

## HOMEWORK 03

### The Beak of the Finch: Chapters 7-9

Answer each question in at least one paragraph (ca. 150-200 words). Refer to the syllabus (section "Written assignments") for formatting instructions.

1. What happens during an El Niño? Was the 1983 El Niño a regular one? How did Daphne Major change during this event and what was happening to the finches while the rains lasted?
2. How did the El Niño event affect the birds in its aftermath? Which birds were at an advantage this time and why?
3. What did Jamie Smith and Dolph Schluter discover when watching sparrows on Mandarte (British Columbia)? How did these results and the finch results alter previous assumptions about natural selection being static and slow moving? Explain how the time frame of observation matters, use an example mentioned in the book from the fossil record that illustrates this point well.
4. Why were the Grants surprised to find that hybrid finches were doing well? Which reproductive barrier did they initially assume was in place in this situation? (not mentioned in book, extra points for this) What would explain hybridization to become common and what would happen if hybridization continued to be common?
5. Darwin might have missed a chance to see evolution in action right before his eyes. What was he observing and what should he have done in order to see the process happening? What pattern do you think he would have seen?
6. What is the difference between variation and evolution? How did people react after Darwin's book *On the Origin of Species* had been published? Did they buy into the theory Darwin proposed? What did Darwin fail to explain in his book?
7. How did Darwin think the Galapagos had been populated? Who came first and why? What experiments did Darwin do to support his hypothesis? What did the Grants find that supports Darwin's ideas about how the islands were populated?