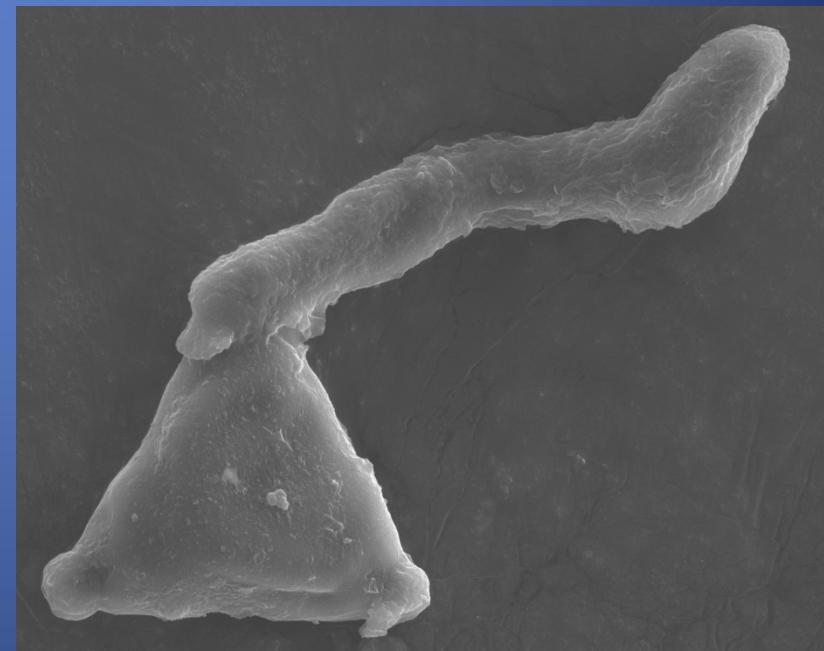
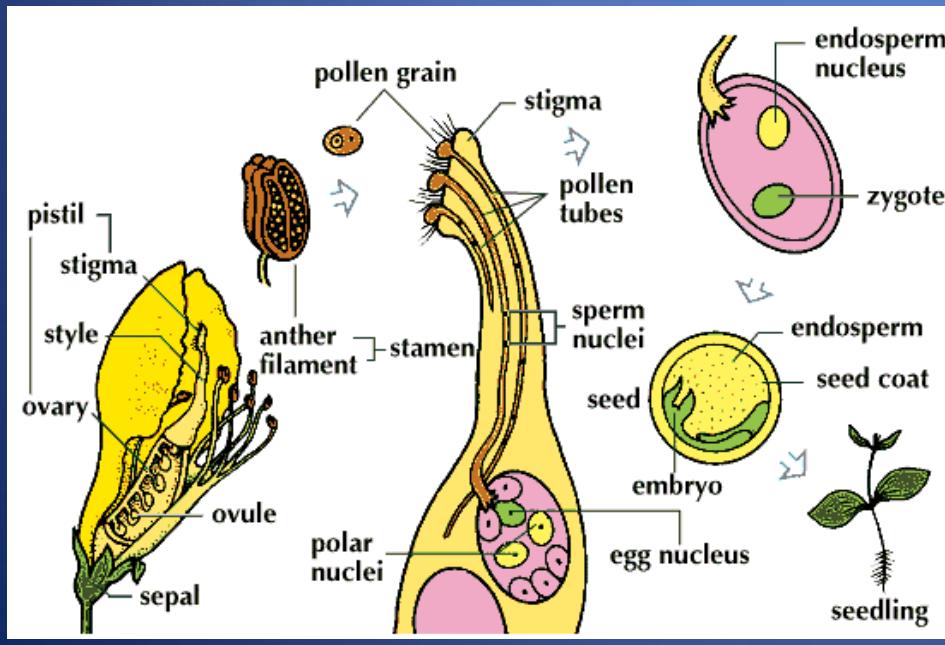
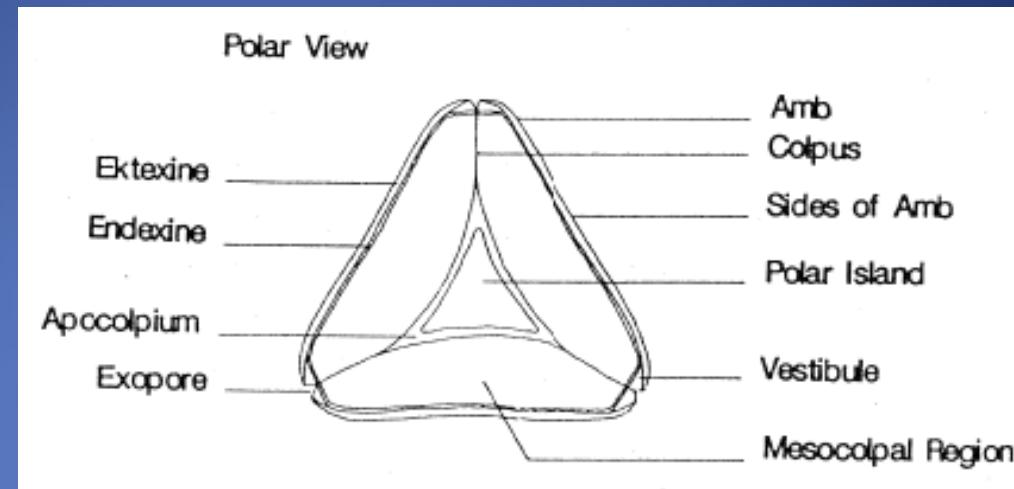
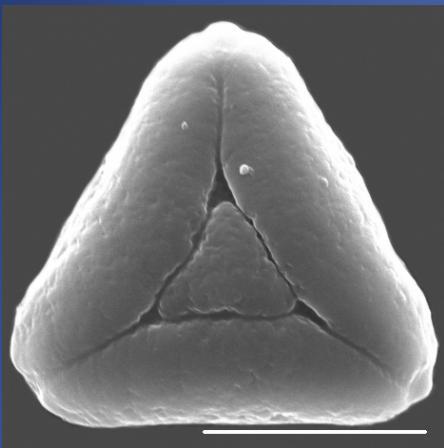


Pollen Under The Microscope

6 Oct - 18 Nov 2011
CSIRO Discovery Centre



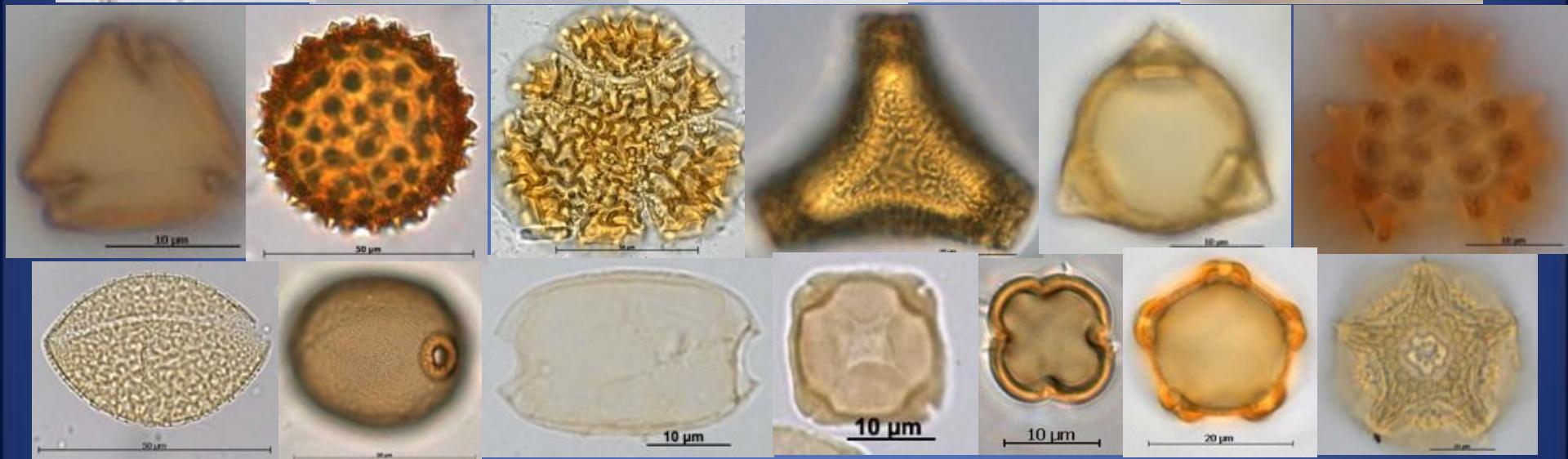
What is Pollen?



