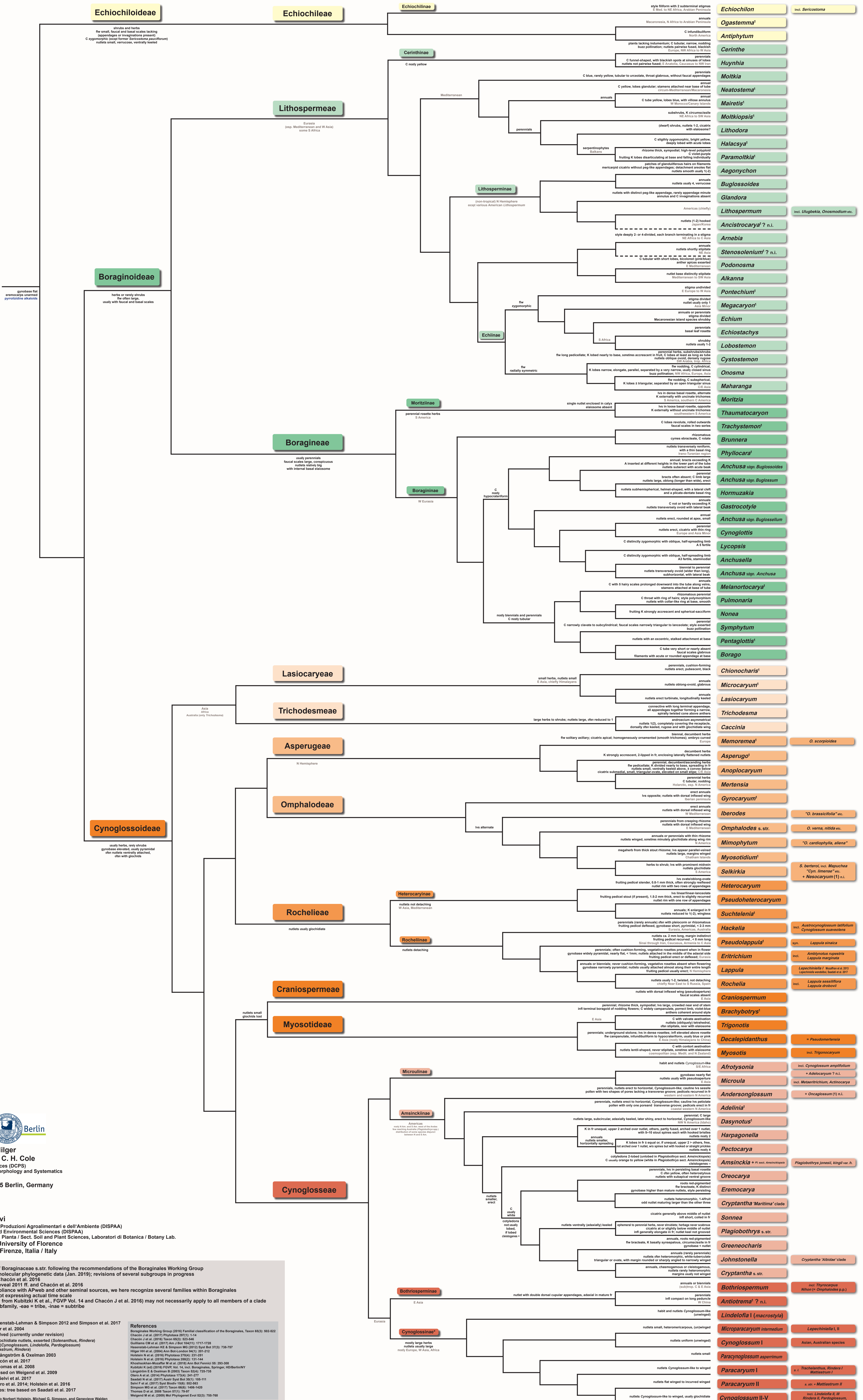


# BORAGINACEAE PHYLOGENETIC POSTER



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- Intrafamilial classification of Boraginaceae s.str. following the recommendations of the Boraginales Working Group
- hypothetical tree based on molecular phylogenetic data (Jan. 2019); revisions of several subgroups in progress
- gross phylogeny based on Chacón et al. 2016
- paraphyletic taxa with generally globose nutlets, exserted (Solentansia, Rindera) or inserted stamens and wingless (Cynoglossum, Lindelofia, Pardoglossum) to asymmetrically winged nutlets (Mattastuum, Rindera)
- contrary to APG, but in compliance with APWeb and other seminal sources, we here recognize several families within Boraginales
- branch lengths deliberate, not expressing actual time scale
- the characters listed (largely from Kutizki K et al., FGVP Vol. 14 and Chacón J et al. 2016) may not necessarily apply to all members of a clade
- -aceae = family, -oideae = subfamily, -ae = tribe, -inae = subtribe
- † monospecific genera

Amsinckinae: tree based on Hasenbalg-Lehman & Simpson 2012 and Simpson et al. 2017  
Boraginales: tree based on Hilger et al. 2004  
Cynoglossinae: only partly resolved (currently under revision)  
paraphyletic taxa with generally globose nutlets, exserted (Solentansia, Rindera) or inserted stamens and wingless (Cynoglossum, Lindelofia, Pardoglossum) to asymmetrically winged nutlets (Mattastuum, Rindera)  
Echiochiloideae: tree based on Långström & Oxelman 2003  
Lasiocaryeae: tree based on Chacón et al. 2017  
Lithospermeae: tree based on Thomas et al. 2008  
Lithosperminae/Echilineae: tree based on Weigend et al. 2009  
Megacaryon: position based on Selvi et al. 2017  
Omphalodeae: tree based on Otero et al. 2014; Holstein et al. 2016  
Pseudoheterocaryum and relatives: tree based on Saadati et al. 2017  
Thomas D et al. (2009) Mol Phylog Evol 52(3): 755-768

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