✍ Compiled by Dr. Priyanka Chatterjee, Asst. Prof. Botany, RDS College, Muz, BRABU

À Types or Classification of Meristem:-(continue of types of meristem)

Classification based upon function:

This classification was putforward by "Haberlandt" who contributed allot to the field of physiological plant anatomy. According to Haberlandt the primary meristem at the apex of the axis is differentiable in to 3 different zones.

i) **Protoderm:-** It is the outermost cell layer of the apical meristem which gives rise to epidermis of the plant body.

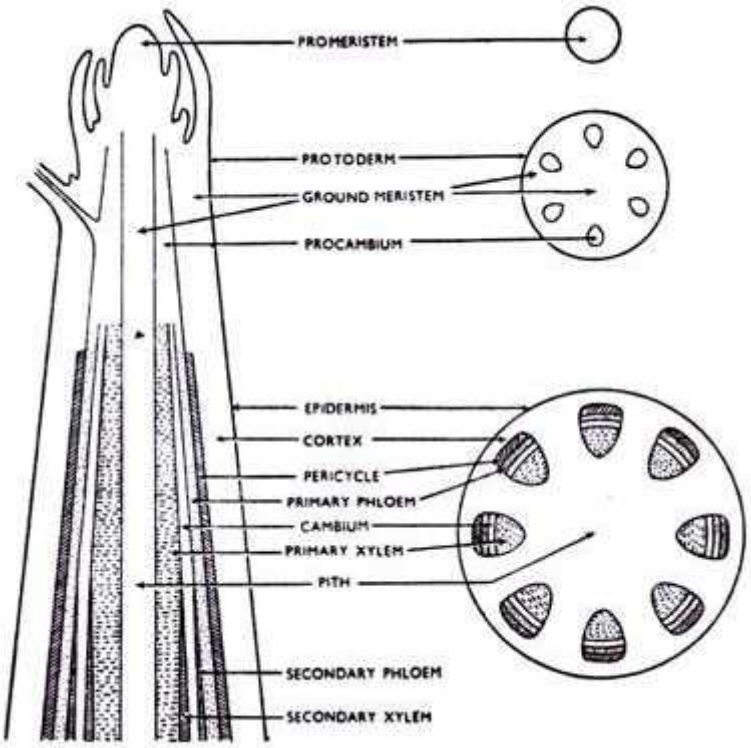

Figure of meristem showing different Histogen layers in stem with longitudinal (left) view and transeverse (right) view

ii) **Procambium:-** These are elongated tapering cells of the growing region. It occurs in the form of a ring of isolated strand. Each of these strands develop in to a vascular bundle consisting of xylem-phloem and cambium. These procambial strands remain scattered in monocot stem.

iii) **Ground Meristem:-** It is also known as fundamental meristem. The meristematic tissue other than protoderm and procambium forms the ground meristem. It is gradually differentiated in to cortex, medullary rays and pith. In case of monocot stem it forms the ground tissue.

Classification based upon Plane of division:-

On the basis of plane of division the meristems can be classified in to the following 3 types:-

i) **Mass Meristem or Block Meristem** :- In this type of meristematic tissue the plane of division is not fixed. The cell divide by atleast 3 planes or all the planes possible. Such meristems are found to increase the overall mass of the tissue.

Examples are found in the early stages of developing embryo, developing sporangia, the endosperm, young pith and cortex of many plant.

ii) **Plate Meristem**:- In this type of tissue the plane of division is anticlinal or longitudinal . It results in to plate like increase in area. The one layered plate meristem forms epidermis and two to several layers contribute to the development of leaf.

iii) **Rib Meristem or File Meristem**:- In this case the plane of division is transeverse as a result columns or rows of cells are produced.

It causes increase in length of organs.

From the above account it can be said that there are variety of meristems found in plants and responsible for the development of permanent tissues.

Reference books:-

1.Life science by Dr. A.P Singh & Kumar Pushkar

2.Plant anatomy by Dr. B.P.Pandey (S. chand)

3. A text book of plant anatomy by S. K. Sinha

4. Plant anatomy by Neeraj Tandan