



# Asteraceae and its relatives



Naturhistoriska  
riksmuseet

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# Outline

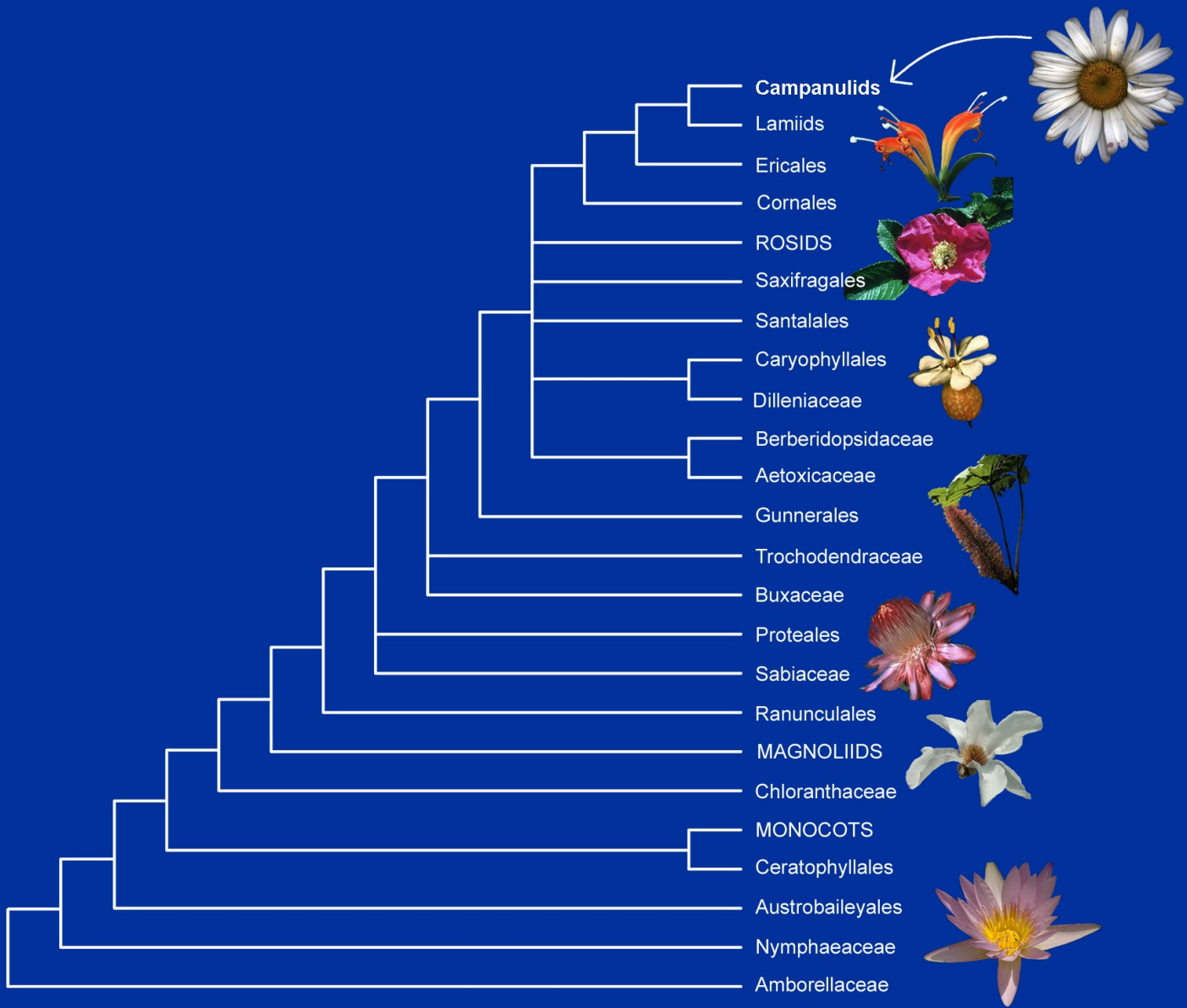
Asterales and Asteraceae

Asterales – an outward view: the campanulids

Some Remaining Problems

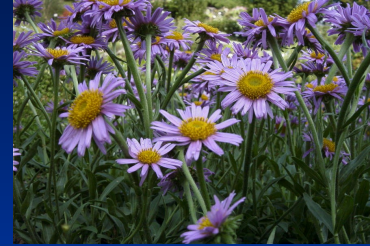
A Dirty Dating

Acknowledgments



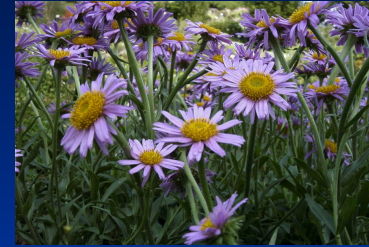
# Asterales – an inward view

Earlier: often Asteraceae only



# Asterales – an inward view

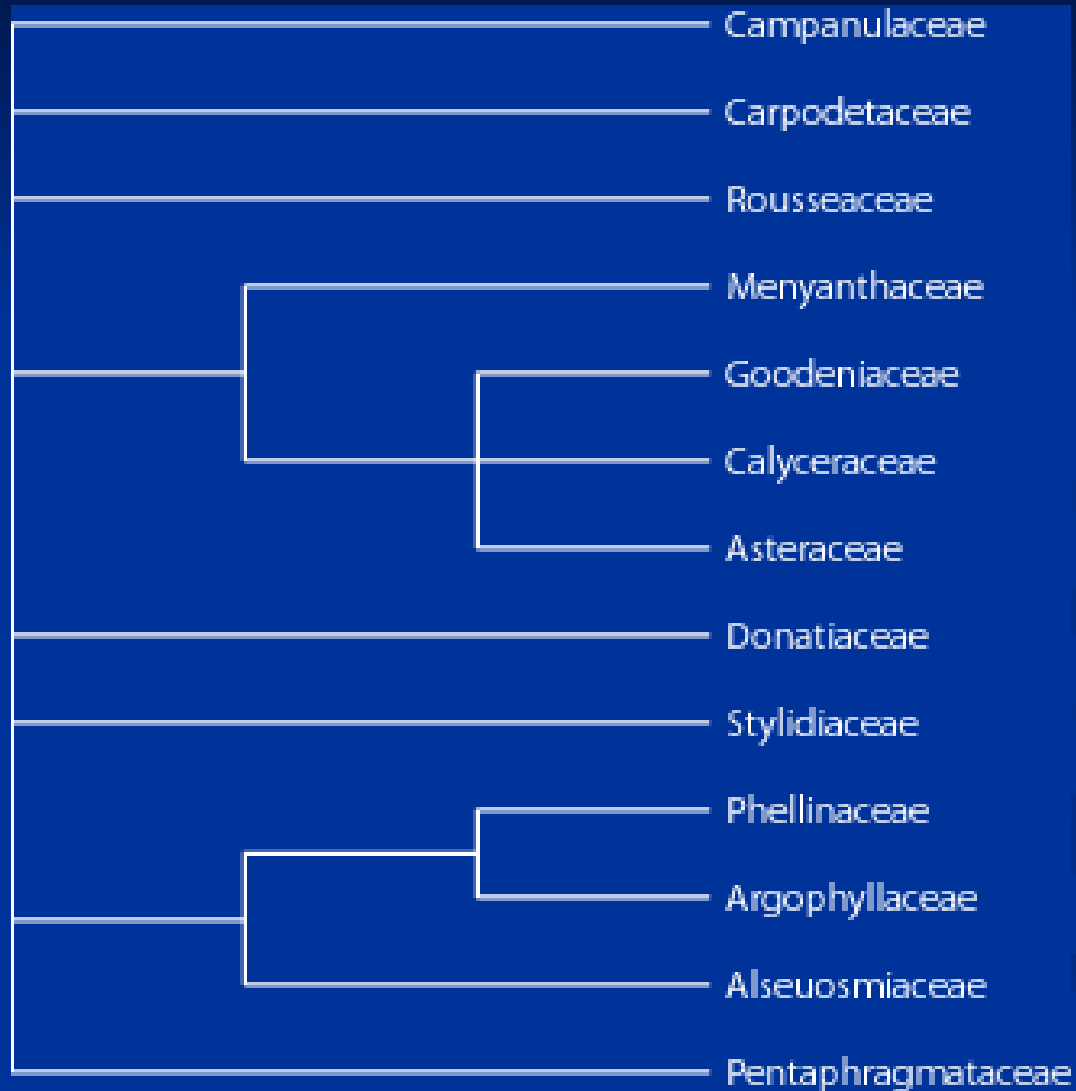
