

Introduction to Botany. Lecture 27

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- 1 Questions and answers
- 2 Plant diversity
 - Systematics
 - Kingdom Vegetabilia, land plants



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Results of Exam 3: statistic summary

Summary:

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.	NA's
23	30	34	40	47	76	2

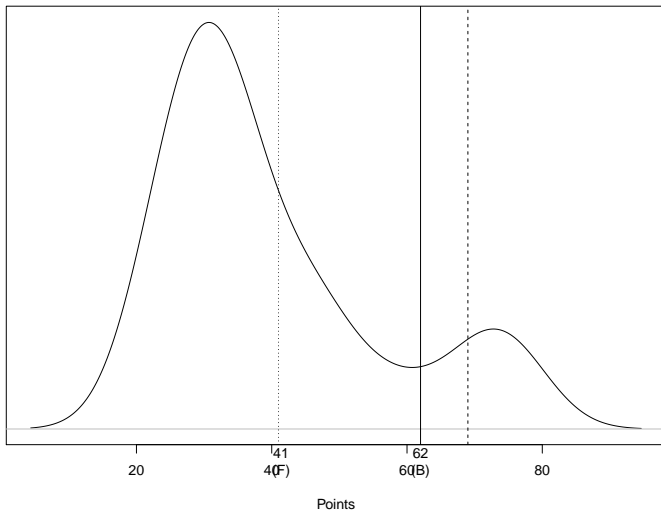
Grades:

F	D	C	B	max
41	48	55	62	69



Results of Exam 3: the curve

Density estimation for Exam 3 (Biol 154)



16. Leaf veins are:
- A. Photosynthetic structures
 - B. **Vascular bundles**
 - C. Lateral meristems
 - D. Petioles
20. Plant growing in California deserts should have well-developed:
- A. Guard cells
 - B. **Palisade cells**
 - C. Spongy cells
31. Root is:
- A. **axial vegetative organ with a function of soil nutrition**
 - B. lateral generative organ with a function of soil nutrition
 - C. lateral vegetative organ with a function of water consumption



*Short answers:
dead cells, tissues, xylem and phloem, leaf description*



Previous final question: the answer

What are lateral roots?



Previous final question: the answer

What are lateral roots?

- Roots growing from the root



Plant diversity

Systematics



Basics of systematics

Terms covered:

- Systematics = taxonomy
- Species, taxonomic hierarchy
- Taxon, rank = category, classification
- Kingdom, phylum, class, order, family, genus, species
- Subclass, subfamily and other intermediate ranks
- Subspecies and cultivars



Biological nomenclature

Terms covered:

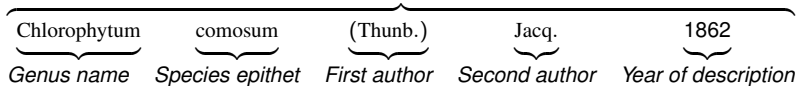
- Binomial name, species epithet, reference = citation
- Priority, starting dates, synonyms
- Nomenclature types
- Shortcuts: “sp.”, “spp.”, “s. l.” (wide sense), “s. str.” (strict sense), “i. s.” (position unknown)



Examples

		Example 1	Example 2
Kingdom	Regnum	Vegetabilia	Animalia
Phylum	Phylum	Spermatophyta	Chordata
Class	Classis	Angiospermae (Magnoliopsida)	Mammalia
Order	Ordo	Liliales	Primates
Family	Familia	Asparagaceae	Hominidae
Genus	Genus	<i>Chlorophytum</i>	<i>Homo</i>
Species	Species	<i>Chlorophytum comosum</i> (Thunb.) Jacq. 1862	<i>Homo sapiens</i> L.

Species name



Plant diversity

Kingdom Vegetabilia, land plants



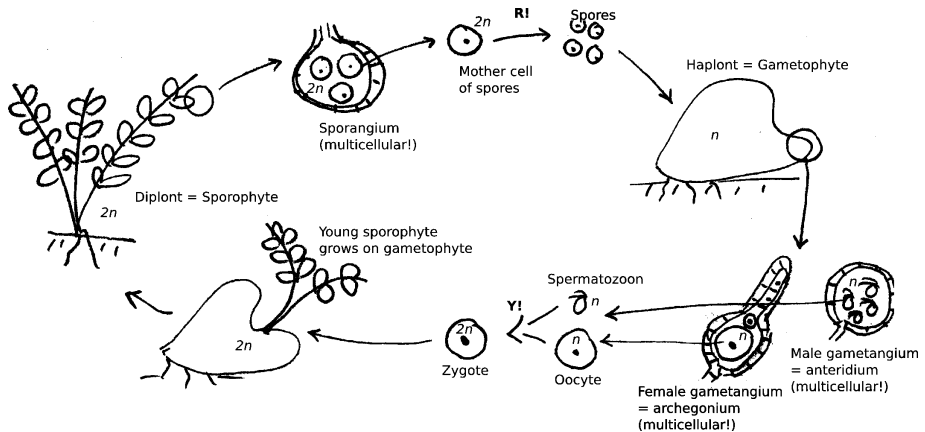
Life cycle of land plants

Terms covered:

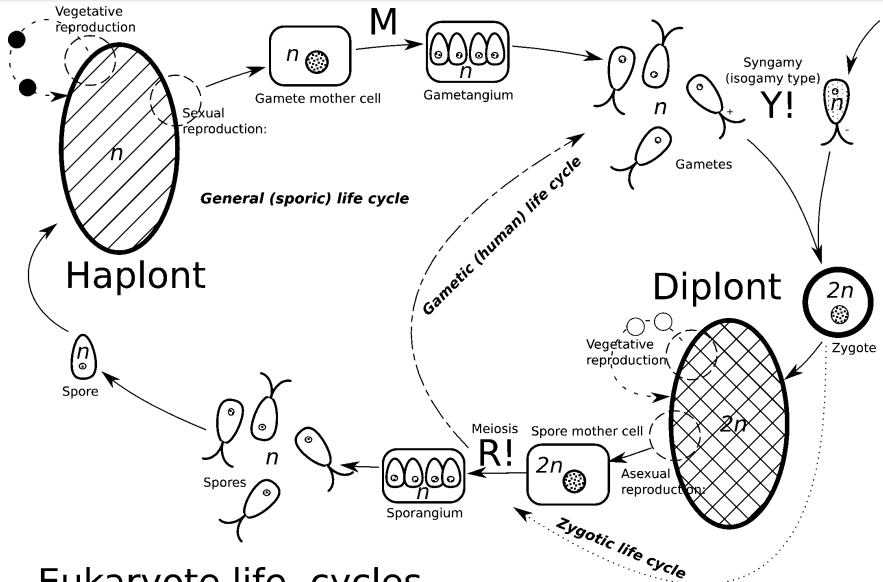
- Sporophyte and gametophyte
- Archegonium and antheridium
- Spermatozoa and oocyte (egg cell)
- Embryo and parasitic sporophyte
- Predominance of sporophyte and/or gametophyte



Life cycle of land plants



General life cycle



Eukaryote life cycles



Three main phyla

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



Final question (2 points)



Final question (2 points)

What is a archegonium?



For Further Reading



A. Shipunov.

Introduction to Botany [Electronic resource].

2010—onwards.

Mode of access:

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



Th. L. Rost, M. G. Barbour, C. R. Stocking, T. M. Murphy.

Plant Biology. 2nd edition.

Thomson Brooks/Cole, 2006.

Chapters 22.

