Bi 213 Lab Lab Topic 20: Plant Anatomy Spring 2010

Notes:

- Your major question for today is: "In what ways does the structure of a plant part reveal its function?"
- As always, there is a lot to do in lab. Use your lab time to complete the activities and label the diagrams, then work on answering questions. Slides and most of the materials will be out all week if you need to review.

Complete in lab:

- Exercise 20.1: Use a living bean plant. Uproot it, shake the dirt off, and carry it back to your table on a paper towel. Label Figure 20.2
- Exercise 20.2: Use prepared slides at your table. The top of the slide box has a key to identify which slides to use. Label Figure 20.3.
- Exercise 20.3:
    - Lab Study A: You will make your own thin sections for slides by embedding a sample of plant stem in wax and then using a microtome to make thin slices. This is a skill that requires practice. Be sure to read the section before beginning, then follow the procedures carefully. After examining your slides, label Figure 20.5.
    - Lab Study B: Use prepared slides for microscope work. Label figure 20.6.
    - Lab Study C: Use prepared slides for microscope work. Instead of *Setcreasia*, we have *Kalanchoe* for examining live cells in the lower epidermis. Snap the leaf in half and gently pull the lower epidermis off of one half by pulling gently with the other half. A thin epidermal peel will then be hanging off of one half of the leaf. Lay the peel over a slide; remove it from the leaf using a razor blade and then view with a compound microscope.
- Exercise 20.4: Use prepared slides of woody tissue
- Exercise 20.5: Examine the grocery store produce on the front table. Try to determine which plant parts have been modified as storage organs (in part by human selection). Clues: Layered structures where each layer has an upper and lower epidermis are usually modified leaves (think of a head of lettuce); true stems have lateral buds while true roots do not; non-woody true stems may turn green when exposed to light while true roots do not; true roots have a central vascular cylinder.

Complete for homework (on your own paper):

- Tables 20.1 and 20.2
- Discussion questions:
    - pp 516, question 1
    - p 518, questions 1, 2
    - pp 523-524, questions 2, 3, 4, 5
    - p 528, questions 3, 5, 6
    - pp 531-535, questions 1, 3, 4
    - p 533, question 1
- Questions for Review, question 2, 4
- Applying Your Knowledge, numbers 2, 4

Homework is due in one week at the start of lab.