



Twelfth International Symposium on Pollination (ISPXII)



16 - 20 October 2023

Kirstenbosch Botanic Gardens, Cape Town, South Africa

THE INFLUENCE OF NECTAR ROBBERS IN SHAPING FLOWER COLOUR

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ABSTRACT

While the influence of pollinators in driving floral signals is relatively well known, the role of flower antagonists is less known. Flowers face a trade-off in attracting effective pollinators but avoiding antagonists such as nectar robbers; flower visitors that take nectar without pollinating the flowers. One solution is to produce signals (e.g. flower colours) that are detectable to pollinators but less detectable to nectar robbers. This is possible if the visual systems of these two flower visitor types differ, which is the case with birds and insects. Bird-pollinated *Erica* species in the Cape Floristic Region, South Africa, are pollinated by sunbirds and predominantly robbed by Hymenoptera. We applied visual modelling to 62 *Erica* species to test if bird-pollinated species are less conspicuous to bees than to birds. The results found this to be true for some metrics of colour discrimination and flower conspicuousness, but not all. We also tested the prediction that flower conspicuousness to bees is correlated to other bee-avoidance traits (corolla length and stickiness, and sepal size) but found no correlations. This study suggests that insect nectar robbers have contributed to shaping flower colour evolution in bird-pollinated species.