Evolutionary Biology, F2004, Paper 1 - Due 25 October

Evolutionary biologists often study the selection regime and other factors responsible for the evolutionary dynamics in some sort of character in the researcher's favorite group of organisms. Examples include:

- the evolution of heterostylous flowers
- the evolution of viviparous reptiles
- the evolution of host specialization in folivorous beetles
- the evolution of hummingbird pollination
- the evolution of the annual life history in plants
- the evolution of extended seed dormancy
- the evolution of hibernation in arctic-alpine mammals
- the evolution of selfing in flowers
- the evolution of light-colored pelage on the bellies of mammals
- the evolution of mimicry coloration on the wings of butterflies
- the evolution of the reparator system in diving mammals and birds
- the evolution of sclerophyllous leaves in arid-land shrubs

And the list could go on for pages. Look for three scientific articles on some such thing. At least one should have original data, but they all may. One or two could be scholarly review papers or chapters in scholarly books. Journals that I recommend are:

- Evolution
- Proceedings of the Royal Society of London, Series B
- Trends in Ecology and Evolution
- Annual Review of Ecology and Systematics
- American Naturalist (but be careful – some articles may be mathematical)
- Journal of Evolutionary Biology (not in our library)

Once you find one article that is really appropriate, it will cite others of interest.

Relate adaptive hypotheses, results, and suggested tests about your topic. Be very explicit about how you suppose natural selection acts; make the reader understand the nature of selection in your system. I will be looking out for the DO-S and DON’T-S of posing ultimate explanations, which I will lecture about on October 6th. Be very careful to only break my rules if you expressly mean to do so. After posing the hypothesis or hypotheses, tell how they have been tested, and if the tests have not been extensive suggest further tests that might be done.

Edit. Edit. Edit. If you feel shaky on grammar, review my grammar rules at www.csun.edu/~hcbio028/322.html. Aim at 1000 words with every one counting. Technical methods should be kept to a minimum: you need not explain how to do multiple regression, just say you are going to regress beak length, beak depth, and beak width on survivorship; you need not explain how to starch gel electrophoresis, just say you will measure variation in allozymes. Strive to have a lucid flow of logic with every detail making sense.

In the text, cite your sources as the author's name and the date (Wilson 1995; Wilson and Thomson 1996). Give the full citation at the end your paper in a "Literature Cited" section using the following format:


Citations, figures, and tables do not count against your 1000 words.