

Lab.3

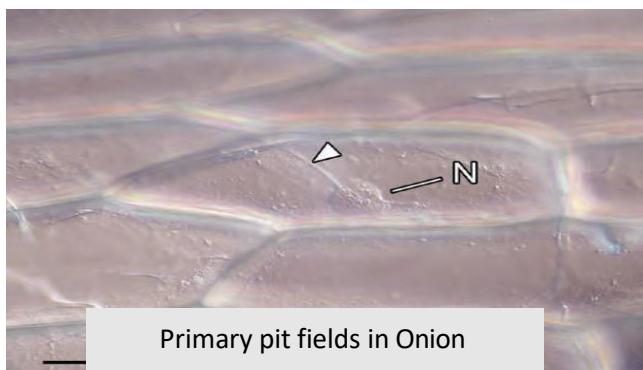
Pits

Pits: - They are thin areas or depressions on the secondary cell walls of plants. They help in the transport of minerals and water between the cells. Usually, a pit has a complementary depression in its neighboring cell. These are termed 'pit pairs'. The structure of a pit includes –

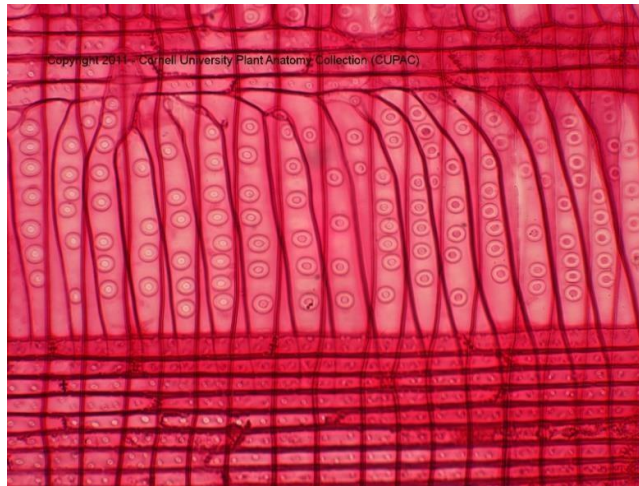
- 1- **Pit cavity** (located between pit membrane and pit aperture).
- 2- **Pit membrane** (consist of middle lamella and thin layer of primary cell wall).
- 3- **Pit aperture** (The opening that joins the pit with cell cavity).

Types of pits

- 1- **Primary pit fields:** - They are depressions on **primary cell wall** & usually associated with plasmodesmata.

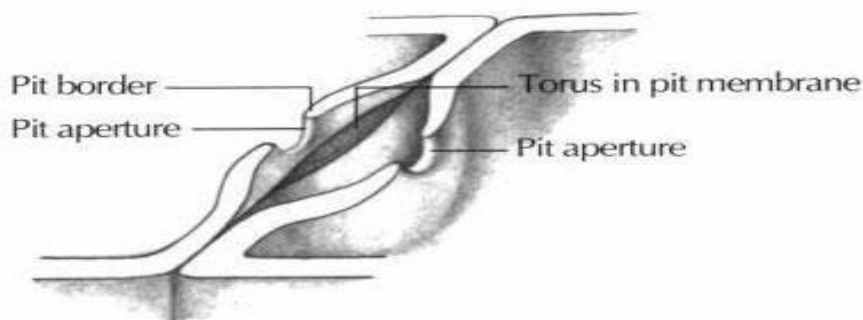


- 2- **Simple pits:** - They are thin, membrane-like structures comprising from the middle lamella and the primary cell walls which the diameter of the pit cavity and the diameter of the pit aperture are equal.
- 3- **Bordered pits:** - In this type, the secondary wall separates from the pit membrane extends into the cell forming a border, or In this case, secondary wall arches over the cavity of the pits. Thus the pit opening become narrow than the pit diameter it usually associates with xylem transport elements (tracheids and vessels) as in L.S. of Pinus Xylem appears as circular in shape.

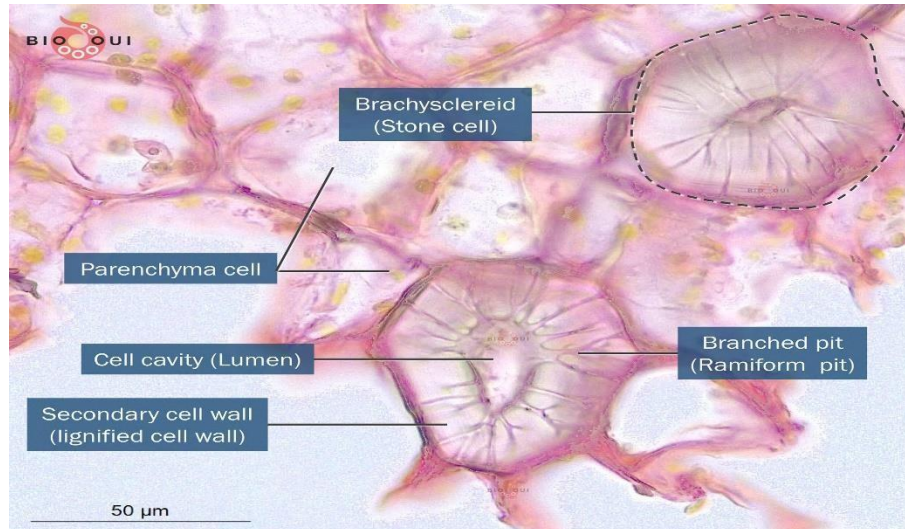


Bordered pits in L.S. of Pinus Xylem

- 4- **Aspirated pits:** In this type, the pit border is thickened to form torus to occupy the aperture, which effectively stops the flow of liquids through the pit. It found in gymnosperm tracheids as in Pinus Xylem T.L.S.



5-Ramiform or branched pits:- They occur when the secondary cell wall become more thick , so it's become like a canal connected between cell lumen and surface as in *Pyrus communis* (Pear fruit).



Branched pits in Pear fruit

Pit combination:

- 1- **Simple pit pair:** When two simple pits are combined
- 3- **Bordered pit pair:** When two bordered pits are combined as in xylem
- 4- **Half bordered pits pairs:** In this type, bordered pit has a complementary simple pit.

Practical work:-

- 1- Examine stripped of epidermis of *Allium cepa* bulb to study primary pit fields.
- 2- Examine L.S. of Pinus Xylem to study bordered pits.
- 3- Examine Pear fruit to study branched pits.