

RHYNIA

(Early land plants)

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Classification

Division-Psilophyta

Class-Psilophytopsida (simplest, earliest land plants)

Order-Psilophytales (single order, 4 families)

Family- Rhyniaceae (Rhynia, Cooksonia, Hornephyton, Yarravia)

Genus- *Rhynia/Cooksonia*

Fossil was discovered by Kidston and Lang in 1917 in Devonian period.

In the village Rhynie in Scotland.

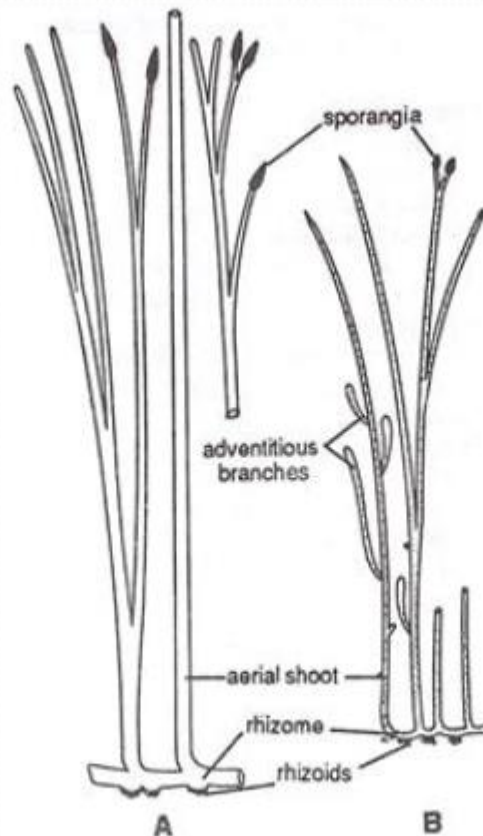
It has two species *R.major* and *R.gwynne-vaughani*.

Morphology

Subterranean ,creeping ,cylindrical , dichotomously branched rhizome. Roots ab., rhizoids pre. Rhizome bears the dichotomously branched aerial leafless shoots. Some
Aerial branch end with pear shaped sporangia.

Herbaceous

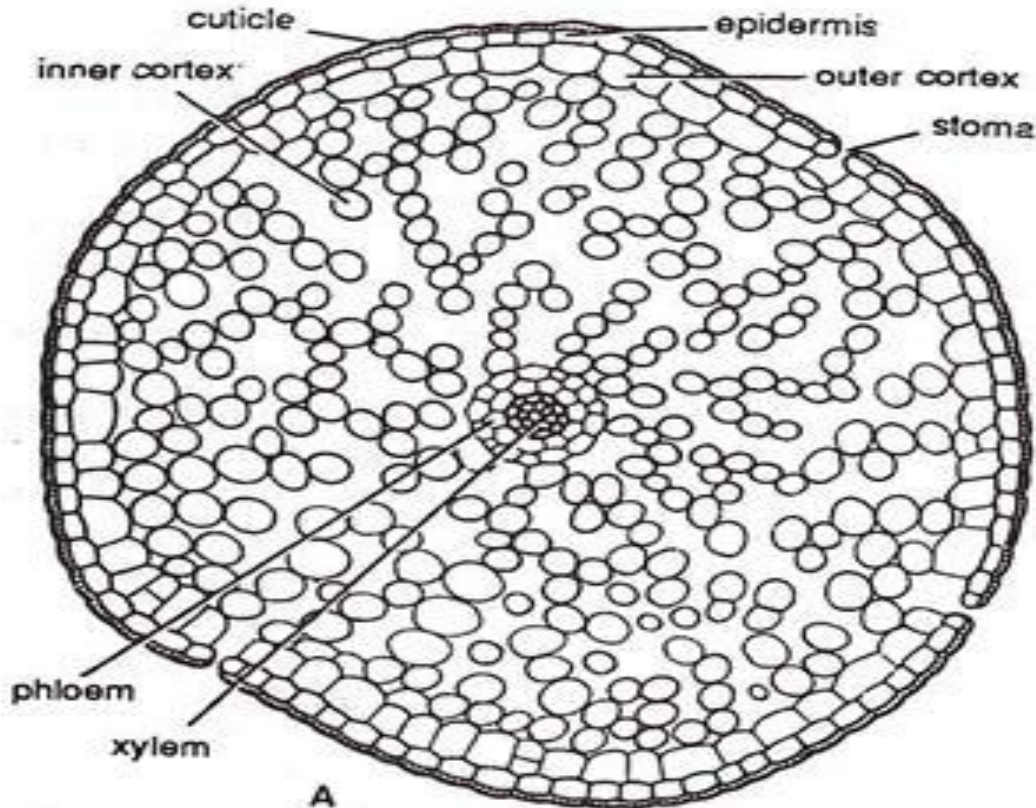
- R. Major
- 50 cm in height
- 1.5-6 mm in diameter.
- Aerial shoot are smooth



- R. Gwynne-vaughani 20 cm in height
- 1-3 mm in diameter
- Shoots with adventitious branches

Fig. 206. *Rhynia*, external features. A, *R. major*; B, *R. gwynne-vaughani*.

