

The plant tissue

Lectures in General Biology -
practical Faculty of
biotechnology

Asis.Lecture

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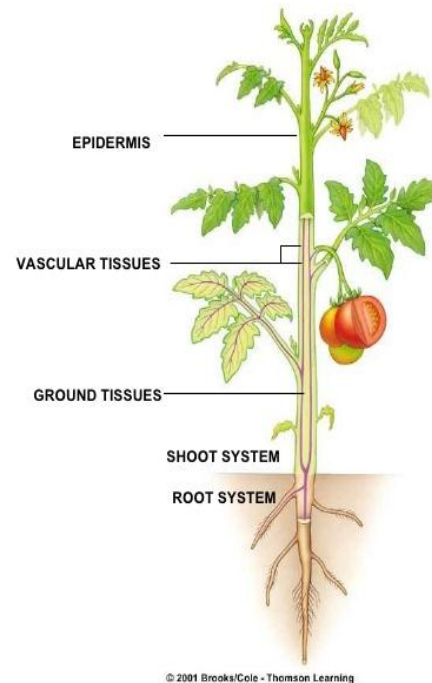
The plant tissue

- It's a sit of cells Coupled with each other Synthetically , and Adapted to perform a specific function or multi functions. The tissue Either simple and It's Consists from sit of cells which similar to each other , like the Cork tissue, fabric visceral. or complex and it's consists from two or more differentiated cells with each other like xylem and bark, it's divided in two types:
- **Permanent tissues** : it's divided according to the Complexity degree:
- **Simple permanent tissue** , Like : fabric visceral , collenchyma tissue and Sclerenchyma Tissue and Cork.
- **Complex permanent tissue** : like Bark and xylem tissue.

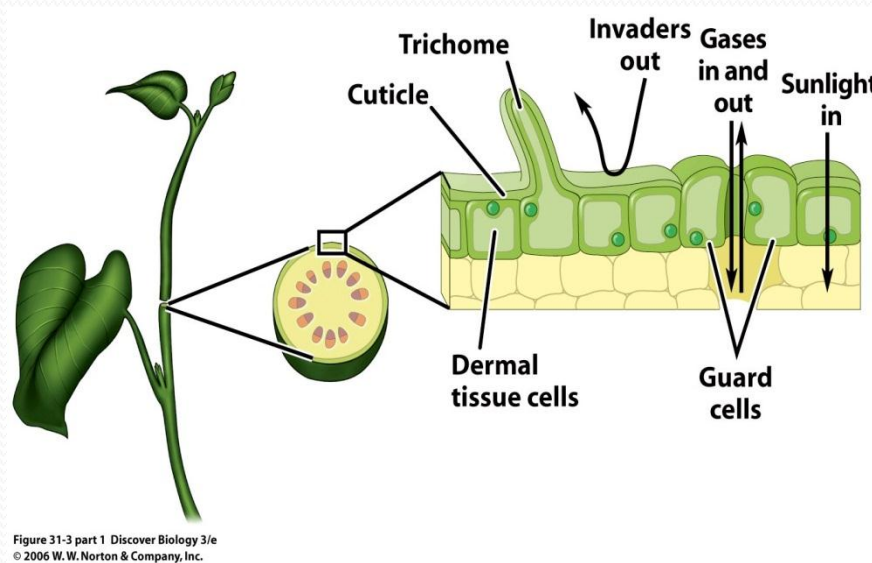
- The permanent tissue divided according to the tissue systems which each one represent a specific location in plants body , and this systems are:

