

Integrative Biology 102: Lecture Outline
Plant Structures for Capturing Energy and Matter

Lecture Objectives:

By the end of the lecture you should be able to:

1. diagram a transverse section of a leaf and root and label cell types.
2. explain the function of each cell type for roots and leaves.
3. list the major functions of roots.
4. list the major and other functions of leaves.
5. explain how leaf and root cell structure reflect their functioning in the plant body.

Reading: Pages 37 (starting at Roots) to page 44 (ending at Vegetables: Edible Plant Organs) in Levetin & McMahon Chapter 3

Terms:

blade	spongy mesophyll	phloem
petiole	stomate	cortex
palisade mesophyll	guard cells	cuticle
trichomes	xylem	root hairs
epidermis	resin duct	root cap

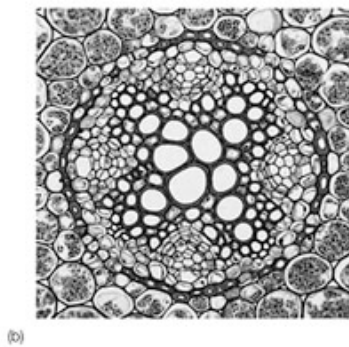
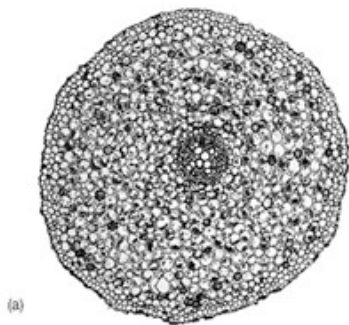
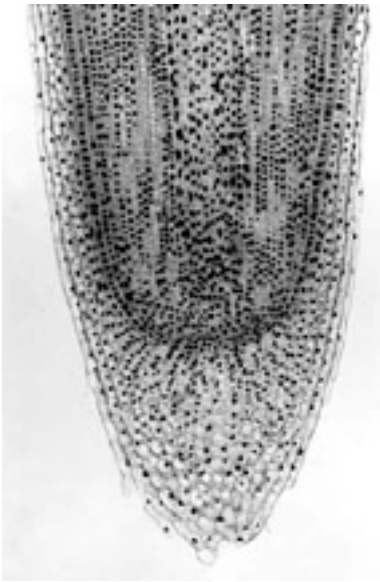
1. Roots

- Functions

- Types

- Mangrove Ecology

- Structure



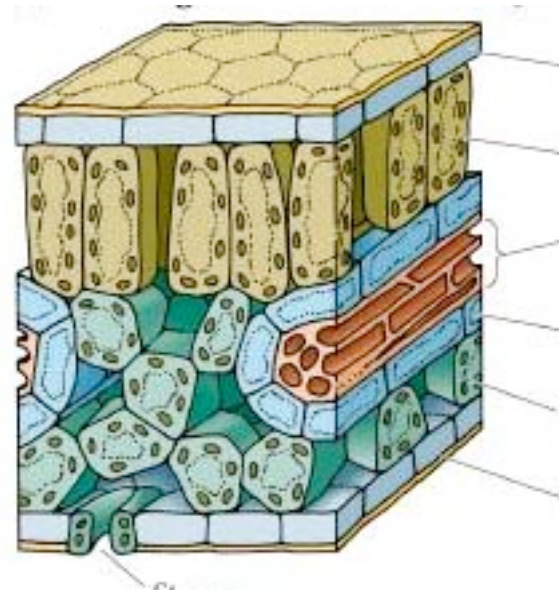
- Root Tissue Functions

2. Leaves

- Major function

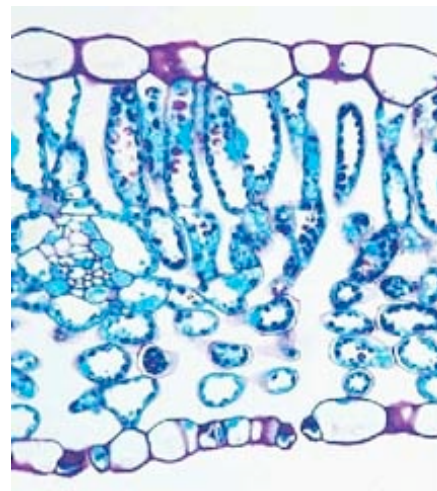
- Other functions

- Leaf cross sections (tissues)
 - Epidermis



- Ground tissue
 - palisade mesophyll
 - spongy mesophyll

- Vascular bundles (veins)
 - Xylem
 - Phloem



- Leaf Tissue Functions

For the next lecture on Capturing Energy: Photosynthesis, read Levetin & McMahon Chapter 4 and be able to answer these questions:

- If you had chloroplast in your cells, how would you control your weight?