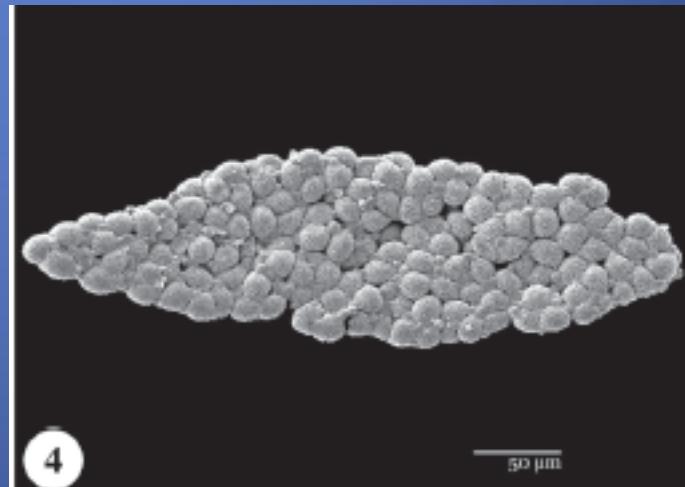
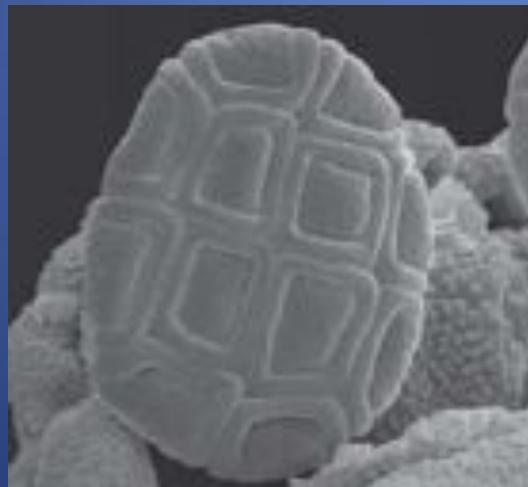
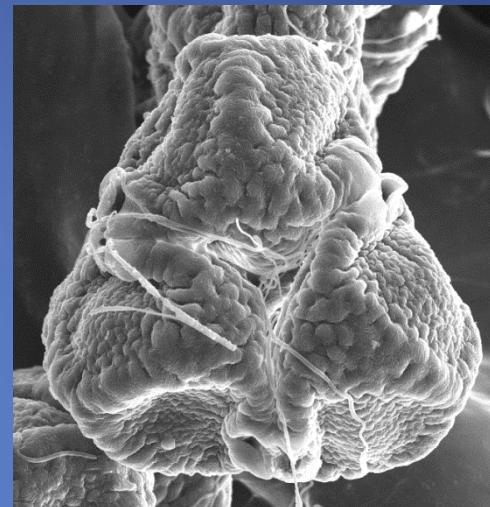
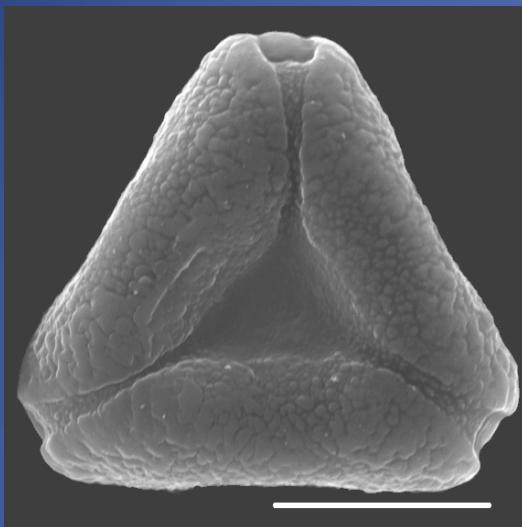


MICRONAUT / CATTERS

Pore Number



Pollen Formations



4

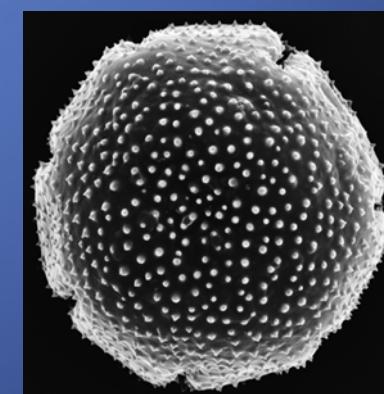
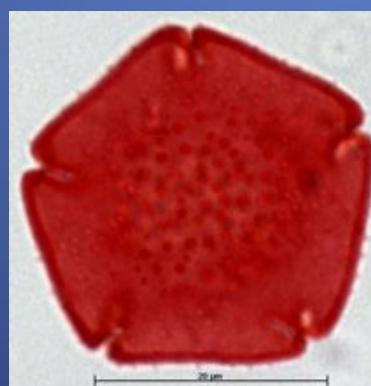
μm 0.5

Dessein et al. 2005 *Bot. Rev.* 71

Light Microscope



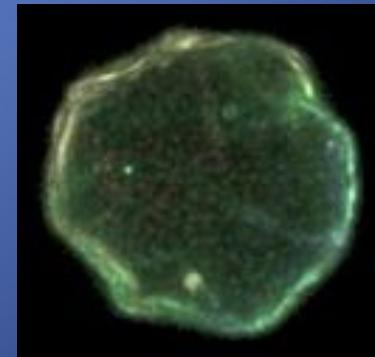
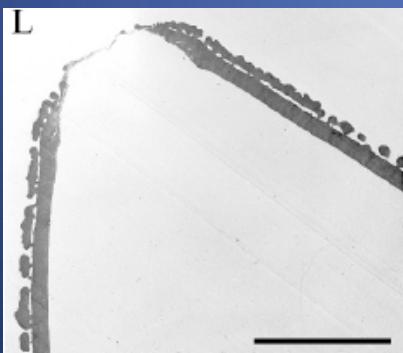
Scanning Electron Microscope (SEM)



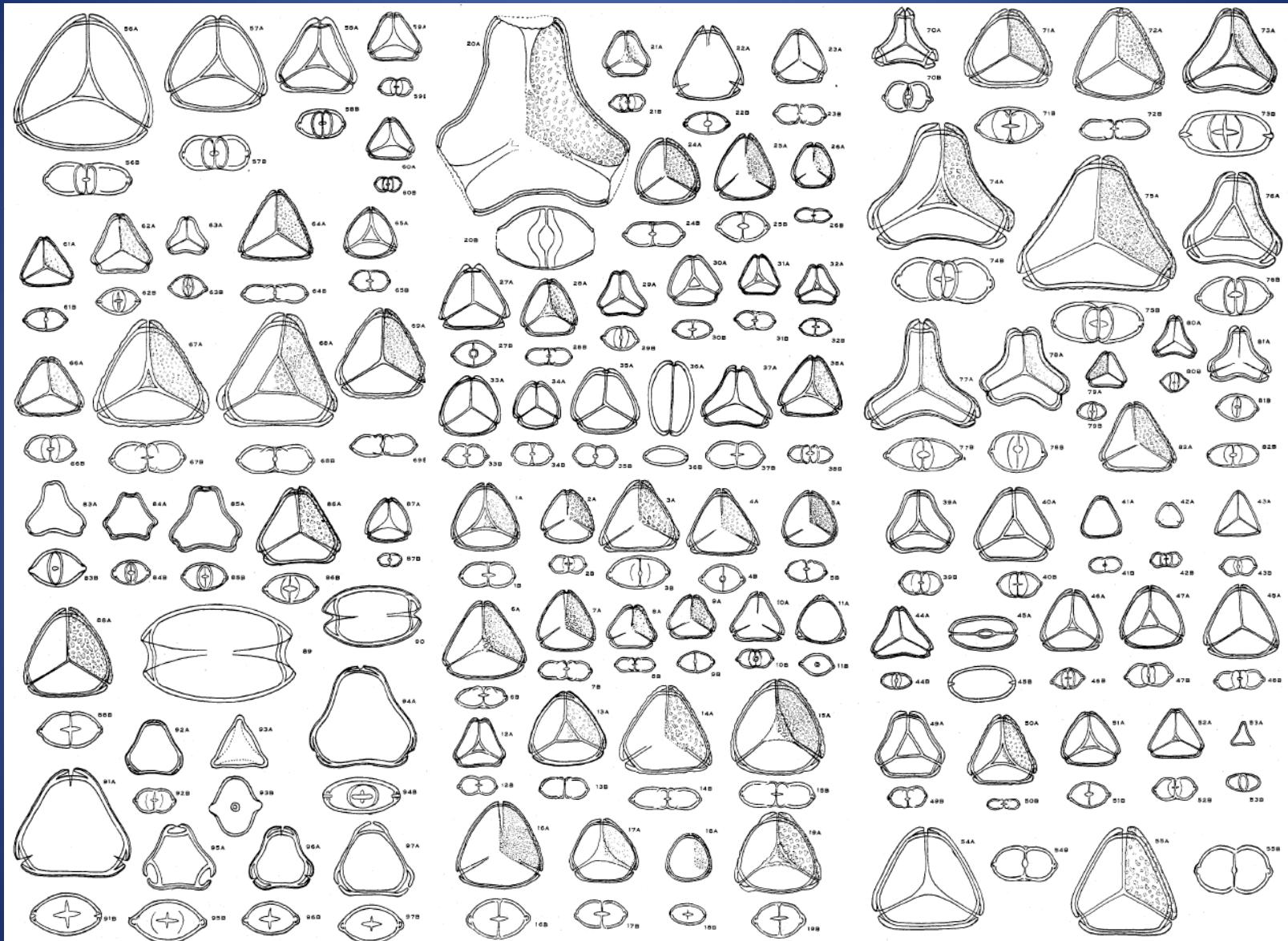
Transmission Electron Microscope (TEM)



