It All Starts With A Seed

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Thank Seeds

For Your Conference Meals

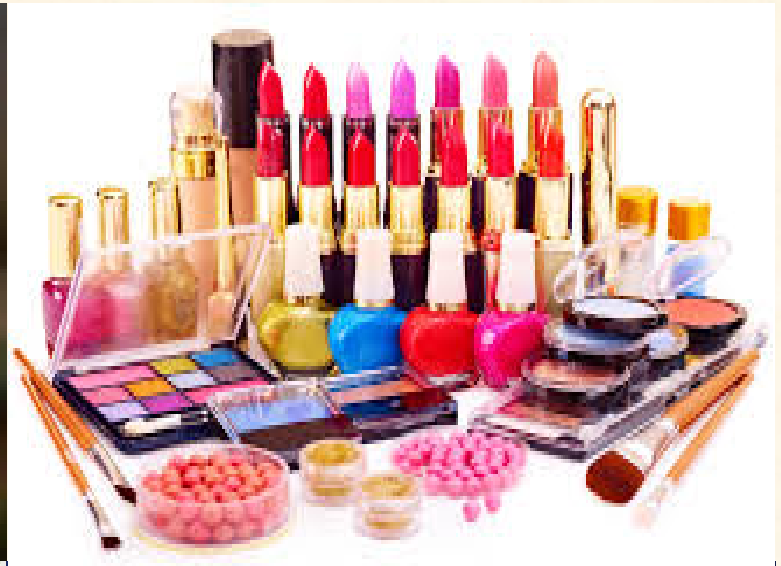
Corn, Wheat, & Rice Seeds

provide 66% of global food calories

Seeds As Livestock Feed

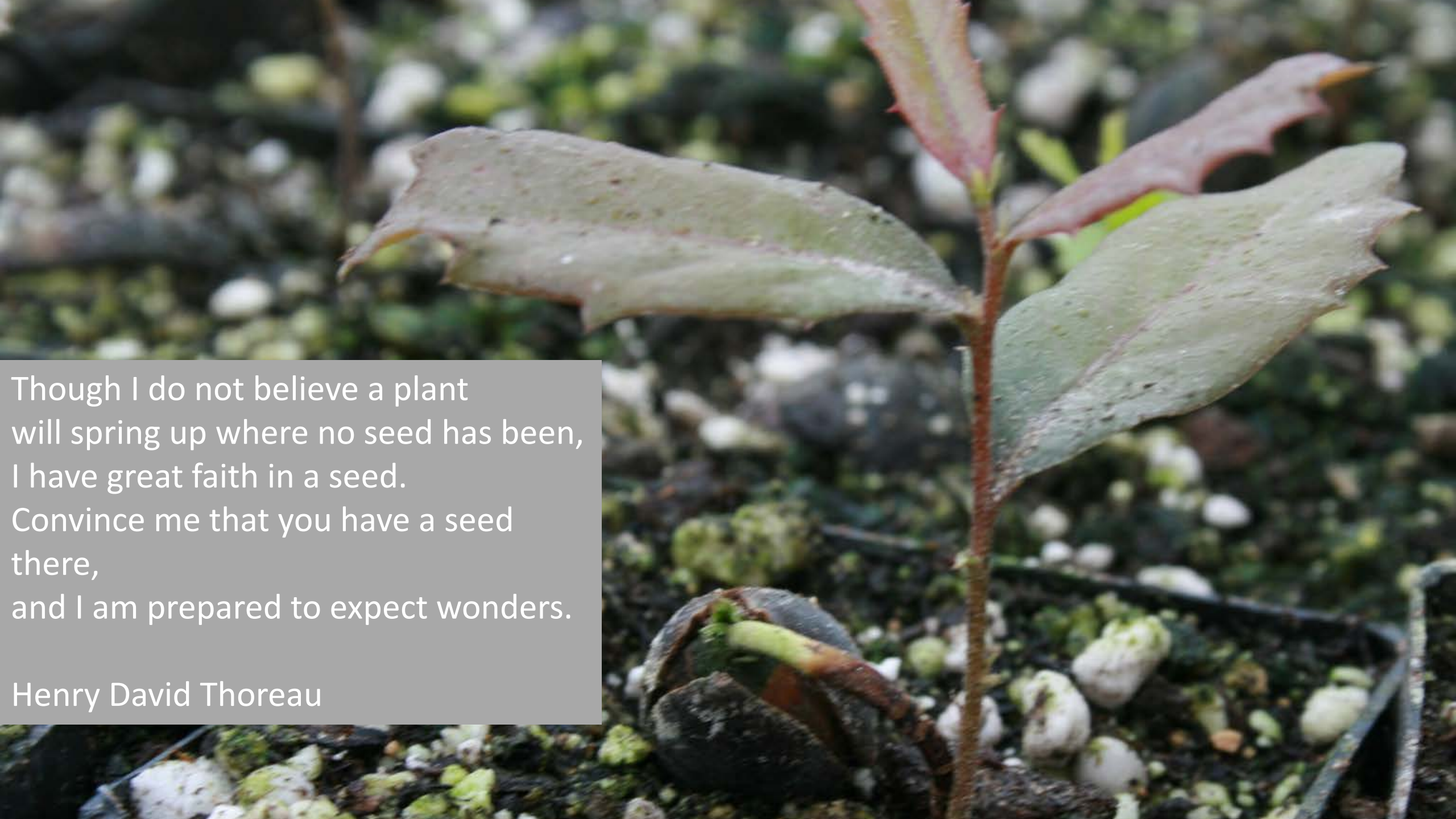
>70% of global food calories






