

Lecture:6

Doomain Eukarya

Kingdom Plantae

- Multicellular
- Cellulose- rich cell wall
- Use starch as a nutrient reserve
- Usually photoautotrophic, using photosynthesis to convert solar energy into chemical energy in glucose
- Chloroplast present, contain chlorophyll (a) and (b) and other pigments
- Most plants live in terrestrial habitats
- Have alteration of generation (plant alternate between a diploid stage called sporophyte and a haploid stage called gametophyte).
- Complex organ systems
- Produce haploid spores

Plant can be classified by the presence or absence of vascular tissues (**which is formed of specialized cells for the transport of water and nutrients**) in to vascular and non- vascular plants

a- Non- vascular plants (Bryophytes الحزازيات):

Name bryophytes is derived from two words ‘ Bryon’= moss; and ‘phyton’= plant

However, the word *bryophyte* refers to a group of plants comprising the mosses, liverworts, and hornworts. There are about 25,000 different species of bryophytes in the world today. Although

these plants are small in size, they are one of the largest groups of land plants and can be found almost everywhere in the world.

These plants do not flower and therefore, never produce seeds. A plant that does not flower is called a cryptogam and reproduces by spore production. The process by which they produce spores is termed alternation of generations.

Bryophytes do not have a true vascular system and are unable to pull water and nutrients up from the ground at any significant distance. Lacking this specialized system distinguishes bryophytes from ferns and flowering plants. It is for this reason that they are considered to be rather primitive plants.

Economic importance of Bryophytes

- Used to prevent soil erosion (Barbula, Bryum).
- *Anthoceros* can fix nitrogen and can enrich the soil nutrients.
- Many mosses are attractive and they are used in gardening.

- Some mosses are used in packing materials.
- Peat moss is a good fuel; it is extensively used in many European countries.
- Sphagnum moss is used for the preparation of absorbent bandages; they also have good antiseptic properties.
- *Marchantia polymorpha* is used for the preparation of pulmonary tuberculosis.
- *Polytrichum* has been used for the treatment of kidney stones.
- Ecologically, bryophytes play a major role in maintaining an ecosystem's humidity level by their ability to absorb and retain water.