Pollen Classifynder (Anthony with Simon)

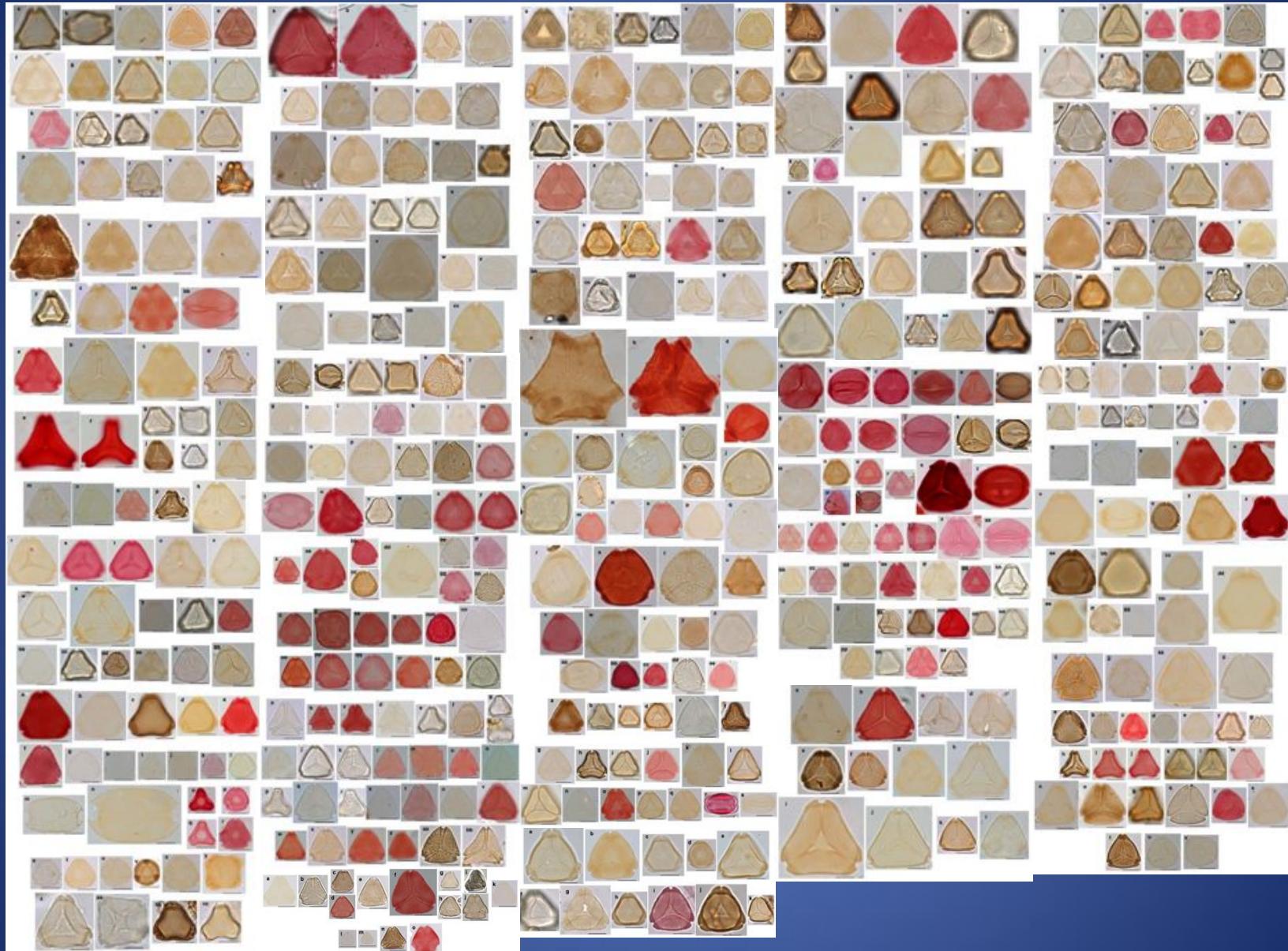


Myrtaceae Pollen – Line Images



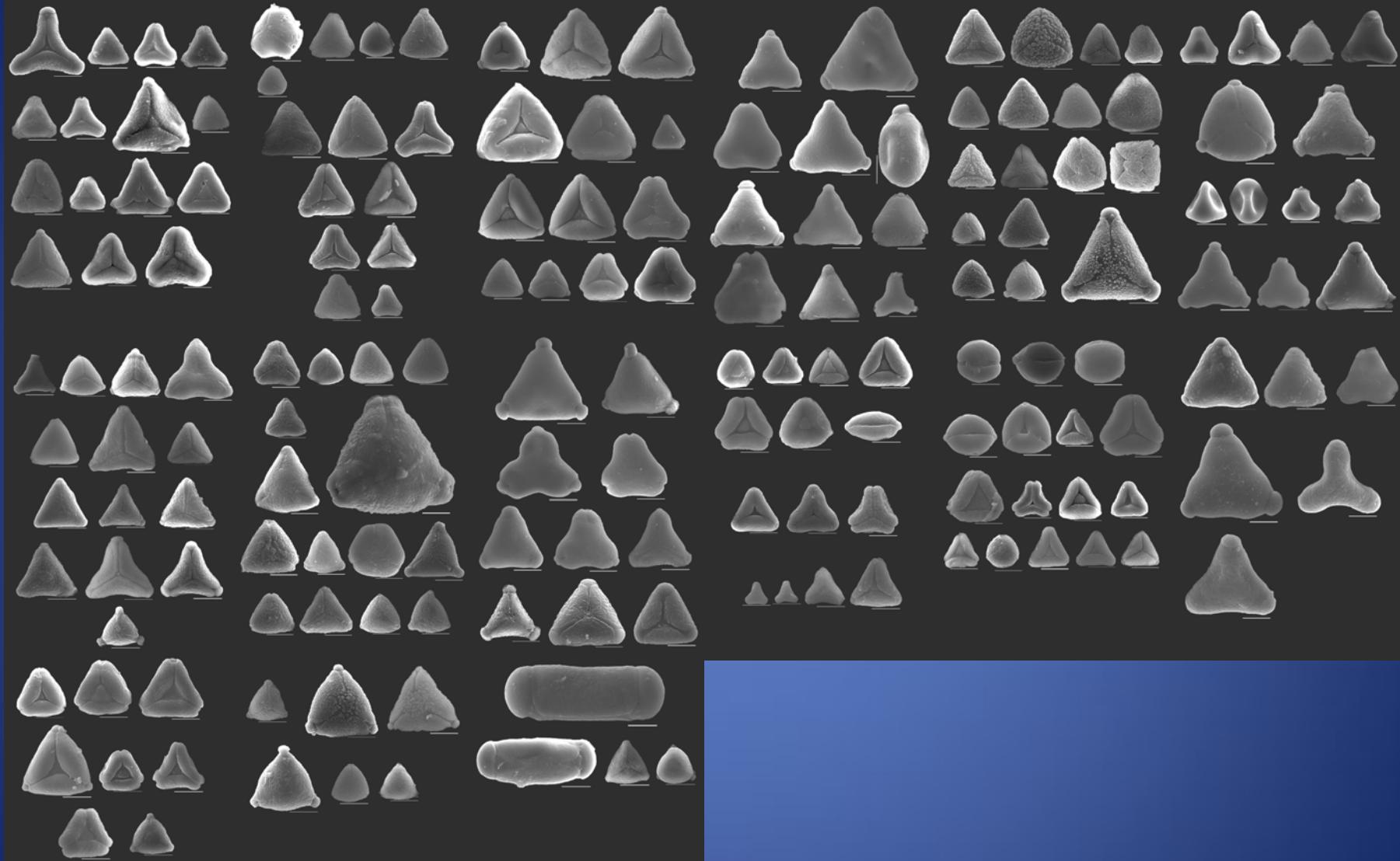
Pike (1956) Aust. J. Bot. 4: 13-53

Myrtaceae Pollen – Light Microscope



Thornhill et al. (in review *Aust. J. Bot.*)

Myrtaceae Pollen – Scanning Electron Microscope