Hierarchy of Needs

Humanity depends on seeds

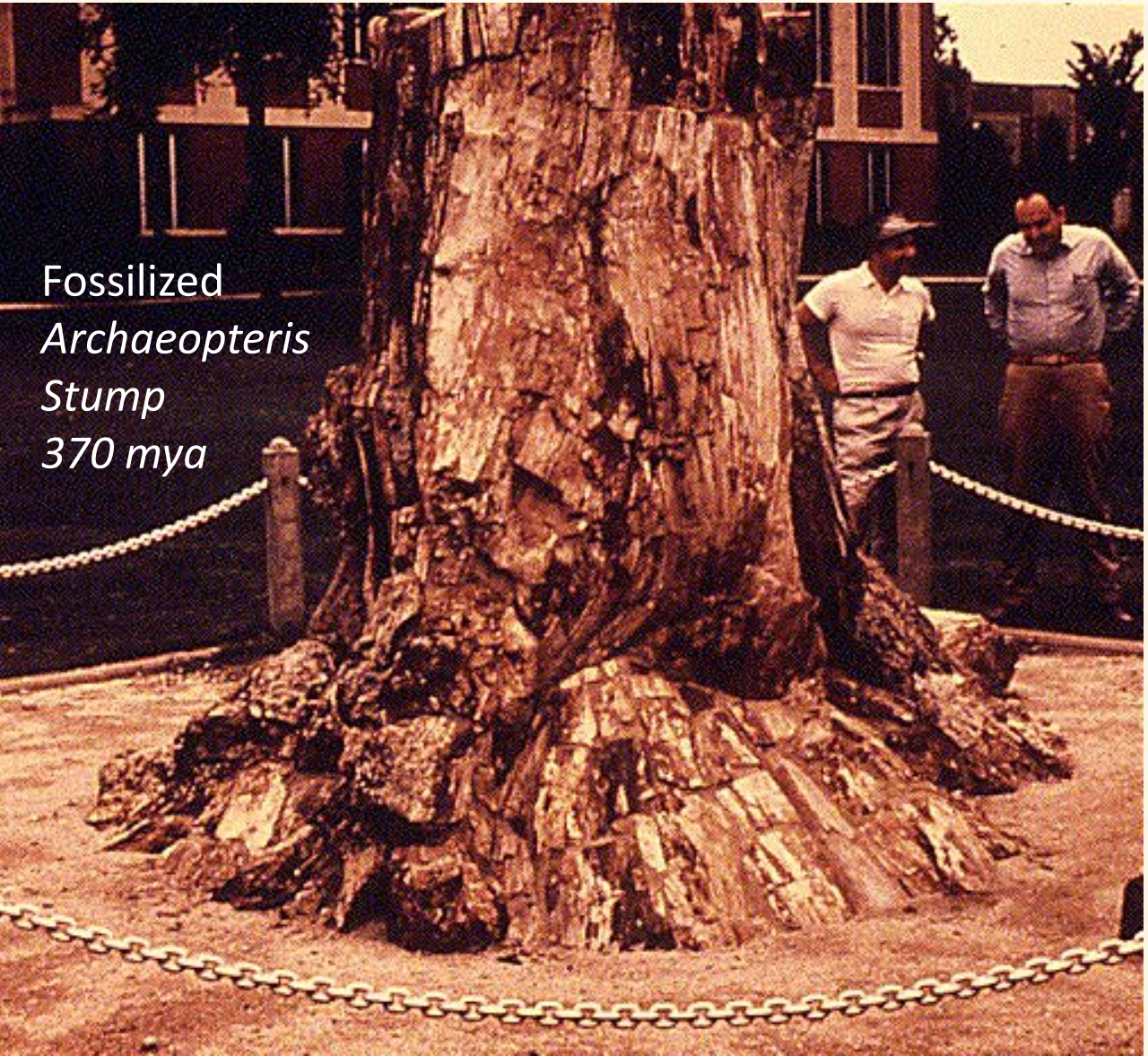


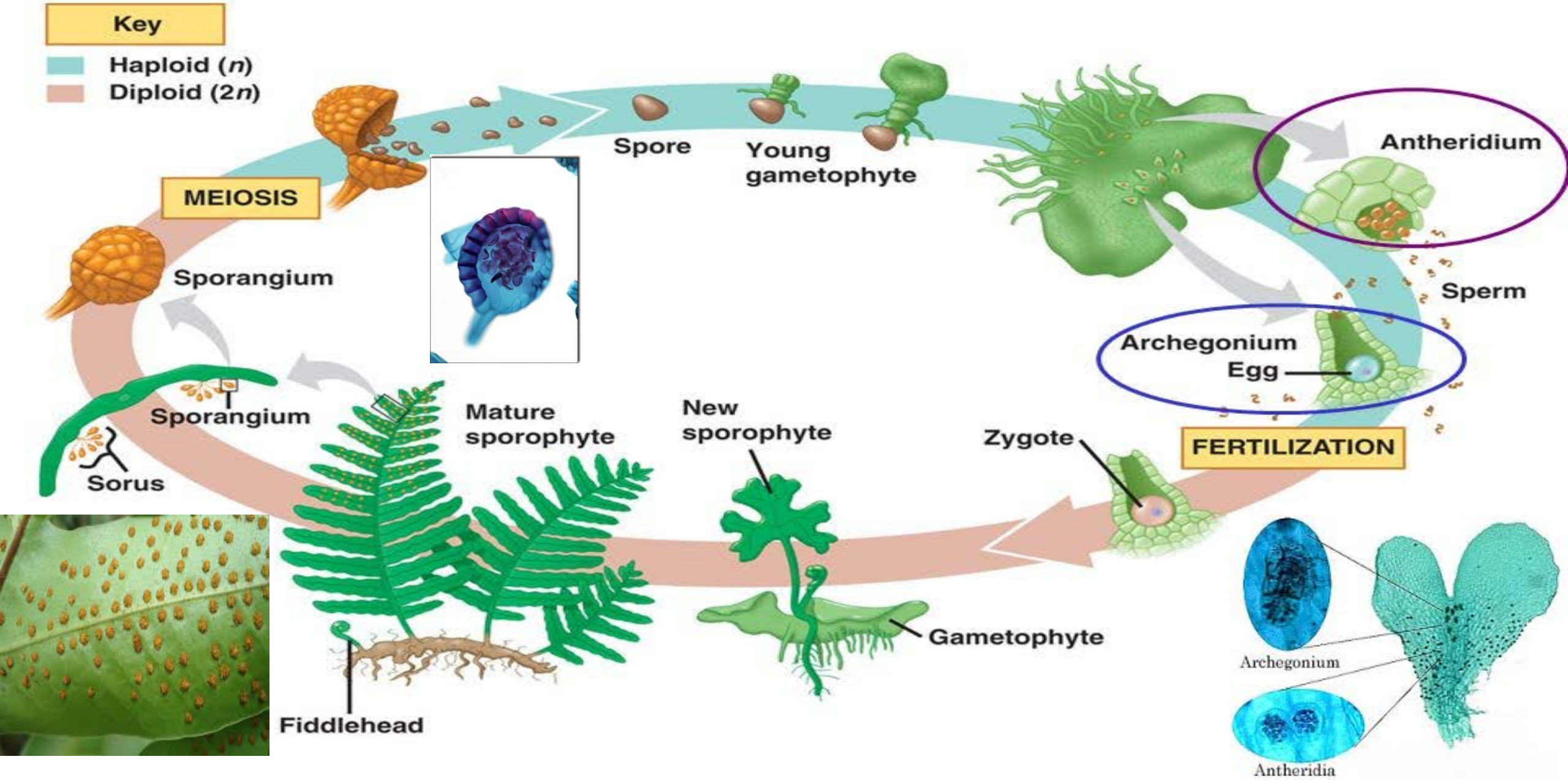
Though I do not believe a plant
will spring up where no seed has been,
I have great faith in a seed.
Convince me that you have a seed there,
and I am prepared to expect wonders.