Earlier: often Asteraceae only



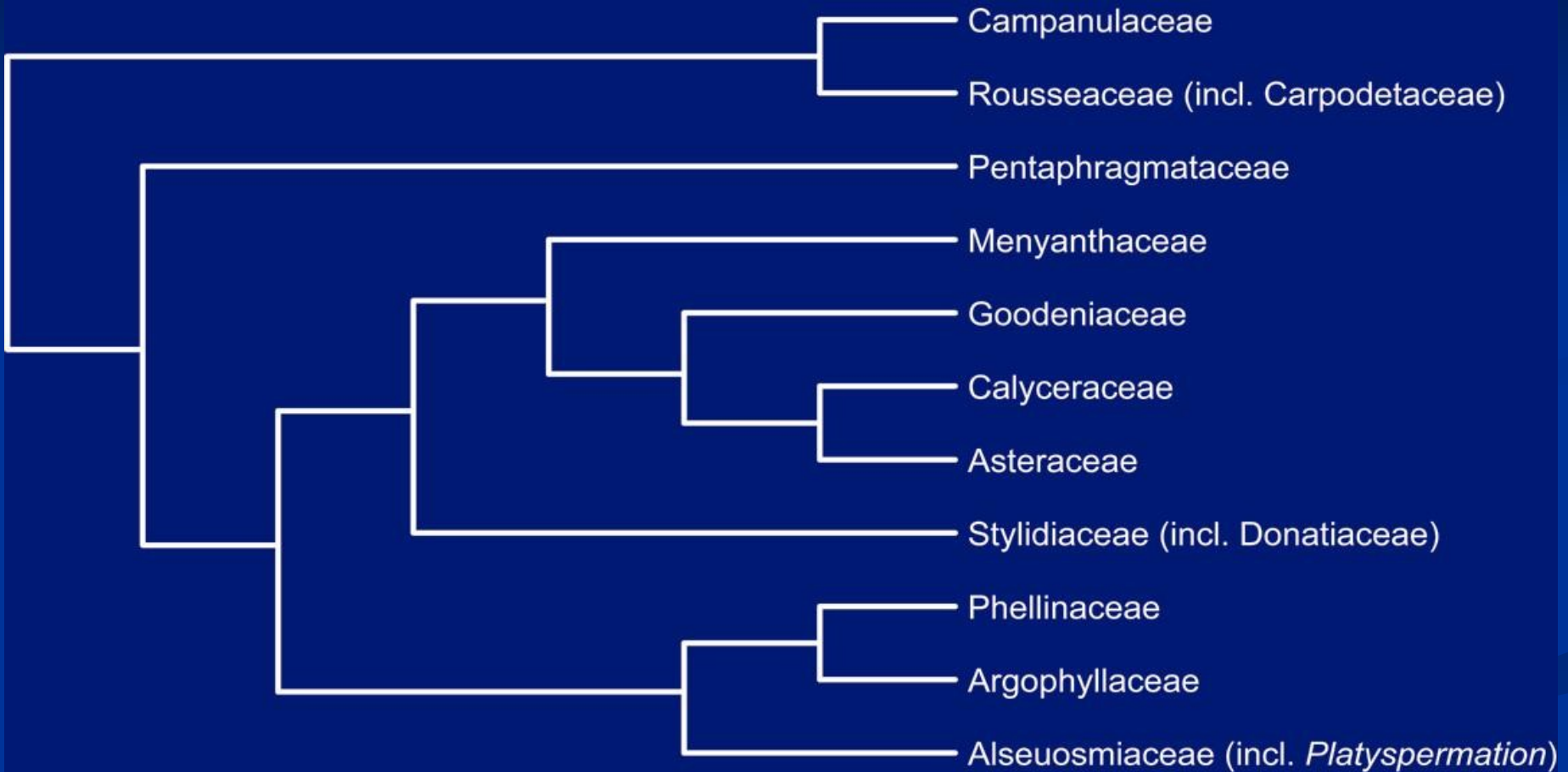
Today: 11 families



# 10 years ago...

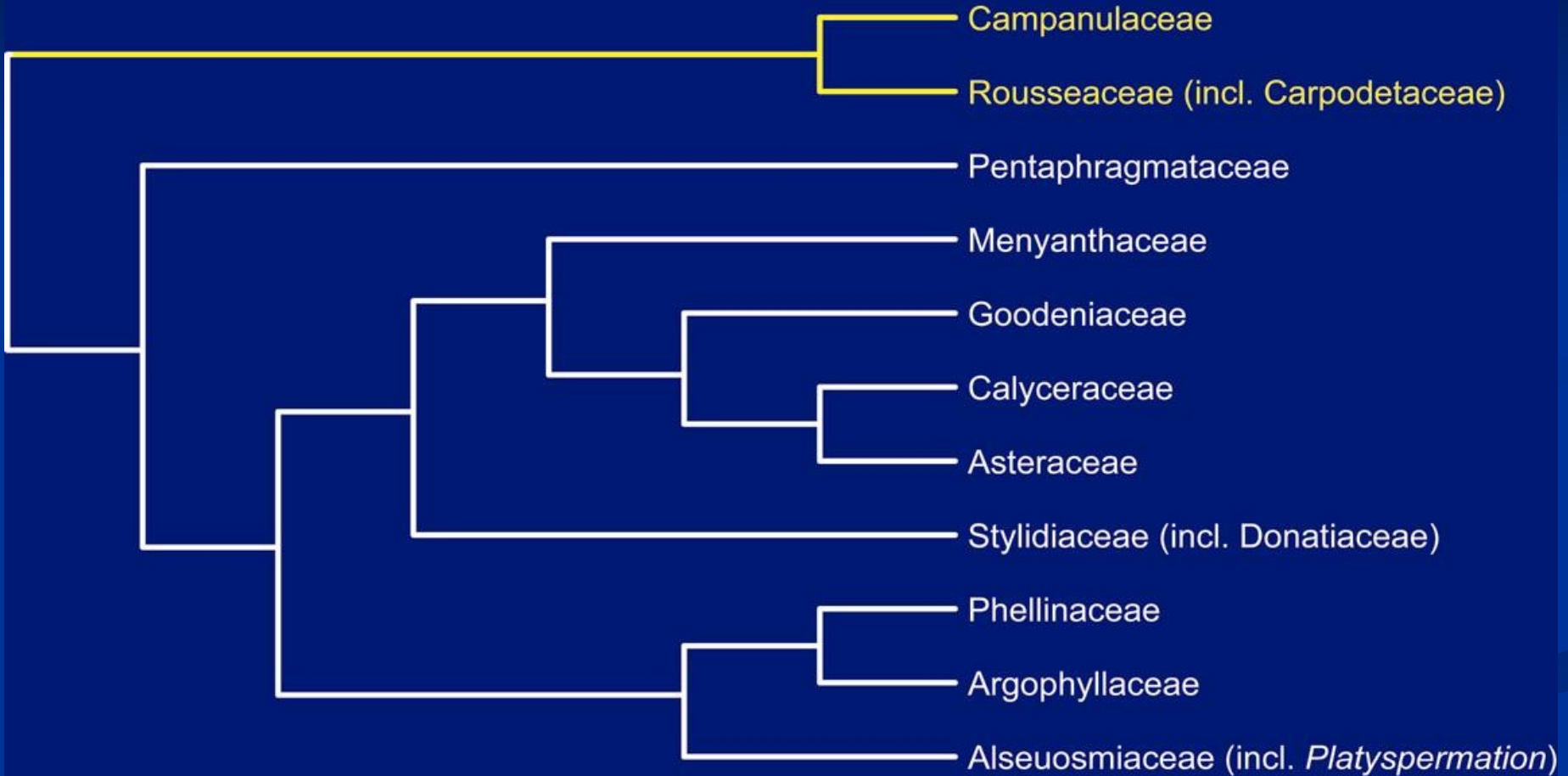


# Today





# Today



# Campanulaceae and Rousseaceae

*Cyphia*



*Nemacladus*



*Roussea*



*Cuttsia*



*Lobelia*



*Campanula*

# Rousseaceae



*Photo: Dennis Hansen ©*



# *Pentaphragma*





# Phellinaceae et al.

*Wittsteinia*



*Alseuosmia*



*Platyspermatum*



*Corokia*



*Phelline*

# Phellinaceae et al.

## Four taxa

Phellinaceae (1 genus, 10 spp, New Caledonia)

