Chapter 3

Paper:

Wellman, Charles H., Peter L. Osterloff, and Uzma Mohiuddin. "Fragments of the earliest land plants." *Nature* 425, no. 6955 (2003): 282-285.

Questions:

1. **What is the difference between a microfossil and a megafossil?**

2. **What is the name of the geological member in which the fragments of the earliest land plants were found?**

3. **What age and type of sediment were the fossils found in**?

4. **What types of evidence/data is the age assignment of the fossils based on?**

5. **Describe briefly the methodology that was used to extract microfossils and larger plant fragments from the sediment samples**.

6. **Define the terms sporangium, spore tetrad and dyad.**

7. **How can you differentiate between a fossil coprolite containing spore remains and a fossil sporangium containing spores?**

8. **The quality of preservation of spore walls is dependent on two primary processes. What are they?**

9. **The authors suggest that the earliest vegetation of the Earth was extremely homogenous worldwide. What is the main line of evidence supporting this suggestion?**

10. **What are the main lines of evidence supporting the interpretation that the Oman microfossils and mesofossils described in this paper are from land plants?**

11. **What group of living plants share the closest morphological affinity with the Oman fossil land plant fragments? What lines of evidence support this association?**

12. **What are elaters and why was it surprising to the authors that they were not found together with spores within the earliest land plant sporangia?**