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**U.R. COLLEGE ROSERA
(SAMASTIPUR)**

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

**(i) EXTERNAL STRUCTURE
OF EQUISETUM.**

External structure of Equisetum

Systematic Position

Division → Cryptogam
Sub-division → Pteridophyta
Super-class → Sphenophyta
class → Colemopsida
order → Equisetales
family → Equisetaceae
Genus → Equisetum.

Occurrence → The genus Equisetum

[Equis = horse, setae = bristles] is commonly called as "horse tail." It consists of about 25 species which are world wide in distribution except in Australia and Newzealand. most of the species are found in North temperate region. Some occur in tropical zone and E. arvense is cosmopolitan. The species of this genus grow in different habitats but mostly they are found in damp and semi-aquatic condition.

The general occurrence is indicated by common names of different species

e.g. *E. arvense* (bleed horse tail) is found in grass lands in open and porous soil, along dry and sandy road sides and railway embankments; *E. polystre* grows in ponds or marshes or along the stream banks. It is called more horse tail. *E. pratense* (meadow horse tail) grows in damp and shady soils.

In India

Common species are *E. debile*, *E. dibbium*, *E. arvense* and *E. remossimum*. *E. debile* is the most popular species which grows abundantly along the banks of river in sandy and moist soils and in sandy and swampy places.

External Structure of Equisetum

The plant body is differentiated into three parts -

① Stem → The stem of *Equisetum* is rhizome. It is much branched and usually penetrates more than three feet deep in the soil. It is differentiated into nodes and internodes. Each node contains scale like leaves

which are united at the base forming a sheath around the stem. From each node vertically erect aerial branches grow upward. The aerial branches may be branched or unbranched. The branches arise in whorls. All the branches and branchlets are distinctly differentiated into nodes and internodes. The internodes are ribbed and the number of ribs correspond to the number of leaves. The aerial branches arising from rhizomes are of three types -

- (i) Sterile branches → They are green and much branched as in *E. arvense*. The branches arise in whorls at the nodes. They are large and without strobili.
- (ii) Fertile branches → They are non-green and unbranched. They bear terminal strobili. They die after spore dispersal.
- (iii) Intermediate branches → They are non-green and unbranched in the beginning but become green and branched after throwing off their mature strobili.

② Leaf → The leaves are small, simple, slender, scale like and uni-nerved. They are arranged in whorls and are fused at the base forming a brownish sheath which closely envelops the internode with shorter or longer teeth like tips. They are non-green and entirely protective in nature.

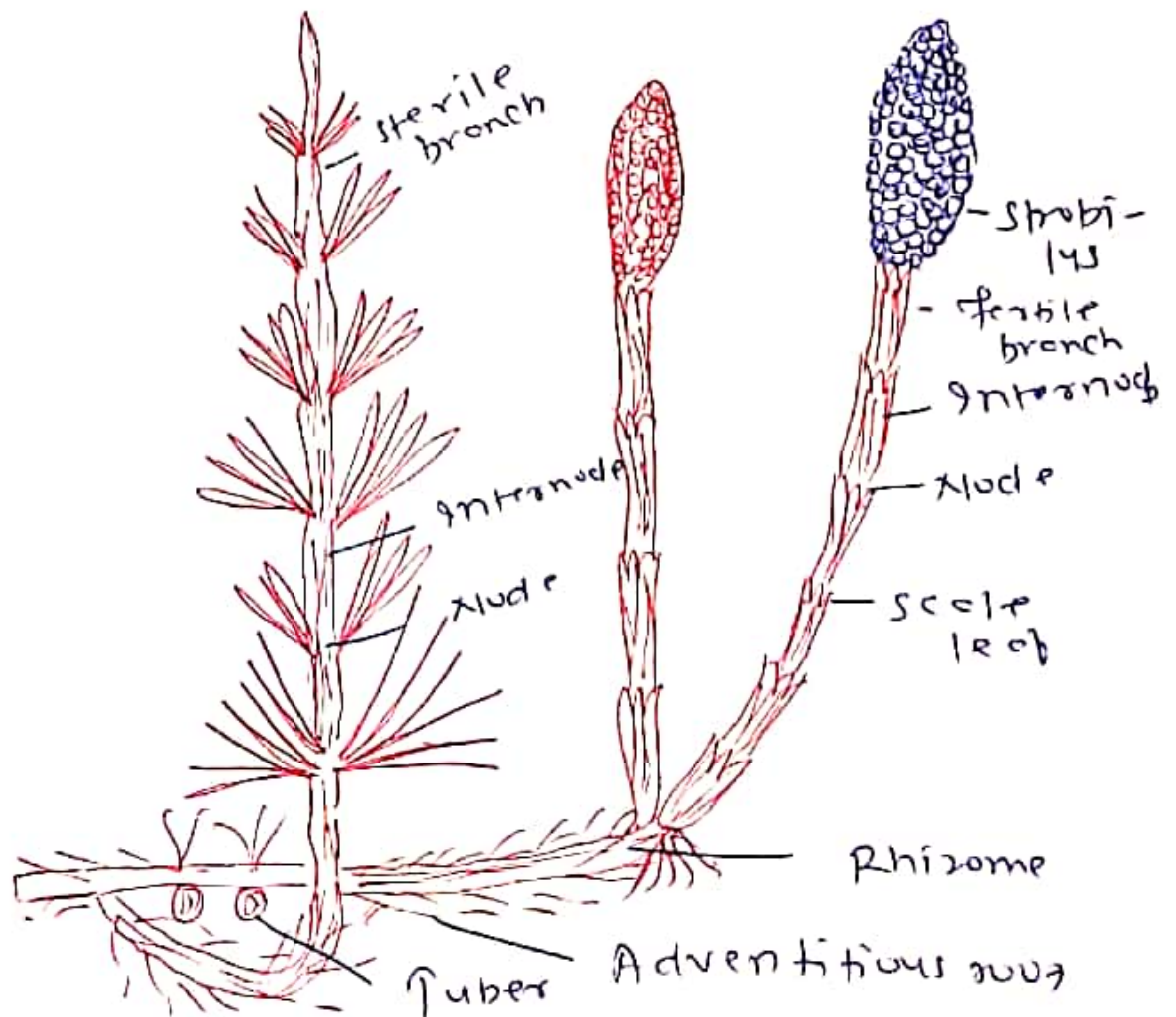


Figure - External structure of *Equisetum arvense*.

③ Root → The roots are adventitious ⑤
and develop from the nodes of rhizome
They are slender, fibrous, born in
whorls, live for years but do not pro-
duce root system. They are rarely
branched. They don't function of fixa-
tion, absorption of water and mineral
salts. Sometimes non-functional roots
also arise from the aerial branches.

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