Henry David Thoreau

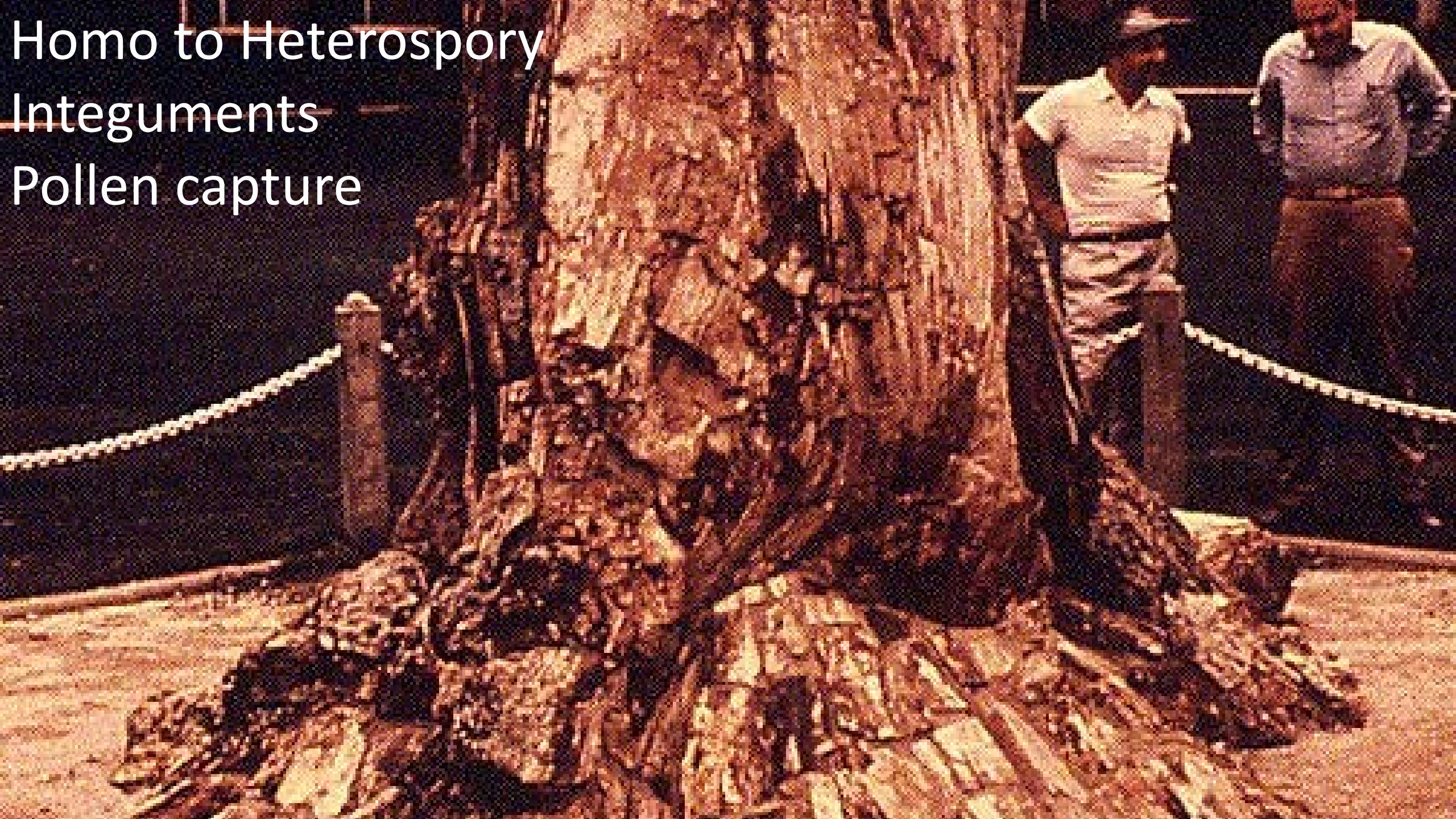
Evolution
Dispersal
Dormancy
Stress tolerance

