

EPGL – B203

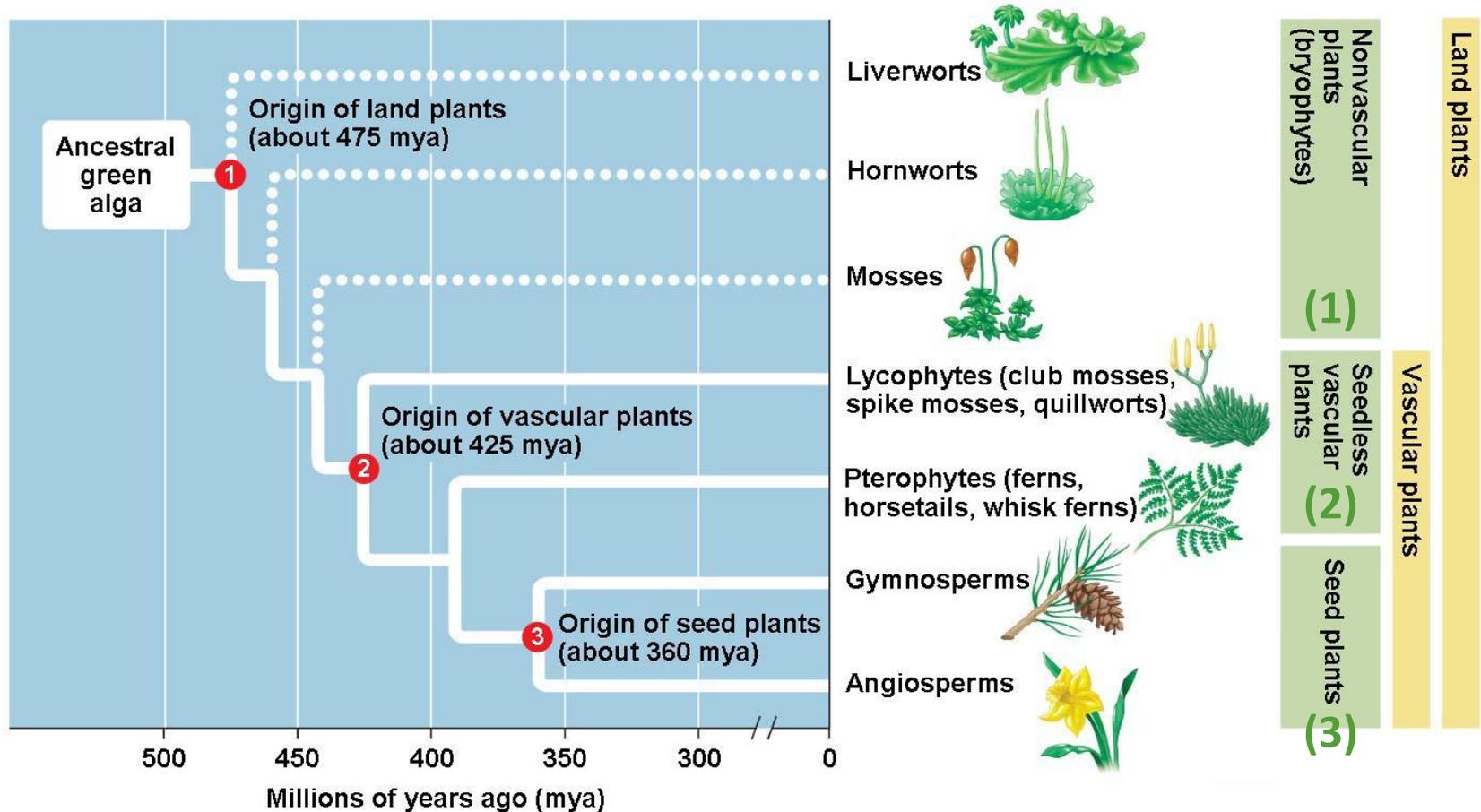
Intriguing Plants: From Physiology to Biotechnology

