

DIGGING DEEPER!

High taxonomic resolution SEM study of pollen and spores from the 21.73 Ma Mush flora, Ethiopia, Africa

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1 – University of Vienna, Department of Botany and Biodiversity, Vienna, Austria

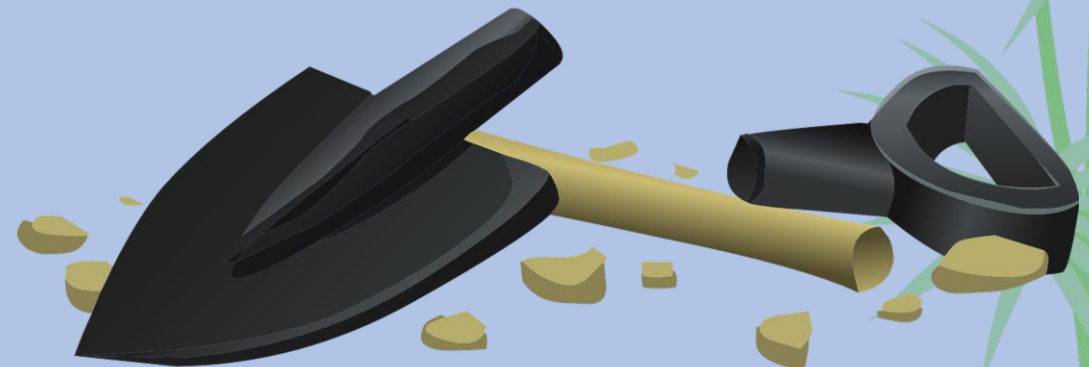
2 – Roy M. Huffington Department of Earth Sciences, Southern Methodist University, Dallas, TX, USA

3 – Departments of Botany and Geology & Geophysics, University of Wyoming, Laramie, WY, USA