Alseuosmiaceae (4 genera, 9 spp, W Pacific)

Argophyllaceae (2 genera, 22 spp, W Pacific)

*Platyspermatia* (1 sp, New Caledonia)

Only low support...

Synapomorphies? (Poorly known



# *Platyspermation crassifolium*





# Stylidiaceae

2 subfamilies:

Donatioideae (1 genus, 2 spp, S SAm, NZ, Tasmania)

Stylidioideae (4 genera, 170 spp, Pacific)

Several morphological synapomorphies:

Unilacunar nodes

Petals imbricate in bud

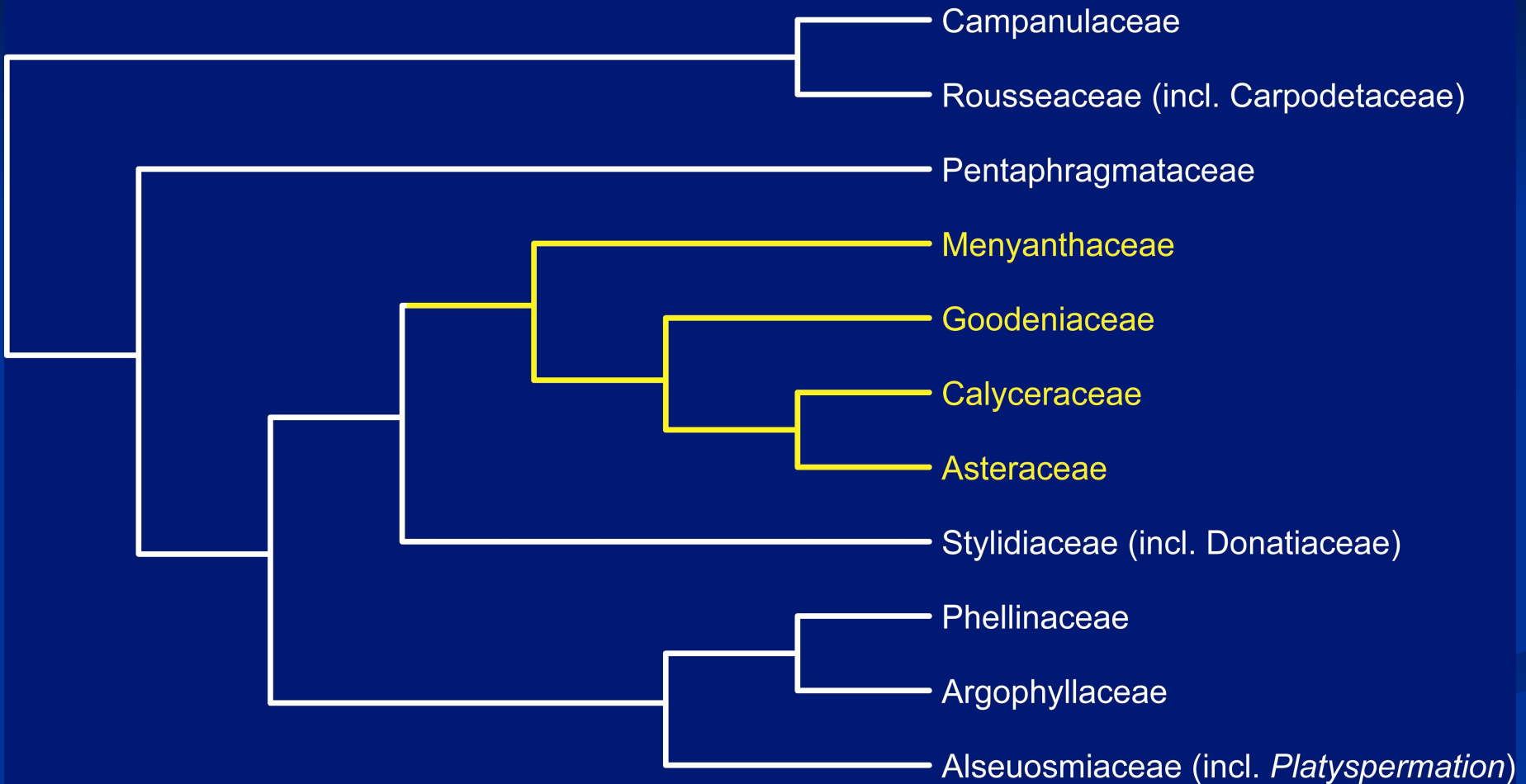
Extrastaminal floral nectaries

Few stamens (2-3)