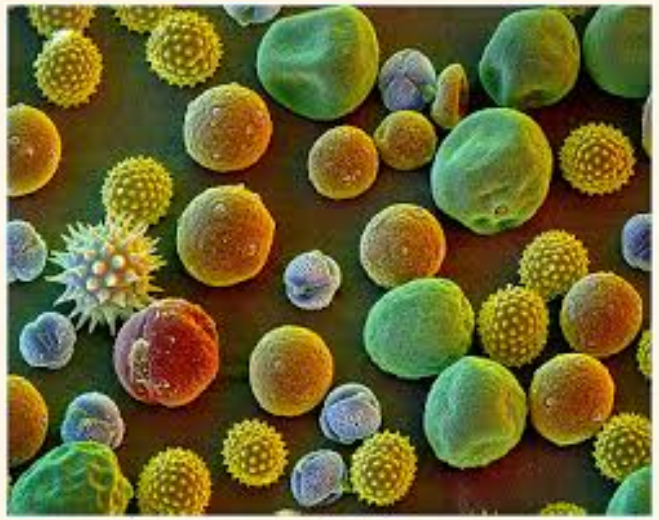
Seeds Before Dinosaurs

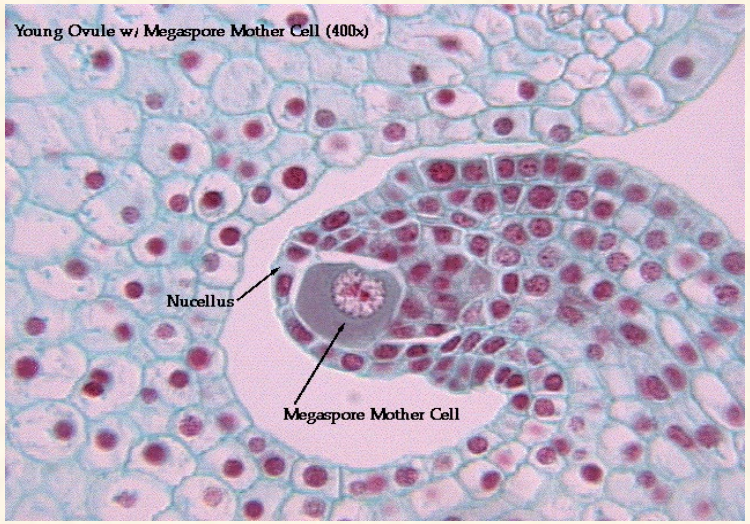



Key
Haploid (n)
Diploid (2n)
MEIOSIS
Spore
Young gametophyte
Antheridium
Sperm
Archegonium
Egg
FERTILIZATION
Zygote
New sporophyte
Gametophyte
Mature sporophyte
Fiddlehead
Sporangium
Sporangium
Sorus
Archegonium
Antheridia