Plant Tissue Systems

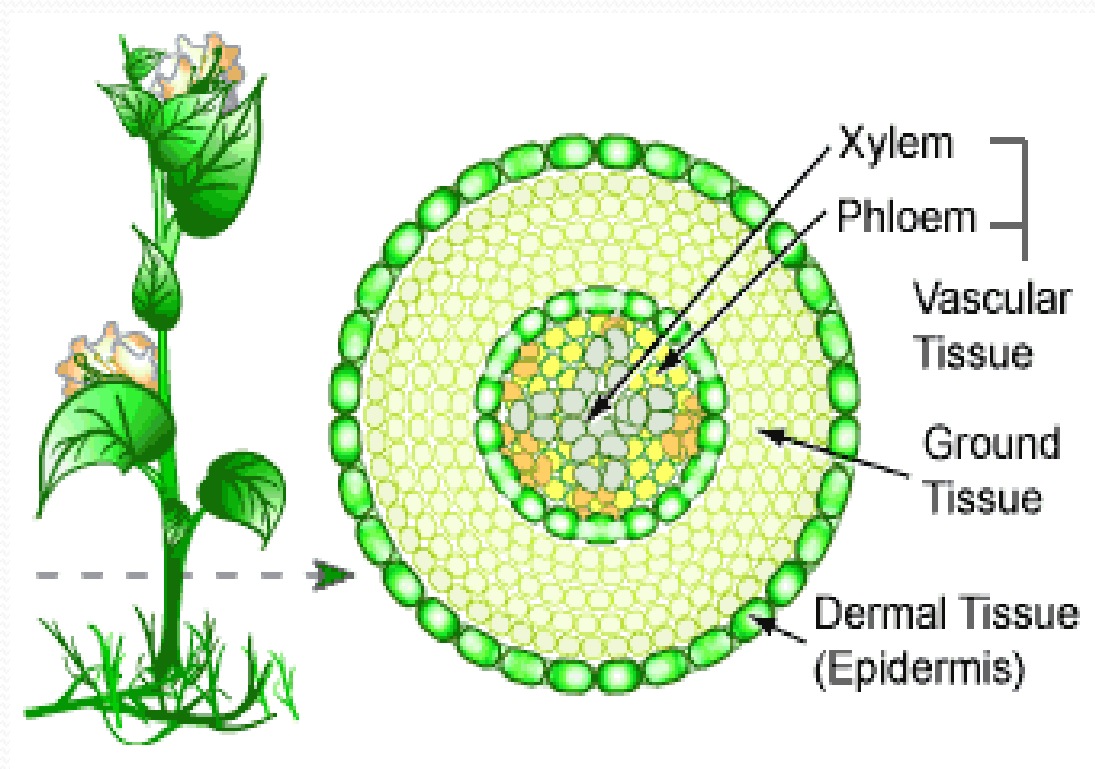
- Ground tissue system
- Vascular tissue system
- Dermal tissue system



- **Dermal tissue system** : represent the epiderm for a member which have primary growth. And periderm in case of member that have secondary growth like root.



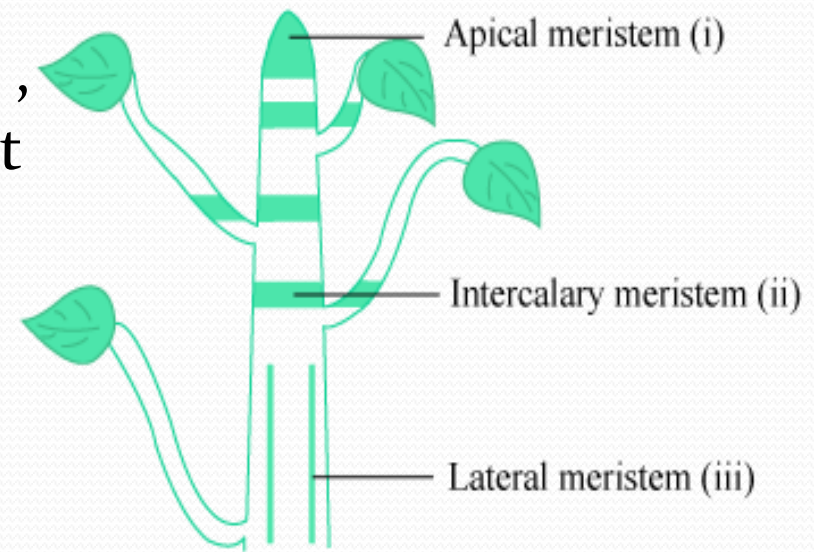
- **Vascular tissue system** : include all tissues of xylem and Bark that exist in plant body.



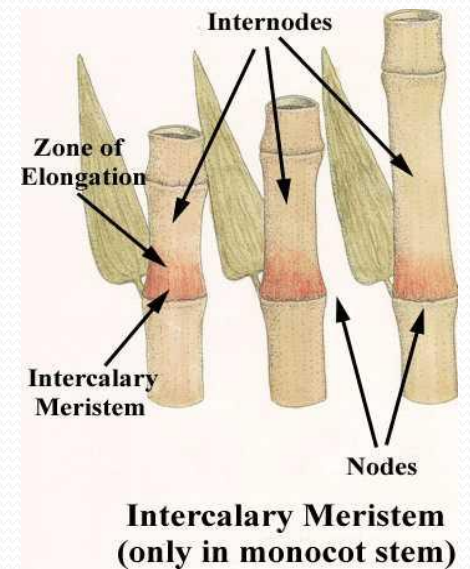
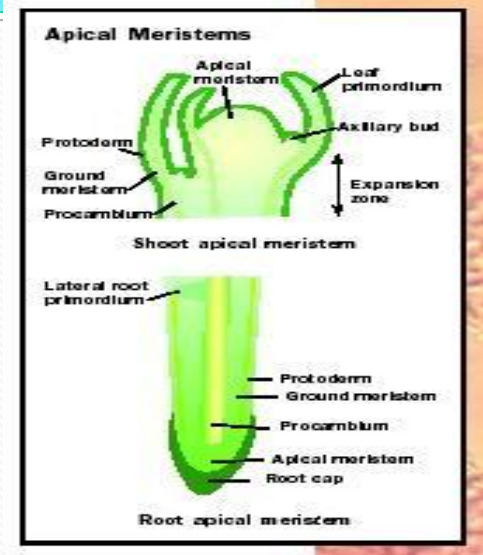
- **Fundamental tissue system** : Featuring the tissue that located between the Vascular Dermal tissues systems and includes cortex , pith , pith rays in Stems , and Fundamental tissue in Stems of Monocotyledon and Mesophyll.