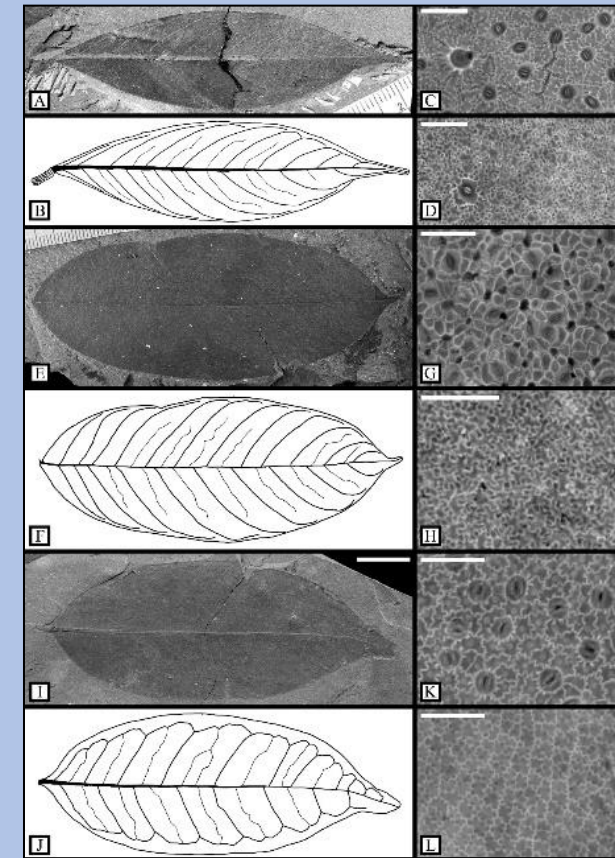
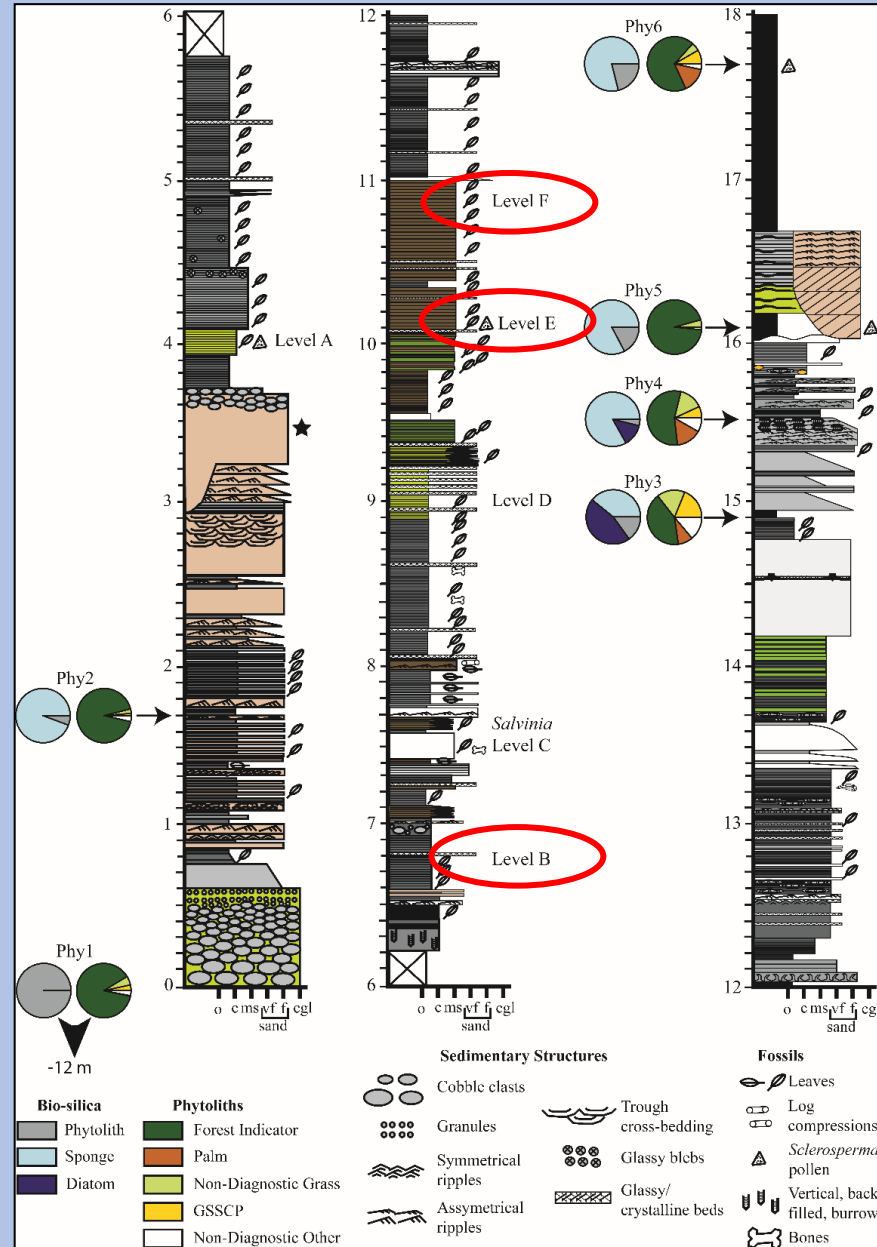
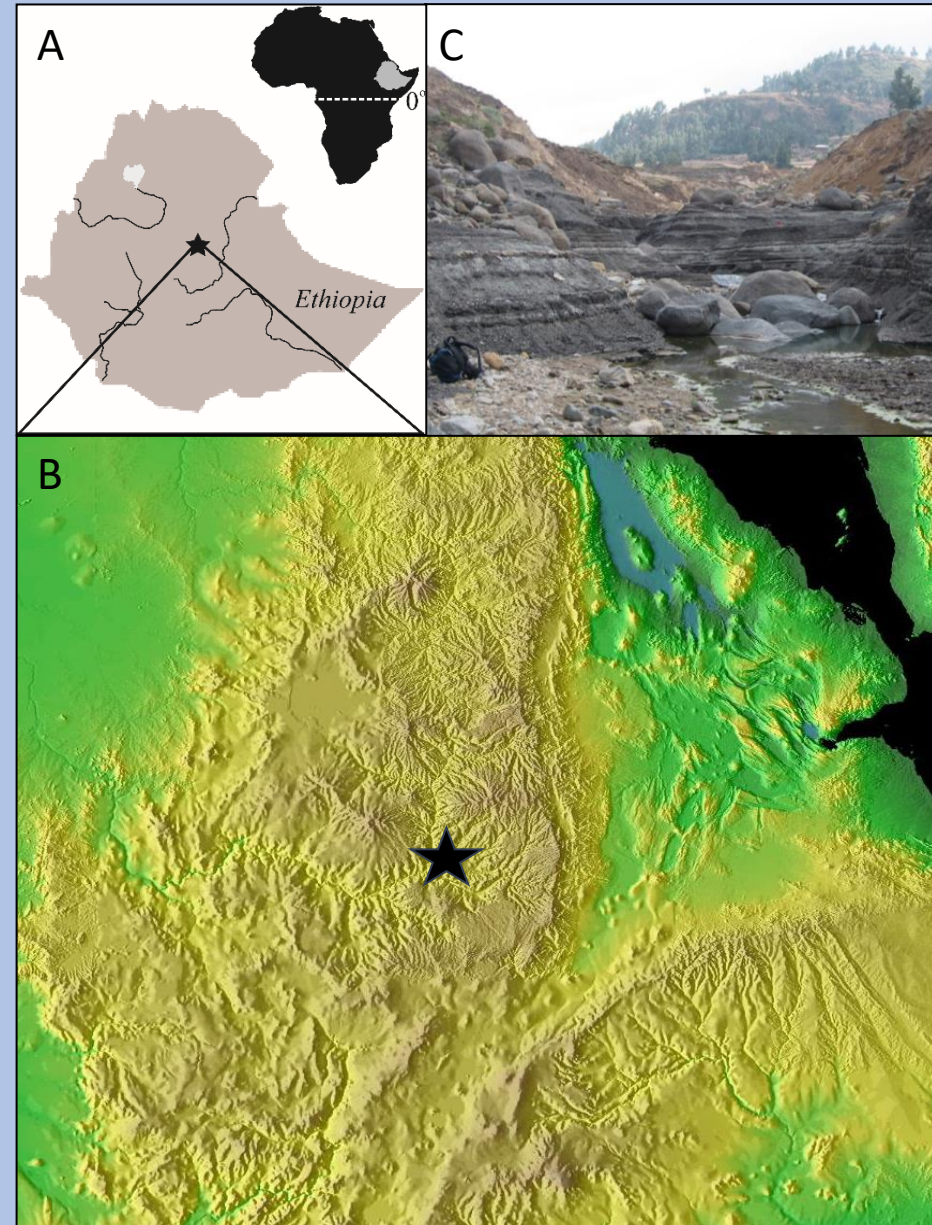
4 – Museum of Texas Tech University, Lubbock, TX, USA



