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Puspa Shrestha

EXPERIMENT NO. 6

NAME OF EXPERIMENT: TO STUDY THE INTERNAL STRUCTURE OF MONOCOT LEAF.

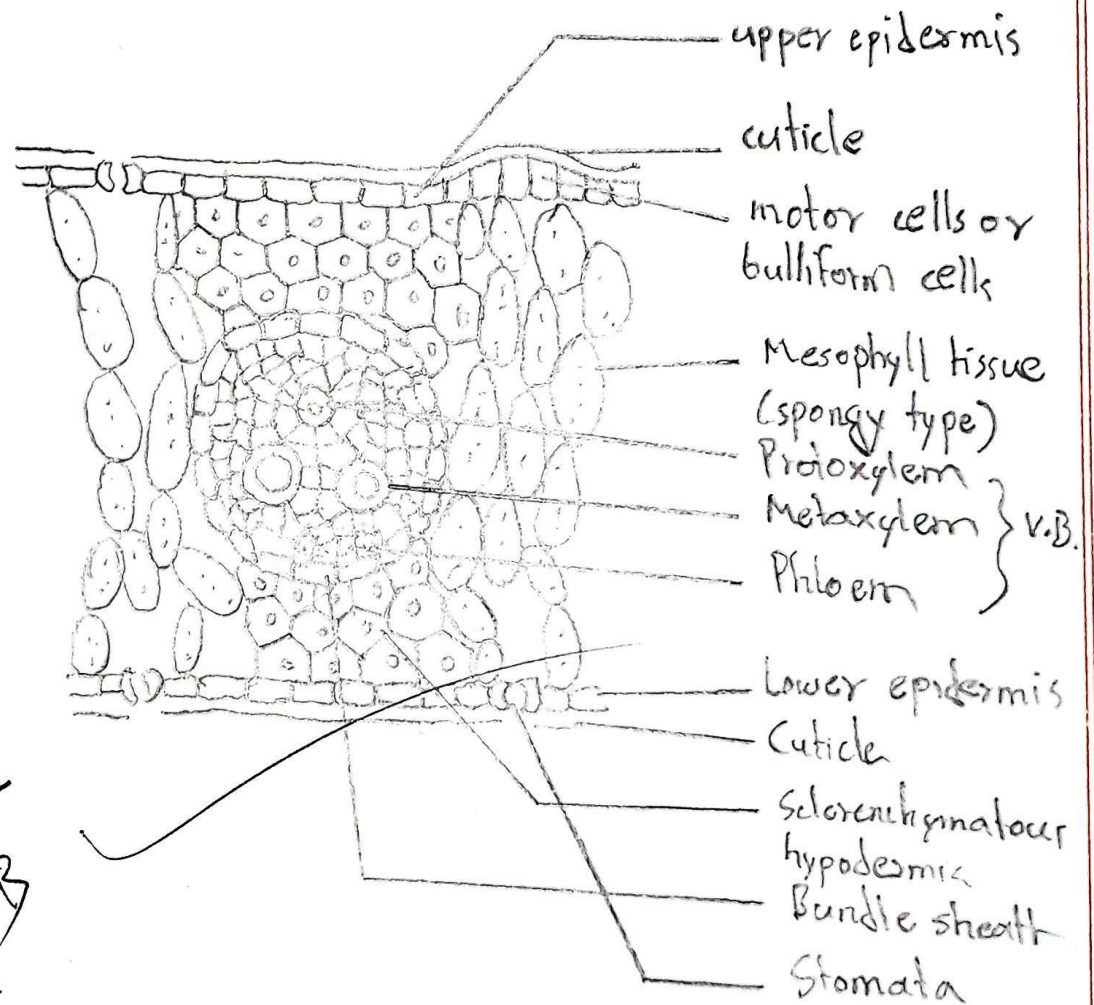
COMMENTS

The T.S. of monocot leaf shows the following anatomical structures.

1. Epidermis: It is a single-layered epidermis found in both sides of leaves which bears approximately equal number of stomata (amphistomatic). The stomata open inwards into the stomatal cavity. In maize, some upper epidermal cells become modified into a group of hygroscopic cells which are swollen to form bulliform cells or motor cells. Each stoma is surrounded by a pair of dumb-bell shaped guard cells.
2. Mesophyll tissue: It lies between the lower and upper epidermis. It consists of multi-layered large rounded parenchymatous cells with large cavities. The intercellular space is reduced. These cells are not differentiated into palaside and spongy parenchyma. Chloroplasts are found abundantly for photosynthesis.

TO STUDY THE INTERNAL STRUCTURE OF MONOCOT LEAF

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3. Vascular bundles: Vascular bundles are present within the mesophyll tissue. They are arranged in a parallel series. The vascular bundles differ in their size. Each vascular bundle is conjoint, collateral and closed type. It is surrounded by a parenchymatous bundle sheath. The small bundles are surrounded by individual sheaths and contain less developed phloem and xylem. But the larger bundles have distinct phloem towards the lower epidermis and xylem toward the upper surface.

- The xylem consists of two pitted oval metaxylem; tracheids are also found in between them. The xylem parenchyma are less numerous. Protoxylem is represented by a lysigenous cavity. The xylem conducts water and mineral ions.
- The phloem has sieve tubes and companion cells. It conducts food materials.