



Phylogenomics of South West Pacific nocturnal foraging bees.

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The hyperactivity of foraging bees is typically associated with spring blossoms on bright sunny days, however, a diverse range of distantly related bee lineages are unusual in their habit of exclusively foraging in dim-light conditions between dusk and dawn. The successful colonisation of a novel photo-temporal niche, and subsequent speciation within it, is the hallmark of adaptive evolution. Halictidae (Apoidea: Anthophila) contains the most prevalent radiations of obligate dim-light foraging among all bees. Two independently evolved lineages have arisen in parallel within different subfamilies in different geographic hemispheres that display a suite of convergent morphologies. The biology of the eastern hemispheric lineage is effectively unknown - evolutionary origins and systematic relationships to their closest day-flying relatives are unresolved and very little is known of their basic natural history and pollination ecology. This project will provide the first integrative assessment of nocturnal bee diversity in the South West Pacific region by assimilating diverse data sets (phylogenomic systematics, morphology, behaviour, plant visitation) to provide a comparative assessment of the factors driving adaptive evolution in novel dim-light sensory environments.

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