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Mush Valley (Miocene, 21.73 Ma), Ethiopia, Africa

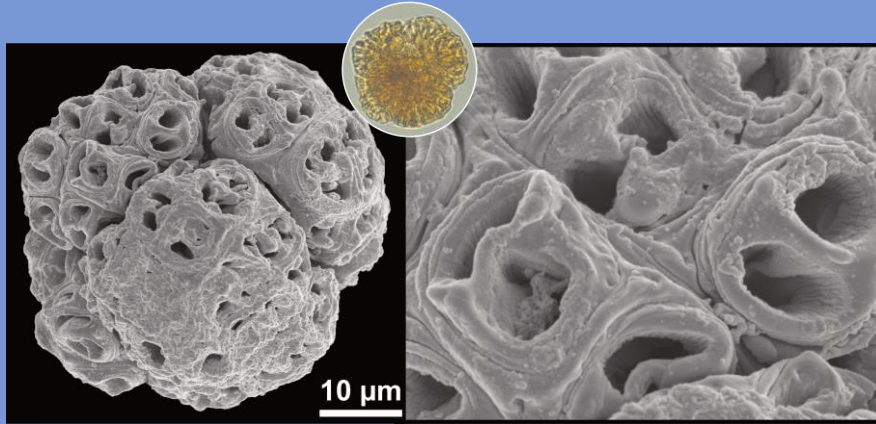


Currano et al. 2020. Ecological dynamic equilibrium in an early Miocene (21.73 Ma) forest, Ethiopia. *Palaeogeography, Palaeoclimatology, Palaeoecology* 539: 109425.

