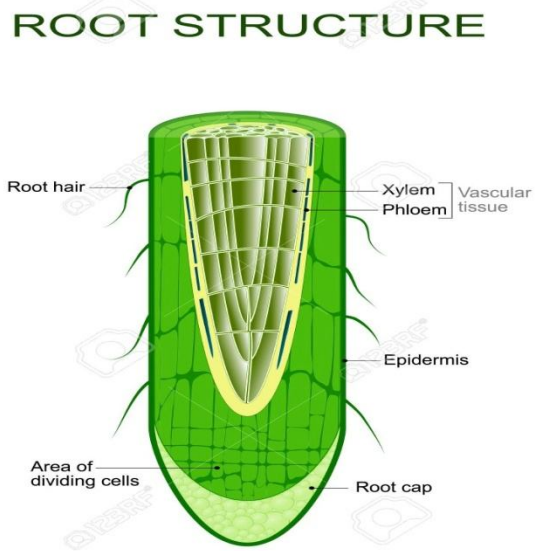
GENERAL ANATOMY OF DICOT ROOT



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Dicot Root

- Dicot plants have the taproot system.

- The outermost layer is called the epidermis. The epidermal cells sometimes project out which appear as the root hairs.

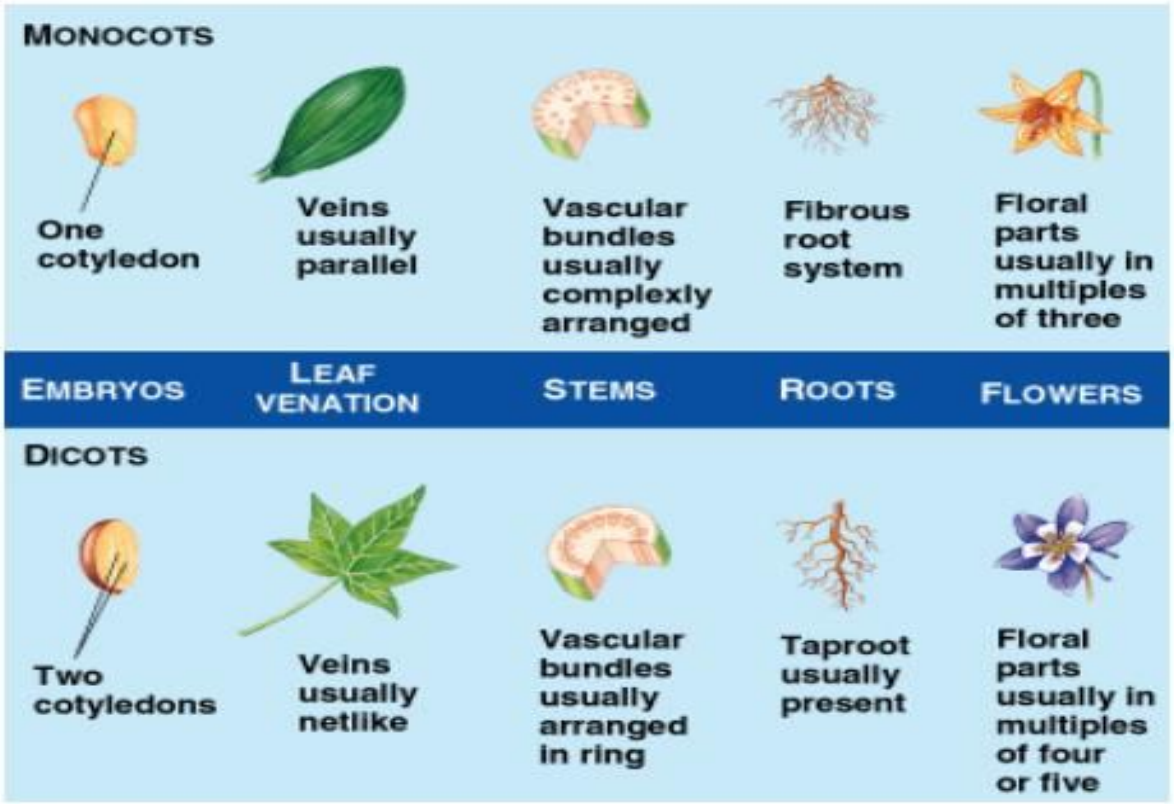
- The epidermis is followed by the multi-layered cortex, loosely made of the parenchyma cells with intercellular spaces.

- The inner layer of the cortex is called endodermis, which is tightly packed by the barrel shaped-cells.

- Endodermis is followed by pericycle, which are a few layers of thick-walled parenchyma cells.
- In dicot, the central pith is not distinct.
- There are two to four xylem and phloem.
- The xylem and phloem are remarked by a layer of parenchymatous cells known as conjunctive tissue.
- During secondary growth, the cambium separates the xylem and phloem. Pericycle, vascular bundles and pith fuse to form stele in dicot.

