

# Systematic Botany. Lecture 30

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# Outline

## Questions and answers

Vegetabilia  
Bryophyta

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Vegetabilia  
Bryophyta

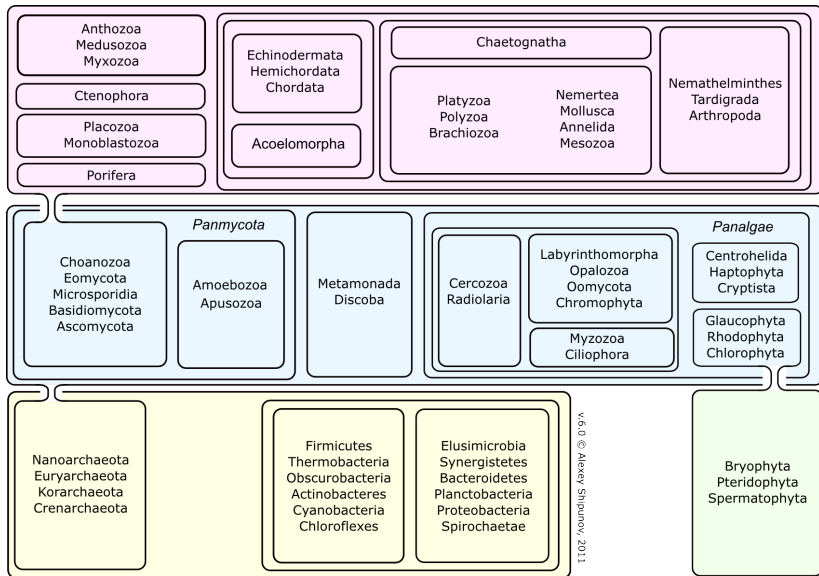
## Previous final question: the answer

For each kingdom, list at least one representative phylum.

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For each kingdom, list at least one representative phylum.

- ▶ Now I believe that you remembered at least several names.



# Vegetabilia

## Bryophyta

Regnum VEGETABILIA [<sup>7</sup>*Magnolia*]Phylum 40(40). *Bryophyta* [<sup>6</sup>*Bryum*]\*41(41). *Pteridophyta* [<sup>6</sup>*Pteris*]\*42(42). *Spermatophyta* [<sup>6</sup>*Magnolia*] s.a.



## Three main phyla

- ▶ **Bryophyta**: gametophyte predominance
- ▶ **Pteridophyta**: sporophyte predominance, no seed
- ▶ **Spermatophyta**: sporophyte predominance, seed

## Mosses: phylum Bryophyta

- ▶  $\approx 20,000$  species
- ▶ Sporic life cycle with gametophyte predominance\*
- ▶ Sporophyte reduced to sporogon (sporangium with seta), usually achlorophyllous, parasitic
- ▶ No roots, only rhizoid cells (long hairy dead cells capable for apoplastic transport)
- ▶ Poikilohydric plants
- ▶ Gametophyte starts development from protonema

# Protonema



# Life cycle of mosses

(picture from the board)

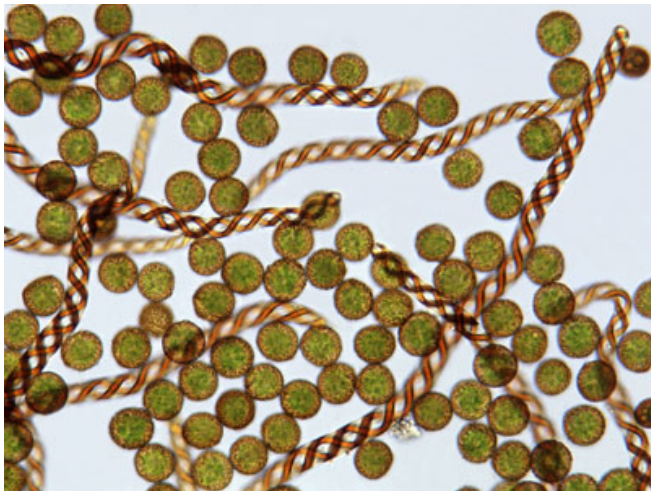
## Three main groups (subphyla)

- ▶ **Hepaticae**—liverworts. Three classes, most primitive are Haplomitriopsida. Body has dorsal and ventral parts, sporogon bag-like, without columella, spores with elaters.
- ▶ **Bryophytina**—true mosses. Six classes, most important are Sphagnopsida (peat mosses), Polytrichopsida (haircap mosses) and Bryopsida. Body radial, sporogon long, with columella, spores without elaters.
- ▶ **Anthocerotophytina**—hornworts. One class. Body flattened, sporogon long, green, with columella and stomata, spores with elaters.

## *Haplomitrium gibbsiae*, primitive liverwort



## Elaters of liverworts (*Lepidozia* sp.)



## *Sphagnum* sp. (Bryophyta, Sphagnopsida) with sporogons





## *Dawsonia superba* (Bryophyta, Polytrichopsida)—the largest moss with vascular system



## *Bryum capillare* (Bryophyta, Bryopsida)



## *Leiosporoceros dussii* (Bryophyta, Anthocerotopsida)—primitive hornwort



## Final question (3 points)

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This is an unfinished key:

1. ... — Bryophyta
- ... — other Vegetabilia

Fill the gaps.

## For Further Reading



Margulis and Chapman. 2009.

*Kingdoms and domains: an illustrated guide to the phyla of life on Earth.* 4th edition.