Chapter 6

Paper:

Feild, Taylor S., Timothy J. Brodribb, Ari Iglesias, David S. Chatelet, Andres Baresch, Garland R. Upchurch, Bernard Gomez et al. "Fossil evidence for Cretaceous escalation in angiosperm leaf vein evolution." *Proceedings of the National Academy of Sciences* 108, no. 20 (2011): 8363-8366.

Questions:

1. **This paper focuses on the evolution of vein density in angiosperms compared with gymnosperms. How is leaf vein density measured in fossil plants and what are the typical ranges of vein densities observed in living angiosperms and gymnosperms?**

2. **What are the advantages of high vein density to a species? How have these advantages been demonstrated?**

3. **What is the primary aim of the paper and why is it important?**

4. **Describe the pattern of vein density change observed in the fossil leaf record.**

5. **How were the fossil leaves used in this study dated and what is the typical range of error associated with the assigned dates?**

6. **The timing of the rise in fossil angiosperm leaf vein density is compared with that inferred from time-calibrated phylogenies of living angiosperms. What does this comparison show and why is it significant?**

7. **What are the likely costs associated with higher leaf vein densities?**