Monocotyledonous & Dicotyledonous Flowering Plants

Monocots and Dicots

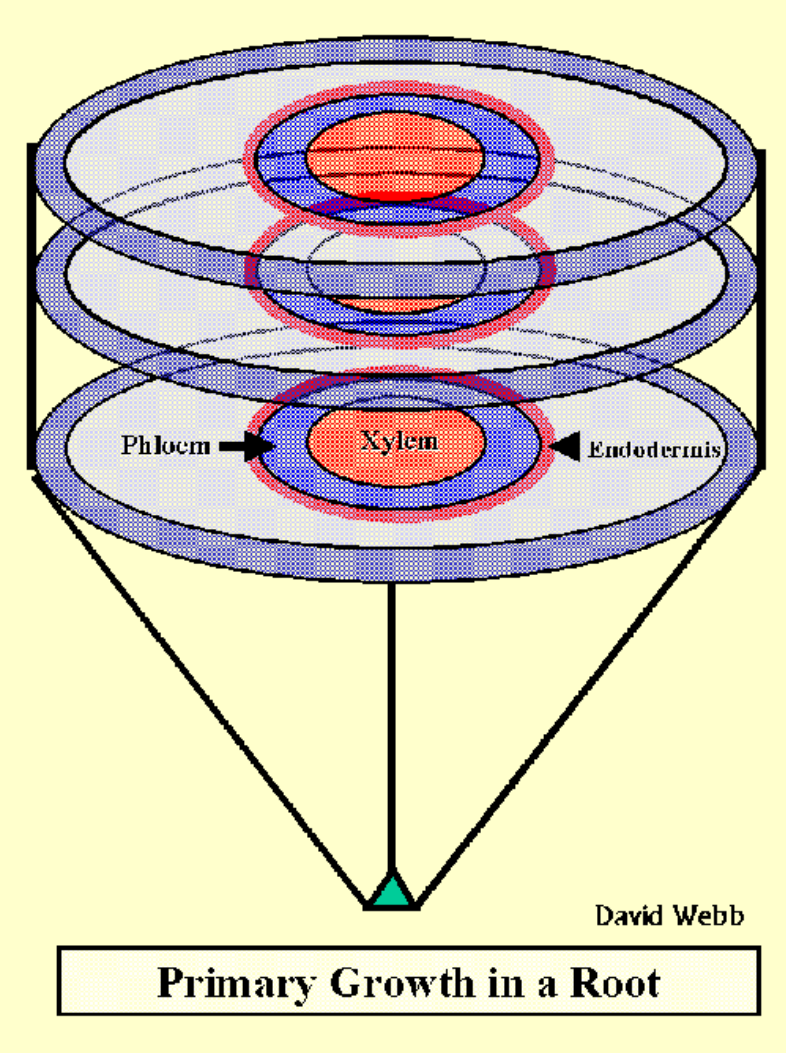


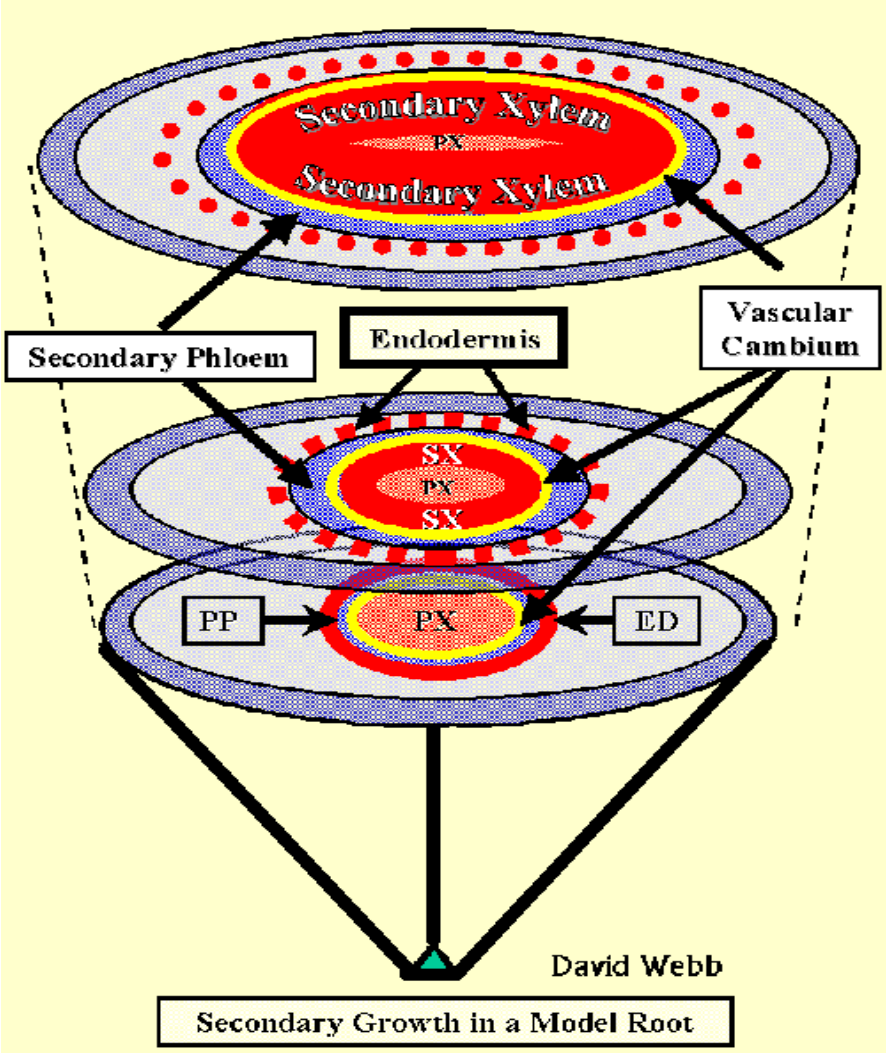
Examples

- Grasses
- Lilies
