

Problem Set #2

Problems Ch. 2 # 1-4,6,7

And

1. Define macro- and microevolution. What is the conceptual connection between the two?
2. List two problems with Lamarck's alternative to natural selection as an explanation for adaptive evolution.
3. What scientific discovery ultimately led to widespread recognition of the fundamental importance of evolution by natural selection? Why did early Mendelians nevertheless resist the idea?
4. Why are fossils a bonus? That is, why is evidence for evolution overwhelming even if we had none?
5. The incorrect depiction of evolutionary relationships of organisms as a function of their position along an evolutionary ladder suggests that some organisms (lower taxa) are less evolved than others (higher taxa). Assume for the sake of argument that higher organisms are in fact more complex than low ones by some objective measure, for example, the number of genes in the genome. Given that the correct evolutionary relationships are actually described by a phylogeny, provide a counter argument to the idea that "lower" organisms are less evolved than "high" ones.