

Introduction to Botany. Lecture 34

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1 Questions and answers

2 Branching and seed

- Origin of seed



Outline

1 Questions and answers

2 Branching and seed

- Origin of seed



Previous final question: the answer

What is a difference between modified root and tuber?



Previous final question: the answer

What is a difference between modified root and tuber?

- Tuber has scales and buds
- Tuber can grow into the new plant

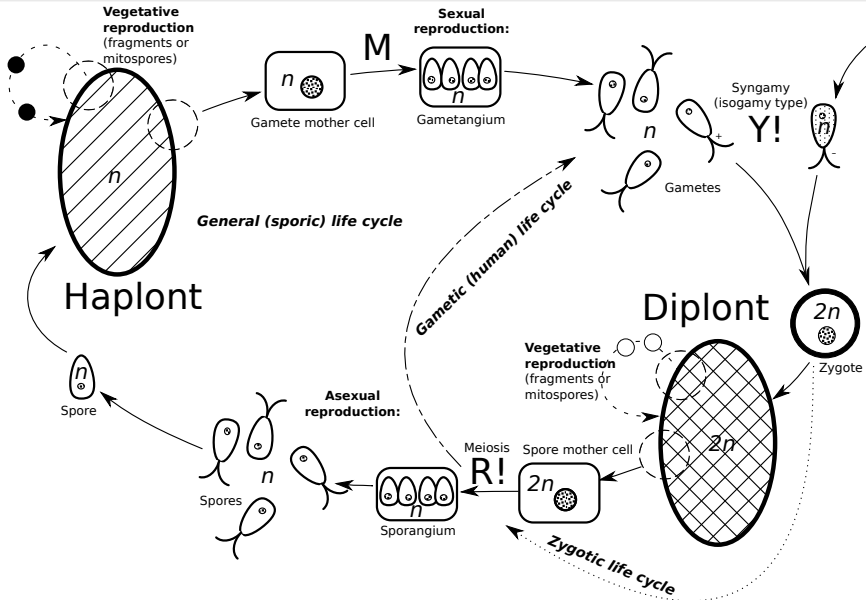


Branching and seed

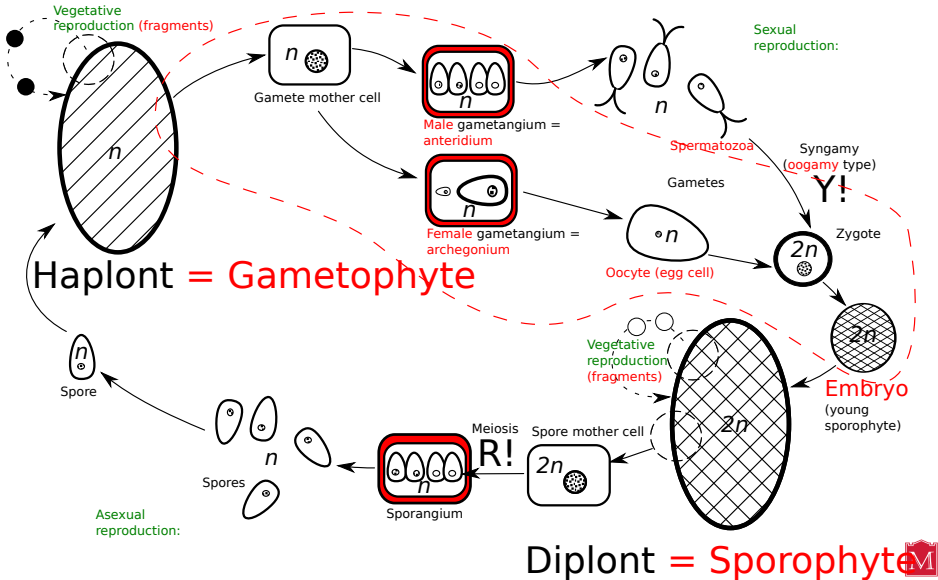
Origin of seed



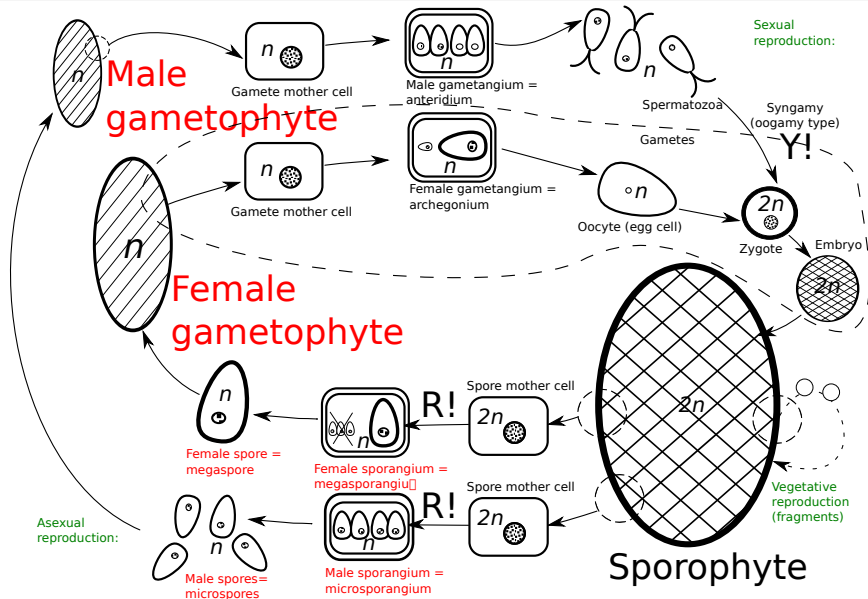
General life cycle



Life cycle of land plants: differences



Heterosporic cycle: differences



Origin of seed

- **“Dinosaur problem”**: without control on the *r*-strategic gametophyte, *K*-strategic tree sporophyte cannot guarantee its reproduction