Homo to Heterospory
Integuments
Pollen capture







Heterospory

Pathway to Seeds

Integument Evolution

Protecting the New Plant

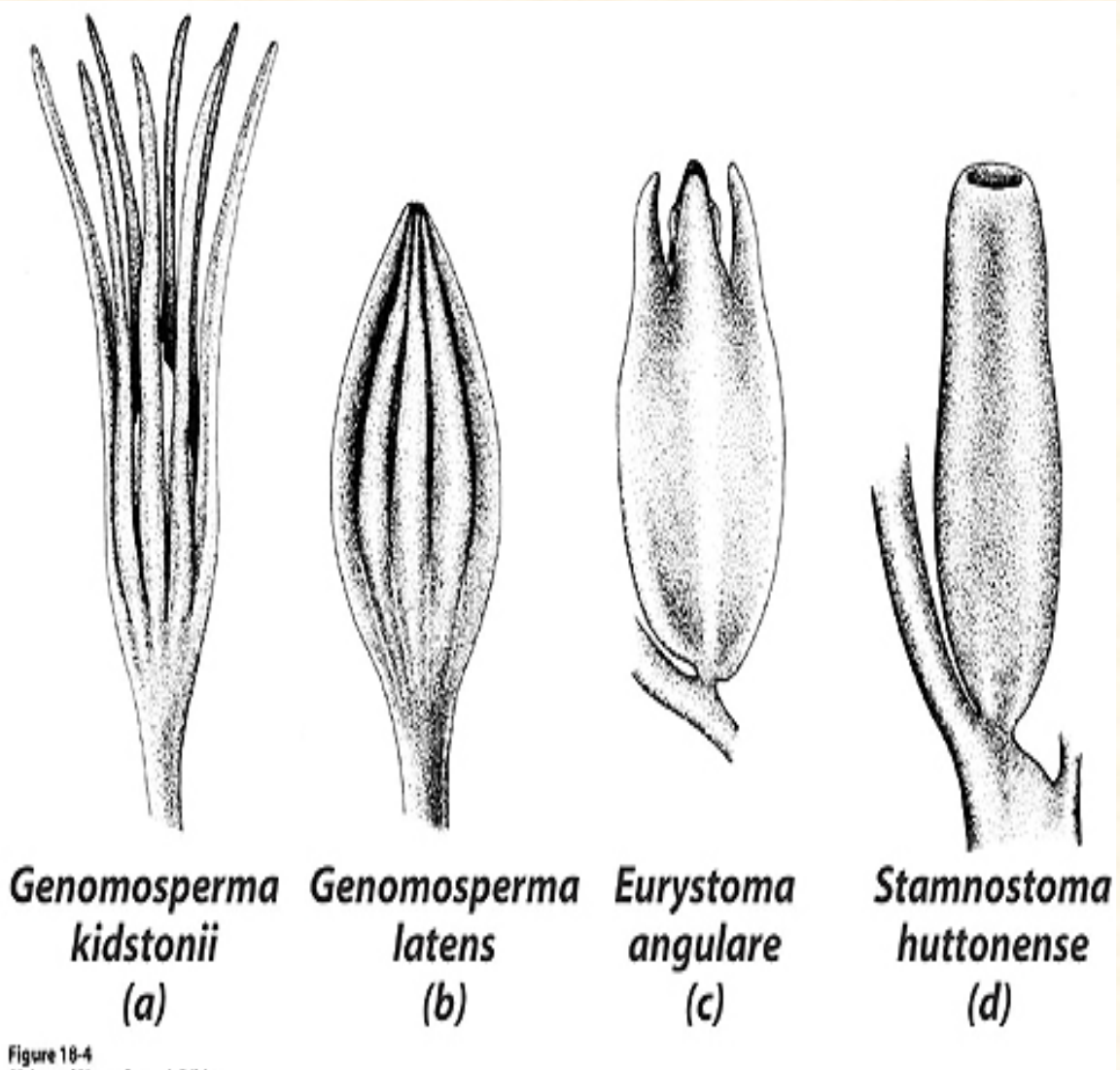
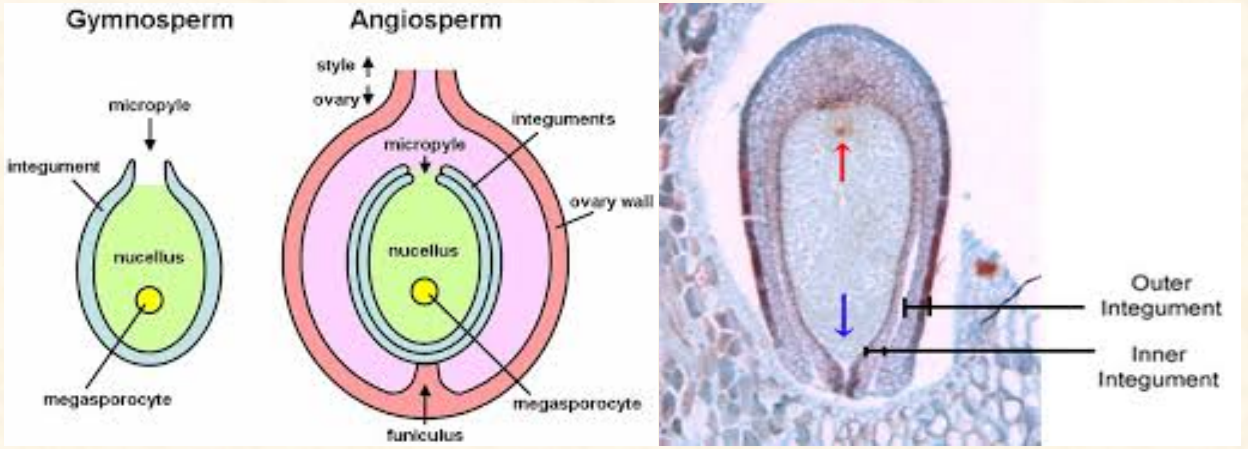
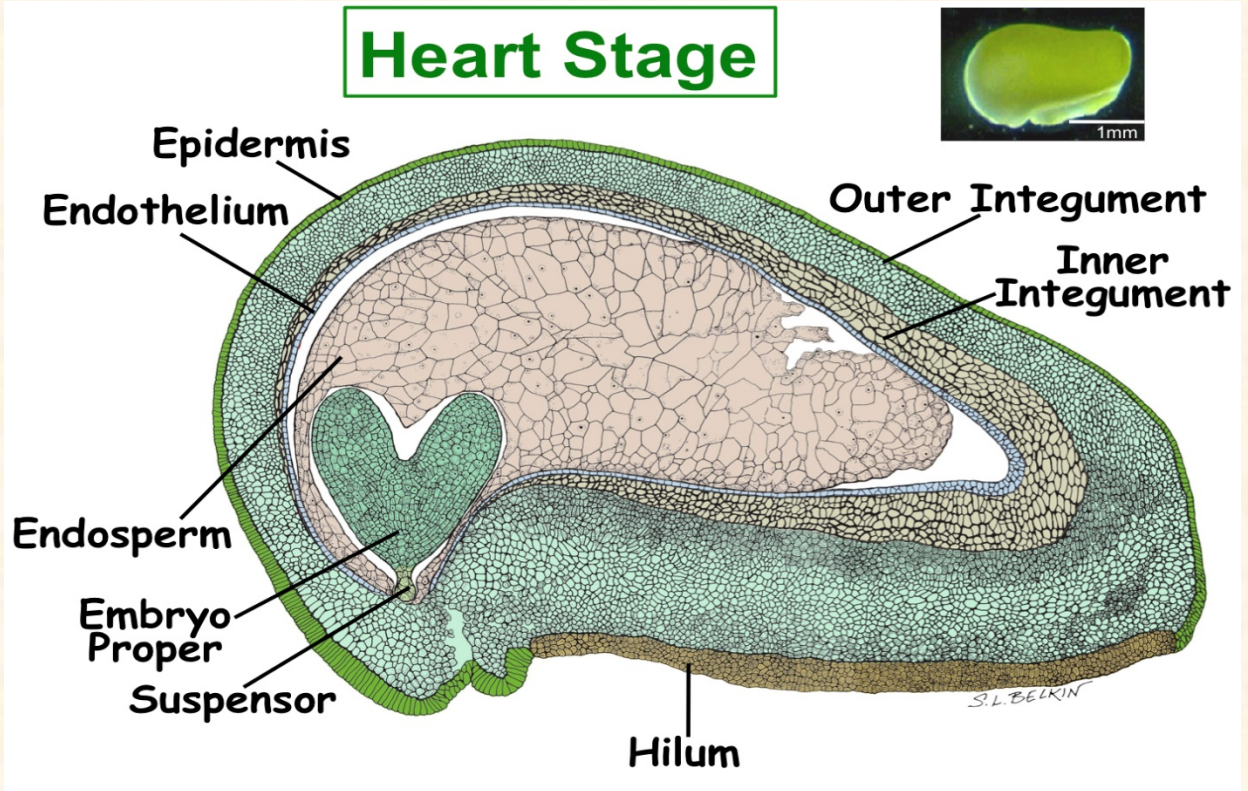