- Orchids
- Palms

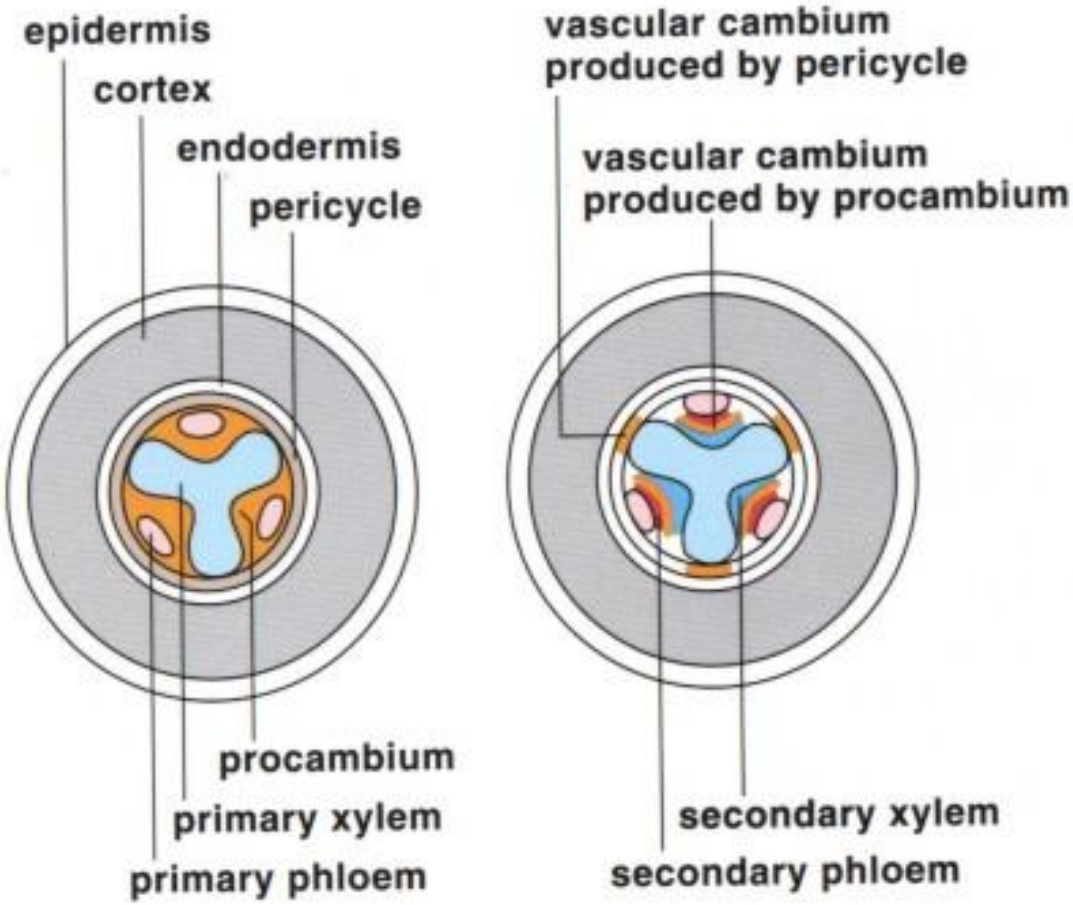
- Oaks
- Bean
- Spinach
- Rose

Primary and Secondary Growth in Roots

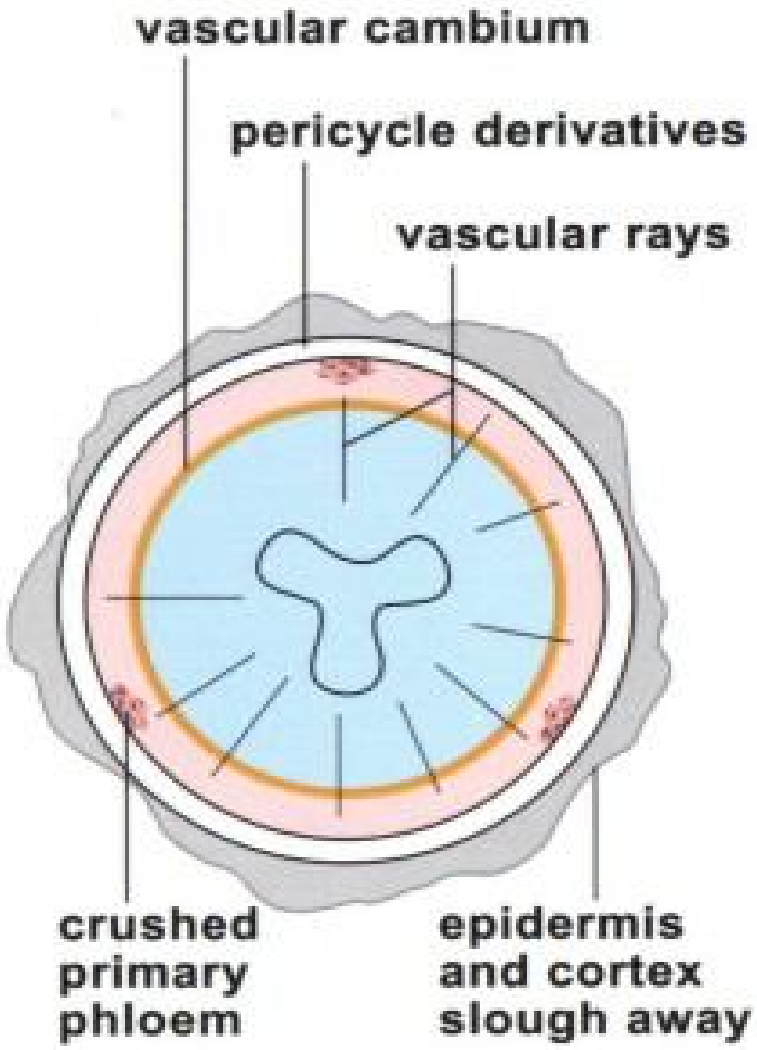