Thornhill et al. (in review *Aust. J. Bot.*)

Wind Pollinated

Pine



15kV X1,600 10µm

UMD SEM

University of Minnesota



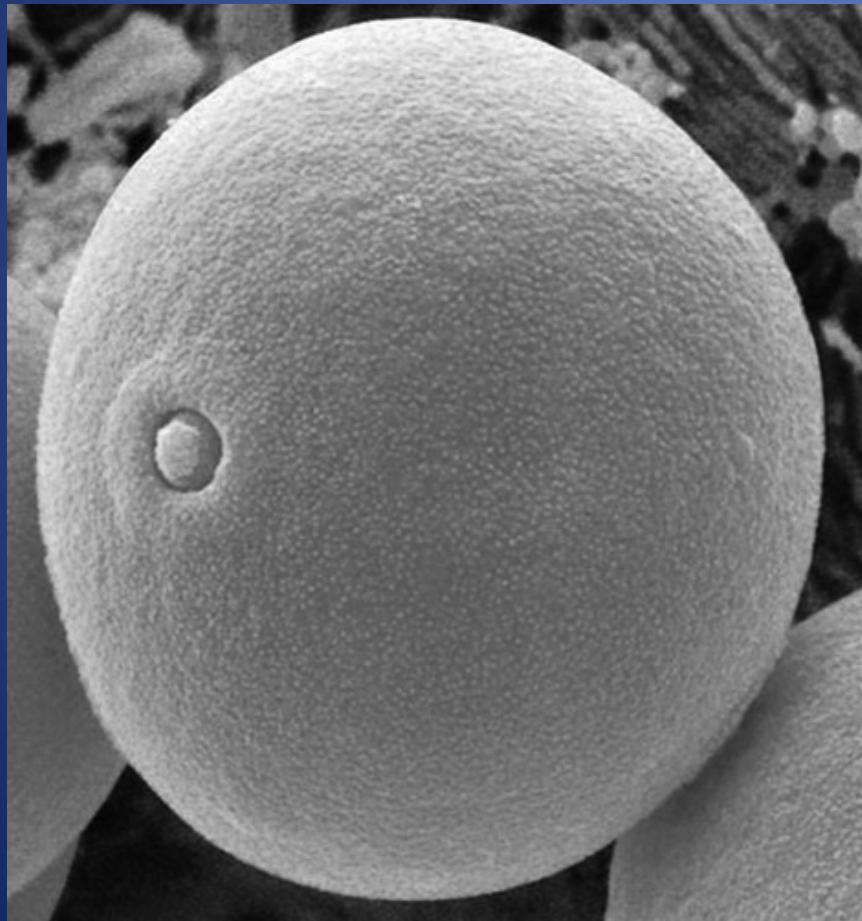
50 µm

Australasian Pollen and Spore Atlas

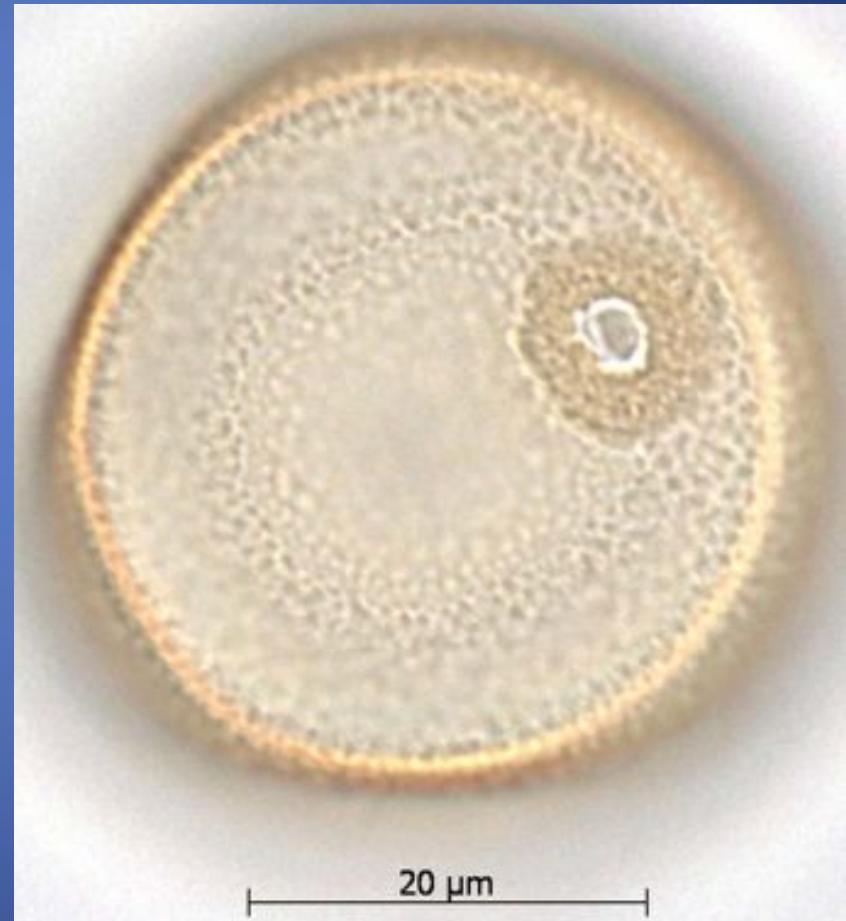


Wind Pollinated

Grass (Poaceae)



