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Butterfly-flower interactions and biodiversity in the changing environments

Butterflies occupy a vital position in the ecosystem and are useful as indicators of environmental change. Their occurrence depends on the climatic dicta, the presence of suitable caterpillar foods and appropriate adult nectar sources or other food, suitable arenas for flight and courtship. They require a continuous supply of food sources, especially nectar sources from a number of plant species. In this context, floral morphological and nectar characteristics are important for visitation by butterflies. Nectar plays an important role in the nutrition of adult butterflies. Nectar is a highly enriched food resource consisting of carbohydrates, amino acids, lipids, antioxidants, alkaloids, proteins, vitamins, salts, etc. But, all these nutrient chemicals are not found in a single floral nectar source and hence flower-visiting butterflies should pay visits to different floral nectars to acquire all the required nutrients. The butterfly interactions with the flowers of certain plant species will be detailed. Plant species which facilitate foraging by butterflies show certain floral traits adapted for butterfly foraging activity and in the process both get benefited. With accelerated deforestation and changing ecology and subsequent change in the environment, the butterflies appear to be struggling to get the required levels of quality nectar for survival during their adult life. The summer season is very crucial for butterflies since a few plants bloom during this period. The butterflies appear to be malnourished during adult life due to lack of enough nectar sources throughout the year due to changes in land use and climate.

Biography

Aluri Jacob Solomon Raju is a Professor of Environmental Sciences, Andhra University, Visakhapatnam, India. He has published more than 400 research papers, participated and presented scores of research papers at more than 50 national and more than 30 International conferences held in India and abroad. He visited USA, Canada, UK, Brazil, Paraguay, Italy, Mexico, Spain, China, Hong Kong, Thailand, Malaysia, Ethiopia and Tanzania. In recognition of his superior record of scholarship, he was awarded Distinguished Achievement Award by the University of Akron, Ohio, USA. He is also the recipient of Best Research Award and Dr. Sarvepalli Radhakrishnan Best Academician Award of Andhra University, Loyola Environmental Award from Loyola College, Chennai and Andhra Pradesh Scientist Award from Andhra Pradesh Council of Science & Technology, Govt. of Andhra Pradesh. Recently, he received State Level Best Teacher Award from the Government of Andhra Pradesh. He completed major research projects on the Eastern Ghats Forests funded by ICAR, UGC, DST, CSIR, DBT and MoEF. He is the Expert member of the Ministry of Environment and Forests, Govt. of India. He has also published ten books on various subjects published by national and international publishers. Thirty Ph.Ds and eight M.Phils were awarded under his guidance. He is the Chief Editor of Advances in Pollen Spore Research Journal and Journal of Palynology.

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