

## DELIMITATION OF GENERA IN *APIACEAE* WITH EXAMPLES FROM *SCANDICEAE* SUBTRIBE *SCANDICINAE*

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### Abstract

Of the 455 known genera in *Apiaceae* (*Umbelliferae*), 41% are monotypic and 26% comprise only two or three species each. Similarly, of the 16 genera constituting *Scandiceae* Spreng. subtribe *Scandicinae* Tausch, seven (*Balansaea* Boiss. & Reut., *Kozlovia* Lipsky, *Krasnovia* Schischk., *Myrrhis* Mill., *Myrrhoides* Fabr., *Sphallerocarpus* DC. and *Todaroa* Parl.) are monotypic, and two (*Neoconopodium* Pimenov & Kljuykov and *Tinguarra* Parl.) are bitypic. Phylogenetic analysis of the subtribe, using molecular (rDNA ITS), morphological and anatomical data, indicates that the number of genera may be reduced with only three, *Todaroa*, *Sphallerocarpus* and *Myrrhis*, retained as monotypic. Remaining taxa form eight clades that are supported by high bootstrap values and are morphologically distinct. Four of these clades (*Anthriscus* Pers., *Geocaryum* Coss., *Osmorhiza* Raf. and *Scandix* L.) are equivalent to currently recognized genera. *Kozlovia*, *Krasnovia* and *Neoconopodium* form a well[hyphen]supported clade that may be recognized as the single genus *Kozlovia*, and *Myrrhoides* is grouped with *Chaerophyllum* L. *Tinguarra* and *Athamanta* L. form a monophyletic group that is well supported by analyses of morphology, fruit anatomy, and combined morphological, anatomical and ITS sequence data; however, this group is not maintained in separate analyses of ITS sequences. Similarly, the group formed by *Conopodium* W. D. J. Koch and *Balansaea* is monophyletic in morphological, anatomical, and combined analyses, but is not supported by the separate analyses of ITS sequence data. All of these groups are well delimited on the basis of fruit characters that have long been regarded as essential in umbellifer taxonomy. One new combination is proposed: *Athamanta montana* (Webb ex H. Christ.) Spalik, A. Wojew. & S. R. Downie.