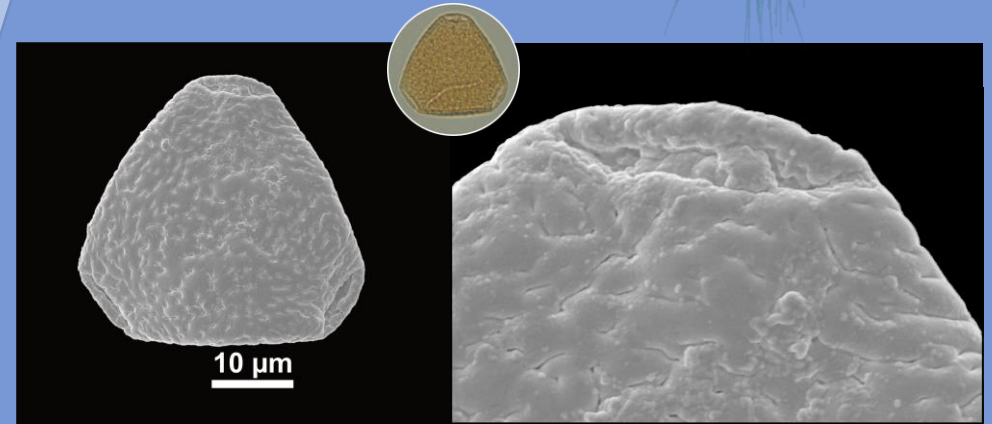
Taxa based on macrofossils

- Englerodendron* (Fabaceae)
- Newtonia* (Fabaceae)
- Tacca* (Dioscoreaceae)

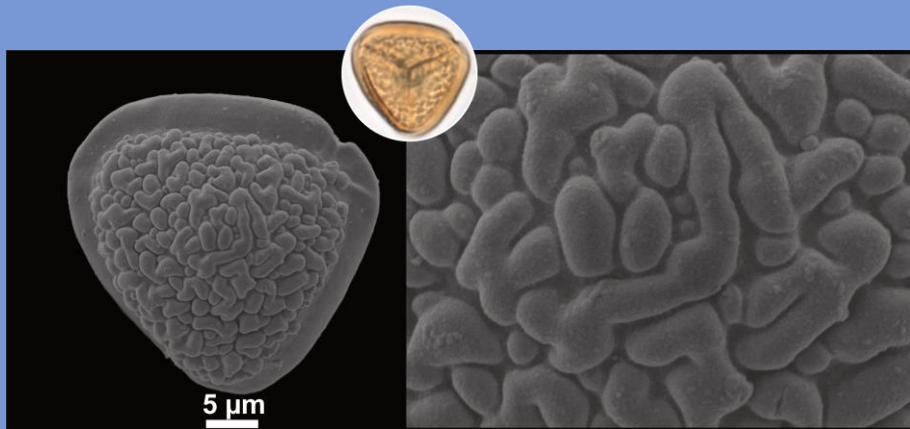
Combined LM and SEM study



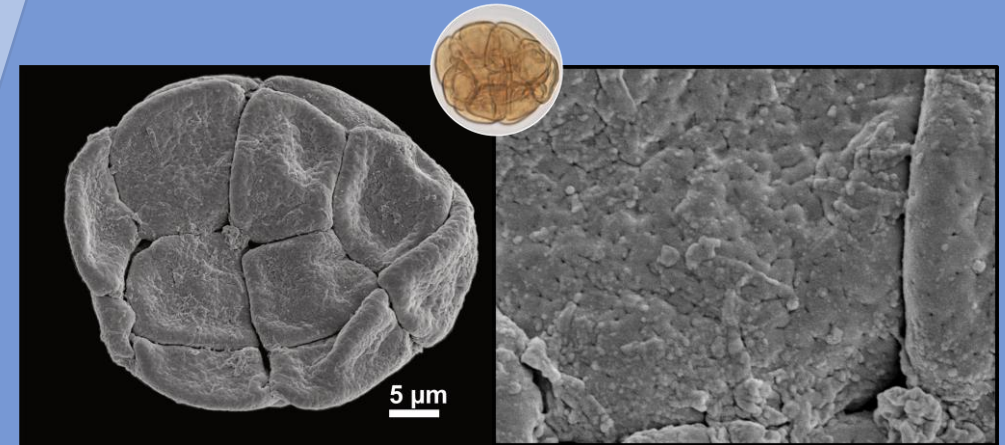
Algae 1 morphotype
Example: *Botryococcus*
Freshwater alga



Monocot Pollen 2 morphotypes
Example: Palm / *Arecaceae* (*Sclerosperma* sp.)

