# *Life Science 7*

Chapter 12-2
p 304-307
"Seedless Plants"

## Objectives

- Describe the features of mosses and liverworts.
- Describe the features of ferns, horsetails, and club mosses.
- Explain how plants without seeds are important to humans and the environment.

## Nonvascular Plants

- Do not have _____tissue!
  - Limits how big they can get
  - Limits where they can grow
    - must live in _____environments
- _____ generation dominant
  - **antheridium**: produces _____ gametes
  - **archegonium**: produces _____ gametes

## Division Bryophyta (don't need to remember division names!)

- Includes the _____
- small plants, live on rocks or on trees
- possess _____, structures which anchor the moss down, and absorb water
  - not true roots! No vascular tissue!
- Ex: _____

## Moss Life Cycle

- _____ is the green moss you normally see.

- Gametes fuse and _____ grows off the top of the gametophyte (see fig 6, p 274)

- Sporophyte releases _____, which grow back into gametophytes.

## Moss Images

## Division Hepatophyta

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

## Division Anthocerophyta

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

## Importance of Mosses, Liverworts, etc

- _____, similar to lichens
  - first to live in new habitats, paves the way for larger plants
  - help keep _____
  - peat moss used for _____ (helps soil retain moisture)

## Non-Seed Vascular Plants

- obviously, have _____ tissue
  - allows greater _____ greater diversity of _____

- just as obviously, do not produce _____
  - limits habitats, as _____ not as hardy as seeds
  - sperm require _____ for fertilization of the egg!

## Non-Seed Vascular Plants

- **_____ dominant**: different than the non-vascular plants!
- gametophyte generation smaller
  - called the _____
  - produce both sperm and egg

## Division Lycophyta

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

## Division Sphenophyta

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

## Division Pterophyta

- the _____
- most common non-seed vascular plant
- Ferns grow from an underground _____
  - see fig 10, p276
- The fern part you see is a _____, which consists of
  - **stipe**: stem
  - **pinnae**: leaflets

## 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!

## •Importance of Seedless Vascular Plants

- Help to form _____
- Help keep soil from _____

- Popular _____
- Some edible, others used for cosmetics, dietary supplements
- Seedless vascular plants that died about 300 mya formed _____