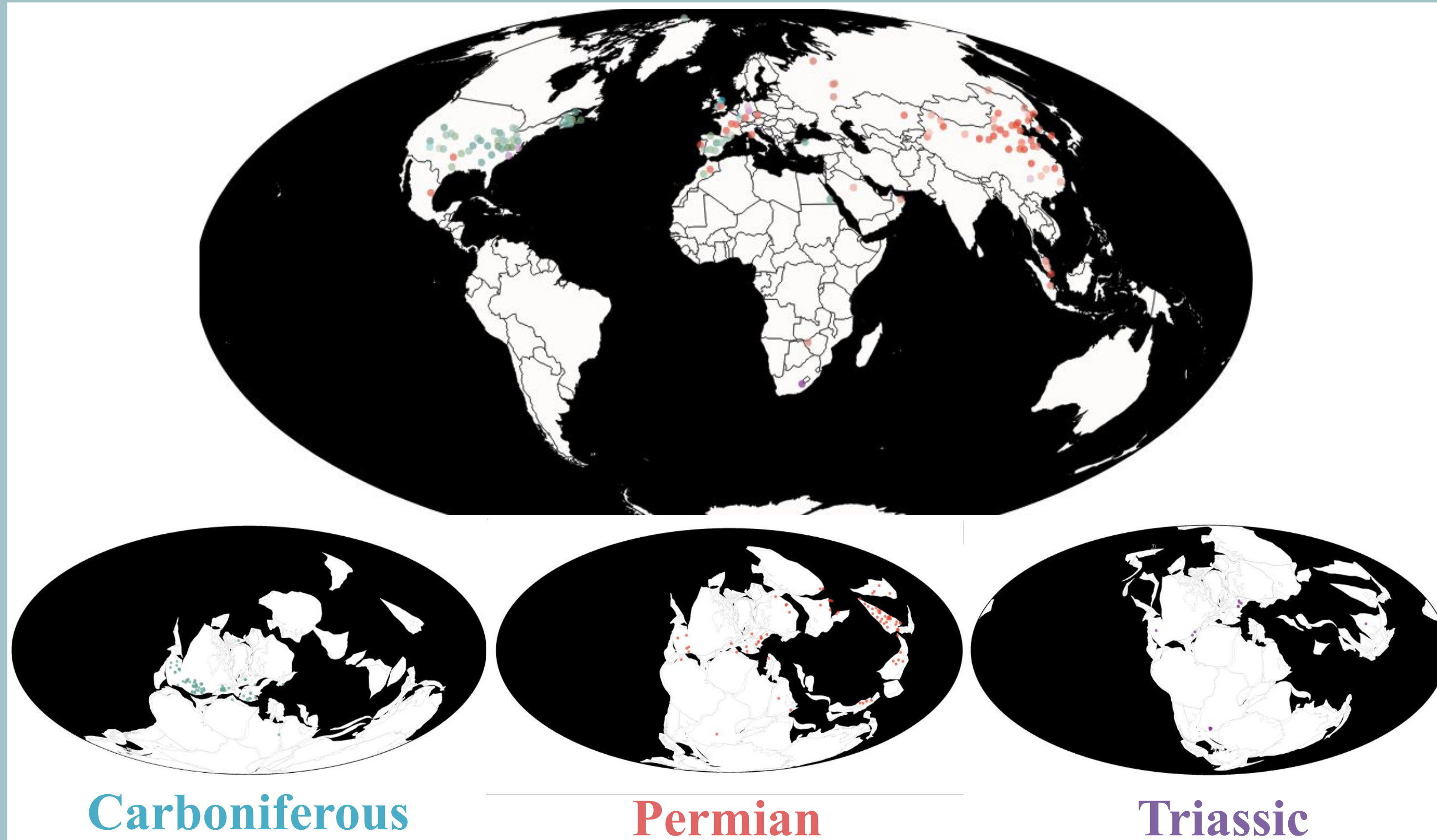


Calamites



Maps sourced from the Paleobiology Database Navigator (paleobiodb.org)

Figure 1. Geographic Range

Calamites were common across the American Midwest-East Coast and Western Europe from the Cambrian to early Triassic periods. Additionally, they were common in Central Asia in the Permian period. Fossils have also been found in smaller concentrations in the Middle East and North Africa, Indonesia, and Southern Africa dating from across these three periods.

Figure 2. Reconstructed Calamite

Calamites' trunks consisted of hollow segments much like the modern bamboo tree. From the trunks, branches sprouted upwards with needle-like leaves at the ends. This massive tree grew to heights of 10 to 30 meters. To support its large structure, the tree had a large rhizome to maintain its anchor to the ground. This large rhizome allowed itself to clone multiple times in close proximity. This distinctive trait allowed the calamite to produce faster in addition to reproducing via spores.

What were calamites?

Calamites are an extinct plant closely related to modern horsetail ferns. These plants were common on sandy banks of coal swamps, and grew to around 100 feet tall. Their trunks are segmented, like that of bamboo, and had a distinct vertical ribbing pattern.

Figure 3. Trunk Cross Section

Most of Calamite fossils are found in the form of a cast. After the tree dies, the hollow insides are filled with sediment as the outer bark and wood decays away. Starting with the outmost black outline and the second layer, we have the bark. As we move in, we have the secondary wood/xylem. Finally in the middle, surrounded by white dots is the carinal canal.

References

- About Sam Noble Home. (n.d.). Retrieved from <https://samnoblemuseum.ou.edu/common-fossils-of-oklahoma/plant-fossils/fossils-by-plant-group/fossil-sphenophytes/>
- Arens, N. C. (2016, September 12). *Calamites*. Retrieved from <https://www.britannica.com/plant/Calamites>
- Arens, N. C. (2016, September 12). *Calamites*. Retrieved from <https://www.britannica.com/plant/Calamites#/media/1/88767/1624>
- Calamite fossils*. (2013, December 19). Retrieved from <https://uwaterloo.ca/earth-sciences-museum/resources/calamite-fossils>
- Carboniferous Period and Prehistoric Facts*. (2017, January 10). Retrieved from <https://www.nationalgeographic.com/science/prehistoric-world/carboniferous/>
- Ellecom, H. S. (n.d.). *Wood of Calamites*. Retrieved April 4, 2020, from <https://steurh.home.xs4all.nl/engcalst/ecalstam.html>
- Falcon-Lang, H. J. (2015). A calamitalean forest preserved in growth position in the Pennsylvanian coal measures of South Wales: Implications for palaeoecology, ontogeny and taphonomy. *Review of Palaeobotany and Palynology*, 214, 51-67. doi:10.1016/j.revpalbo.2014.10.001
- PBDB Navigator. *Calamites*. Retrieved from <https://paleobiodb.org/navigator/>.

GEOL 204 The Fossil Record

Spring 2020 Section 0104

Emma Campbell, Maggie Fritz, Kevin Tsai, Andrew Sarama