

Study Questions for Ch. 19, Stratigraphy: concepts and Lithostratigraphy; Nichols, pp 297-310

1. Please discuss the geologists “peculiar sense of time” and try to fathom why Barnes keeps ranting about this as a special type of insight amongst geologists.
2. Distinguish between geochronology and chronostratigraphy. How are they similar? How are they distinctly different?
3. Be sure and know the geological time scale including at least Eons, Eras, and Periods/Systems
4. Have something interesting to say about the GSSP, or Golden Spike approach to the Geological Time Scale.
5. Why is the Geological time scale somewhat less important when doing actual geology in the field or with subsurface core?
6. How are Lithostratigraphic Units defined?
7. Describe all of the types of stratigraphic subdivision and the actual basis for each type of subdivision.
8. What are the critical criterion for determining relative stratigraphic position (age)?
9. What is the meaning of “diachronous”? Is this an important concept in stratigraphy (duh), and why?
10. How are lithostratigraphic units related to sedimentary facies? The question is whether any sense can be made in the relationship between classic lithostratigraphy and “genetic” stratigraphy (the interpretation of sedimentary facies and facies associations in terms of sedimentary depositional environments)?
11. I have used the term “correlation” for both lithostratigraphic correlation and temporal correlation. This is a little different than what Dr. Nichols suggests. Explicitely, what is the difference between lithostratigraphic correlation and chronostratigraphic correlation. Are both types of correlation of some value? What is this value?
12. Discuss the stratigraphic expression of a hiatus at various magnitudes of gaps in the stratigraphic record. How do we recognize hiatus? Think about the relationship between physical expression and magnitude of time with respect to a hiatus.