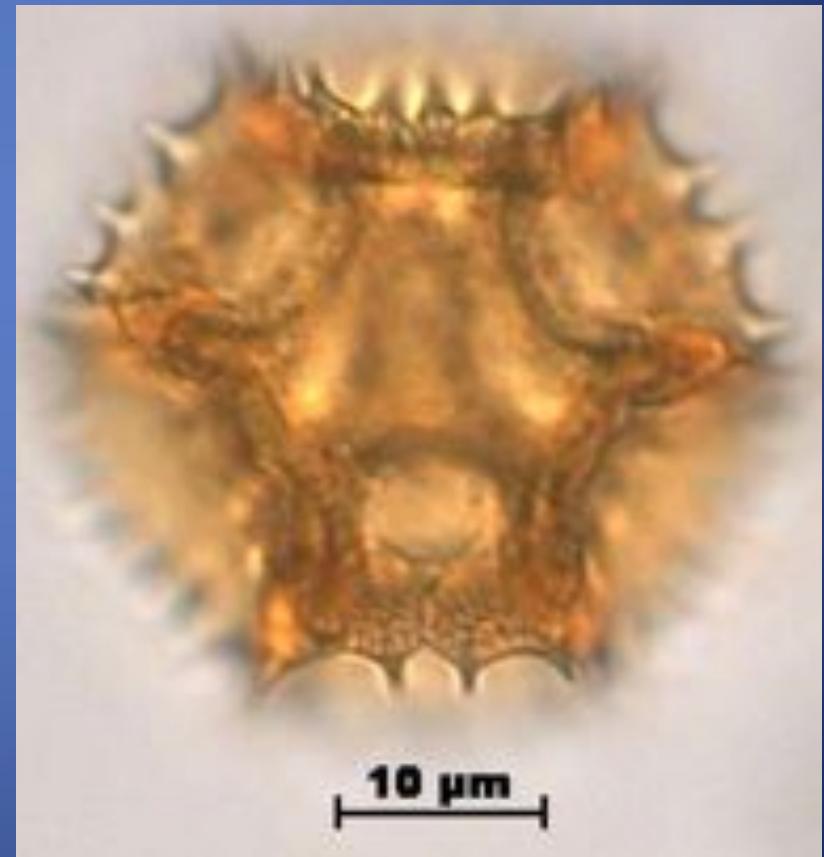
SCIENCE PHOTO LIBRARY



Australasian Pollen and Spore Atlas

Insect Pollinated

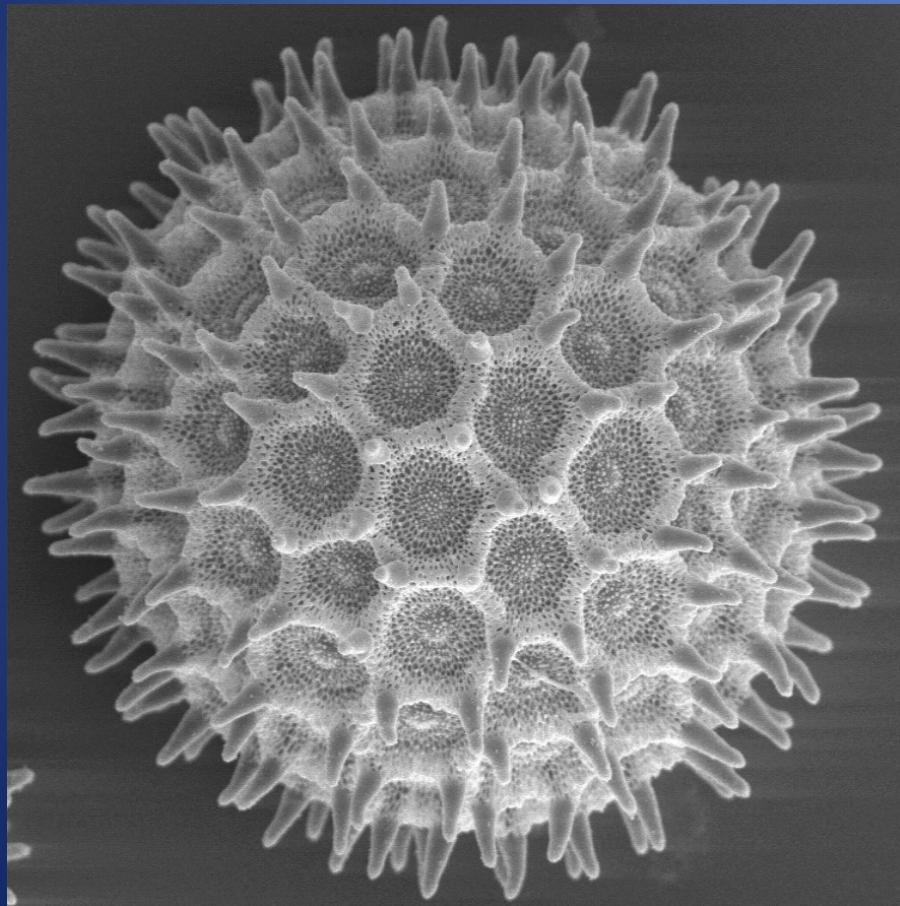
Daisy (Asteraceae)



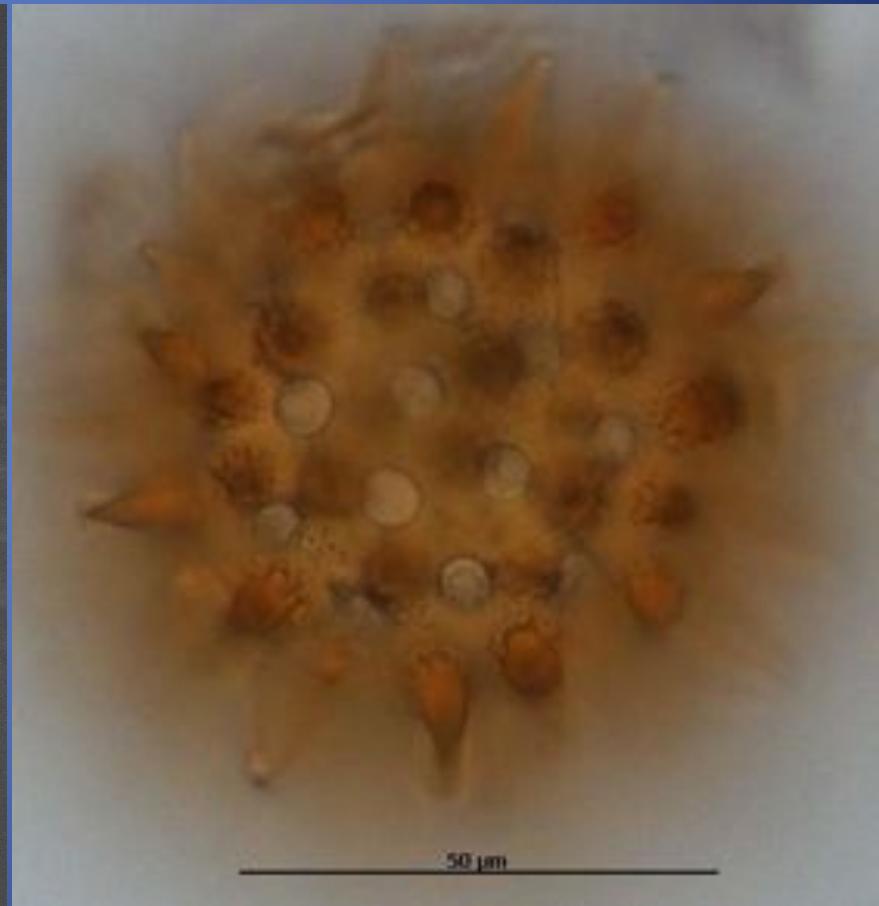


Insect Pollinated

Morning Glory (Convolvulaceae)



Dartmouth College



Australasian Pollen and Spore Atlas

Bird Pollinated

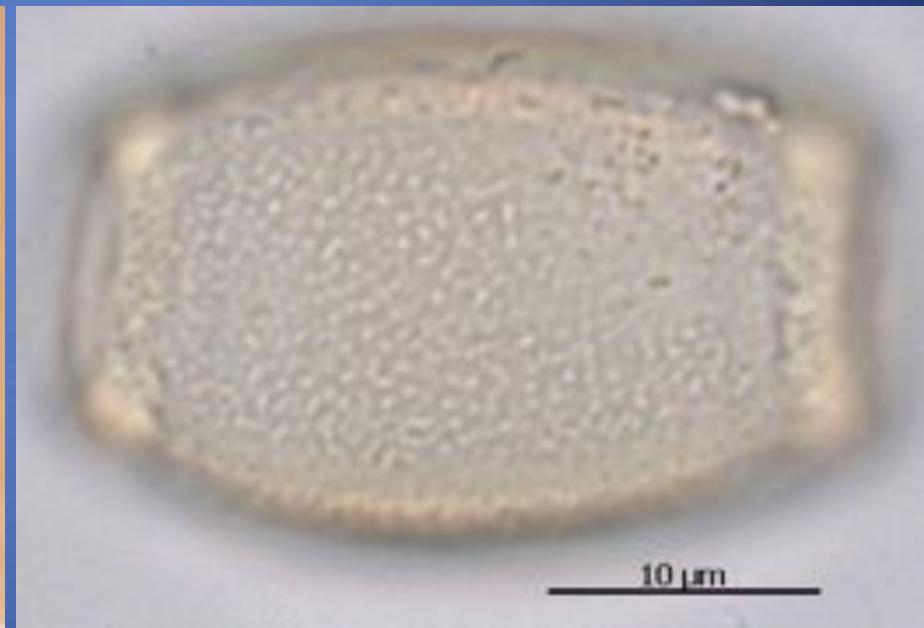
Banksia (Proteaceae)