- **Meristematic tissues** :

- Tissues it's cells have ability to split , multiply and grow. It's funtion don't unfold to this time. the cells of it have a feature that have thin wall with cubic shape with intensive cytoplasm and large nucleus. This tissues divided according to it's location to the following :

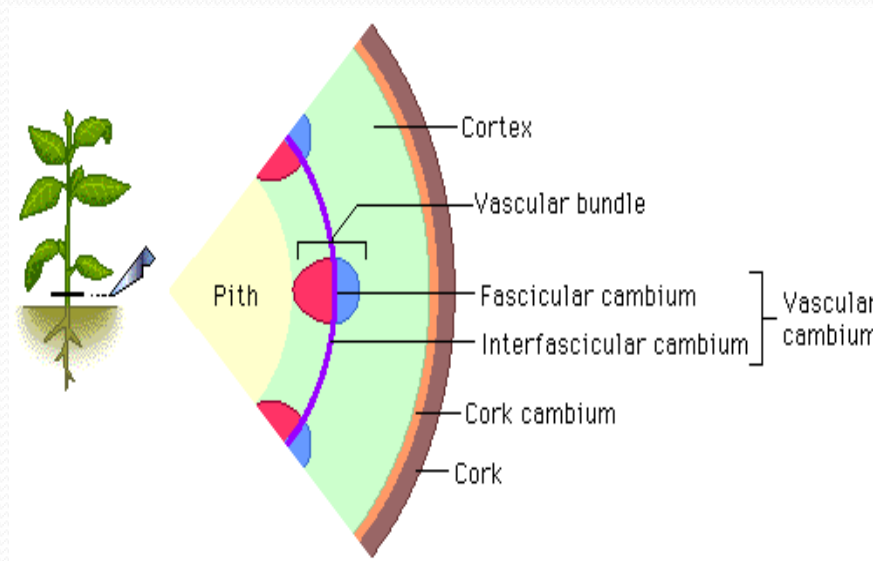


- **Apical meristems :**
- Exist in apex of roots and stems and their activity will lead to increase the length of plant member.
- **Intercalary Meristems :**
- It's a primary meristemic is squeezed between the Permanent tissues and far from the growth apex , and produce from their activities increasing in length of member. The B- Intercalary Meristem found in the base leaves and stems for some plants.



- **Lateral Meristems**

- this meristematic tissue is arranged in parallel shape to the sides of plant member, it's split and this will cause increase in thickness of plant member. Like Vascular cambium that will produce the secondary xylem and secondary phloem and cork cambium that will produce the cork and phelloderm.



- **Dermal tissue is represented by the epiderm and peridrem**
- **Epidermis**
- It's a one layer or more from external cells that covered all parts of plant through it's primary growth and this mean that the epiderm contact with environment factor, the epiderm consists from one layer of cells that mean simple epiderm , but it's some time consists from multiple layers in some plants and we can noted it in Moraceae, or consists from two rows and called Double epiderm.
- The epiderm remain through the growth period of plant
- or destroyed and replaced by the cork tissues such as in pants that have secondary. The adult cells of epiderm are living and clearly nucleus have thin Cytoplasm and wide pits full by cell sap and surraunded by primary wall consists a field of primary pits and the epiderm covered by layer from cuticle or dermis , the epiderm cells involve :

- **The ordinary cell**
- **Guard cell**
- Which lined as apairs and creates the Stomata
- **Epidermal hair or trichomes**
- It's a trichomes creates from the Epiderm cells and different in shape and structure and functions , the simple type of it called Papillae its occure at the external wall of sell like the papillae that found in leaves corolla of flowers. While the famous trichomes which extend from the cell to form the Hairs and its multi type