

PSYCHOPHILY IN THE FLOWERS OF *IMPATIENS* OF SOUTHERN WESTERN GHATS

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ABSTRACT: *Impatiens* are highly evolved member among the order Geraniales as evident from marked zygomorphic flowers with diversified structure, shape and colour of floral parts. To identify the close relationship among the flowers of *Impatiens* and butterflies, the structural morphology and pollination mechanism of 31 species of *Impatiens* of southern Western Ghats were studied by periodical observation. The morphological characters of floral parts were studied by using vernier caliber and scale. The pollinators and their foraging behavior were studied carefully through high resolution binocular. The nectar availability per flower was measured by using micro-capillary tube and the concentration was also measured by hand refractometer. The flowers of *Impatiens* have complex structure with diversified shape, structure and coloured floral parts. The structure, shape, size and colour of flowers and its parts are specially adopted for foraging butterflies. The floral parts especially upper standard petals, lower wing petals and lip with spur are markedly adopted for psychophily. The flowers were visited by honey bees, bumble bees, rock bee, hawkmoths including butterflies. Of the floral visitor observed, butterflies are attracted by the flowers of the *Impatiens* and visited the flowers at more time and its interplant movement facilitates successful pollination. The availability of nectar per flower was ranging from 11-16 μ l and the concentration of nectar was about 28-31% along with 7 essential aminoacids at least per flower. The interaction between the butterflies and flowers of *Impatiens* are more or less mutualistic. The role of aminoacid in psychophily is still under discussion. The total amount of aminoacid may reflect the pollinator type and components are suppose to be important to the diet of the butterflies.

Key words: *Butterflies, Impatiens, Phenology, pollination, Western Ghats.*

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