Plant Histology

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(9)

Several types of cells can be found in the epidermis: cells that form stomata, hydathodes, thrycomes:

a. Stomata

- It is a pore in the epidermis, through which gaseous exchange takes place in plants. It is surrounded by two specific cells known as *guard cells*. Stomatal pores together with guard cells are known as **stoma.**

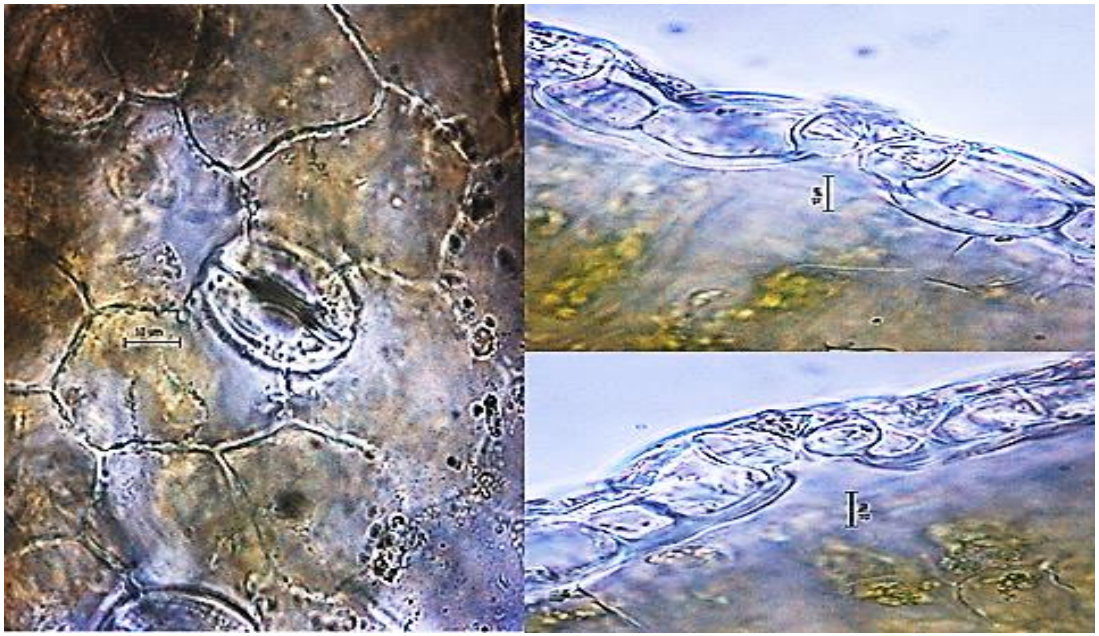
- These guard cells are surrounded by various number of cells known as *subsidiary cells*. This pore together with guard cells and subsidiary cells is known as **stomatal complex**.

- Frequency of stomata differs from species to species.

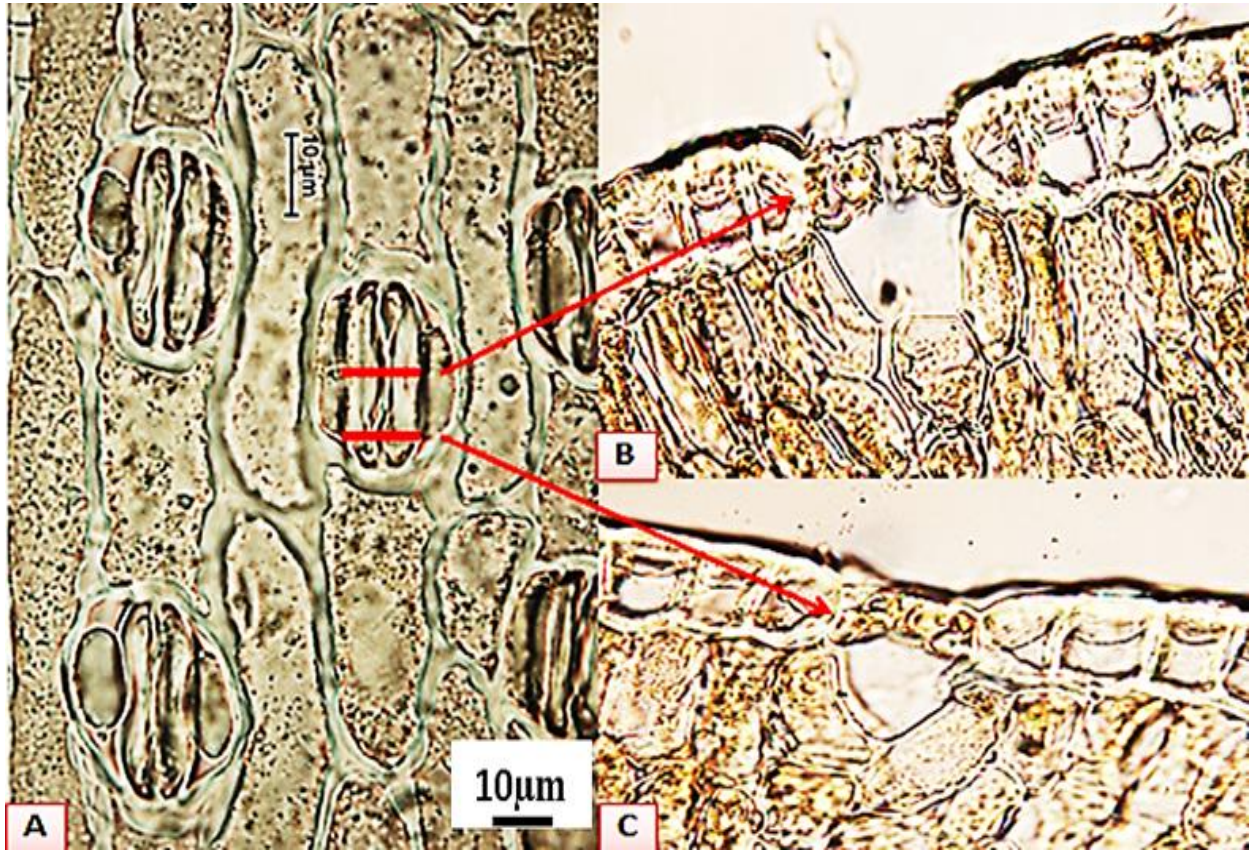
Stomata are divided into three types on the basis of guard cell structure and mechanism regulating the opening and closure of stomatal pore:

1. Moss-Fern type

2. Amaryllis type



3.Grass type



Types of stomata of Dicotyledon

Depending upon the number and arrangement of *subsidiary cells* around the *guard cells* stomatal complex has been classified into **six** types:

- 1. **Paracytic type**– (also called *rubiaceous* or *parallel-celled* type)
- 2. **Anomocytic type**–(also called *ranunculaceous* or i*rregular-celled* type)

- 3. **Diacytic type** - (also called c*aryophyllaceous* or *cross-walled* type)
- 4. **Anisocytic type** – (also called *Cruciferous* or *unequal-celled* type)
- 5. **Actinocytic** type
- 6. **Cyclocytic** type

b. Hydathodes

Hydathodes found on leaf margins, secret out organic and inorganic substrates mixed in water e.g. The process of liquid discharge from hydathodes is known as **guttation**.

Hydathodes are subtended by a sub-epidermal cavity and mass of loosely packed parenchymatous cells called *Epithem*.