Extrorse anthers



# Today





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**Menyanthaceae**



Gerald D. Carr

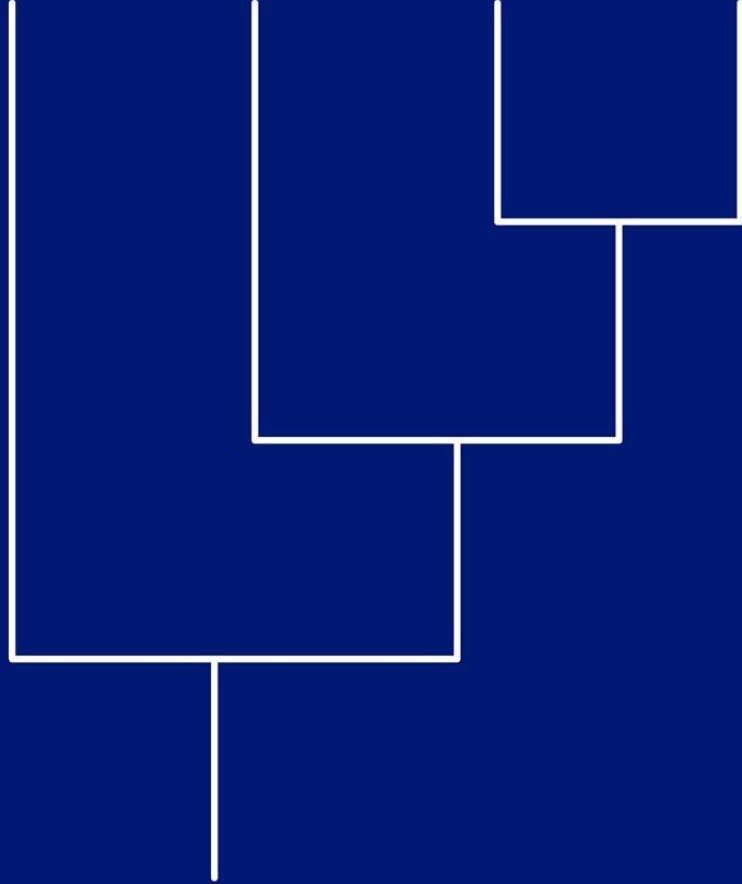
**Goodeniaceae**



**Calyceraceae**



**Asteraceae**





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Gerald D. Carr

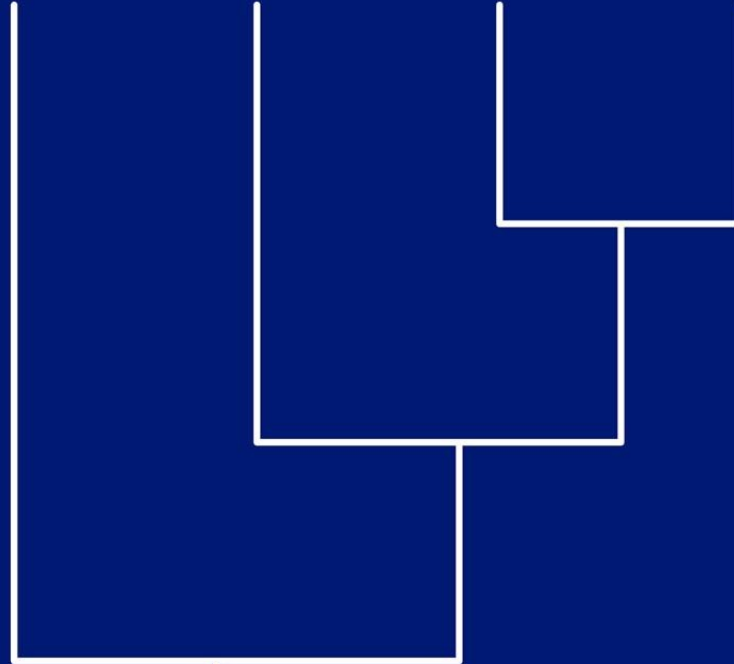


**Menyanthaceae**

**Goodeniaceae**

**Calyceraceae**

**Asteraceae**



+ micropylar endosperm haustoria absent  
 + thick integument



© G. D. Carr



Gerald D. Carr



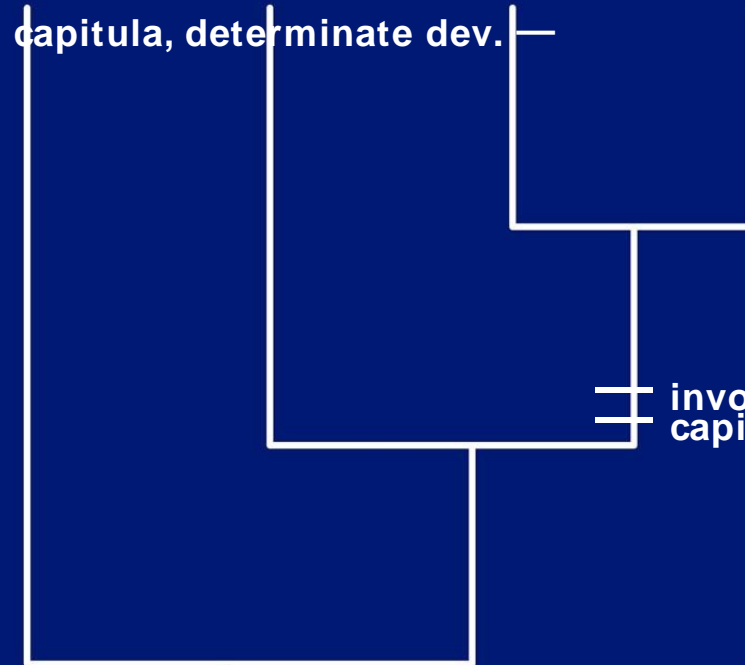
**Menyanthaceae**

**Goodeniaceae**

**Calyceraceae**

**Asteraceae**

capitula, determinate dev.



involucral bracts, modified calyx  
capitula, indeterminate dev.

micropylar endosperm haustoria absent  
thick integument



Menyanthaceae



Goodeniaceae



Calyceraceae



Asteraceae

capitula, determinate dev.

ovules pendulous

ovules basal

anthers completely fused

ovary unilocular, uniovulate, inferior  
at least parts of anthers fused  
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Menyanthaceae