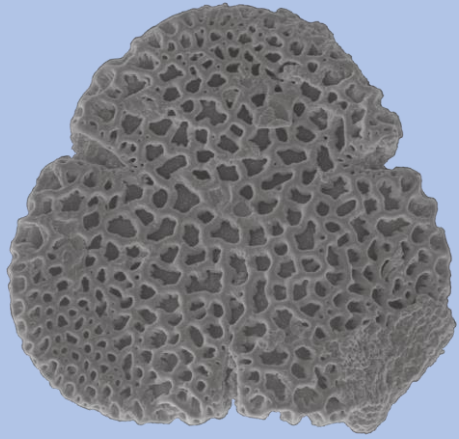


Spores 15 morphotypes
Example: Fern / *Pteridaceae* (*Pteris* sp.)

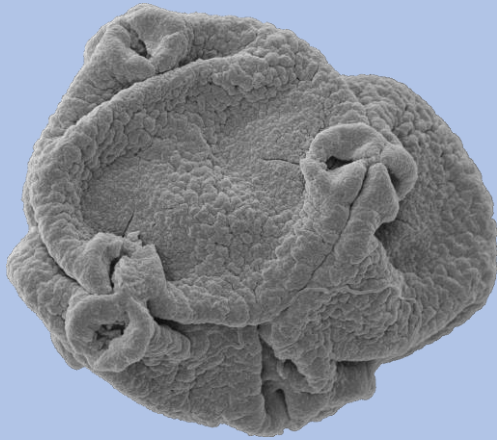


Dicot pollen 85 morphotypes
Example: Legume / *Fabaceae*

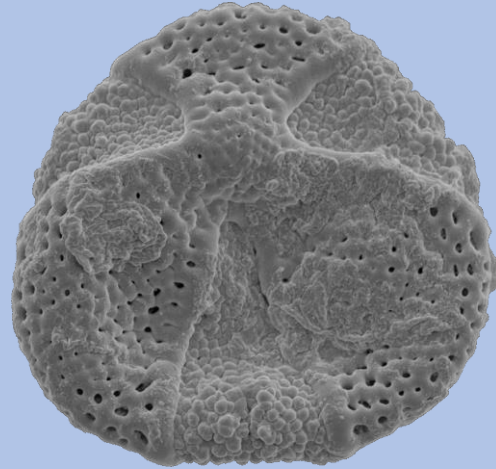
Dicot pollen diversity



Malvaceae (Bombacoideae)



