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B.Sc. PART- I
PAPER- II, GROUP- [B]

(i) ANATOMY OF OPHIOGLOSSUM.

B.Sc. Part - I [Botony Hons.]

Paper - II. Group - 'B'

Anatomy of Ophioglossum

(A) Rhizome Anatomy

The rhizome apex shows a single inconspicuous pyramidal apical growing cell with three cutting faces. The part of rhizome may show a protostele surrounded by an epidermis but the stem is generally siphonostelic. A transverse section of matured rhizotomatous stem shows a broad homogenous cortex which may sometimes show an outer periderm. The endodermis is not defined in the upper part of rhizome. The siphonostele inside may be solenostelic due to one leaf gap but more often it is dictyostelic by several leaf gaps showing small a big crescent shaped meristeles. The meristeles are endarch and collateral. The protoxylem lines the entire inner face of the xylem mass. The metaxylem has irregularly shaped reticulate tracheids. The phloem lies on the outerside. In O. vulgatum a small amount of secondary thickening has been observed. The central pith is homogenous but in O. pendulum small strands of xylem

are found mixed with it.

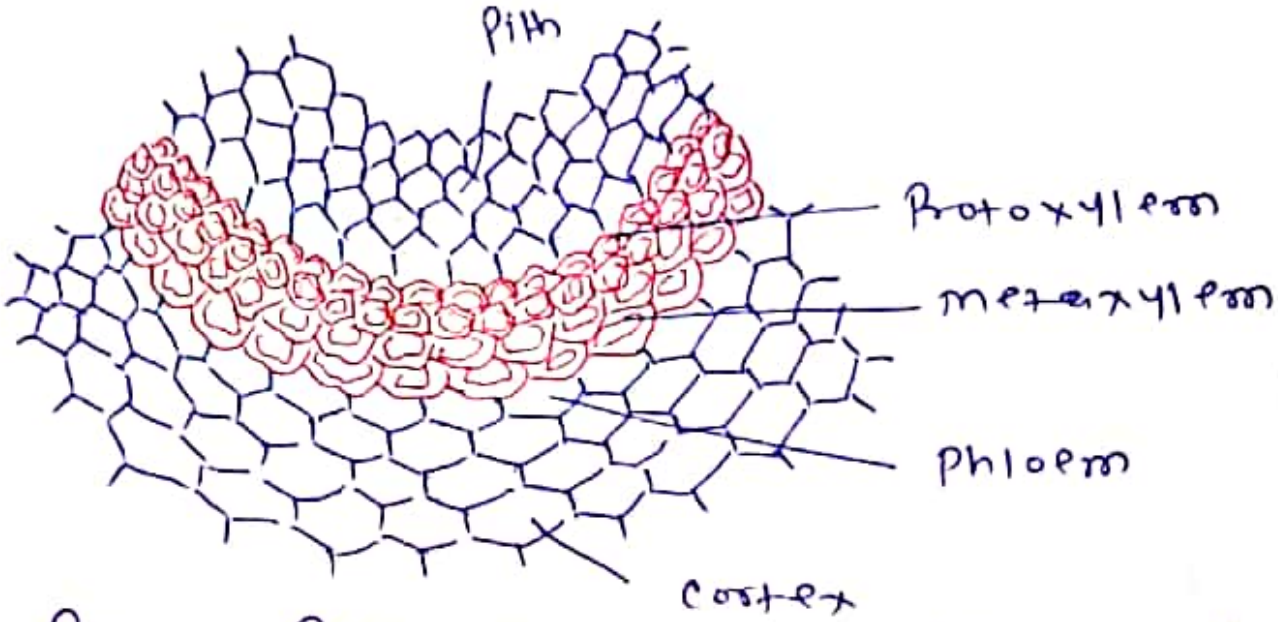

Figure- T.S. of matured rhizome of Ophioglossum vulgatum.

(B) Root Anatomy

The roots are endogenous. They have no root hairs. There is a mycorrhizal phycomycetous fungus in the cortex. The endodermis is distinct. The stele is monarch to tetrach and the phloem patches alternate with protoxylem patches. The xylem is exarch.

