

Introduction to Botany

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Lecture 16

Outline

- 1 Life cycle
 - Basics of life cycles

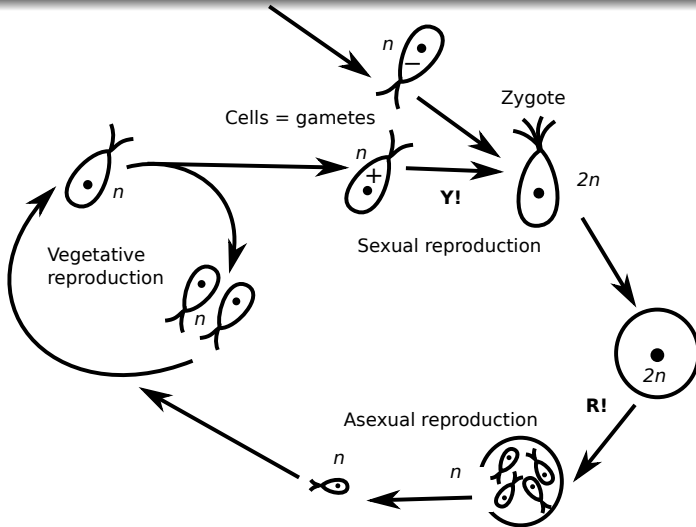
Life cycle

Basics of life cycles

Simple life cycle: unicellular organism

Associated terms: mitosis, meiosis (R!), syngamy (Y!), reproduction, sexual reproduction, asexual reproduction, vegetative reproduction, isogamy, heterogamy, oogamy, zygote, gamete, male, female, spermatozoon, oocyte

Simple life cycle: unicellular organism



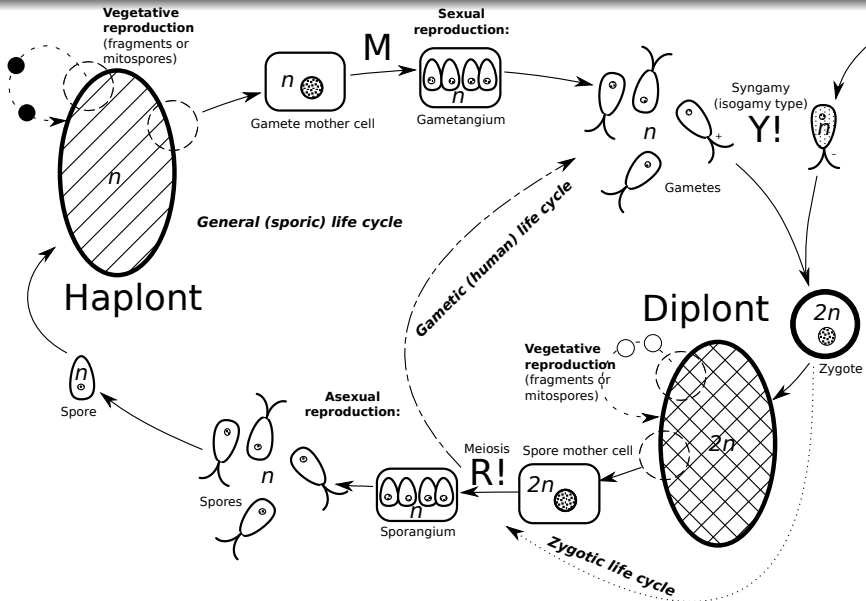
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Multicellularity, or Origin of Death

- Sometimes, cells do not part after mitosis. These simple cell aggregates may benefit from their size (e.g., harder to swallow) and putative division of labor (e.g., capture light from different sides and share products of photosynthesis)
- Next step is to separate *germ cells* and *somatic cells*. Somatic cells will eventually die whereas germ cells may give an offspring.
- This is the beginning of **multicellularity**.
- Life cycles of multicellular organisms are based on interleaving **haplont** and **diplont**, the second is making **spores**

General life cycle: multicellular organism

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Quiz question (... points)

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Summary

- **Mitosis** is a equal division of DNA, **ploidy does not change**, **genotype does not change**
- **Syngamy** is a sexual process of cell fusion, **ploidy doubles**, **genotype changes**
- **Meiosis** is a process of reduction of DNA amount, **ploidy halves**, **genotype changes**
- Meiosis has two stages: first to reduce ploidy, second to split exact copies of DNA

For Further Reading



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Introduction to Botany [Electronic resource].

Mode of access:

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