ANBG



AQUA

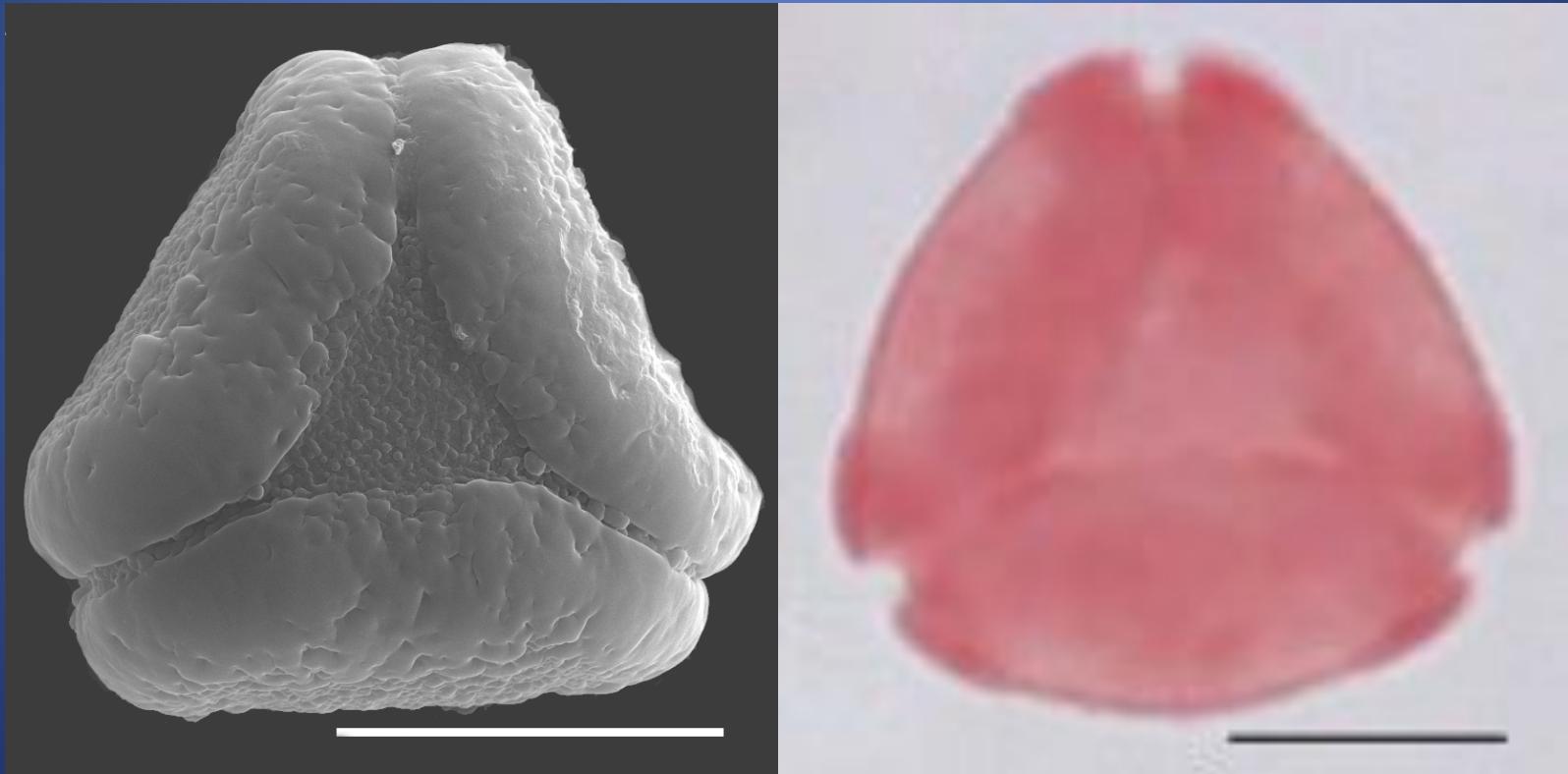


Australasian Pollen and Spore Atlas



Mammal Pollinated

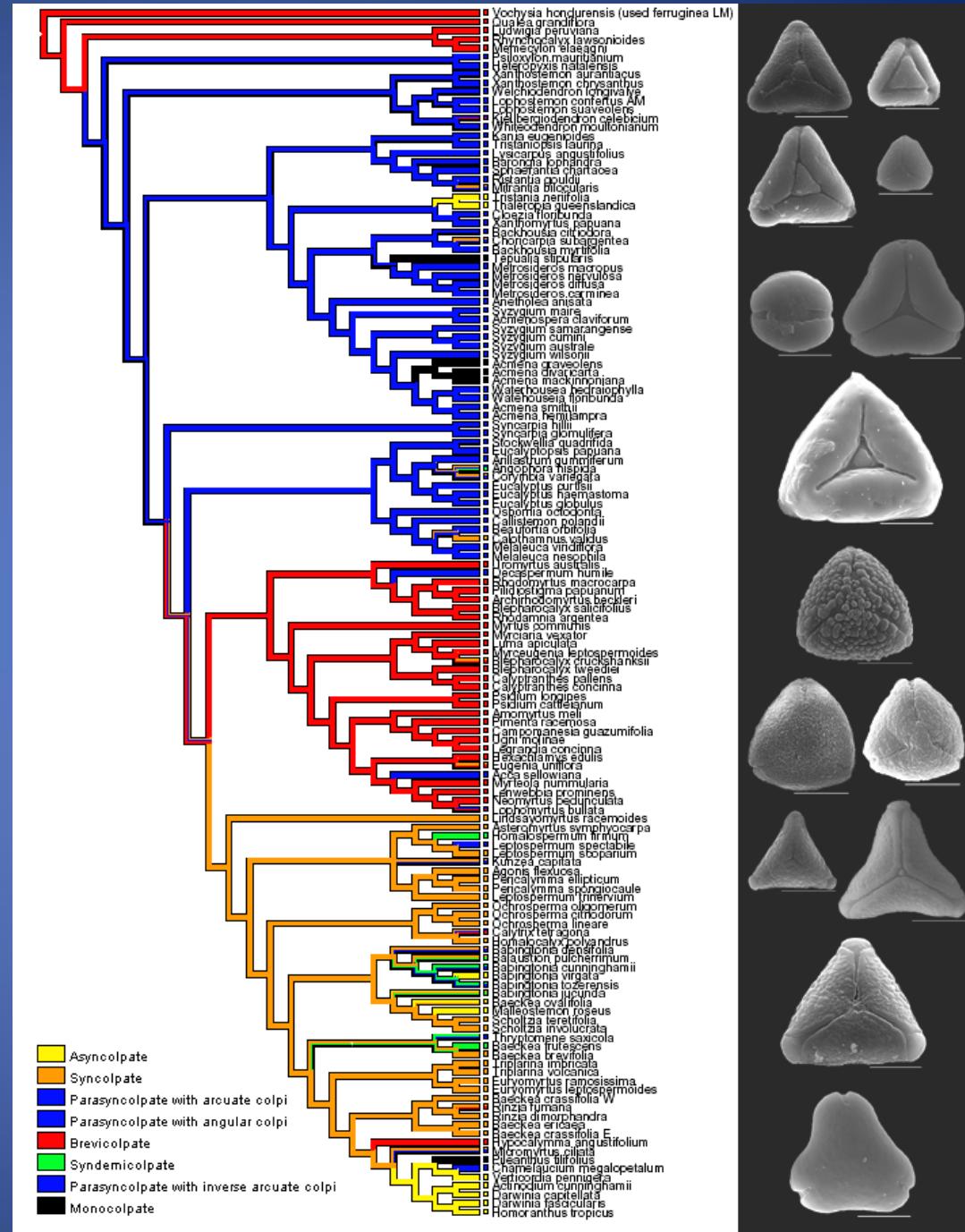
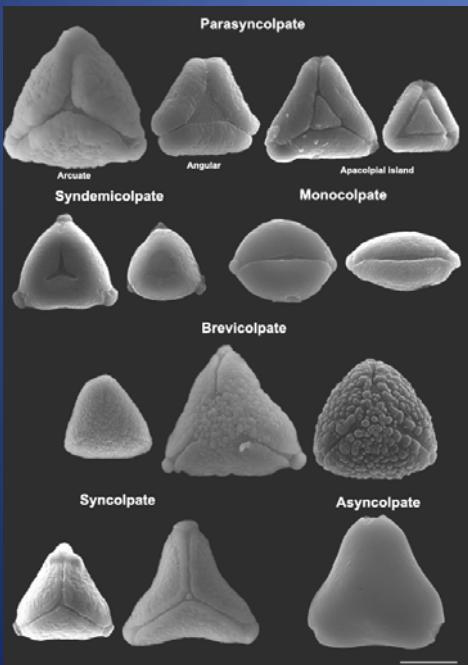
Gum Trees(Myrtaceae)