Goodeniaceae



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Menyanthaceae



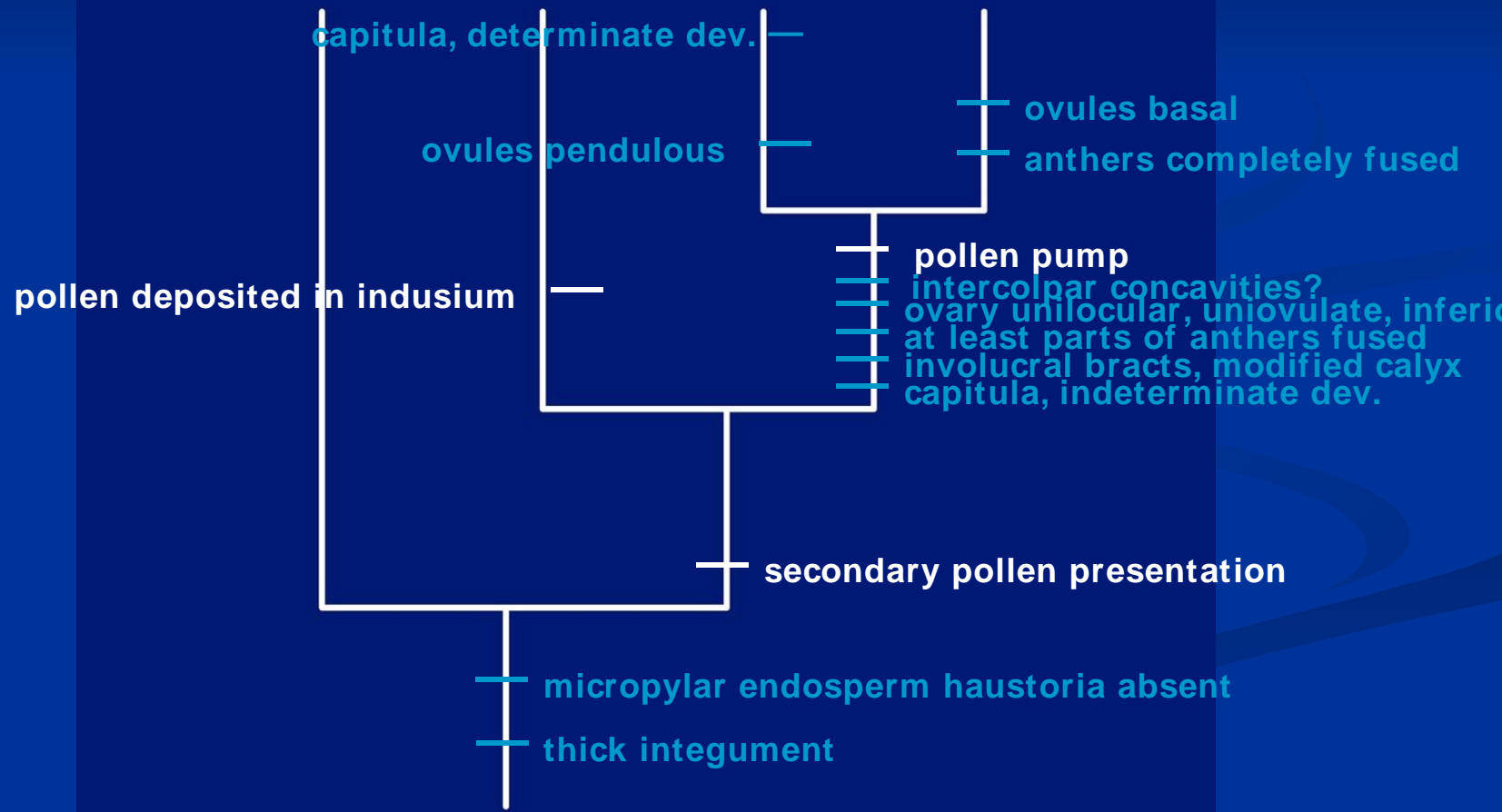
Goodeniaceae



Calyceraceae



Asteraceae





Menyanthaceae



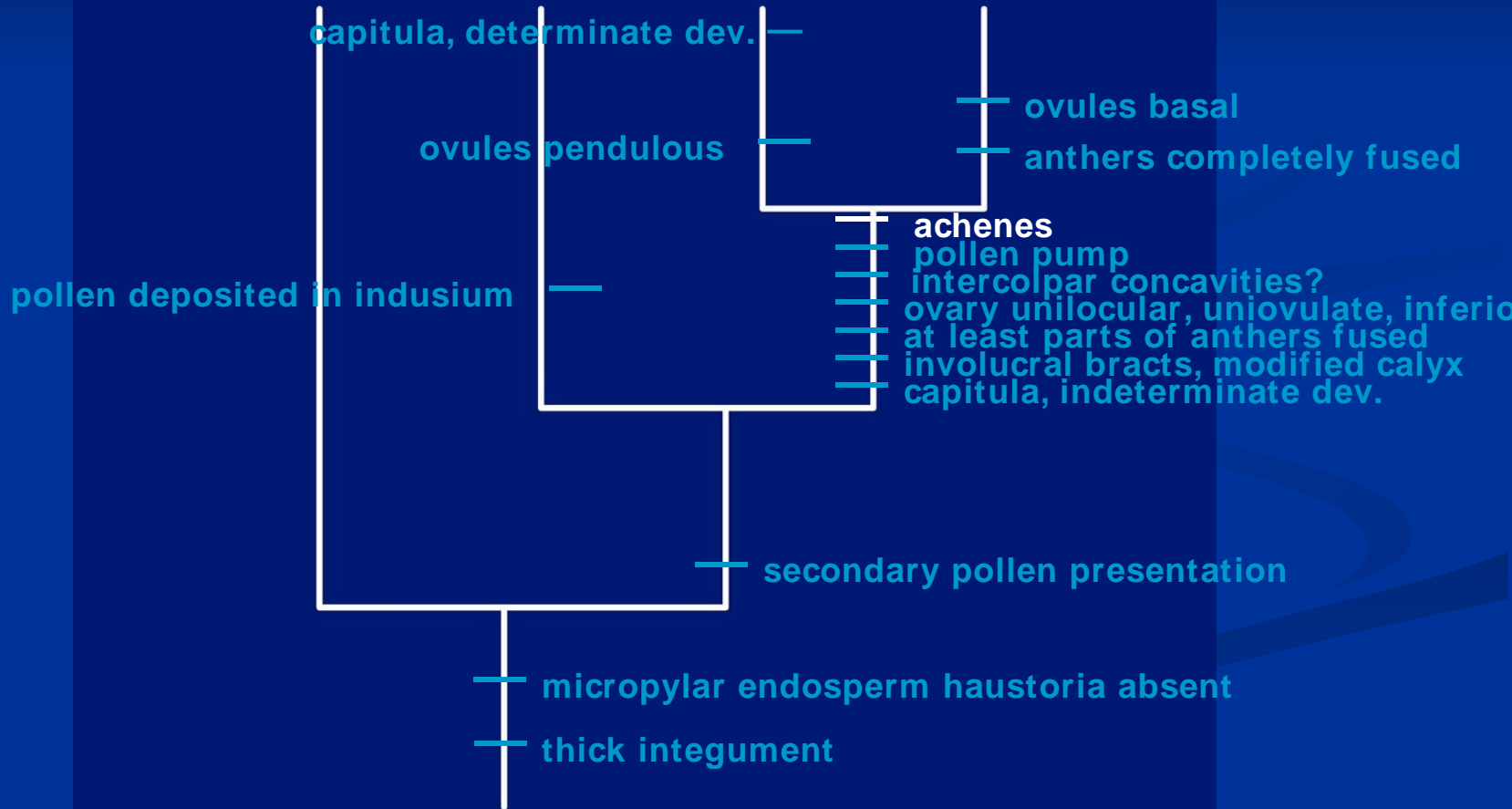
Goodeniaceae



Calyceraceae



Asteraceae

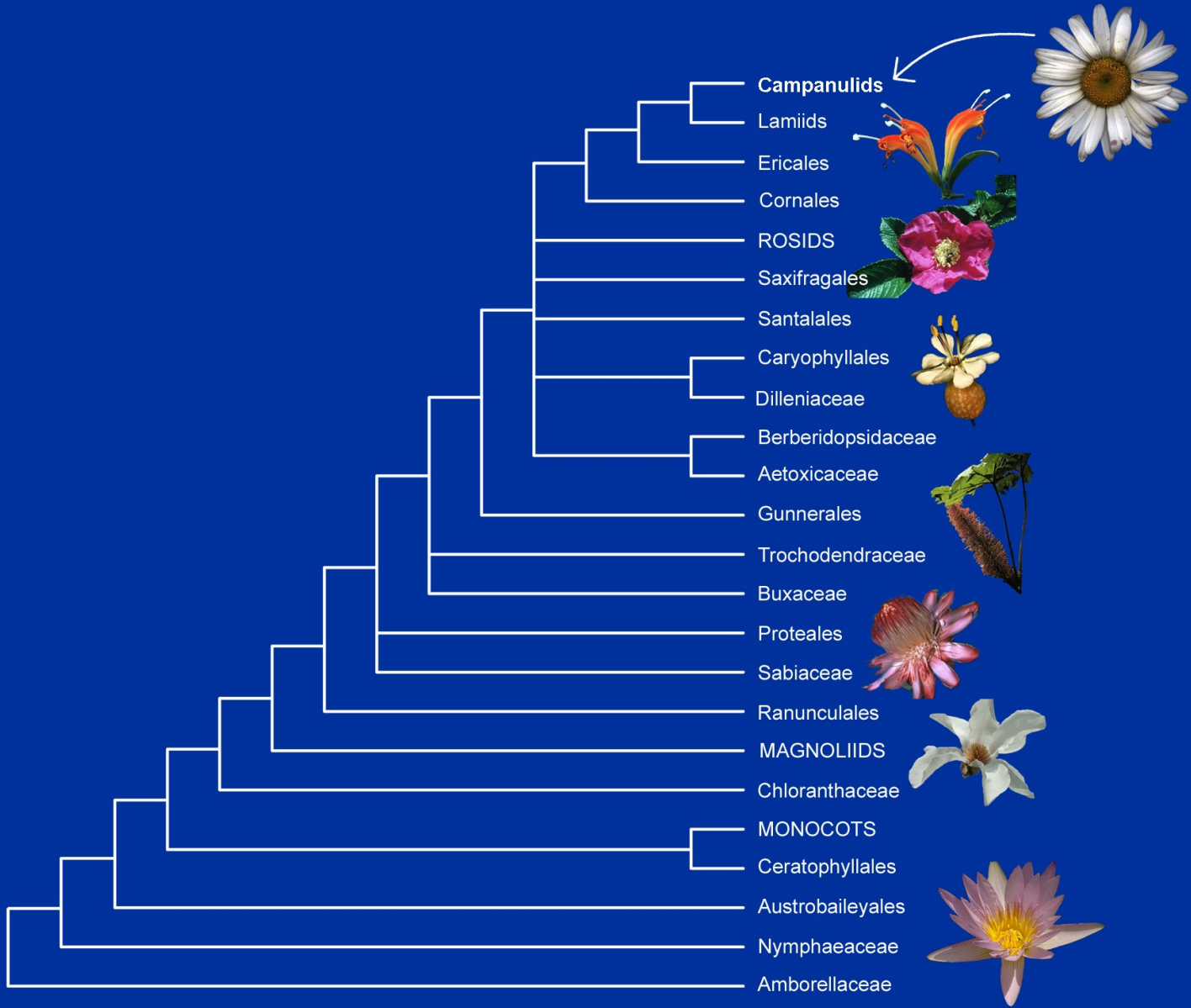


# Asterales – an outward view

Asterales is well defined...

