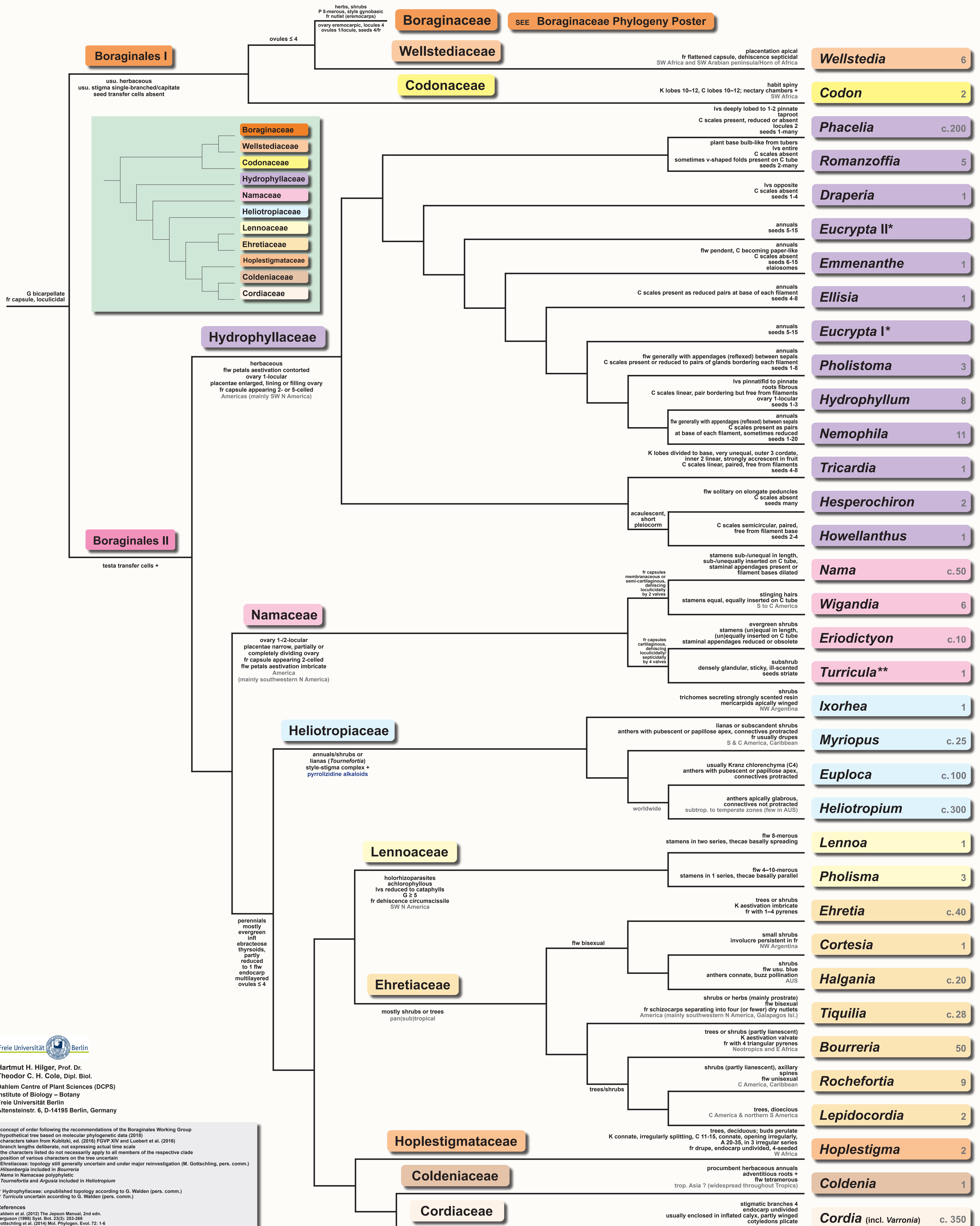


# BORAGINALES PHYLOGENY POSTER

Families and genera with plesio-/apomorphic and (non)diagnostic traits



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- concept of order following the recommendations of the Boraginales Working Group
- hypothetical trees based on molecular phylogenetic data (2016)
- characters taken from Kubitzki, ed. (2016) FGV XIV and Lubert et al. (2016)
- branch lengths deliberate, not expressing actual time scale
- the characters listed do not necessarily apply to all members of the respective clade
- position of various characters on the tree uncertain
- Ehretiaceae: topology still generally uncertain and under major reinvestigation (M. Gottschling, pers. comm.)
- *Hilsenbergia* included in *Bourreria*
- *Nama* in Namaceae polyphyletic
- *Tournefortia* and *Argusia* included in *Heliotropium*
- \* Hydrophyllaceae: unpublished topology according to G. Walden (pers. comm.)
- \*\* *Turricula* uncertain according to G. Walden (pers. comm.)

References  
Baltewin et al. (2012) The Jepson Manual, 2nd edn.  
Ferguson (1998) Syst. Bot. 23(3): 263-268  
Gottschling et al. (2014) Mol. Phylog. Evol. 72: 1-6  
Hilger and Diane (2003) Bot. Jahrb. Syst. 128(1): 19-51  
Kubitzki, ed. (2016) FGV XIV, Springer  
Lubert et al. (2016) Taxon 65(3): 502-522  
Walden and Patterson (2012) Madroño 58(4): 211-222  
Walden (2015) UC Berkeley Electronic Theses and Dissertations, <http://escholarship.org/uc/item/8tq9z0kb>

see also: Stevens PF (2018) APweb – [www.mobot.org/MOBOT/research/APweb](http://www.mobot.org/MOBOT/research/APweb)

\* Thanks to Marc Gottschling and Genevieve Walden for valuable comments