

DEPARTMENT OF BOTANY BY DR. RANJANA
 D.B. COLLEGE TAYNAGIAR, ASST. PROFESSOR
 L.N.M.U, DBG. (GUEST)
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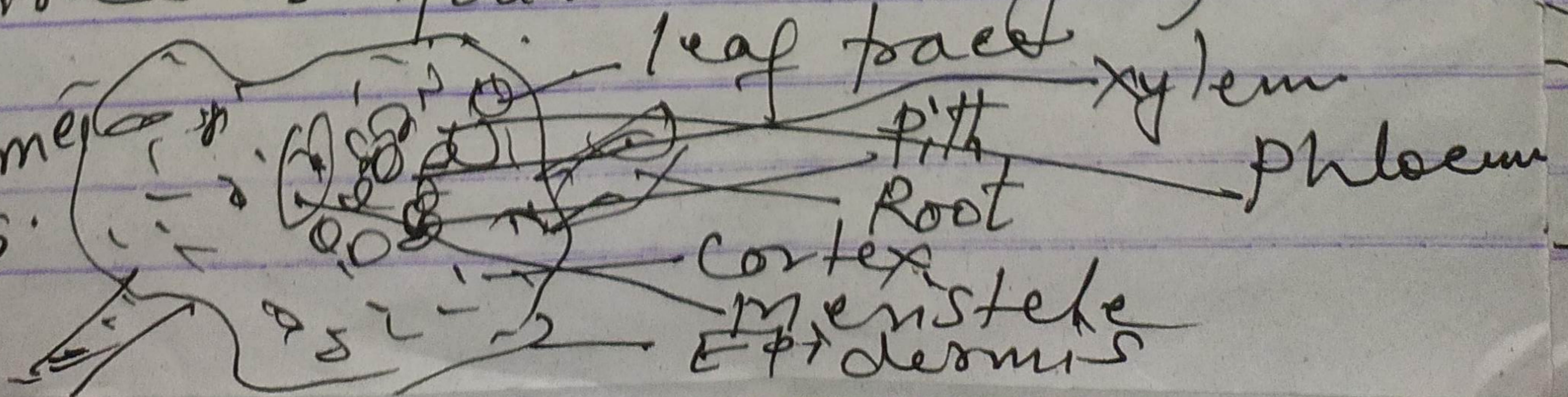
B.Sc. PART I PAPER-II

CORE CONCEPT OF PTERIDOPHYTA

Ophioglossum II:

Leaf: The leaf trace is not usually branched but in *O. palmatum* and *O. pendulum* two traces depart at each gap. In all cases the traces branch further before they run into the leaf base. The petiole thus shows a number of vascular bundles arranged in a semicircle. The leaf T.S shows stomata on both the epidermises, a uniform spongy mesophyll with air spaces and a number of vascular bundles. The fertile spike meristem grows with an apical cell having three or four cutting faces.

Fig
O. Rhizome
 in T.S.



Reproduction: In ophioglossum

Sexual reproduction takes place by spores. The fertile spike meristem grows with an apical cell having three or four cutting faces originating from a spherical cell of a young leaf. Bower stated that as the spike begins to project, two continuous sporangiogenic bands are noticed on the two sides. Later the band is differentiated into alternate blocks of archesporial and sterile cells. Each archesporium supported by continuous cells forms a sporangium with a multilayered jacket, a weak tapetum and the sporogenous tissue inside. The tapetum ultimately breaks down into a plasmodial mass with persistent nuclei which invades the space between the isolated spore mother cells. The sporangia become somewhat dissociated from one another when mature and ultimately open by transverse clefts after the spores are mature. There is no annulus.