

Indicators of Fragile Ecology: Butterflies (Pertaining to Kota)

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INTRODUCTION

Maybe there will be no one who did not chase away the colorful butterflies in childhood? Perhaps because of their beautiful and attractive colors, butterflies are also called "Flying Flowers". The term butterfly was first used to describe a Brimstone butter colored fly (*Gonepteryx rhamni*). Butterflies are found on every continent except Antarctica. Whose more than 28,000 species are recorded all over the world. The 3,500-year-old murals of butterflies can still be seen in Thebes (Egypt), indicating their ancient deep and esoteric connection to human life.

These insects are interesting creatures of the animal kingdom with very special features. Like-

- Butterflies can only fly or eat food until their body temperature is at least 30 °C, and this heat is obtained from the light they receive from open wings oriented towards the sun. The colours of butterflies give them Helps in thermoregulation.
- Butterflies have taste receptors in their feet.
- Butterflies are able to see beyond the ultraviolet spectrum; their eyes have a network of 6000 lenses.
- Until 2012, scientists believed that butterflies were unable to hear.
- Butterflies can observe red, green and yellow colours.

Butterflies are an important part of a balanced ecosystem. They are called the "Wild Indicators" of the ecosystem; as they are extremely sensitive to climate change. It is called the "Wild Indicator" of the ecosystem; because they are extremely sensitive to climate change. Pollination and habitat destruction are the main reasons for their vulnerability.

Therefore, a large number of butterfly species in an area usually reflects a healthy ecosystem. Kota (Rajasthan) covers a small part of the unique world of these beautiful butterflies, where different species of these insects are found in the floral diversity. Ponds, and other wetlands are areas that are ideal for completing the life cycle of different species of butterflies.

Swallowtails of the family Papilionidae are probably the largest butterflies found in the region. Their young caterpillars have black-and-white patterns that look like bird droppings, and thus avoid predators. Sensing danger, the mature colored caterpillar inflates a fleshy, orange-colored structure from the back of the head, called an osmatorium. This gives off a pungent pineapple-like odor. As winter pupae, the caterpillars cling to plant stems and turn greenish-brown depending on their surroundings. They have the ability to endure long periods of time submerged in water. The ultraviolet pattern hidden in the shiny scales of the feathers of some species of Swallowtails is helpful in attracting mates, repelling predators, and creating a camouflage.

Whites & Blues or Sulphures of the family Pieridae are found in many species. The colouring of these butterflies is generally white, yellow, or orange with black markings. The pigments that give these butterflies their colour come from waste products in their bodies, which are common in this family. Males and females are generally recognisable, with black patterns on their bodies. Their caterpillars derive their nutrition from plants of the Brassicaceae (mustard family). They are considered pests in gardens and fields. Kaleidoscope of male butterflies of various species of Pieridae in the wild can be seen eating salt from moist soil. The behavior is called Mud-puddling or Puddling.

The Lycaenidae family of butterflies, popularly known as 'Gossamer Winged

Butterflies,' is the second largest butterfly family. Adults are typically shorter than 5 cm in length. They're brilliantly coloured and occasionally have a metallic sheen to them. Males have smaller forelimbs that are devoid of claws. Compared to other butterflies, their larvae are flattened, in which they attract and tame ants (in some species) by the secretion of specialized glands found. Thus these larvae are both plant predators as well as insectivorous.

The family Nymphalidae is the world's largest group of brightly colored butterflies, also known as 'Brush-foot or Four Footed Butterflies'. They have short forelimbs, which look like brushes and are not used for movement. Like other butterflies, they also have two long antennae on their heads, which are rounded at the ends, which they use for sensing, smell and hearing. Their caterpillars are coloured, with their bodies covered with thorns or hairs. These butterflies have fuzzy plumage on the underside, which makes them look like dead leaves; This is a great example of camouflage in nature.

Butterflies of the family Hesperidae are commonly called 'skippers'. They are similar to other butterflies, however their egg, larval, and pupa phases differ from those of other butterflies. Crochet Needle (used in needlework) are employed by skipper butterflies. Some skipper butterflies seem quite similar, making it difficult to tell them apart.

These butterflies were once a part of our lives, but due to the continuous degradation of the environment and the rapidly changing ecosystem, today many species of butterfly are under threat. Like other big cities, Kota is also turning into a concrete jungle. In such a situation, favourable conditions are not being found for butterflies, due to which the easy sight of butterflies is a significant fact today. Schedule-I of the Wildlife (Protection) Act, created for the protection of wildlife,

mentions many such species which are in threat today. Among them, species like Blue Mormon, Danaid Egg Fly, Great Egg

Fly, Black Raja are prominent, which fall under the category of Critically Endangered at global level.