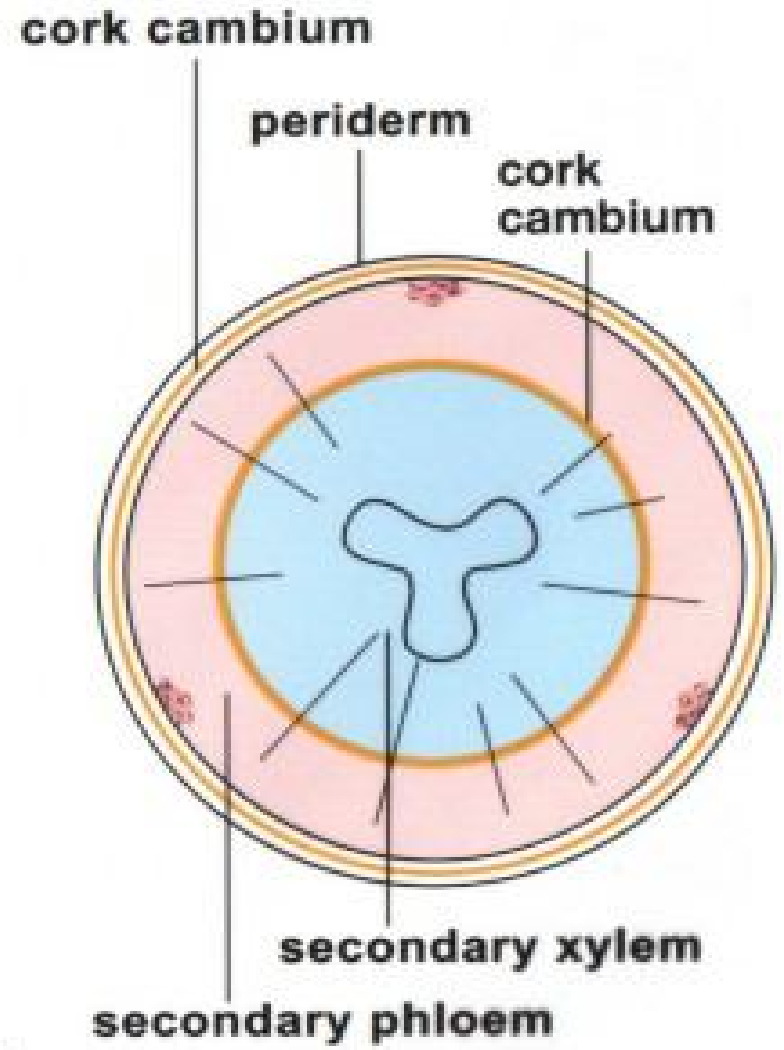


Secondary Growth in Dicot Roots

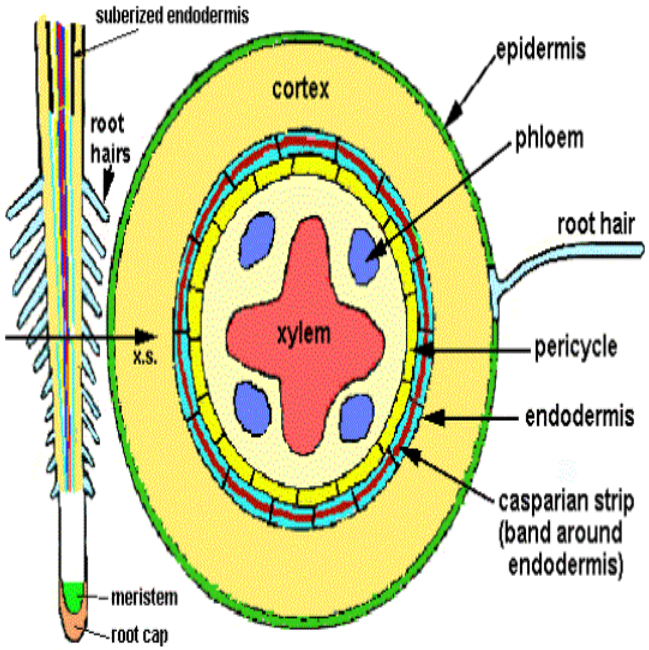


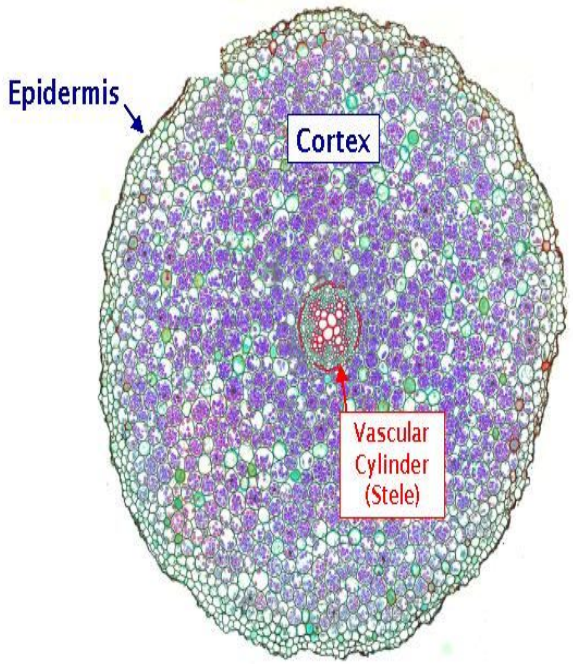
Secondary Growth in Dicot Roots