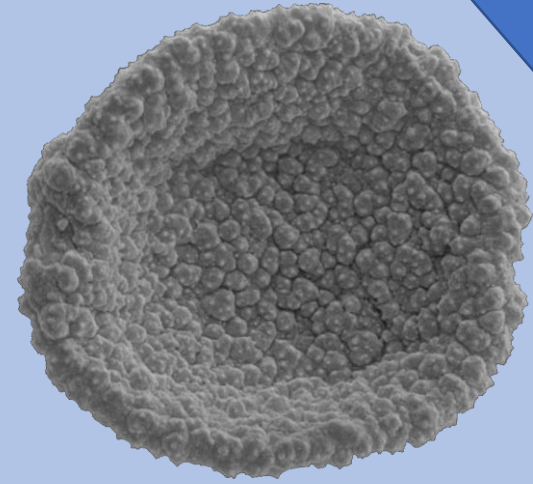
Onagraceae



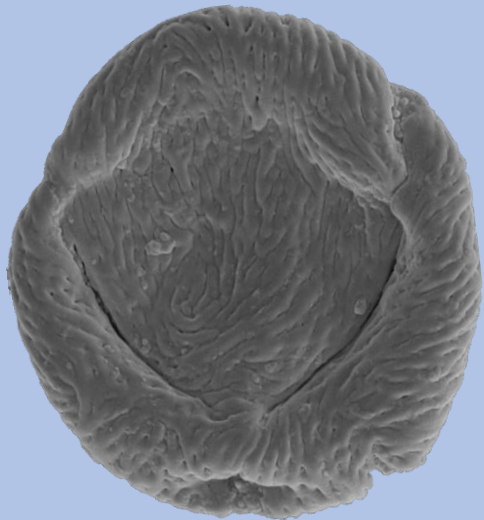
Fabaceae (*Pterolobium* sp.)



