Chapter 5

Paper:

Rydin, Catarina, Barbara Mohr, and Else Marie Friis. "Cratonia cotyledon gen. et sp. nov.: a unique Cretaceous seedling related to Welwitschia." *Proceedings of the Royal Society of London. Series B: Biological Sciences* 270, no. Suppl 1 (2003): S29-S32.

Questions:

1. **What are Gnetales?**

2. **Describe the general morphology of polyplicate pollen.**

3. **Living Gnetales are a relatively low diversity group. However, palaeobotanists hypothesize that they were much more diverse in the geological past. What are the main arguments used to support this hypothesis?**

4. **The fossil plant described in the paper is a new genus and species (gen. et sp. nov.) to science. A very formal description of the new genus and species is presented. Why is this and what procedure is followed in palaeobotany to describe new genera and/or new species?**

5. **What morphological feature of the new fossil is characteristic of living *Welwitschia* and why is it significant that both fossil *Cratonia* and living *Welwitschia* possess this trait?**

6. **What other morphological traits are observable in the fossil which are also only found today in Gnetales?**

7. **What is the broader significance of the discovery of *Cratonia cotyledon* for understanding plant evolution?**