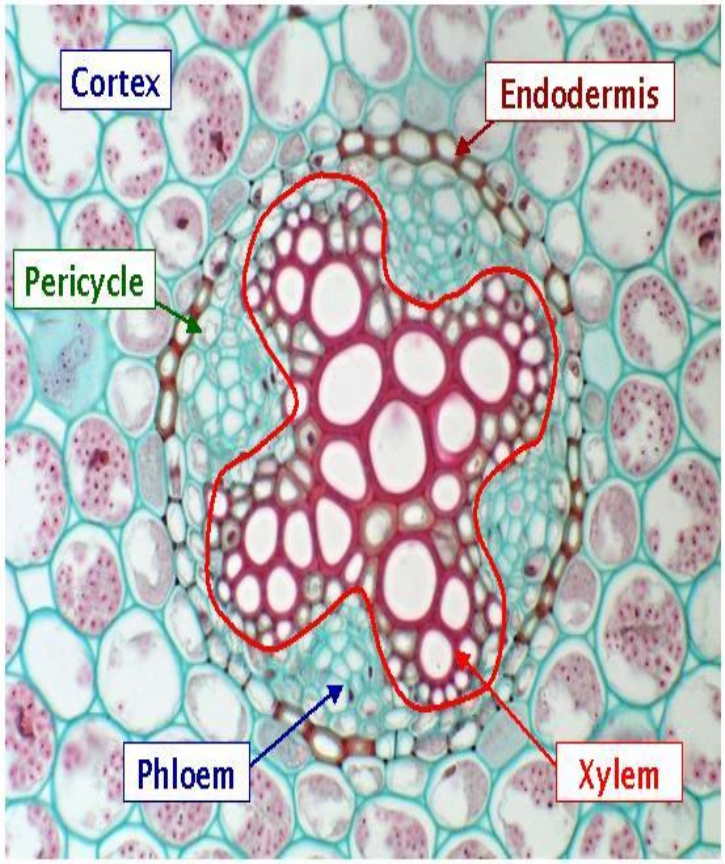


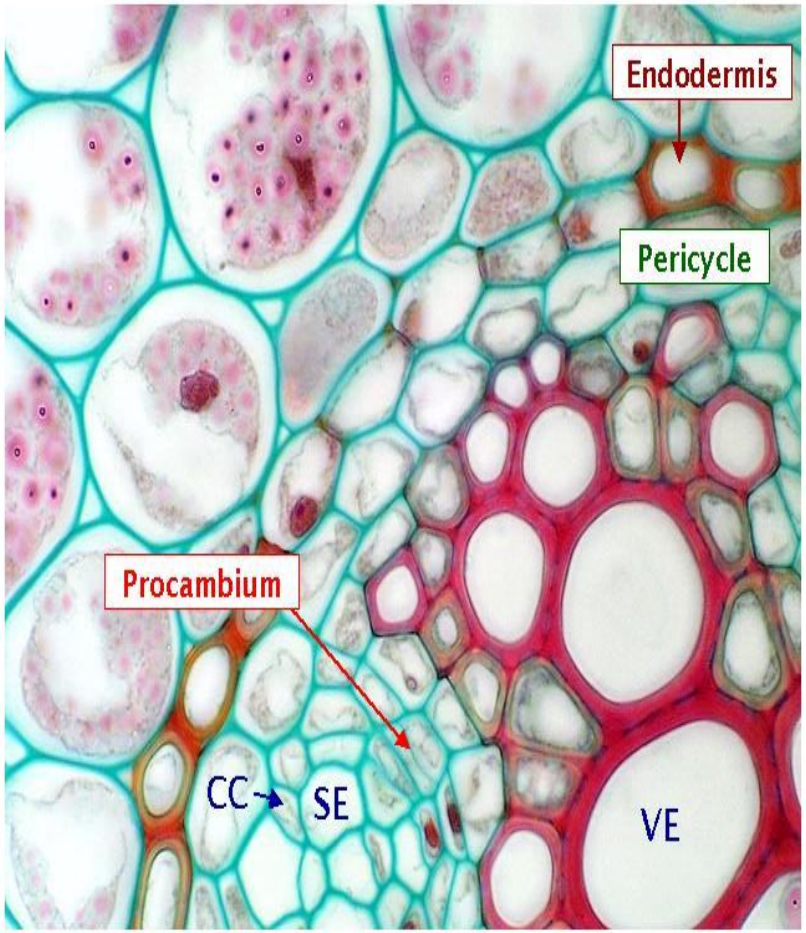
Dicot Root in Cross Section



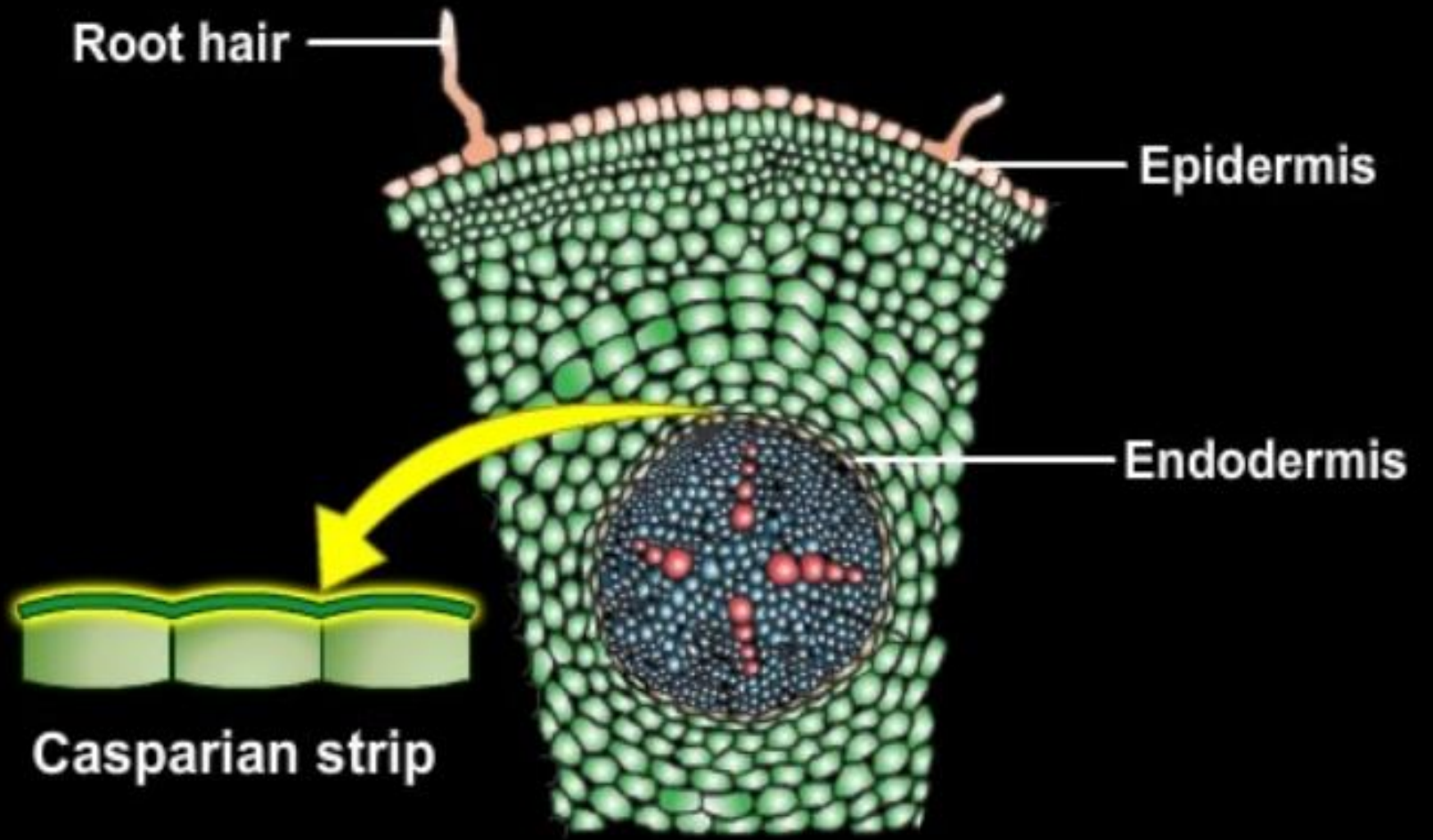


Dicot root in Cross Section

