

# BRYOPHYTE PHYLOGENY

## Nonvascular Land Plants (Liverworts, Mosses, Hornworts) – Systematics and Characteristics

MARCHANTIOPHYTA

Liverworts

BRYOPHYTA

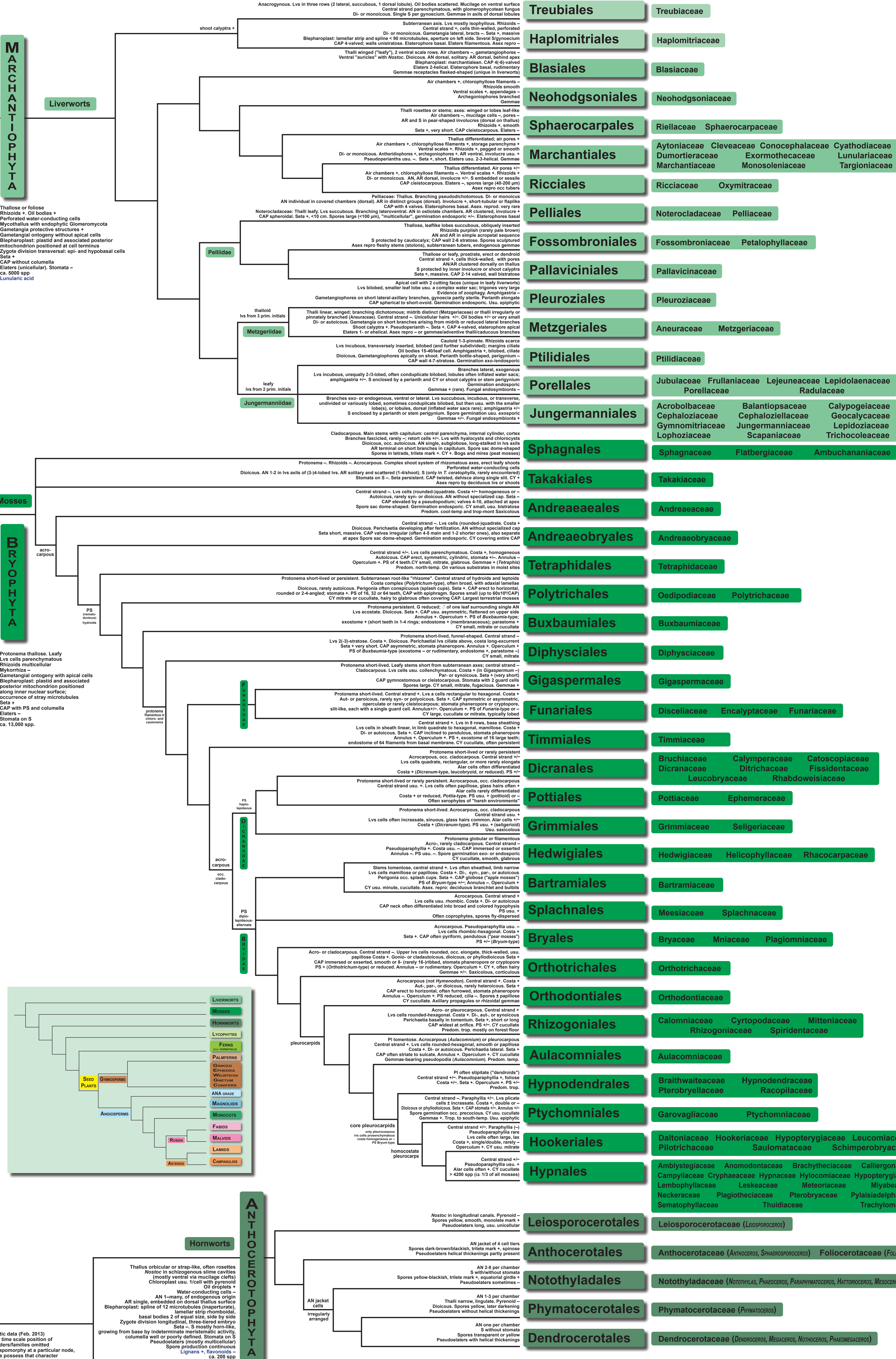
Mosses

Stomata

Stomata

Stomata

Stomata



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• hypothetical tree based on molecular phylogenetic data (Feb. 2013)  
• branch lengths deliberate, not expressing actual time scale position of many characters on tree unclear; some minor orders/families omitted  
• if a character is marked as being a potential synapomorphy at a particular node, this does not mean that all members of that clade possess that character  
• Phylogenetic References: Judd W et al. (2007); Simpson M (2010); Soltis DE et al. (2005); Cox et al. (2010); Knoop (2010); Villarreal et al. (2010); Shaw et al. (2011)  
• Characters from: Frey et al. (2009) and Goffinet/Shaw (2009); Lignone et al. (2012)  
• Abbreviations: G gametophyte, S sporophyte, AR archegonium, AN antheridium, CAP capsule, CY calyptra, PS peristome  
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Vascular Plants see Tracheophyte and Angiosperm Phylogeny Posters