- **Seed is the result of enforced control of sporophyte over gametophyte**
- Growing of gametophytes, syngamy (fertilization) and growing of daughter sporophyte—everything happens **directly on mother sporophyte**



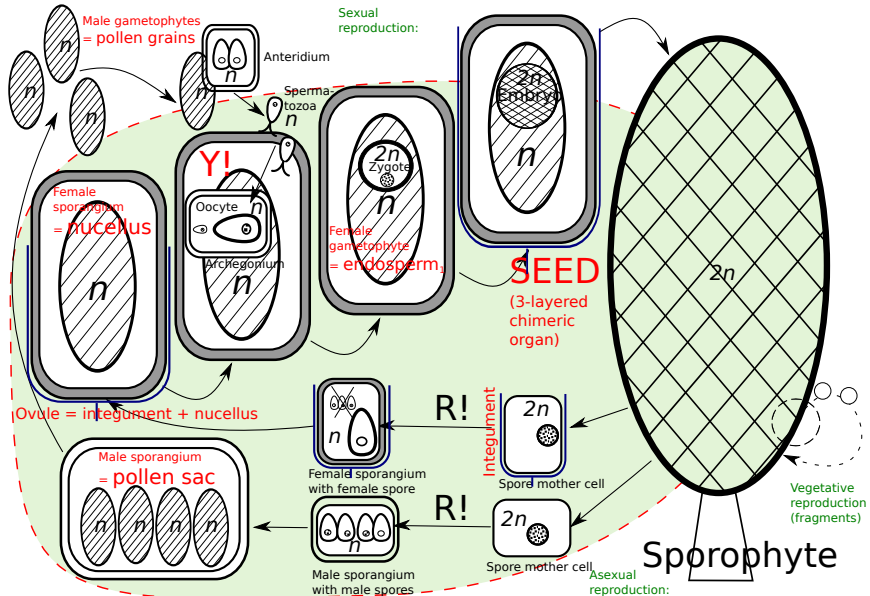
Seed plants have life cycle where almost all stages happen on mother sporophyte

Terms covered:

- Ovule and integument
- Nucellus and pollen sac
- Pollen grains and endosperm
- Seed



Seed plant cycle: differences



The seed

- Seed is a **chimeric organ** with three layers: (1) mother sporophyte tissue (integument + nucellus), (2) female gametophyte tissue (endosperm) and (3) daughter sporophyte (embryo)
- Biggest disadvantages of having seed are: (a) low probability of fertilization (pollination needed) and (b) overall slowness of cycle



For Further Reading



A. Shipunov.

Introduction to Botany [Electronic resource].

2015.

Mode of access:

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

