



Twelfth International Symposium on Pollination (ISPXII)



16 - 20 October 2023

Kirstenbosch Botanic Gardens, Cape Town, South Africa

FLORAL DIVERSIFICATION DRIVEN BY A POLLINATOR SHIFT IN THE DUVERNOIA CLADE OF *Justicia*

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ABSTRACT

Floral divergence among sister taxa is often associated with pollinator shifts and can play a role in speciation. We investigated a potential case in *Duvernoia* clade of *Justicia* (Acanthaceae) which includes two species with markedly divergent floral morphology. Pollinator observations and pollen load analyses showed that *Justicia adhatodoides* is pollinated exclusively by large carpenter bees, while its sister taxon *Justicia aconitiflora* is pollinated exclusively by eumenid wasps. Floral morphology matches body and tongue morphology of these two insect groups, and this phenotypic matching mediates pollen transfer and access to nectar. Visual and olfactory signals of flowers, and possibly also the taste of nectar, likely play functional roles in pollination system specialization. To infer the direction of the pollinator shift in the *Duvernoia* clade, we are also studying pollination systems of the outgroups. This study provides a compelling new example of a transition between bee and wasp pollination, and highlights the combined effects of floral morphology, colour and scent on specialization in plant pollination systems.