Internal structure of stem and rhizome



Epidermis :- thick and covered by thin cuticle, presence of stomata
cortex:- Differentiated into outer (thick walled, compact) and inner cortex (intercellular spaces with chloroplast)

Endodermis and pericycle are absent

Stele:- Presence of Protosteles
2} xylem made up of annular trachides and no sieve element in phloem

Fig. 207. Rhynia. A, T.S. rhizome; B,

Reproduction

- Homosporous
- By sporangia formation

L.S. of sporangia

Multilayered jacket

Outer layer thick walled.

Innermost layer-nutritive, tapetum

Many spore tetrads formed inside

Str. Of spore

Heavily cutinized

Sporangia does not have any special mechanism of dehiscence, liberation of spores occurs by death and decay of sporangia.

No evidence on gametophyte

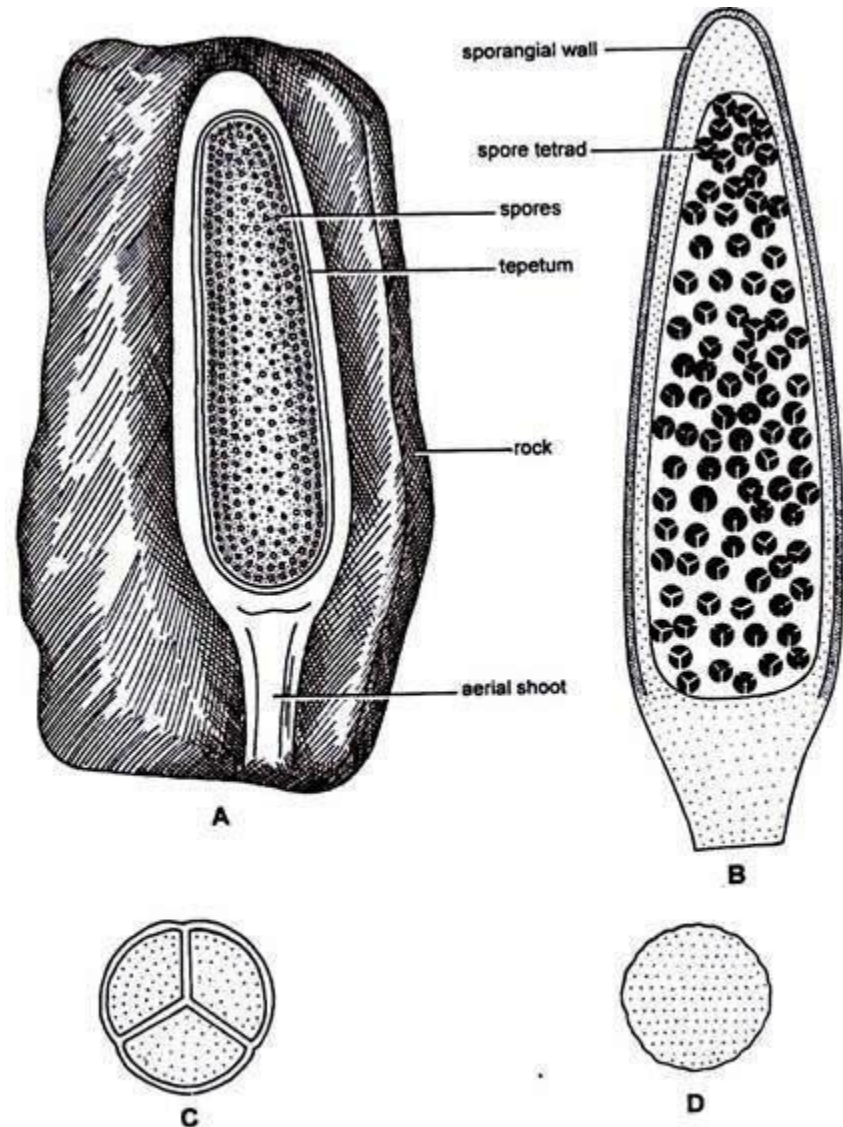


Fig. 3 (A-D) *Rhynia*. Sporangia and spores A. L. S. of sporangium of *R. major*, B. L.S. of sporangium of *R. gwynne-vaughani*, C. Sporetetrad, D. Spore