

Biology 10

Chapter 22-2

p 639-645

“Seedless Plants”

Objectives

- Identify the structures of nonvascular plants
- Compare and contrast the different groups of nonvascular plants.

Nonvascular Plants

- Do not have vascular tissue!
 - Limits _____ they can get
 - Limits _____ they can grow
 - must live in damp environments
- _____ generation dominant
 - **antheridium**: produces _____ gametes
 - **archegonium**: produces _____ gametes

Division Bryophyta

- Includes the _____
- small plants, live on rocks or on trees
- possess **rhizoids**, structures which _____, and absorb _____
 - not true roots! No vascular tissue!
- Ex: *Sphagnum*: peat moss

Moss Life Cycle

- Gametophyte is the green moss you normally see.
- Gametes fuse and sporophyte grows off the top of the gametophyte (see fig 22.11, p642)
- Sporophyte releases spores, which grow back into gametophytes.

Fig 22-11, p642

Moss Images

Division Hepaticophyta

- Includes _____
- Liverworts named after the lobed leaves, similar to mammalian liver
- May reproduce sexually (following alternation of generations) or asexually

- produce a _____ which contains clusters of cells called _____
- Rain splashes in the cupule and scatters the gemmae, which grow into a new liverwort

Division Anthocerophyta

- Includes _____
- Similar to liverworts, but sporophyte sticks straight up, resembling an animal horn
- Unique in that each cell has only one large _____

Uses of Mosses

- Most abundant plant in polar regions, important for their ecosystems
- Peat moss used as fuel, or in gardening.
 - helps retain moisture
 - helps _____ of soil (important for some plants that like acidic soil)

Non-Seed Vascular Plants

- obviously, have vascular tissue
 - allows _____, _____
- just as obviously, do not produce seeds
 - _____, as spores not as hardy as seeds
 - _____ for fertilization of the egg!

Non-Seed Vascular Plants

- _____ **dominant**: different than the non-vascular plants!
 - _____: structure usually at the tip of the sporophyte that protects and distributes spores
- gametophyte generation smaller
 - called the _____
 - produce both antheridia and archegonia

Division Lycophyta

- Includes _____
- club moss (*Lycopodium*) resembles a small evergreen tree
 - used as _____

Division Arthrophyta (Sphenophyta)

- commonly called _____
- cell walls contain _____, (like sandpaper)
- once used to _____!
- usually found in marshes, ponds, shallow streams, etc

Division Pterophyta

- the _____
- most common non-seed vascular plant
- Ferns grow from an underground _____
- The fern part you see is a _____, which consists of
 - stipe: _____
 - pinnae: _____

Draw a Fern below, label the rhizome, frond, stipe, and pinnae

Division Pterophyta

- ferns were the first plants to have leaves with branching vascular tissue (ie: veins)
- On back side of fern, the spores are produced in structures called _____
- Spores form the gametophyte (prothallus)
- Fertilization occurs, and the sporophyte grows
 - when the fern first pokes through the ground, it is called a _____, after its appearance!

Fern Life Cycle (Fig 22-14, p645)