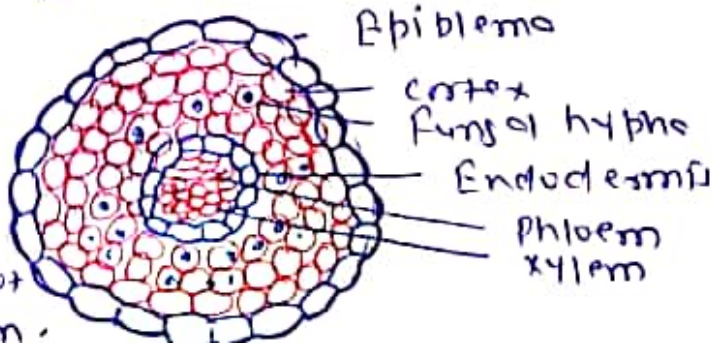

Figure- T.S. of root of O. vulgatum.

(C) Leaf Anatomy

T.S. of the leaf shows stomata on both the epidermises. A uniform spongy mesophyll with air spaces and a number of vascular bundles.

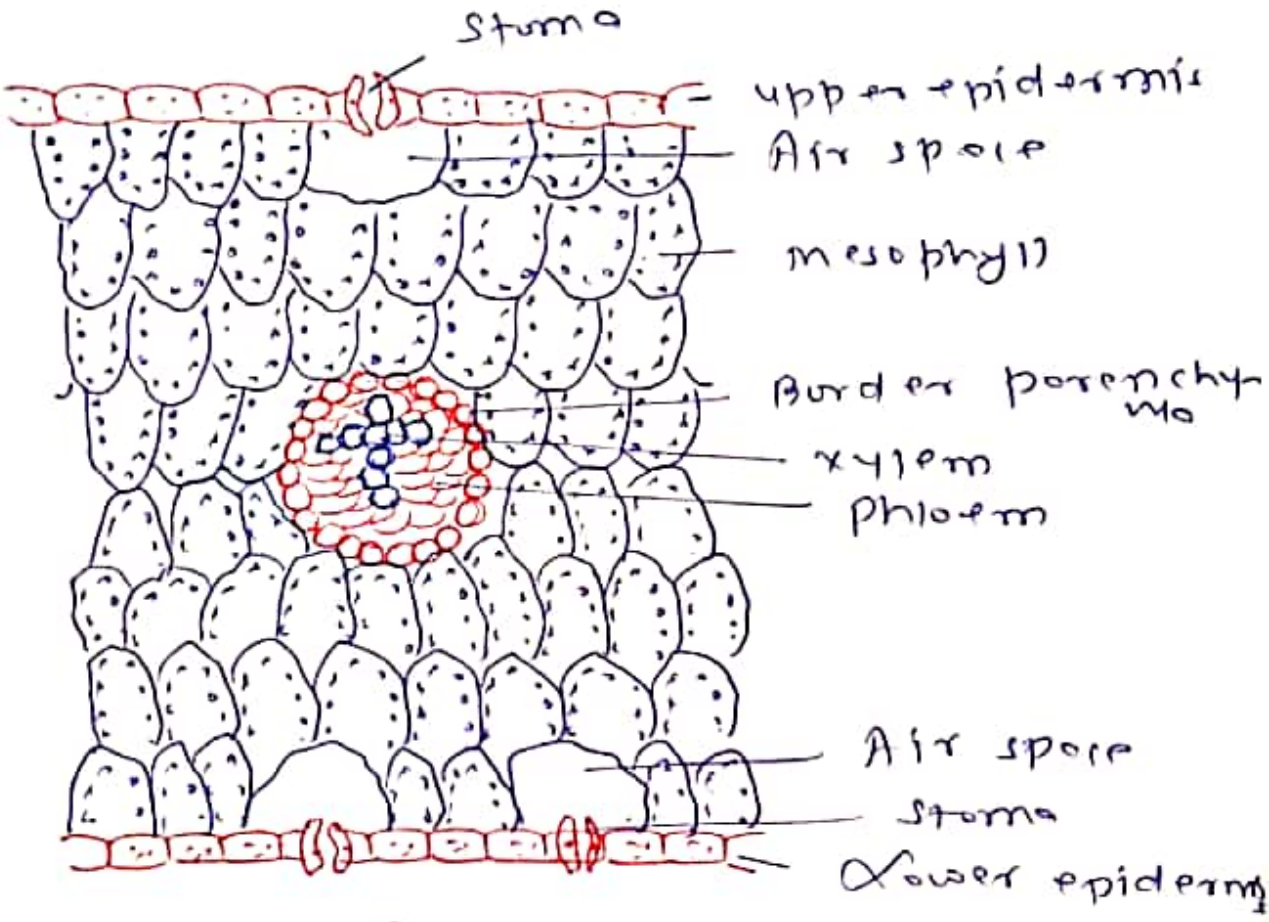

Figure- T.S. of leaf of Ophioglossum

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