



A species-level phylogeny of eastern Australian *Phebalium* Vent. sect. *Phebalium* Duretto & Heslewood (Rutaceae; Zanthoxyloideae).

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Phebalium Vent. sect. *Phebalium* Duretto & Heslewood is an Australian endemic monophyletic group of species. It has two geographic clades (Mole *et al.* 2004; Duretto *et al.* 2023), with 14 species distributed in south-western Australia and 21 in eastern Australia. We have hypothesised more than 35 taxonomic changes. SD's PhD project focussed on testing the species limits of the *P. squamulosum* complex has supported the recognition of at least 14 new species and raising seven subspecies to the rank of species. Duretto *et al.* (2023) subsumed *Microcybe* into *Phebalium* as two new sections in the genus. Most species-level relationships in *Phebalium* were unresolved, and the study did not include putative new taxa of the eastern Australian clade recognised at the N.C.W. Beadle Herbarium. Our SNP-based phylogenetic analysis of all eastern Australian *Phebalium* taxa, including newly delimited species, was carried out using maximum likelihood and maximum parsimony criteria in program IQ-TREE2 (Minh *et al.* 2020; Minh *et al.* 2022) and PAUP v.4.0a168 (Swofford 2003) respectively. We also inferred phylogenetic relationships under a coalescent model using SVDquartet (Chifman and Kubatko 2014) implemented in package PAUP*v.4.0a168. The phylogenetic relationships inferred under all models were concordant. Our results supported three major clades within eastern Australian *Phebalium* corresponding to three species complexes: namely, *P. squamulosum*, *P. glandulosum* and *P. nottii*. The monophyly and inter-specific relationships of most eastern Australian *Phebalium* were resolved and will be discussed.

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