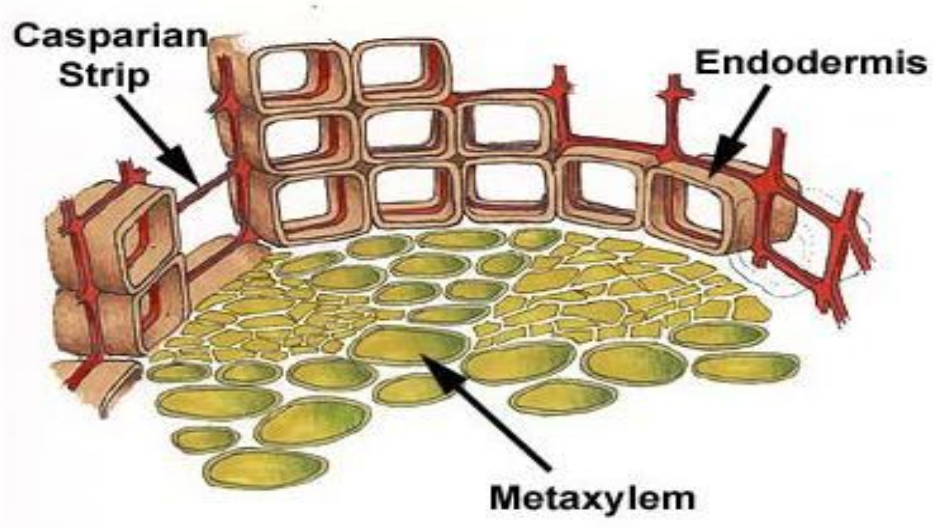


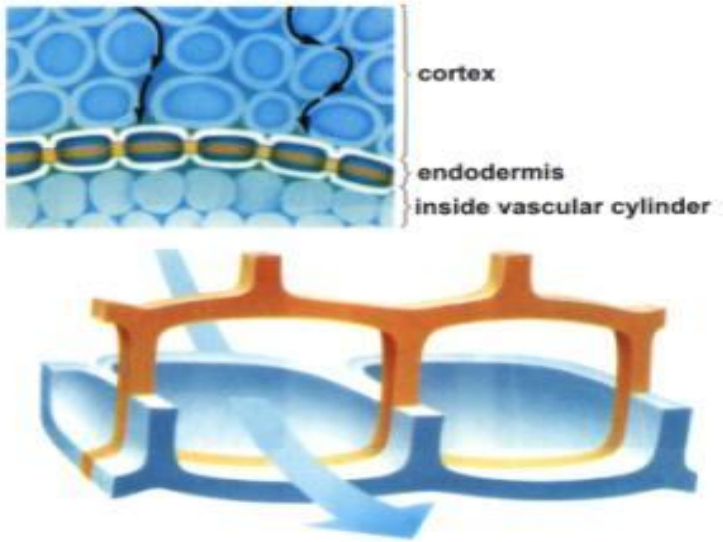


The walls of the endoermal cells consist of a waxy , water impermeable suberin layer called the casparian strip.

