rows of many-branched spines. The caterpillars feed on a variety of plants of the Acanthaceae family. It belongs to Forest and human habitat. (20)

7.COMMON GRASS YELLOW BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera

Family:Pieridae
Genus: *Eurema*
Species: *Euremahecabe*

Fig. 7: **Common Grass yellow Butterfly**

Euremahecabe, commonly called as common Grass-yellow butterfly, is a small butterfly species found in Asia and Africa. They are found flying close to the grond in open grass and scrub habitats (21). Underwing is yellow to bright yellow. Forewing with broadly black excavated border in the apex and termen. Hindwing with narrow irregular border. The border is broader in female. Under side both wings are yellow. They carry a habitat in grasslands, open and scrub forests. (*Fig.7*)

8.LIME SWALLOWTAIL BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Papilionidae
Genus: *Papilio*
Species: *Papilio demaleus*

Fig 8: **Lime Swallowtail Butterfly**

Lime swallowtail butterfly is also known as lime butterfly, lemon butterfly and chequered swallowtail. There common names refer to their host plants, as they usually depend on citrus species such as the cultivated lime (22). Unlike most swallowtail butterflies, it does not have a prominent tail. When the adult stage is taken to consideration, the lime swallowtail is the shortest lives butterfly, the male adults die after four days and females after a week. The butterfly has a wingspan 80-100mm. a broad, irregular yellow band is found on the wings above, which is broken in the case of forewing(*Fig.8*). The butterfly has a large number of irregular spots on the wings. The butterfly is native to Asia and Australia

9.LEMON EMIGRANT:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Pieridae

Genus: C*atopsilia*
Species: *Catopsilia Pomona*

Fig 9: **Lemon Emigrant**

Lemon Emigrant comes in number of species in both sexes, nut generally they are moderately large with wings upper side appearing in either white or yellow and black bordered on the costa and termen of the forewing (*Fig. 9*). The lemon Emigrant is a common butterfly in Singapore. The fast-flying adults can be found all over the islands such as the nature reserves, urban gardens, wastelands and housing estates. The species has pale and dark morphs in Australia. The *pomona*species has the antennae pinkish or red. The development of this is due to the photo period and temperature during the growth (23)

10.CENTAUR OAKBLUE:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Lycaenidae
Genus: *Arhopala*
Species: *Arhopalacentaurus*

Fig 10: **Centaur oakblue**

it is unclear how many species should be classified within the genus *Arhopala.* But still it is defined the genus with wide spread, with the species distributed variously from Afghanistan to Japan and from Pacific to Australia.it is commonly called as oak blues (24). Most species have metallic blue or purplish upper sides; few are metallic green wings (*Fig.10*). The Upper sides of all species are cryptically patterned with dark spots and blotches on a greyish or brown ground colour. all species have short tails on the hindwings; they have patch of metallic green or blue scales adjacent to the tail.*Arhopalacentaurus*is found in India, Sri Lanka, Bhutan, Myanmar, Thailand, West Malaysia and Bali. This is a common species found in rainforest and humid deciduous forest.

11.RING BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Nymphalidae
Genus: *Ypthima*
Species: *Ypthimahuebneri*

Fig. 11: **Ring butterfly**

The common four ring, is one of the most common species in the campus.it shows variations in various seasons.but, the characterstics eye like markings on the hind wings are unique to this species, with which it can be identified even when it is in another season. It has upper side with greyish brown colouration. Fore wing comparatively large, bipupilled, yellow-ringed, black pre-apical ocellus (*Fig.11*). It is found throughout peninsular India, Assam and Burma (25)

12.HOLLY BLUE BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family:Lycaenidae
Genus: *Celastrina*
Species: *Celastrinaargiolus*

Fig 12: **Holly Blue Butterfly**

The holly blue butterfly has pale silver-blue wings with pale ivory dots. Male has shining violet blue, only the apical portion of the margin being marked with white lining. Female has both wings broadly bordered with dark, the margin of the hind wing bearing vestige of ocelli (26). Under side is silver-white. These butterflies are seen in spring and again in July, sometimes at the end of September. They are common on flowering plants (*Fig. 12*). The holly blue is the National butterfly of Finland. This butterfly is commonly found in South Asia, Eurasia and parts of North and central America making its home in gardens, parks and woodlands.

13.BLUE MORMON BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family: Papilionidae
Genus: *Papilio*
Species: *Papilio polymnestor*

Fig 13: **Blue Mormon Butterfly**

Papilio polymnestor. commonly called as blue Mormon is a large swallowtail butterfly found in South India and Sri Lanka. In India it is the state butterfly of Maharashtra. It is the fourth largest butterfly in India. It is common and not in verge to be threatened. It occurs throughout the year but mostly seen in monsoon. (*Fig. 13*)
The butterfly is seen in heavy rainfall areas, evergreen forests, deciduous forests and wooded urban areas, due to cultivation of host plants that is the citrus species (27).
Males have the upper wings rich velvety black and the fore wing has a postdiscal band composed of interweave broad blue streaks gradually shortened. The blue Mormon has been known as a pollinator of cardamom.

14.GRASS DEMON BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family: Hesperiidae
Genus: *Ancistroides*
Species: *Ancistroidesfolus*

Fig 14: **Grass Demon Butterfly**

*Ancistroidesfolus*is commonly known as grass demon, it is a small but prominent butterfly found in India and Nepal. It is also regarded as an occasional pest of ginger and turmeric plants. It is a butterfly with a wingspan of about 4-4.8cm. it is black with a large white spot on the upper side of the hindwings and several white spots on the forewing (*Fig. 14*). The upper side of its wings is mostly white with brown edges (28). The grass demon is found in deciduous and semi-evergreen forests. It prefers open space rather than the deep forest shade or open sunlight. It is more abundant in core forest areas.

15.COMMOM BARON BUTTERFLY:
Classification:
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family: Nymohalidae
Genus: *Euthalia*

Species: *Euthalia aconthea*

Fig 15: Common Baron Butterfly

Euthalia aconthea, commonly called the common Baron, is a medium-sized butterfly species, native to India and Southeast Asia. The upper side of male dark brown with loop-like marks in the cell and dark band on both wings. Forewings with four small white spots on the margin (*Fig.15*). It has paled brown underside and the narrowly dark brown margin. The female is larger and paler than the male. It is found in Evergreen, moist deciduous forests and human habitats. It flies at low heights and maintains a territory. Its hosts are mostly flowering plants (29).

CONCLUSION:

Human beings are the most self-centred, selfish and greedy animal in the entire animal kingdom. We humans think that the entire nature is there to serve the endless desire of ours, we always forget that we are here because all factors biotic and abiotic including small invertebrates working with harmony, taking the things within the limited range from the nature and never ever think about their growth at the cost of destroying the other wildlife, environment and ecosystem
So, the most important thing we must is to stop raising the question why it is matter to think to conserve ecosystem. For any species from Protozoa to Mammals nature treats all the life equally with all respect and it is our duty to treat with same.it is inevitable that we have to use nature our survival but should be in a limit.

Nature has tremendous capacity to balance itself and our lives as well. Nature does not need anybody's help for the survival and in return we need nature to survive. This is high time to conserve and salute all the lives of nature including small insects to big mammals. Finally, I would like to end with the note of Romain Grey, "there is nothing in nature to prove that it cares more for human species than for daffodils. When the balance of nature is threatened, it always finds a way to restore the balance, at whatever cost. At the end the only thing we know is "nature has no favourite among the species". Hence,it's our own duty to keep the ecosystem clean and protect the lives which includes from microorganisms to mammals.

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