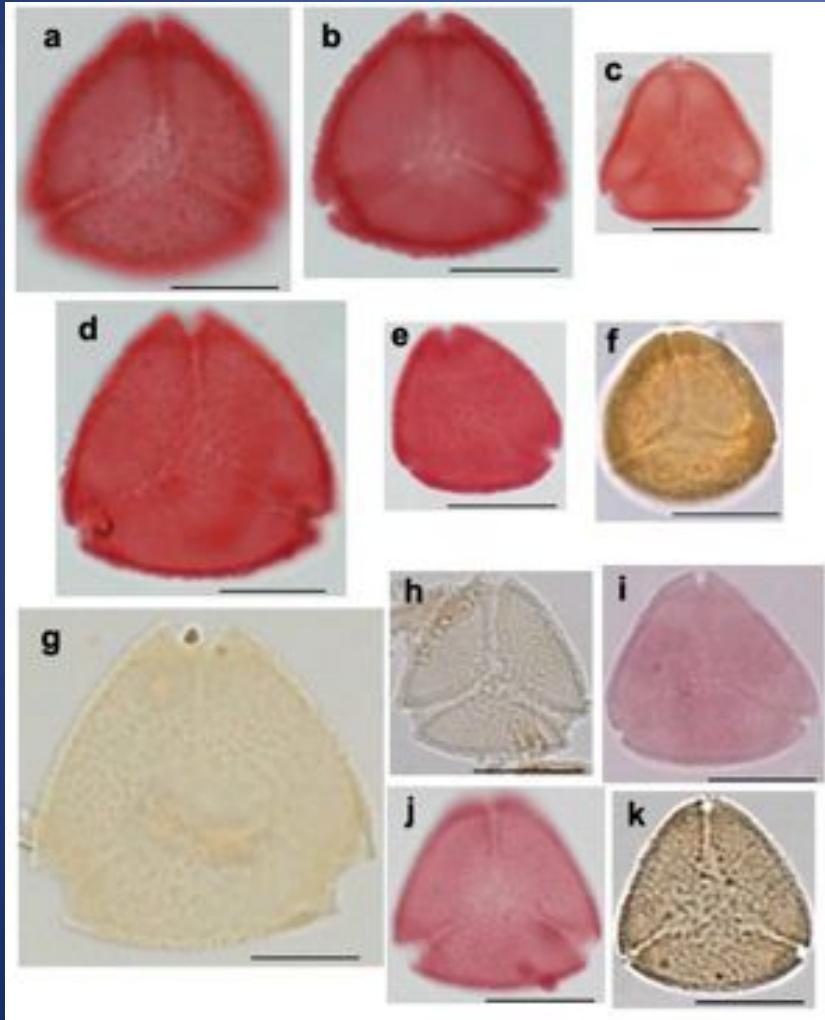
Character mapping

matK tree SEM colpi morphology parsimony mapping

- four distinct pollen groups



Modern

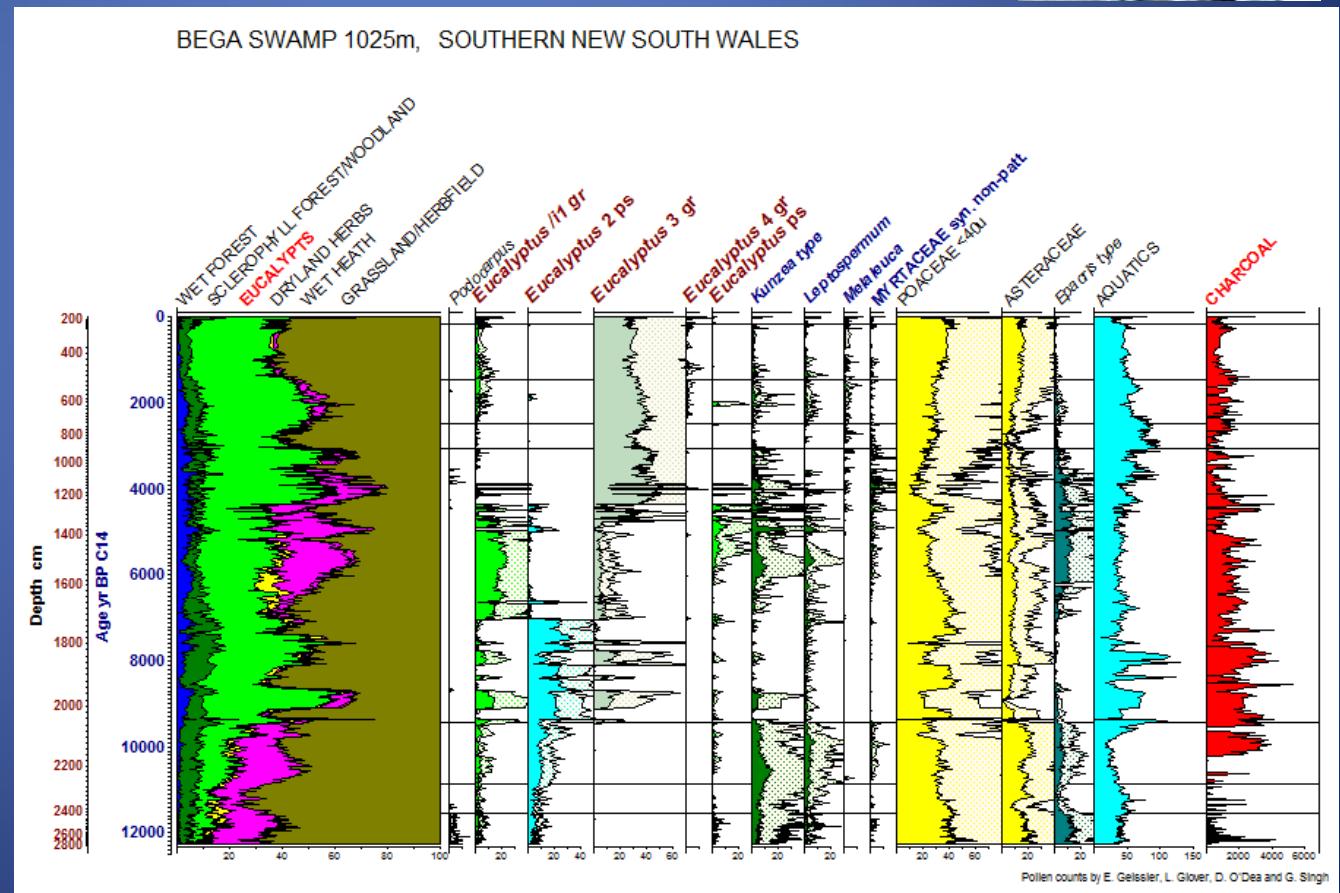
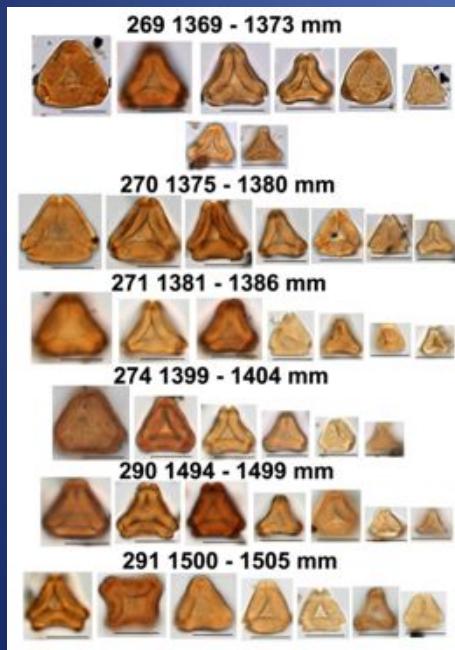


Fossil (up to 40 Ma)