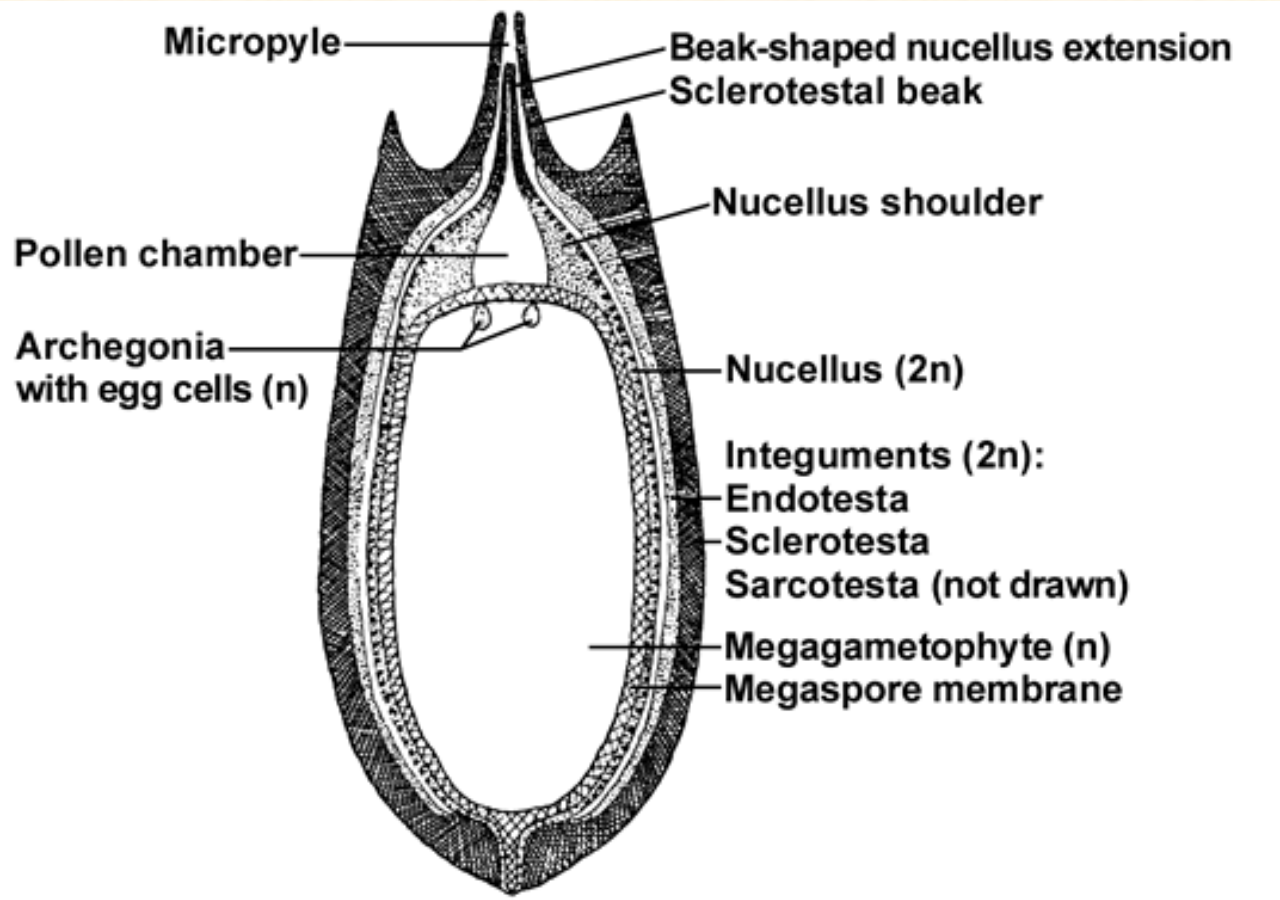
Figure 18-4
Biology of Plants, Seventh Edition
© 2005 W. H. Freeman and Company





Pollen Capture Structures

Improving Efficiency



Stephanospermum akenioides - fossil seed of a "medullosan seed fern" (Permian-Carboniferous Lyginopteridopsida; ca. 1 cm long). Drawing of Oliver and Salisbury (1911) from K. Schnarf (1937), Anatomie der Gymnospermen-Samen, Verlag von Gebrüder Borntraeger, Berlin.

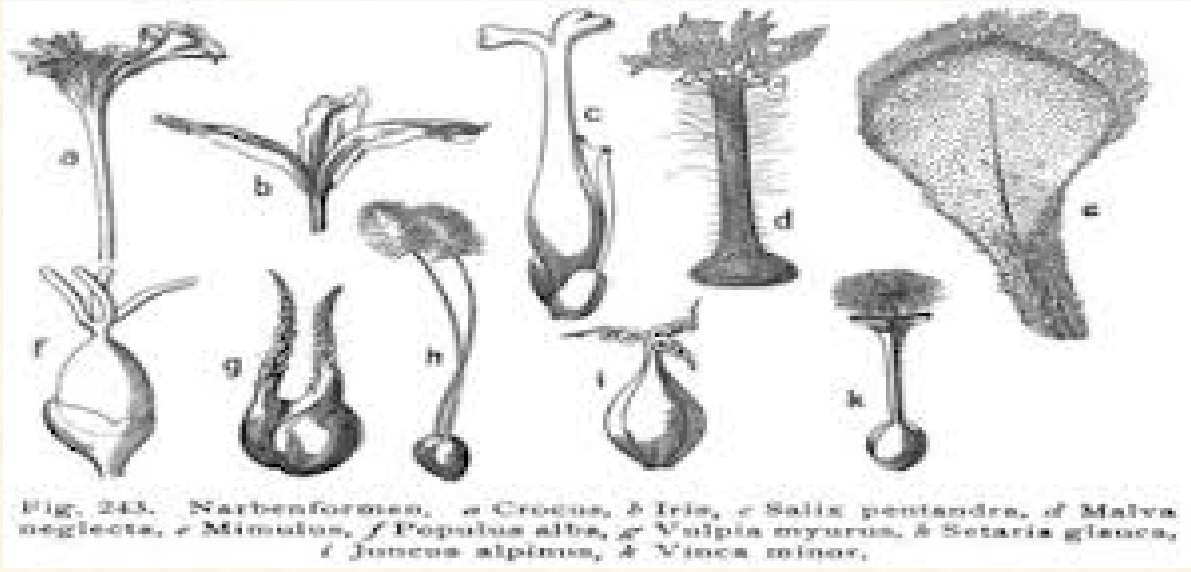


Fig. 243. Narbenformen. *a* Crocus, *b* Iris, *c* Salix pentandra, *d* Malva neglecta, *e* Mimulus, *f* Populus alba, *g* Vulpia myurus, *h* Setaria glauca, *i* Juncus alpinus, *k* Vinca minor.