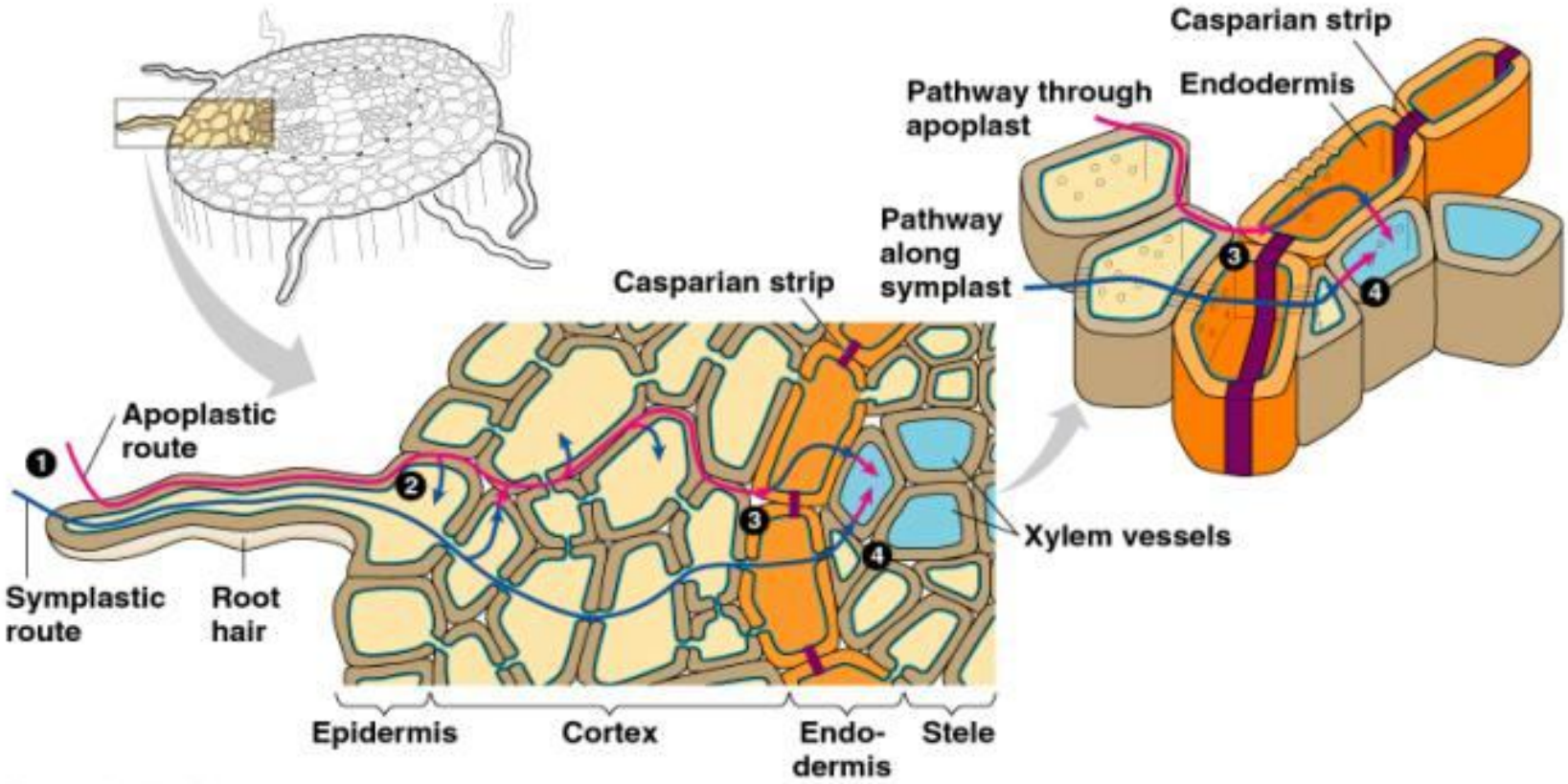


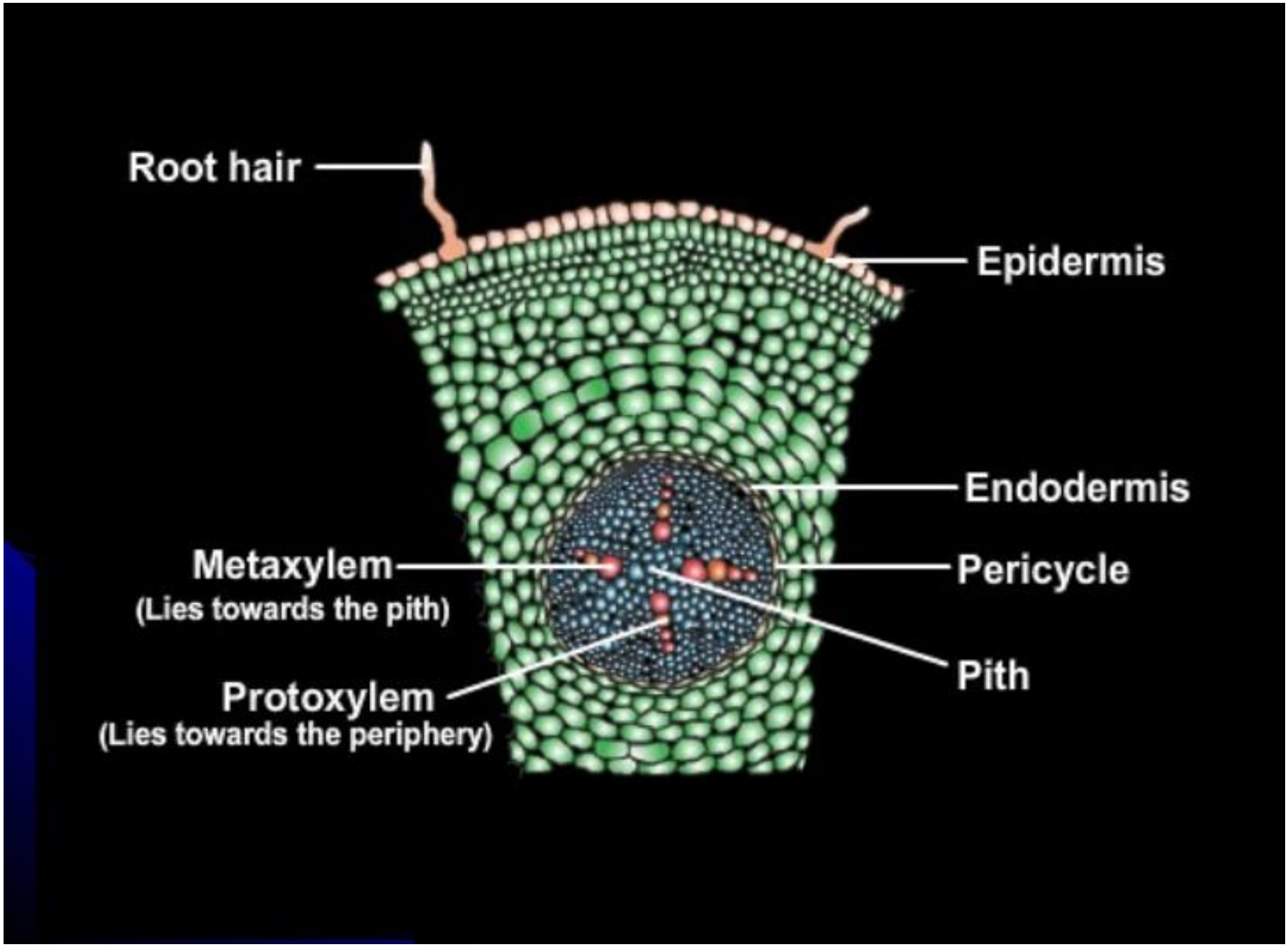
The Casparian Strip





The Path of Water into Roots




Root hair
Epidermis
Endodermis
Metaxylem
(Lies towards the pith)
Pericycle
Pith
Protoxylem
(Lies towards the periphery)


THANK YOU