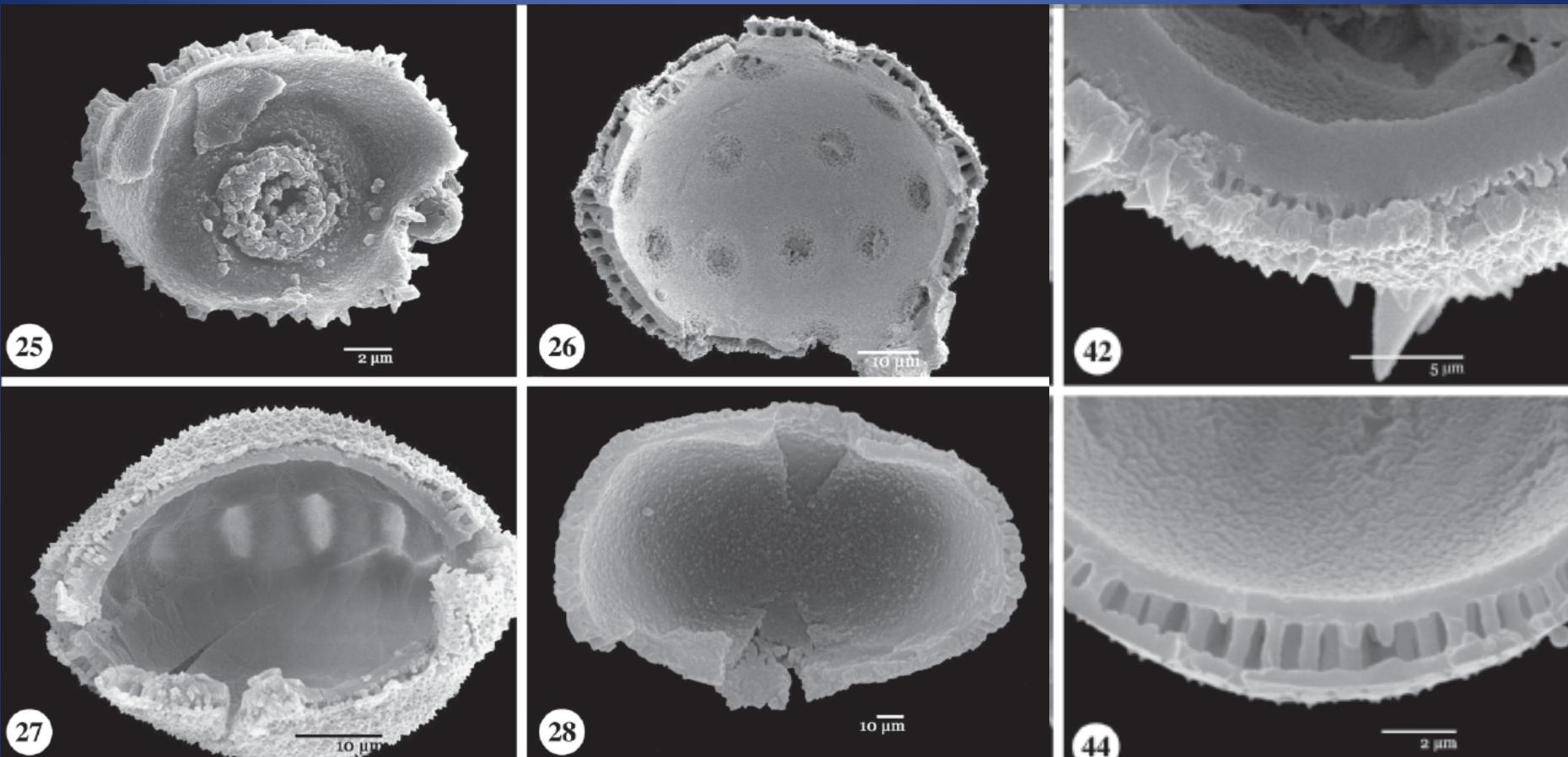




Quaternary Research

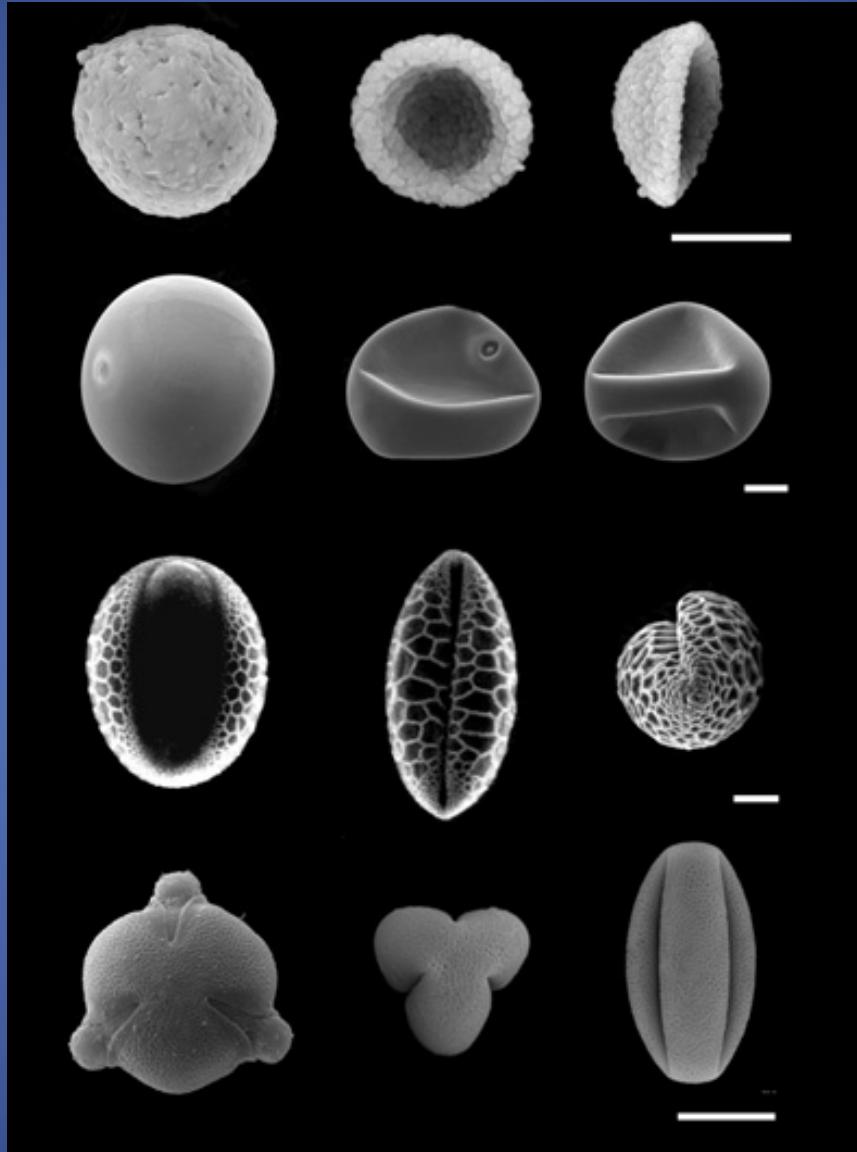


Inside Pollen



Dessein et al. 2005 *Bot. Rev.* 71

Harmomegathic Effect



Eleni Katifori and Jacques Dumais

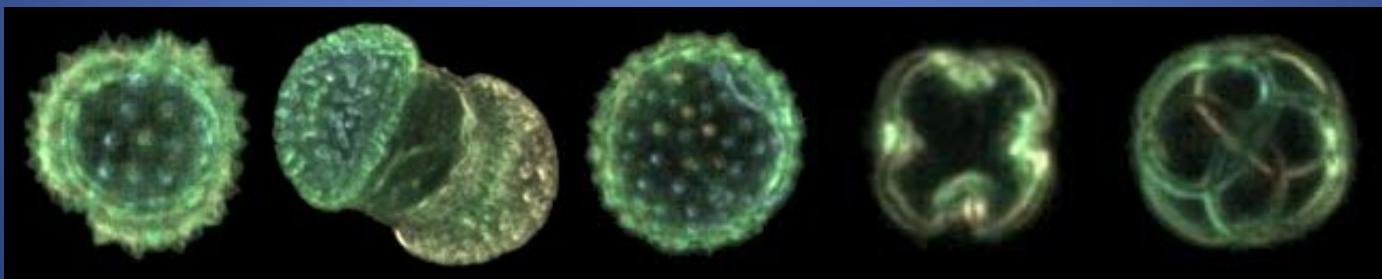
Harmomegathic Effect



Video: Eleni Katifori et al. 2010 PNAS 107:17



Classifynder (Anthony)



Questions...

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