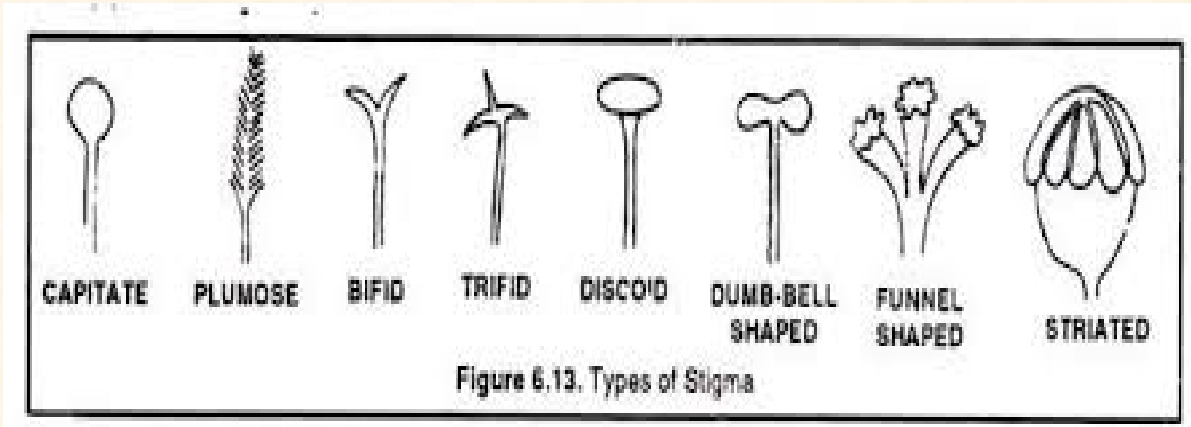


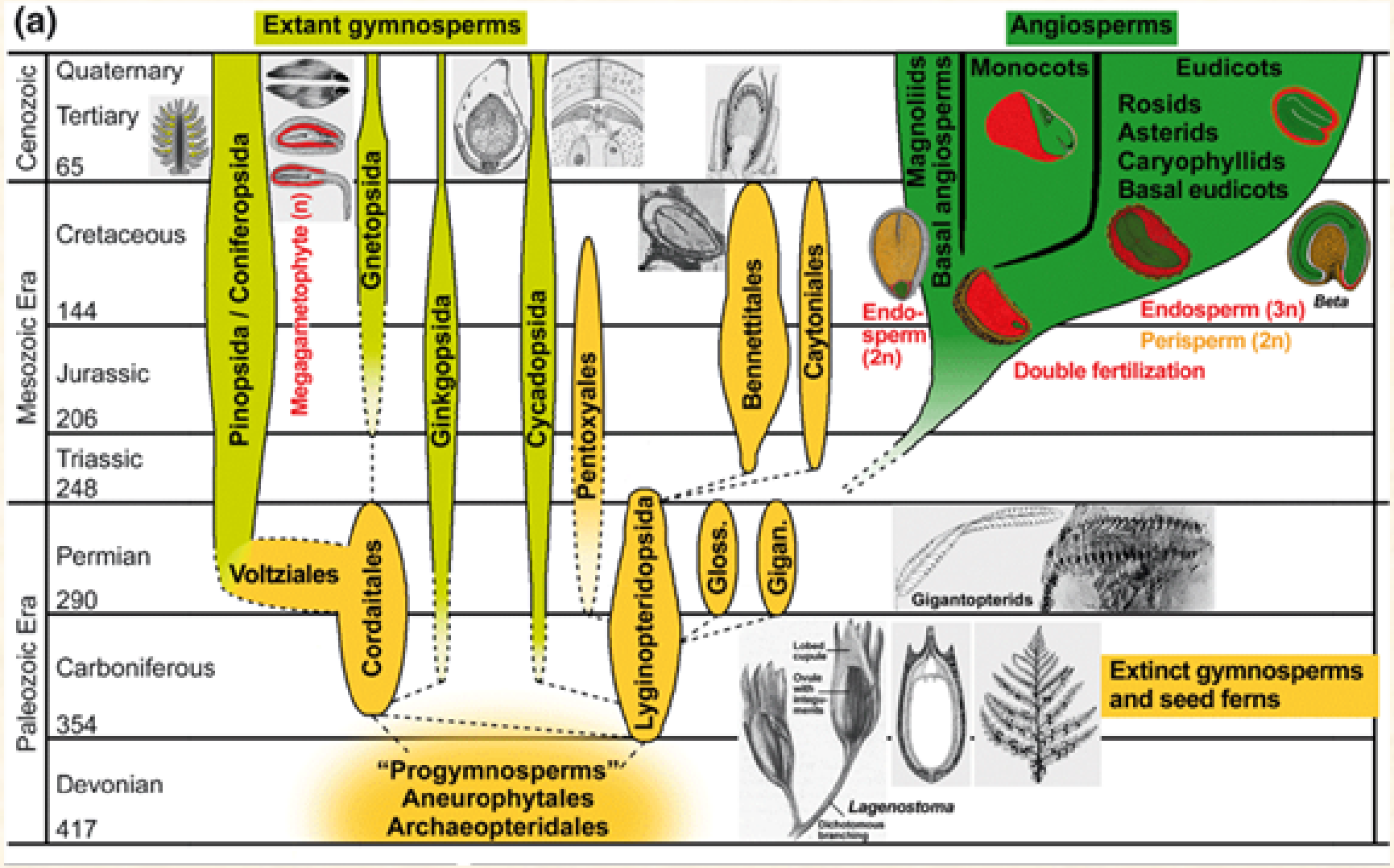
Figure 6.13. Types of Stigma

Evolution of Seed Habit

Homo to Heterspory

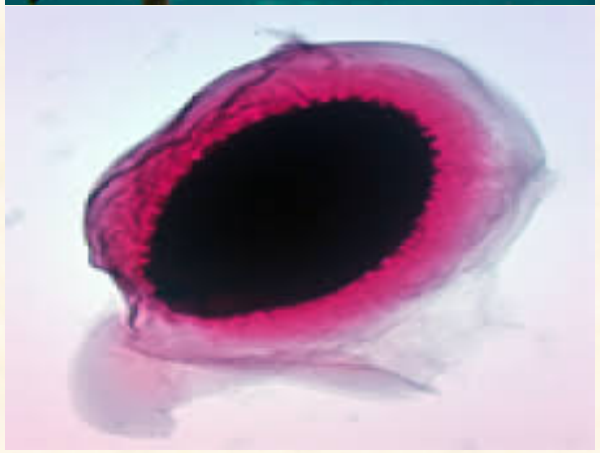
Integuments

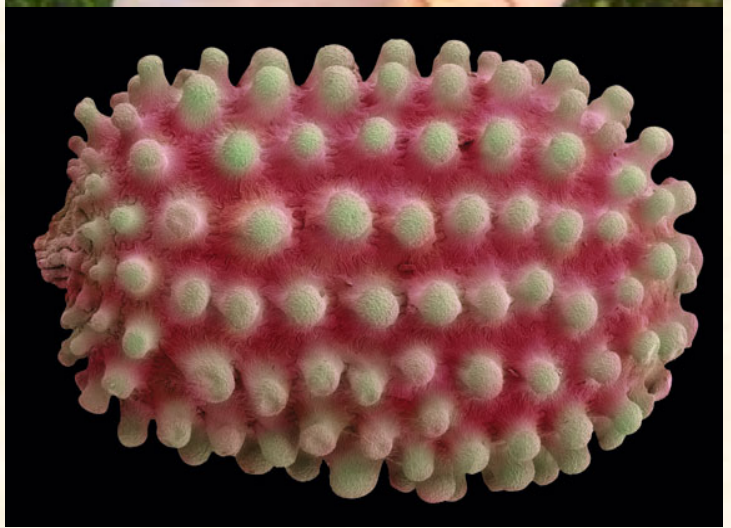
