

Chapter 02

Plant Tissues

Vascular tissues:

They are composed of different types of cells, which show specific arrangements.

They are of two types. One is xylem and other one is phloem.

- Xylem is responsible for the transportation of materials like water and salts from the root.
- Phloem helps in the transportation of the food material prepared by photosynthesis to the other parts of the plants.

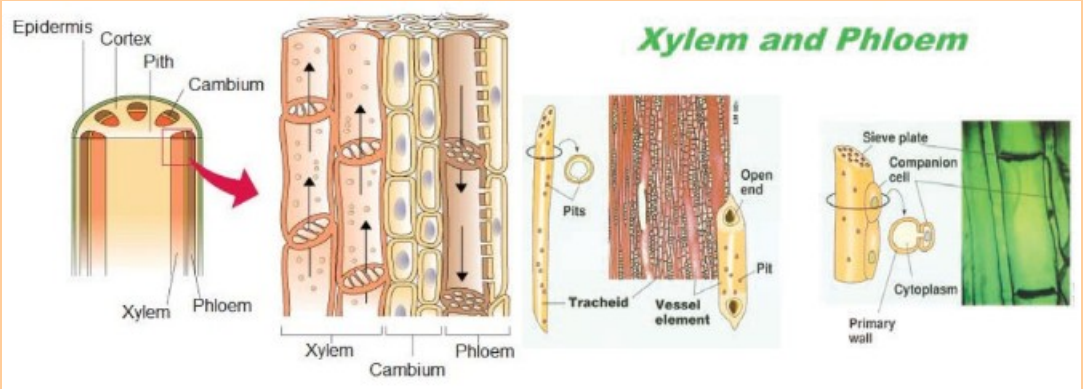
Xylem and Phloem together form the vascular bundles. The vascular tissue also provides mechanical support to the plant.

Xylem:

It contains elongated tracheid cells with perforations called pits, then it has tubular vessels, fibres and xylem parenchyma.

Phloem:

It contains long sieve cells and sieve tubes, companion cells, fibres and phloem parenchyma.

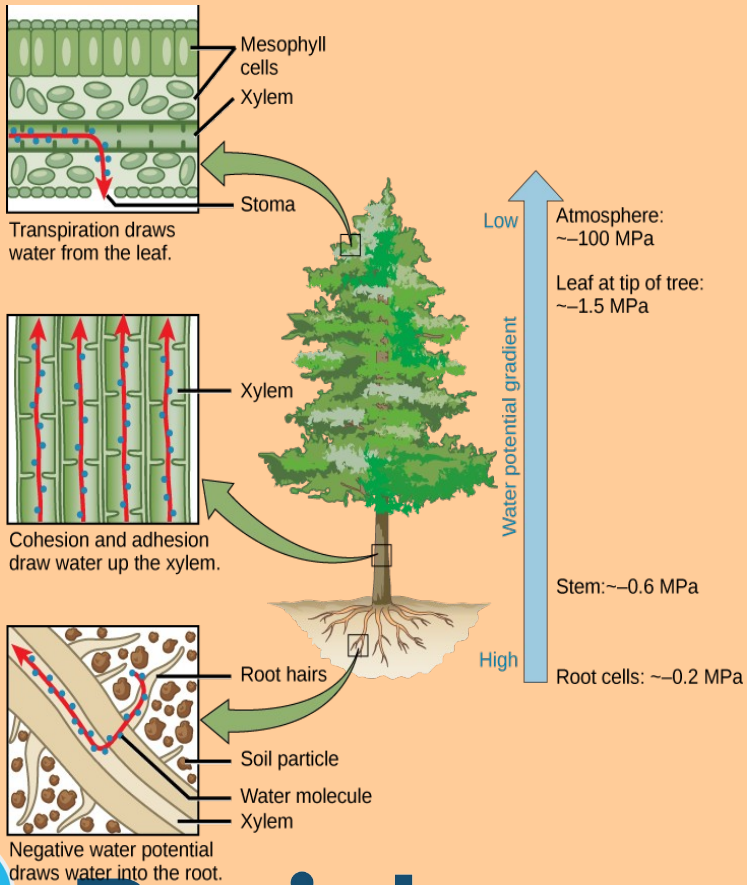


Eucalyptus plants, which is nearly 200 ft and the Redwood trees that's almost 330 ft in height also needs to transport water to such great heights.

- The main driving force of water uptake and transport into a plant is the transpiration of water from leaves.
- Evaporation from cells in the leaves produces a higher negative water potential in leaf.

Whereas,

- Roots have less negative water potential.
- The Water always moves from the system with a higher water potential to the system with a lower water potential.
- The water moves from roots to leaves of plant.



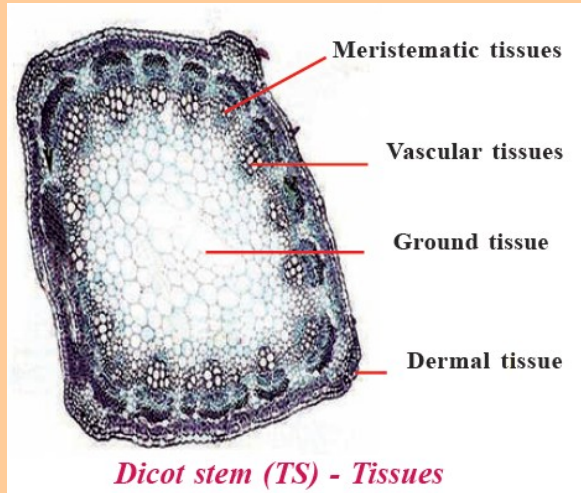
Transverse section of a dicot stem:

That has been stained with safranin under microscope.

- The cells are not similar in shape and structure.

Types of tissues:

- Meristematic tissues
- Vascular tissue
- Ground tissue
- Dermal tissue



- Red structure that you see is the xylem and the cells adjacent to this is called the phloem.

