

ANATOMICAL DRAWINGS

“Why do I have to do all of these drawings?” This question has entered the mind of every plant anatomy student. This section explains the purpose of anatomical drawings and helps you prepare drawings that record your observations effectively.

So, why drawings? When you make anatomical drawings, you develop several skills including the ability to:

- A. interpret complex information,
- B. identify diagnostic features that distinguish among similar structures, and
- C. represent and communicate this information in visual form.

These skills have applications in many fields. Your employer will probably never ask you about the difference between a tracheid and a vessel member, but he or she may well ask you to examine a complex problem, identify the important points among a confusing array of details, and present your analysis to coworkers. Sound familiar?

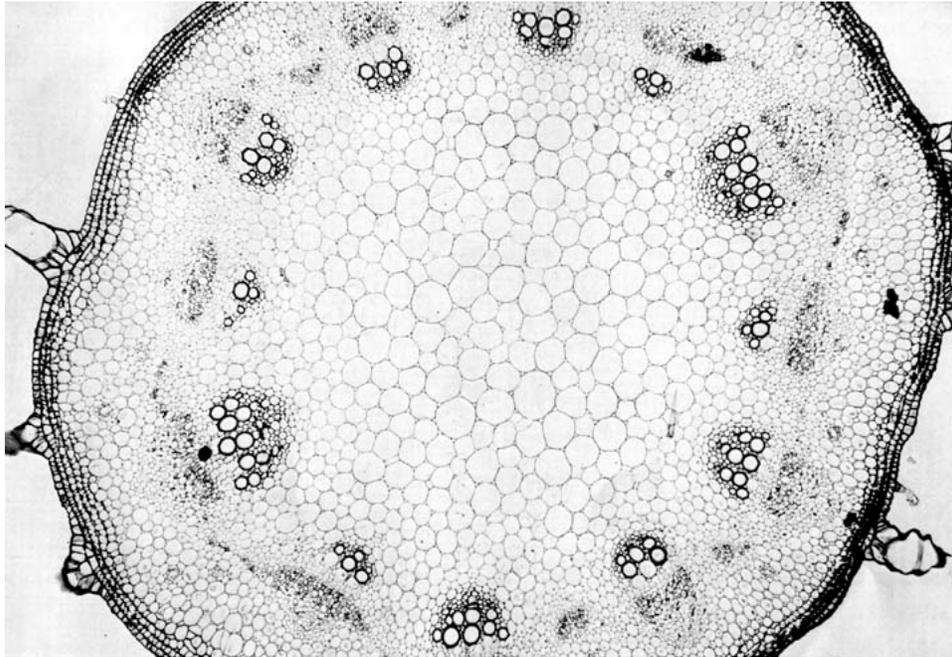
Easy steps to better drawings. The purpose of a drawing is to convey information, first to your lab instructor who will evaluate whether you understood the specimen you were asked to draw, and then to yourself as a record of what you will need to recognize when you take exams. A useful drawing includes just the right amount of detail. You can accomplish this by using the following steps to plan your drawings.

1. Select the magnification and field of your drawing according to what you are asked to illustrate. Given the very same prepared slide, you might be asked to illustrate:
 - A. a cell type,
 - B. an arrangement of cells within a tissue, or
 - C. an arrangement of tissues within a structure.

The resulting drawings should be very different.

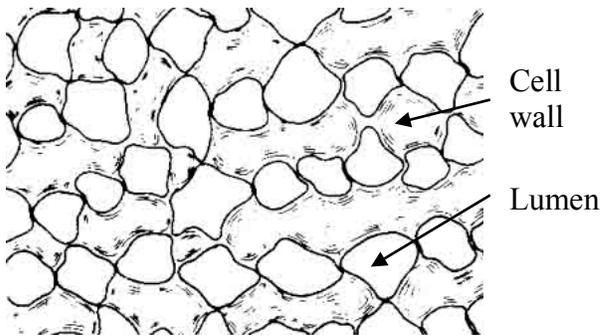
2. Include details that distinguish the subject from other similar structures. Given the assignments in A-C above, your drawings might be designed as follows:
 - A. Include details of individual cells (a brachysclereid should look different from an astrosclereid).
 - B. Draw outlines of individual cells with enough detail to distinguish among cell types.
 - C. You may not need to draw individual cells at all. If the point is to show how vascular bundles are arranged in a stem, you need only outline boundaries of vascular bundles.
3. Represent form, proportion, and spatial relationships accurately.
4. Use insets when information at more than one level of organization must be conveyed.
5. Label distinguishing features.

Examples: Three drawings based on a cross-section of *Helianthus* stem.

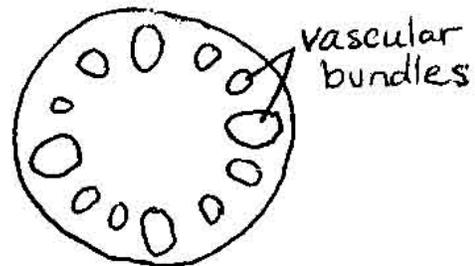


Photograph of a cross section of *Helianthus* stem (c.s.). Mag. 50X.

1. Draw a diagram to illustrate the structure of collenchyma cells in *Helianthus* stem.



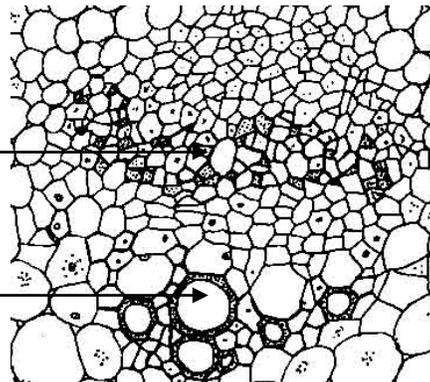
2. Draw a diagram to illustrate the arrangement of vascular bundles in *Helianthus* stem



3. Draw a diagram to illustrate the cell types found in the vascular bundles of *Helianthus* stem.

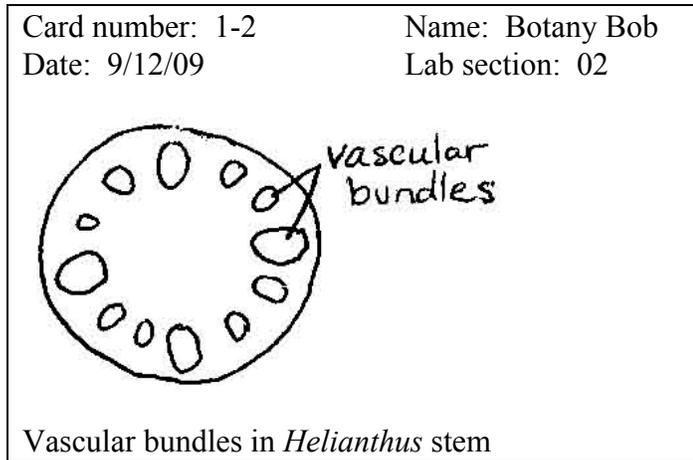
Sieve tube member

Vessel member



Lab assignments:

Prepare drawings for 311 labs on 5X8" note cards using the following format:



Sometimes you will be asked to answer questions on the back of the card.

Cards will be graded using the following criteria:

1. Is the subject shown at an appropriate magnification?
2. Is the context clear?
3. Is the level of detail appropriate?
4. Are the appropriate structures labeled?
5. Are questions answered correctly?

Cards will be returned promptly so that you can use them for studying.