...but what is its sister-group???

To be found in the campanulids!



# Campanulids

4 orders:

Aquifoliales

Apiales

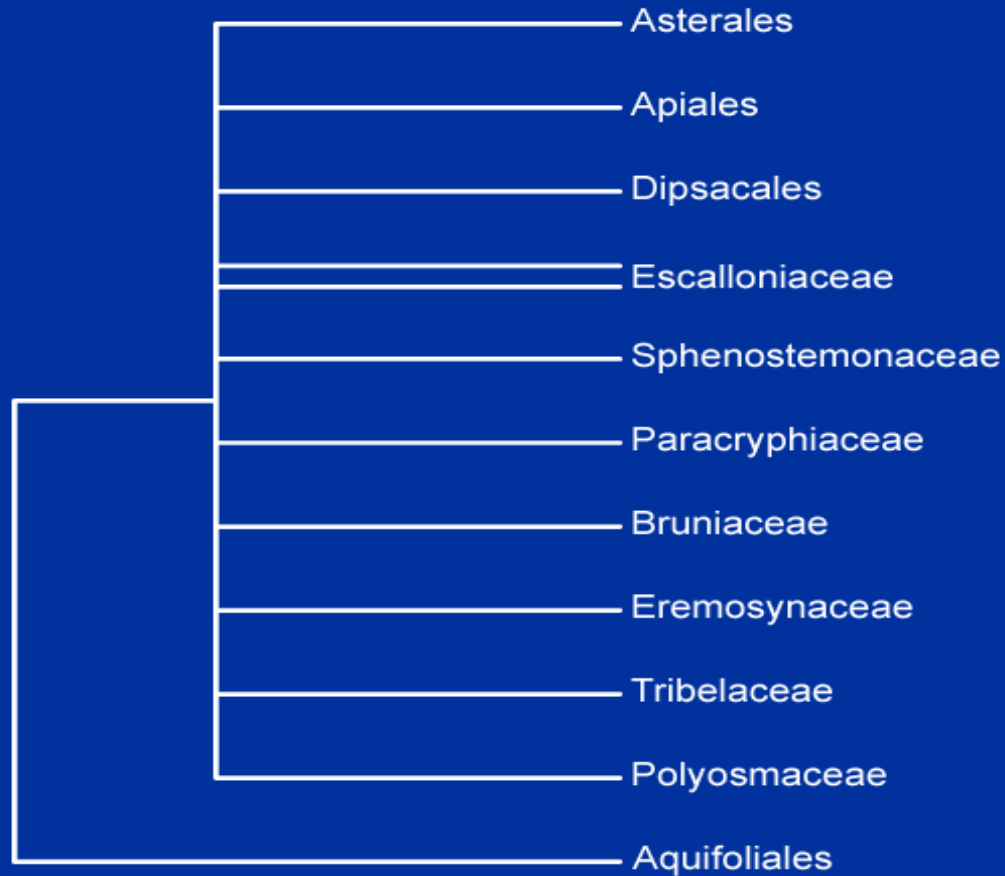
Dipsacales

Asterales

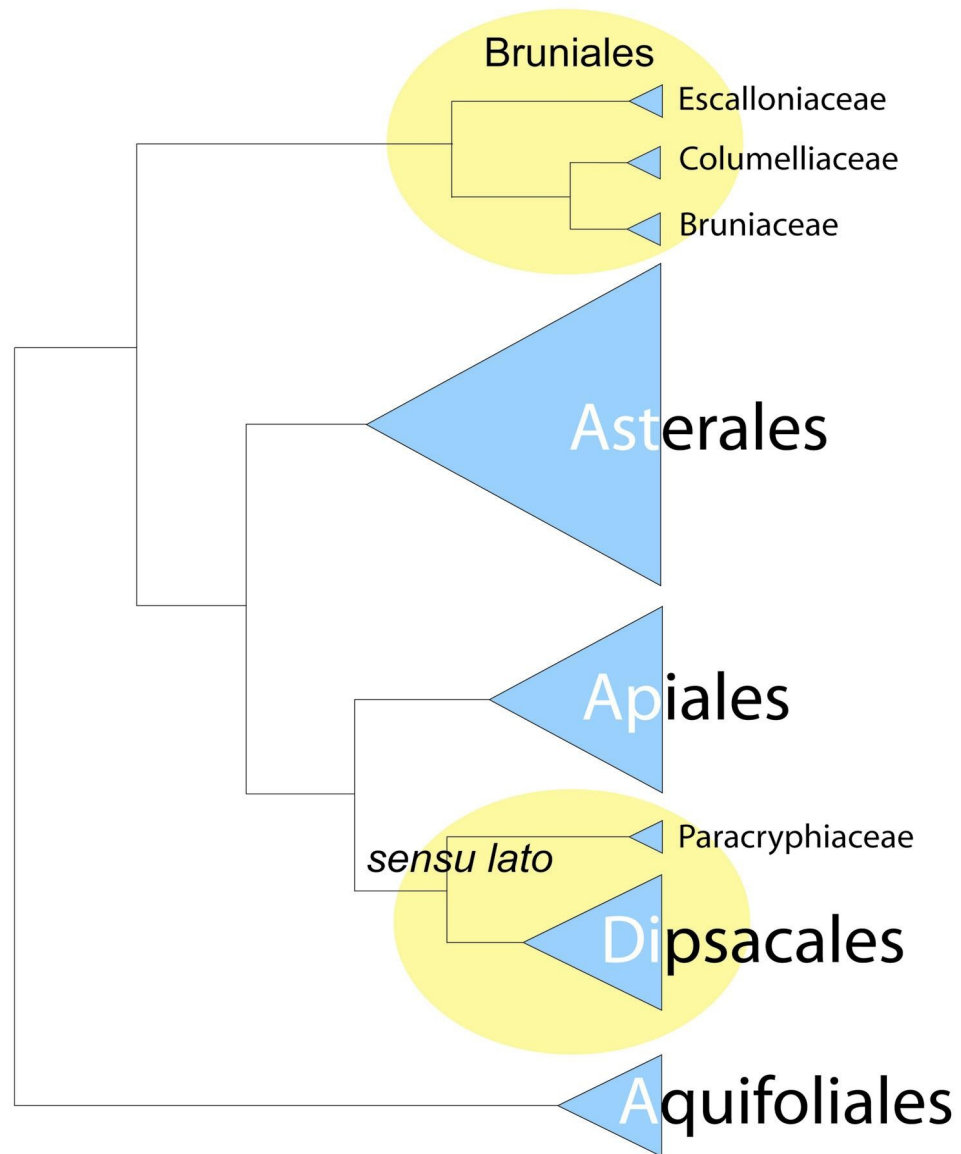
Several poorly known families unplaced as to order



