

TWELVE NEW BUTTERFLY SPECIES RECORDED IN THE EASTERN GHATS OF VISAKHAPATNAM DISTRICT

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Gossamer-winged butterflies conjure up images of flowery fields and sunshine-soaked gardens.

Indicators of a healthy environment and ecosystem, butterflies have been widely used by ecologists to study the impact of habitat loss and fragmentation, and climate change. So it is encouraging that 12 new species have been recorded as new to Visakhapatnam district in a research study on butterflies recently published in a scientific journal. It also brought to light some interesting facts.

The study was conducted between 2016 and 2018 by research director Mantha Ramamurty, STPL Ushasri and Pavani Sagiraju of Dolphin Nature Conservation Society in Visakhapatnam. The research paper titled Butterflies of Visakhapatnam District, Andhra Pradesh, India, was published in the recent edition of the scientific journal, *Zoo's Print*. The 12 species recorded as new to Visakhapatnam district are — *Troides helena*, *Colotis amata*, *Delias hyparete*, *Eurema brigitta*, *E. laeta*, *Ixias pyrene*, *Lethe europa*, *Vanessa cardui*, *Ypthima baldus*, *Y. ceylonica*, *Virachola isocrates*, and *Freyeria trochylus*. The common names are common birdwing, small salmon Arab, painted jezebel, small grass yellow, spotless grass yellow, yellow orange-tip, bamboo treebrown, painted lady, common five-ring, white four-ring, orange-spotted grass jewel and common guava blue.

While the study documented the presence of these species in parts of Eastern Ghats of Visakhapatnam district like Chintapalli, G K Veedhi, Ananthagiri, Paderu, Araku and Sileru, a good number of these butterfly species can be seen flitting about within the city limits as well. The researchers recorded many of these species in the urban environments of Kambalakonda, Thotlakonda, Indira Gandhi Zoological Park, Simhachalam Hills and Biodiversity Park.

There are 20,000 species of butterflies recorded in the world; of them 1,500 are reported from India. The northern part of the Eastern Ghats is an area with significant biodiversity value. However it remains poorly explored, especially with regard to studies of invertebrate diversity, particularly butterflies.

The study highlights the presence of a total of 105 species belonging to six families of which, 12 species were recorded as new to Visakhapatnam district. As many as seven species are legally protected in India under the Wildlife (Protection) Act, 1972. A total of 11 areas were selected from Visakhapatnam district, of which six areas were from Eastern Ghats forests and five from urban environments. Seven species are legally protected in India under the Wildlife (Protection) Act, 1972— *Pachliopta hector* under Schedule I, *Euploea mulciber* and *Appias libythea* under Schedule IV, and *Hypolimnys misippus*, *Lampides boeticus*, *Euchrysops cnejus*, and *Tanaecia lepidea* under Schedule II.

“Identification of butterflies needs very careful study because of seasonal changes, sexual dimorphism, where females look different and polymorphism, where same species exists in different morphological form because of mimicry,” says Ramamurty.

In the study, 12 species were exclusively found in the Eastern Ghats forests of Visakhapatnam district but not in urban environments — *Troides helena*, *Delias hyparete*, *Ixias pyrene*, *Ariadne ariadne*, *Symbrenthia lilaea*, *Tanaecia lepidea*, *Ypthima baldus*, *Ypthima ceylonica*, *Ypthima*

huebneri, *Caleta decidia*, *Talicauda nyseus*, and *Sarangesa dasahara*.

Two species were found only in urban environments of Visakhapatnam—*Appias libythea* and *Abisara bifasciata suffusa*. “The observations were made through transects, each of 500 metres length with five metres on either side, with one to three transects at every site. Observations were taken in the morning from 8am to noon when the butterflies were most active. Abundance of butterflies in different habitats were recorded,” says Ramamurthy. The encountered butterflies were identified while they were in flight or in resting. Identification of the species was done mostly through photographic evidence. Species which are difficult to identify were caught by hand net and released after examination.

The study also highlighted the butterfly habitats in urban areas that are affected due to pollution, industrialisation and urbanisation. “Vast stretches of plantation of monotypic and exotic species like *Bougainvillea spectabilis*, Madagascar almond, and *Conocarpus lancifolius* in traffic islands and road dividers pose a threat to the native species. Landscaping is seen everywhere for beautification purposes, which leaves no native herbal plants for the butterflies and larvae to flourish. Making every possible inch of urban space with concrete, not only depletes the water table but also reduces wild patches that attract butterflies,” says Ramamurthy.

Creating public awareness by involving students, local people, forest dwellers, and tribals is essential in the conservation of butterflies. “These are an extremely important group of organisms used from centuries to study several areas of biological research, including navigation, pest control, embryology, mimicry, evolution, genetics, population dynamics and biodiversity conservation,” says Ushasri.

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