



Expanding the Epacrid Tree of Life.

Caroline Puente-Lelievre (University of Auckland); Cinthy Jimenez Silva (University of Auckland); Lars Nauheimer (Australian Tropical Herbarium); Francis Jason Nge (Institut de Recherche pour le Développement and Royal Botanic Garden Sydney); Katharina Nargar (Australian Tropical Herbarium); Nicholas J. Matzke (University of Auckland); Darren Crayn (Australian Tropical Herbarium).

Ericaceae subfam. Epacridoideae comprises about 580 taxa. It is an important component of the Australian native flora, particularly in the southern Australian heaths. Generic circumscription based on morphological characters has been problematic and unstable since the group was first described by Robert Brown in 1810. Molecular phylogenetic studies over the past 20 years have provided the basis for a phylogenetic reclassification of several genera eg. *Androstoma*, *Cyathopsis*, *Lissanthe*, *Monotoca*, and *Styphelia*. The resolution of generic boundaries is now well settled, but the relationships within and between genera remain poorly supported, particularly in the largest tribe Styphelieae, which contains 336 accepted species and about 116 phrase-named species, many of which are of conservation concern. Here, we analyse 250 loci generated through the Genomics for Australian Plants (GAP) and the Plant and Fungal Trees of Life (PAFTOL) consortia. The result is a well-supported and resolved phylogeny of the Epacridoideae with just over 100 species across 11 genera. Moreover, we use StarBeast3 to estimate divergence times and BioGeoBEARS to reconstruct ancestral distributions for each genus.

Caroline Puente-Lelievre: caroline.puentelelievre@gmail.com