# Campanulids (euasterids II) recently...

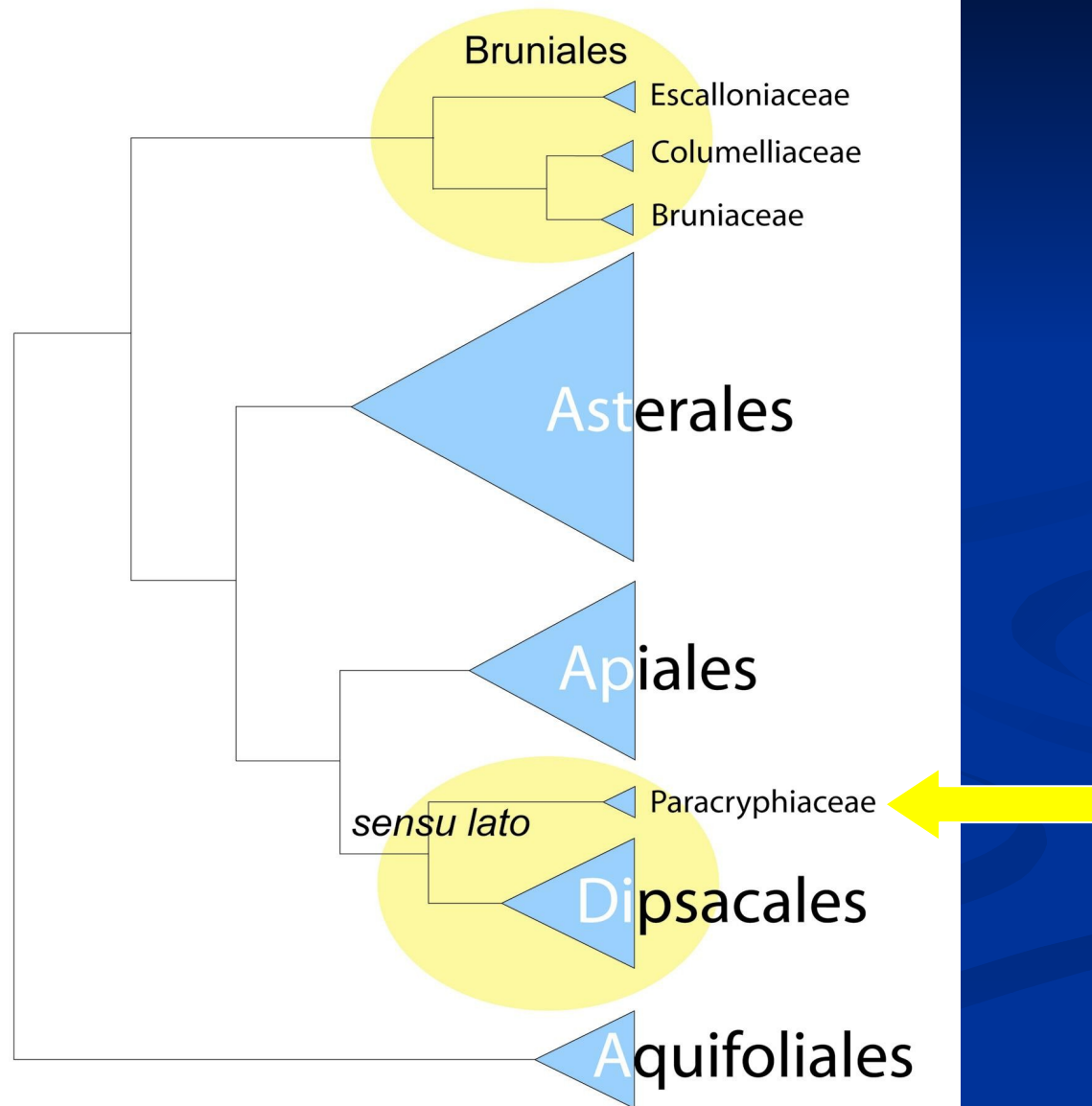


# Today!





# Today!



# Paracryphiaceae

3 genera:

*Paracryphia* (1 sp, New Caledonia)

*Quintinia* (25 spp, C Mal to Austr, NC, NZ)

*Sphenostemon* (c 7 spp, C Mal to trop Austr & NZ)



*Paracryphia*



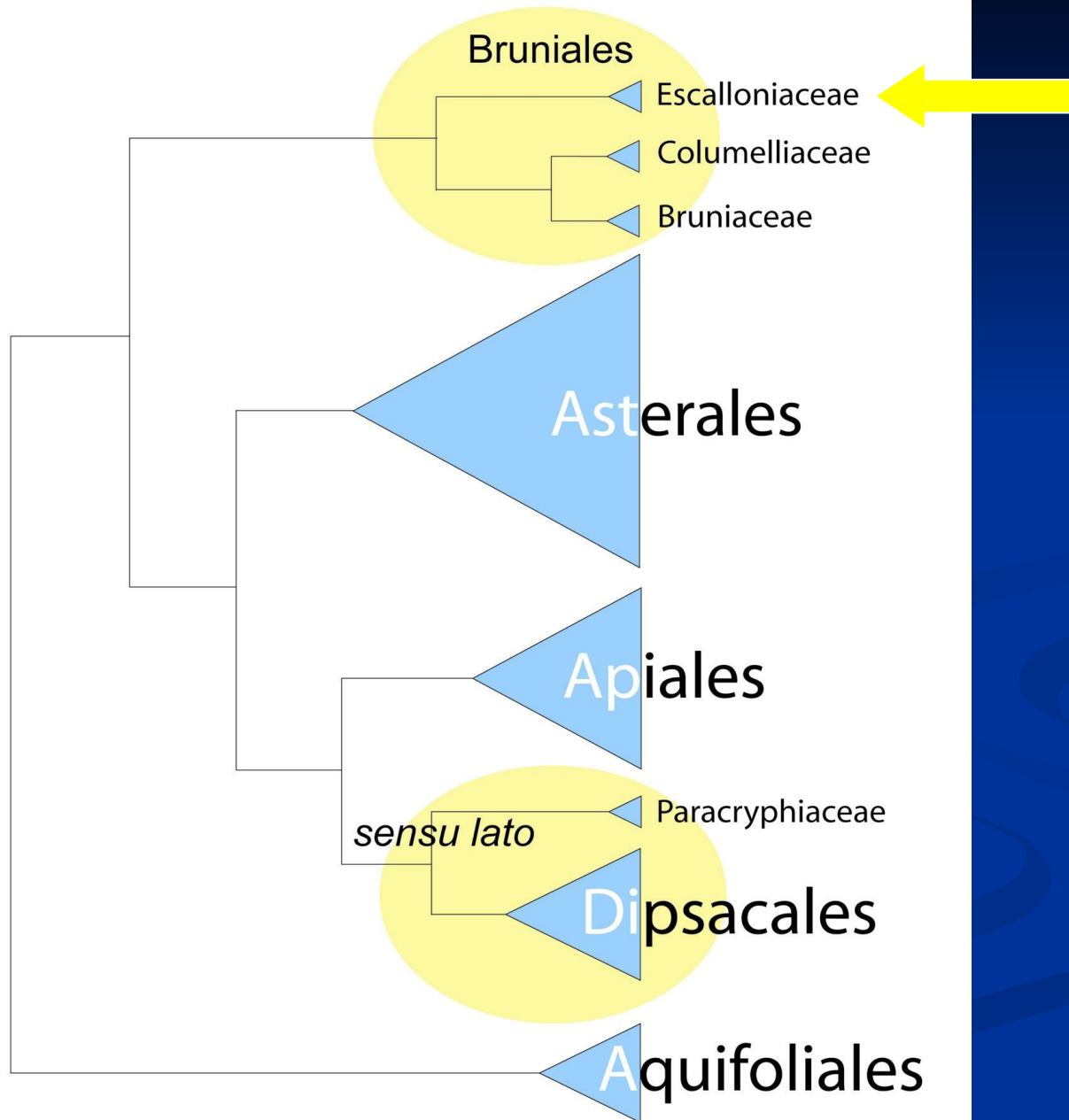
*Quintinia*



*Sphenostemon*

# Paracryphiaceae





# Escalloniaceae

*Polyosma*



*Valdivia*



*Escallonia*



*Anopterus*



*Forgesia*

# Some remaining problems

Asterales:

