

Questions for Evolutionary Ecology Readings – 3 September 2009

Wiggins, D.A. 1989. Heritability of body size in cross-fostered Tree Swallow broods. *Evolution* 43: 1808-1811.

1. Why were cross-fostering experiments deemed necessary to determine heritabilities in these birds?
2. What was the experimental design? Did it appear adequate to test the questions posed by the author?
3. How did heritabilities compare between foster and true parent regressions? What factors may contribute to these estimates of  $h^2$ ?
4. How and why were the control families measured?
5. Why do you think heritabilities in control families were higher than those for the true midparent regression in cross-fostered broods?

Galen, C. 1996. Rates of floral evolution: adaptation to bumblebee pollination in an alpine wildflower, *Polemonium viscosum*. *Evolution* 50: 120-125.

1. How can evolutionary change be measured/predicted in a population?
2. How do *Polemonium* plants and their pollinators change over an elevational gradient?
3. What effect did the author predict that pollinators would have on the plants?
4. How was heritability measured in this study? How accurate do you think these estimates are?
5. What factors might constrain the evolution of floral size?
6. How quickly could floral phenotype change in this population? How does this compare to the natural range of variation in floral size?