Dr. Amy Li



1) Classification of plants

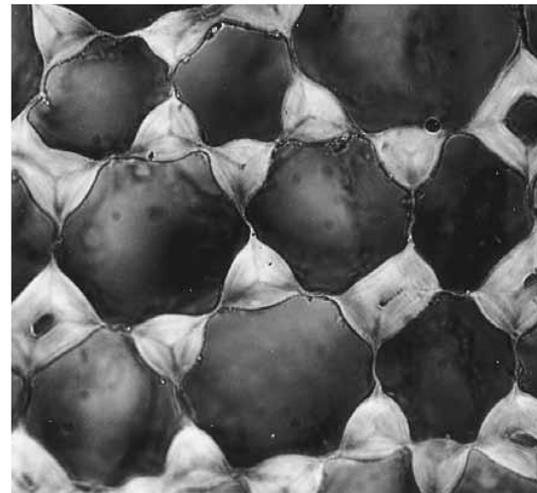
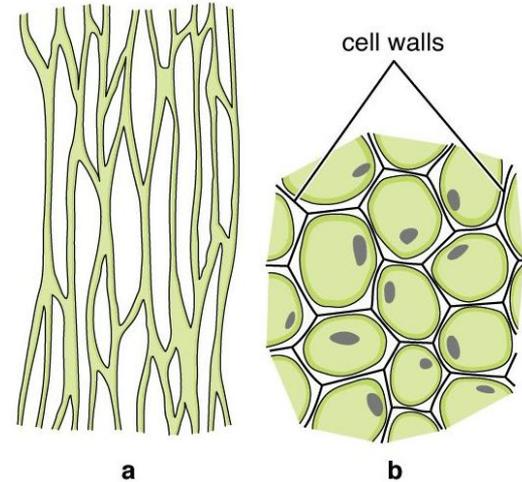
- 2 key evolutionary events to better adapt on land