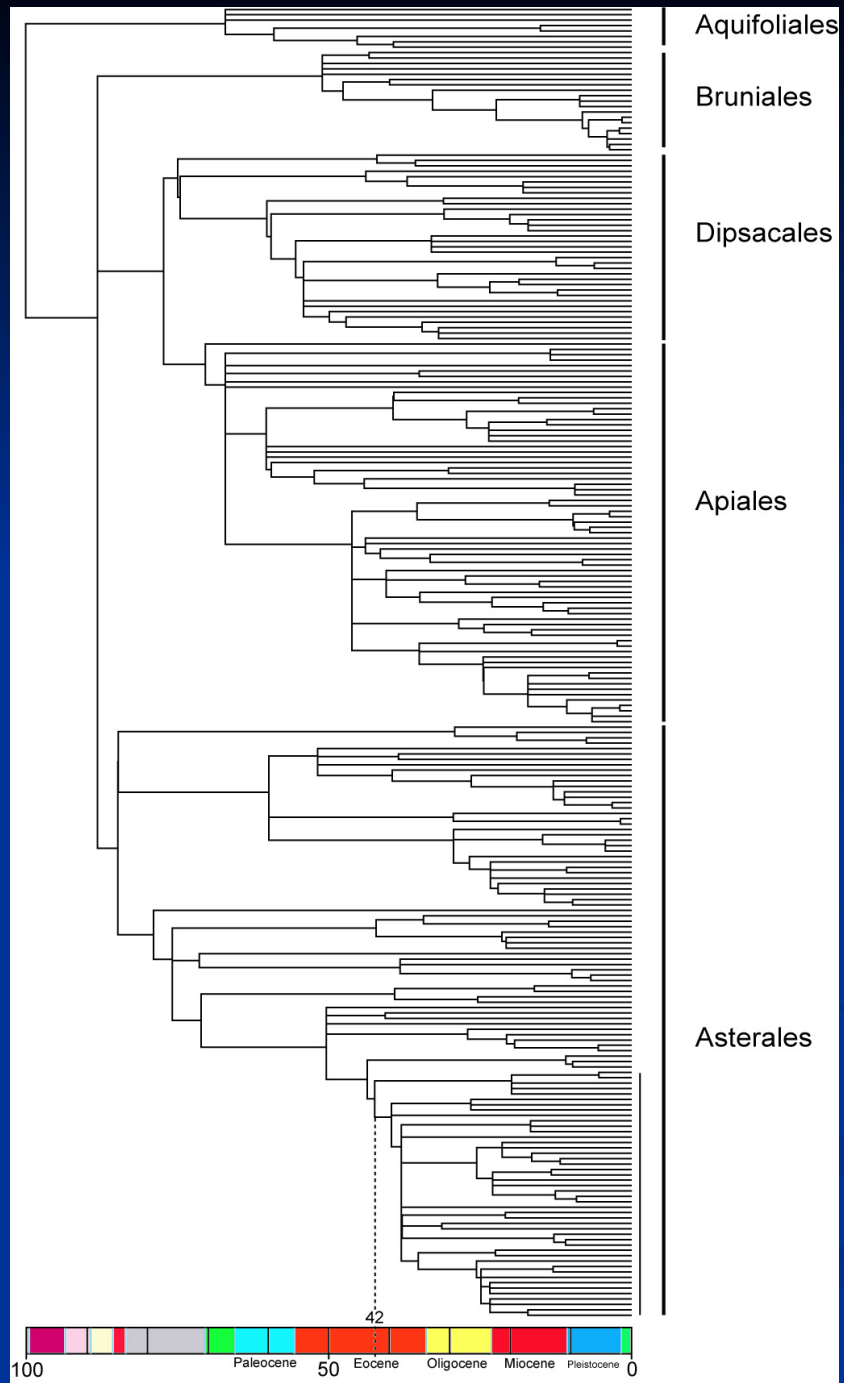
Position of Stylidiaceae

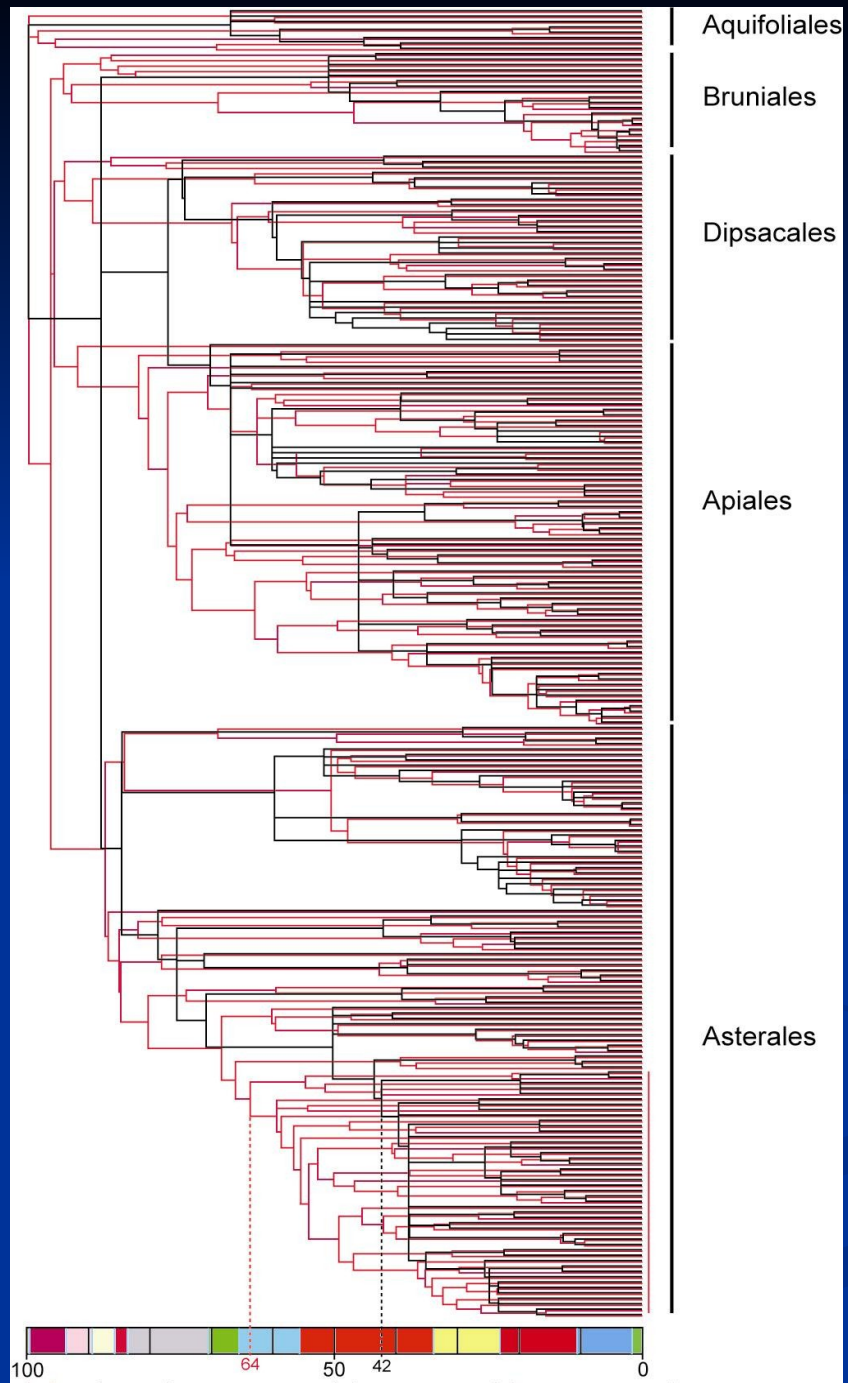
Campanulids:

Paraphyly of *Escallonia* (and other genera?)

Increased confidence in the early  
branching events

Reliable datings (and biogeography)







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