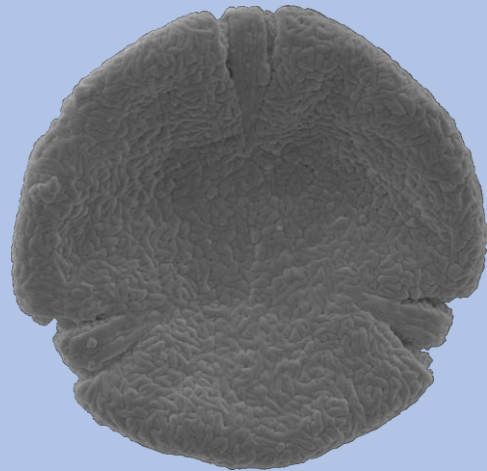
Fabaceae



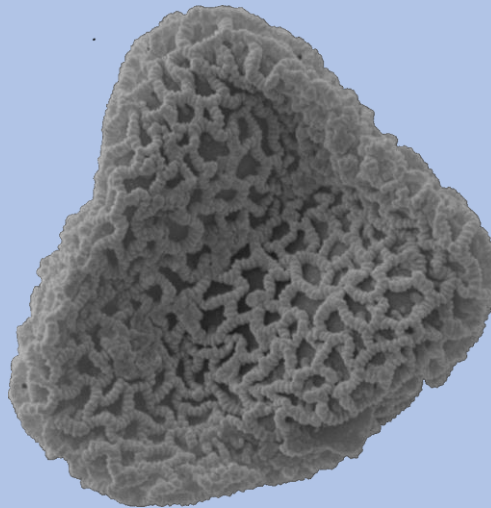
Moraceae



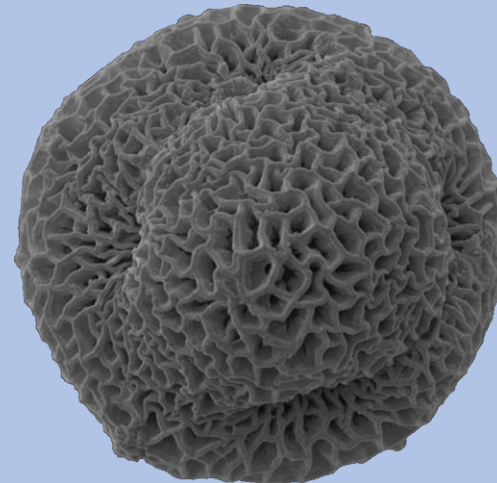
Rosaceae



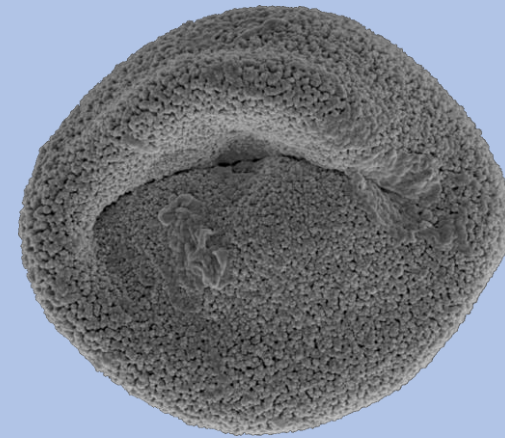
Euphorbiaceae



Oleaceae



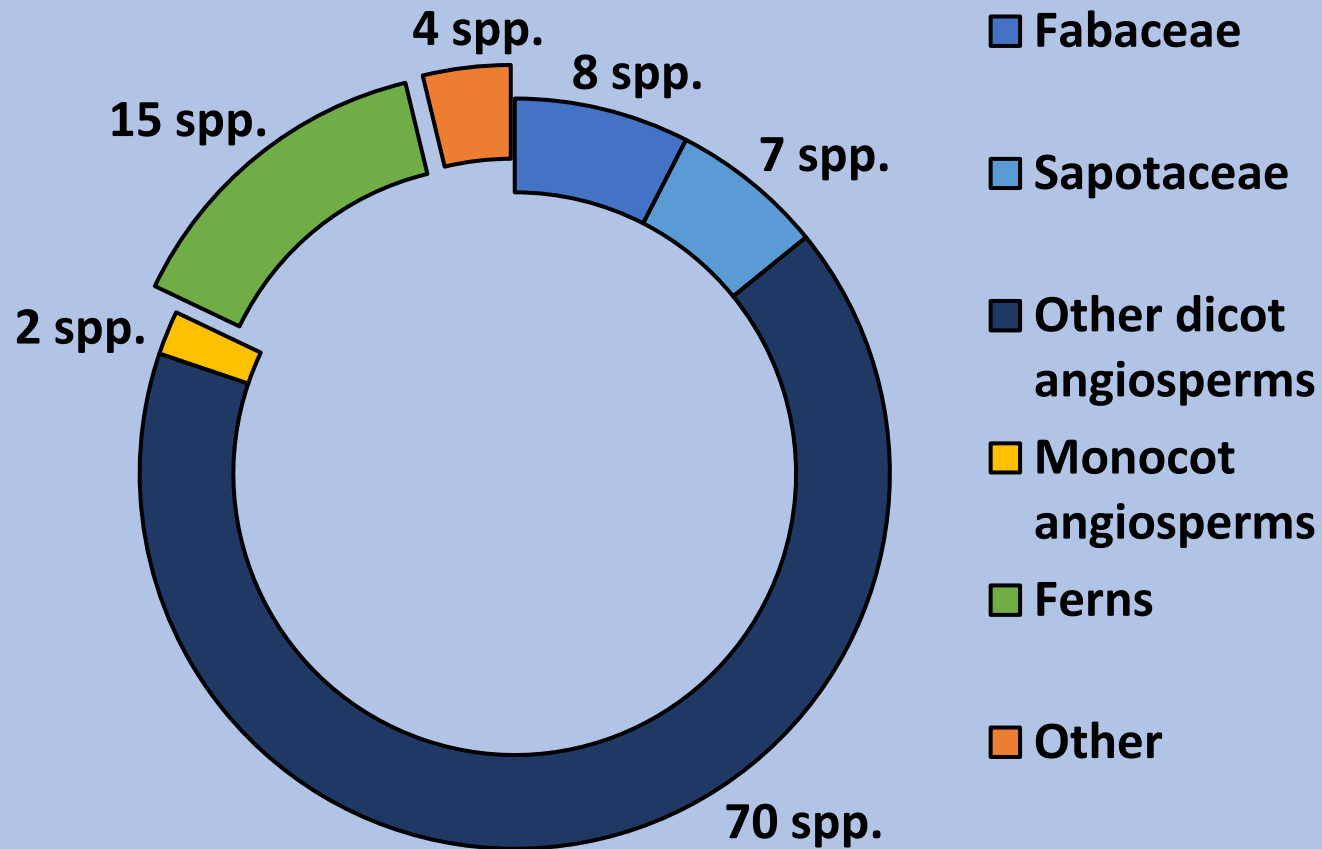
Eudicot ord. fam.
gen. et sp. indet 1



Eudicot ord. fam.
gen. et sp. indet 2

The paleoflora

Main Results



- Several plant taxa typical of subtropical to tropical climates
- Pollen from herbaceous plants, shrubs, trees and woody climbers
- High terrestrial diversity with wetland and aquatic components
- Reflects a diverse and complex forest vegetation surrounding an ancient lake

Thank you!

Special thanks to all field workers for collecting the material!

A big thank you to my scientific supporters and my working group:



Bonnie F. Jacobs
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