Lab(7): Vascular Plant (Phanerogams)

Pteridophyta (ferns)

Super kingdom: Eukaryota

Kingdom: Plantae

Division: Pteridophyta

1- Class : Equisetopsida

Order : Equisetales

Genus : *Equisetum*

2- Class : Lycopodiopsida

Order : Lycopodiales

Genus : *Lycopodium*

General characteristics for Pteridophyta :-

1- Commonly termed as (ferns) includes many species, most of which are herbs.

2- Tropical ferns are characterized by their upright stems and many leaves, so they are called tree ferns.

3- Fern consists of leaves and a rhizome stem extends horizontally on or under soil, carrying downward transverse shoots.

4- Leaves are in **two types**: large, complex, with gaps in the vascular cylinder, and small, without gaps in the vascular cylinder.

5- The sporophytes consist of cohesive cell groups.

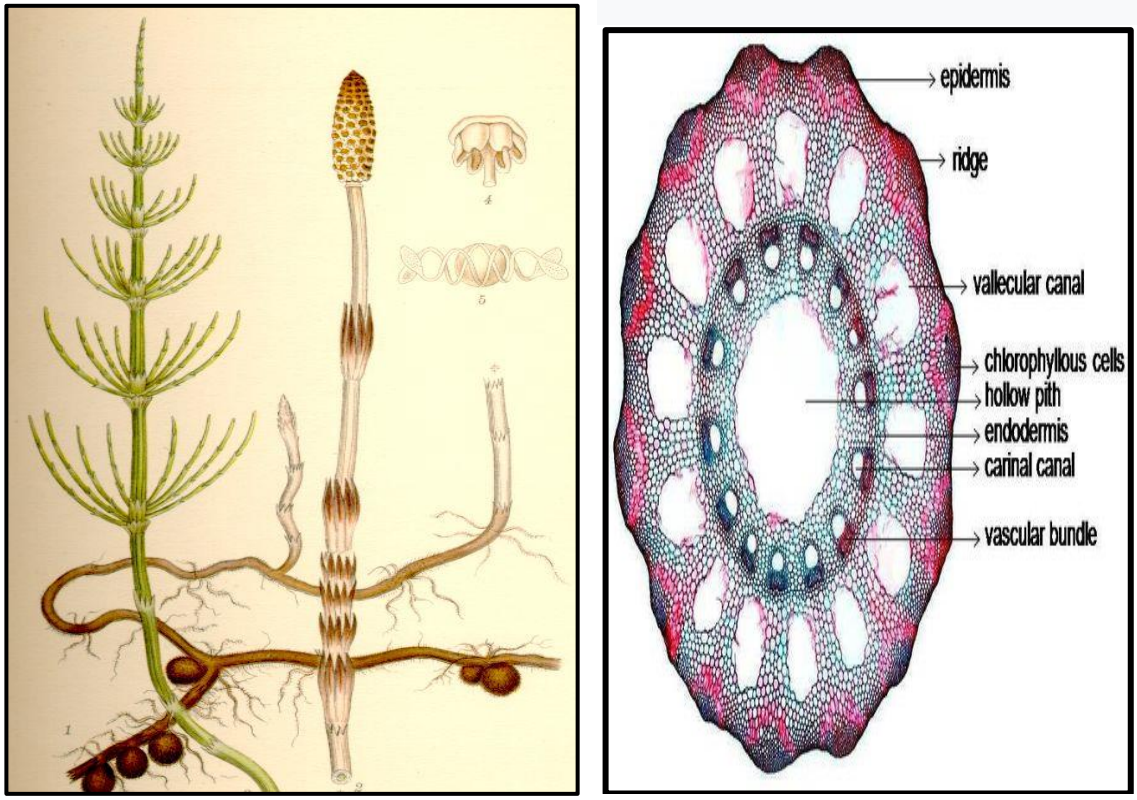
Genus : ***Equisetum***

A plant that lives in different environments.

• The sporophyte is divided into roots, stems, and leaves

• In Cross section of the stem you can see that:

The epidermis consists of a **single row of cells**, Then the crust and Then the vascular bundles, which are characterized by the presence of a (**Carinal canal**)



Figure(1): *Equisetum* whole view and C.S in stem

Characteristics of species that live in the aquatic environment:

1- The presence of the vascular canal.

2- The presence of the carinal canal.

3- The presence of a hollow pulp.

4- Wood grows sparsely.

Characteristics of the species that live in the desert environment:

1- The presence of thick cuticles.

2- The presence of sunken stomata.

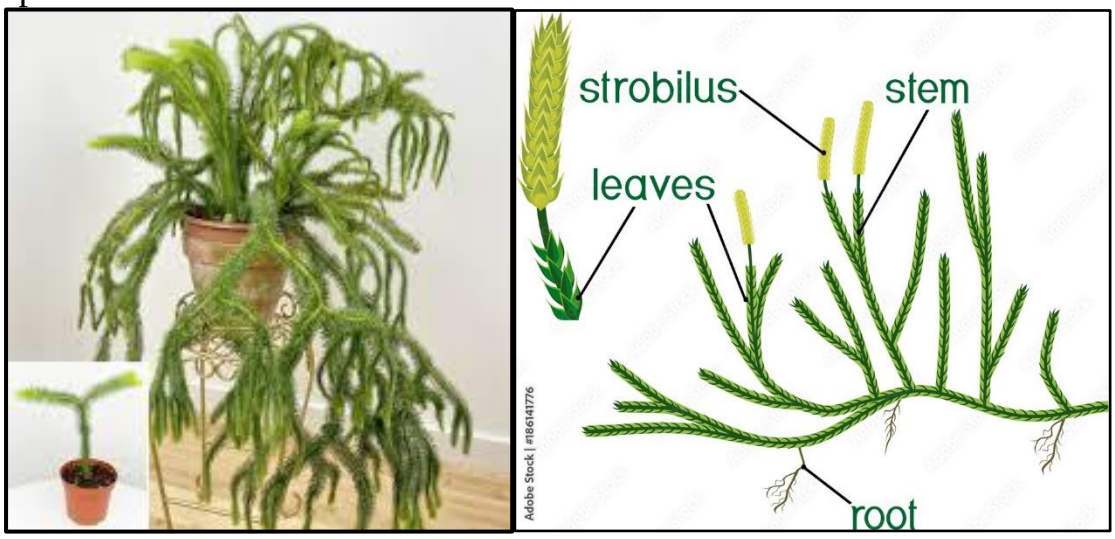
3- The presence of sclerenchyma under the skin.

Lycopodium (Club moss)

• It includes ancient fern individuals.

• Its individuals are distinguished into stems, leaves, and roots, and they have vascular bundles of the **primitive type**.

• It is noted that there are **no gaps in the cylinder**, and the spore leaves often gather at the **top of the stem** to form **cones (strobilus)** and various spores.



Figure(2): ***Lycopodium***