2) Plant cells & tissues

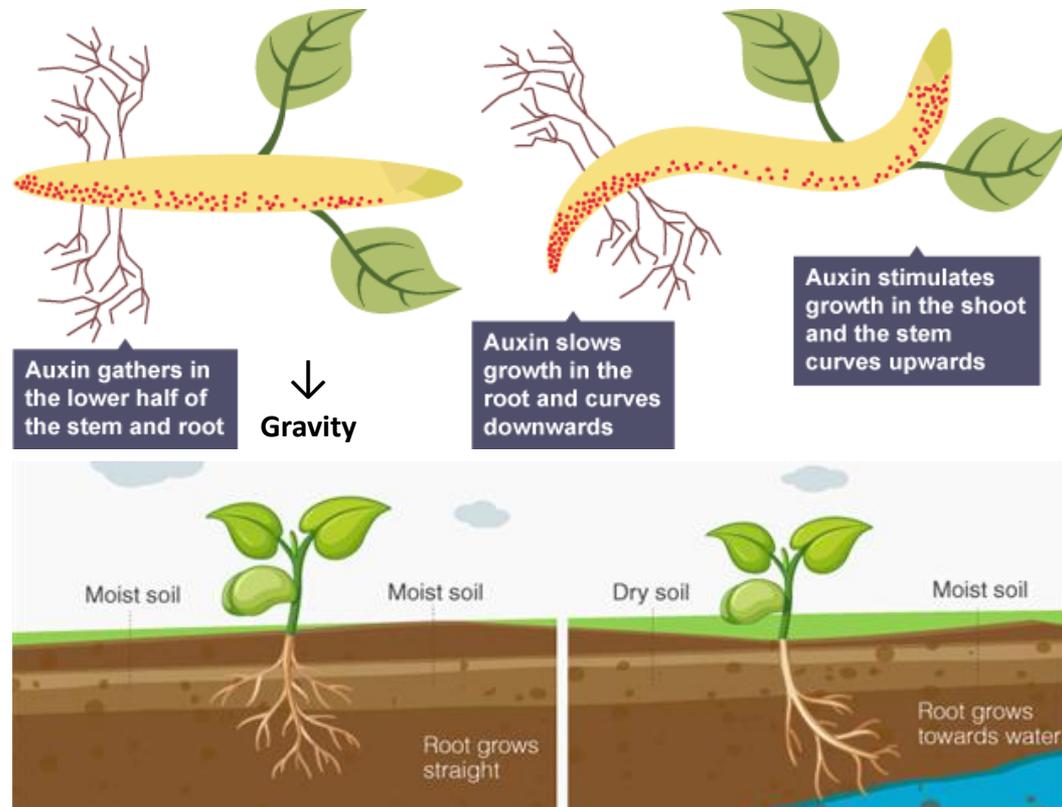
- **Collenchyma**

- With unevenly thickened primary walls
- Supports young growing organs



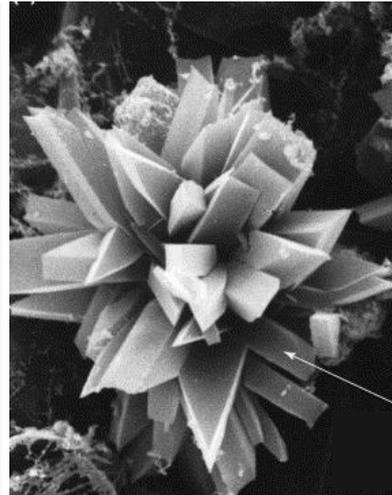
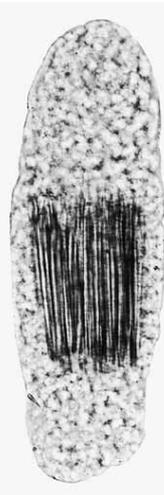
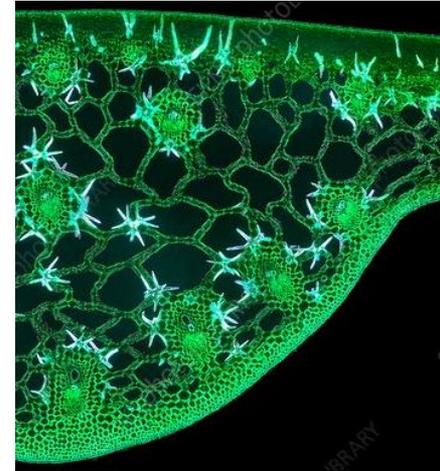
3) Plant growth & reproduction

- Root growth is regulated by plant hormones, e.g. auxin
 - Toward gravity &/or water
 - Away from light



4) Plant defence

- Cells with specialized shape or content
 - Stone cells wear down teeth of herbivores
 - Calcium oxalate crystals hurt herbivores



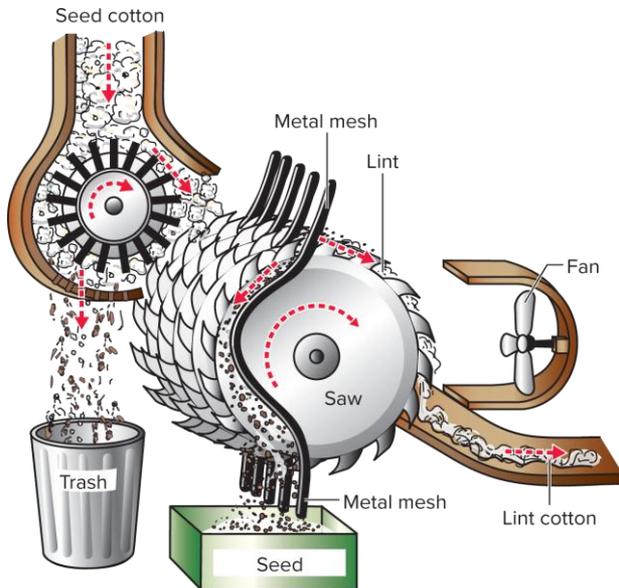
5) Plants & society



Cotton cloth from trichomes on cotton seed coat



Linen from flax phloem fibers



6) Plant biotechnology

- High phenotypic plasticity in response to environment
- **Totipotency** = Ability of a single cell to divide & differentiate into an entire organism

