

Introduction to Botany. Lecture 3

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Outline

- 1 Questions and answers
- 2 Course in general
 - Syllabus
- 3 Plants: definition
 - Plants₁ and plants₂
- 4 Plants in general
 - Levels of organization
 - Taxonomy



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Importance of plants

Why are plants important?

- Food
- Oxygen
- ...?

[aesthetics, landscape, materials, drugs,...]



Course in general

Syllabus



Syllabus

Download and read, especially exam dates!



Plants: definition

Plants₁ and plants₂



Plants₁ and plants₂

- Plants₁ are all green photosynthetic organisms
- Plants₂ are “typical plants” (better definition follows)



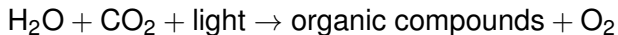
The nature of two definitions

- Plants₁—ecological definition (based on the role in nature)
- Plants₂—taxonomic definition (based on the evolution)



Plants₁ is about ecology

Plants₁ are *photosynthetic organisms*:



Some plants₁ could taxonomically be bacteria or even animals!



Green slugs



Green slugs obtain chloroplasts from algae, but keep them all their life, feed from them and even use chloroplast genes.



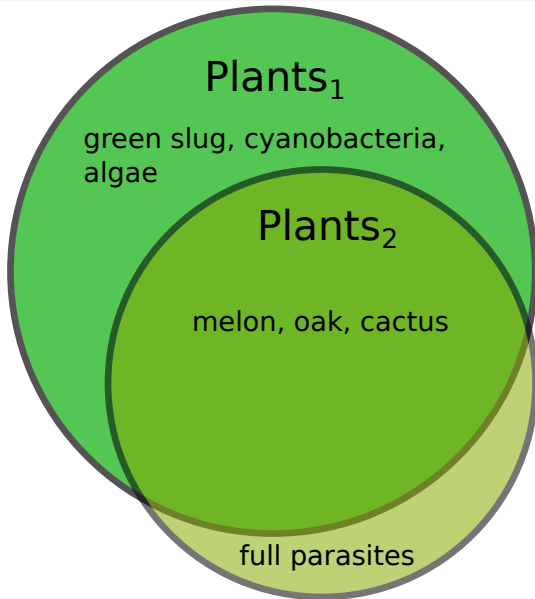
Green *Hydra*



No mouth!



Plants₁ and plants₂ are similar but **not** the same



Hydnora



Root parasite



Pilostyles



Tissue parasite



Dodder



Stem parasite



Plants in general

Levels of organization

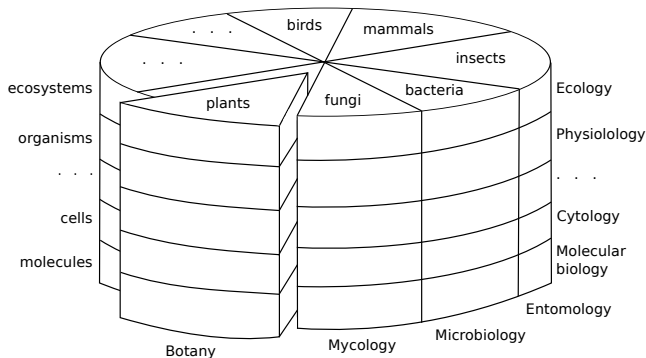


Levels of organization

- Ecosystems OR Taxa
- Populations
- Organisms
- Organs
- Tissues
- Cells
- Organelles
- Molecules



Place of botany



Layered cake of biology (Odum, 1971): botany is a
“slice science”



Plants in general

Taxonomy



Ranks

Most scientists accept seven main ranks:

- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species



Names

- Names of species are binomials like *Solanum tuberosum* (potato)
- Names of other ranks are uninomials like **Vegetabilia** (plant kingdom)



Plants₁ and plants₂ (updated)

- Plants₁ are all photosynthetic organisms
- Plants₂ are **Vegetabilia**: multi-tissued, terrestrial, primarily photosynthetic eukaryotes



Final question (2 points)



Final question (2 points)

What is the difference between plants₁ and plants₂?



Summary

- “Plants” have **two definitions**
- Botany is a “slice” science



For Further Reading



A. Shipunov.

Introduction to Botany [Electronic resource].

Mode of access:

http://ashipunov.info/shipunov/school/biol_154

