

Topic: Meristem Structure and Functions

B.Sc. Botany (Hons. & Sub.) II

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Meristem Structure and Functions

Meristem consists of a group of cells which remain in a continuous state of division or they retain their power of division. The term meristem was proposed by Karl Nageli (1858) from a Greek word 'merizein' which means 'to divide'. The meristem composed of rapidly dividing undifferentiated mass of cells. Meristems are usually found in the growing region of plant organs such as shoot apex and root apex. Usually meristem originates from the embryonic cells.

The following characteristics features of meristem are –

- i. They are composed of immature cells.
- ii. The cells are usually isodiametric in shape i.e., rounded, oval or polygonal.
- iii. They are always living and thin-walled.
- iv. They are compactly set without evident intercellular spaces.
- v. Each cell of meristematic tissue possesses abundant cytoplasm and one or more nuclei in it.
- vi. The vacuoles in the cells may be small or altogether absent.
- vii. The meristematic cells of vascular cambium are fusiform in shape.
- viii. The protoderm develops into epidermis.
- ix. The procambium into primary vascular tissues and ground meristem into fundamental or ground tissues.

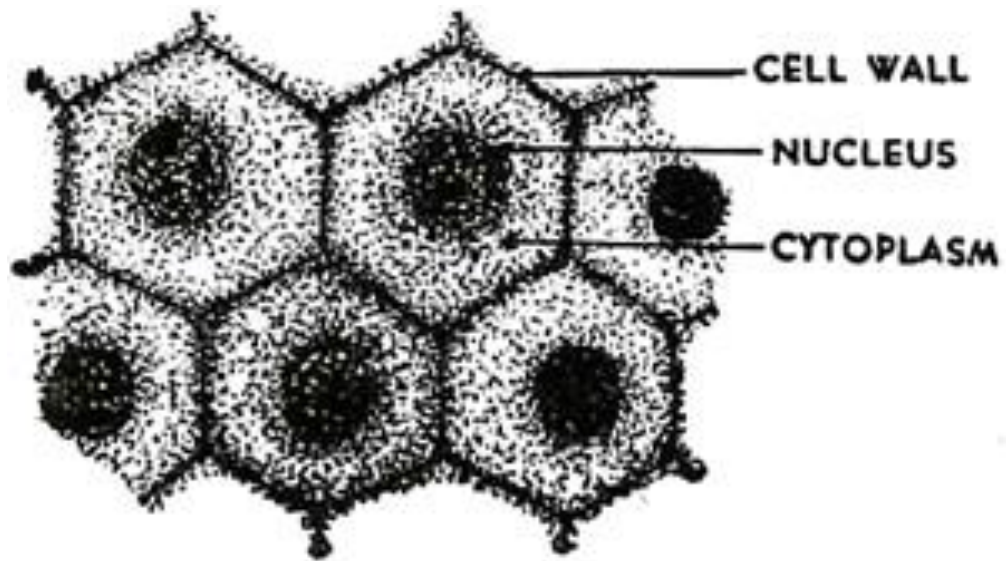


Fig 1. Meristematic cells

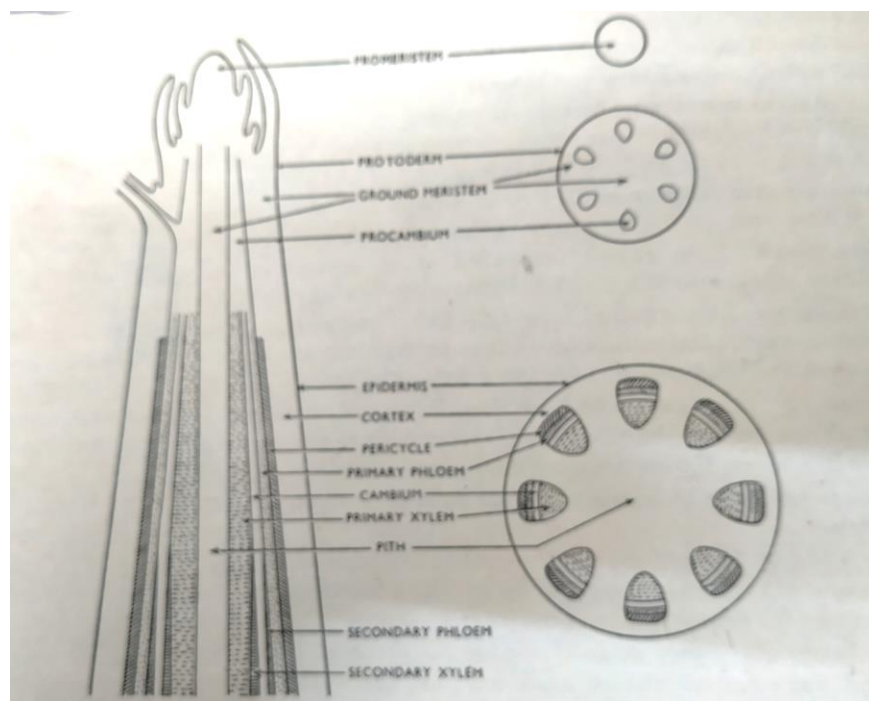


Fig 2. Meristem diagrammatic representation of meristem in a stem and their gradual differentiation in longitudinal view (left) with corresponding transverse view (right)