Pollen Capture



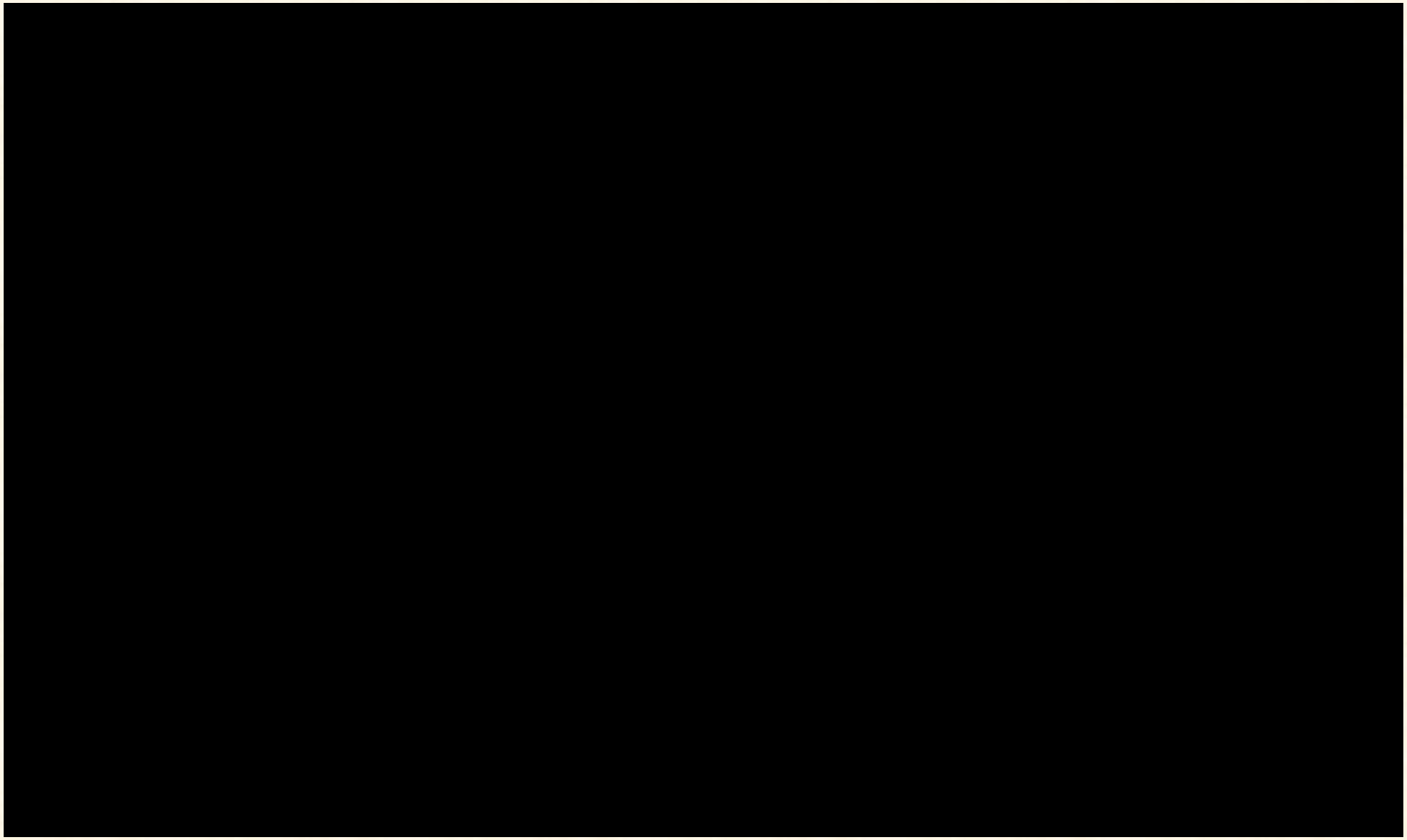
Seed Dispersal Mechanisms

Spreading Seeds Far and Wide





Ballistic Seed Dispersal



Ballistic Seed Dispersal

Seed Dormancy

Contributed to Plant Spread

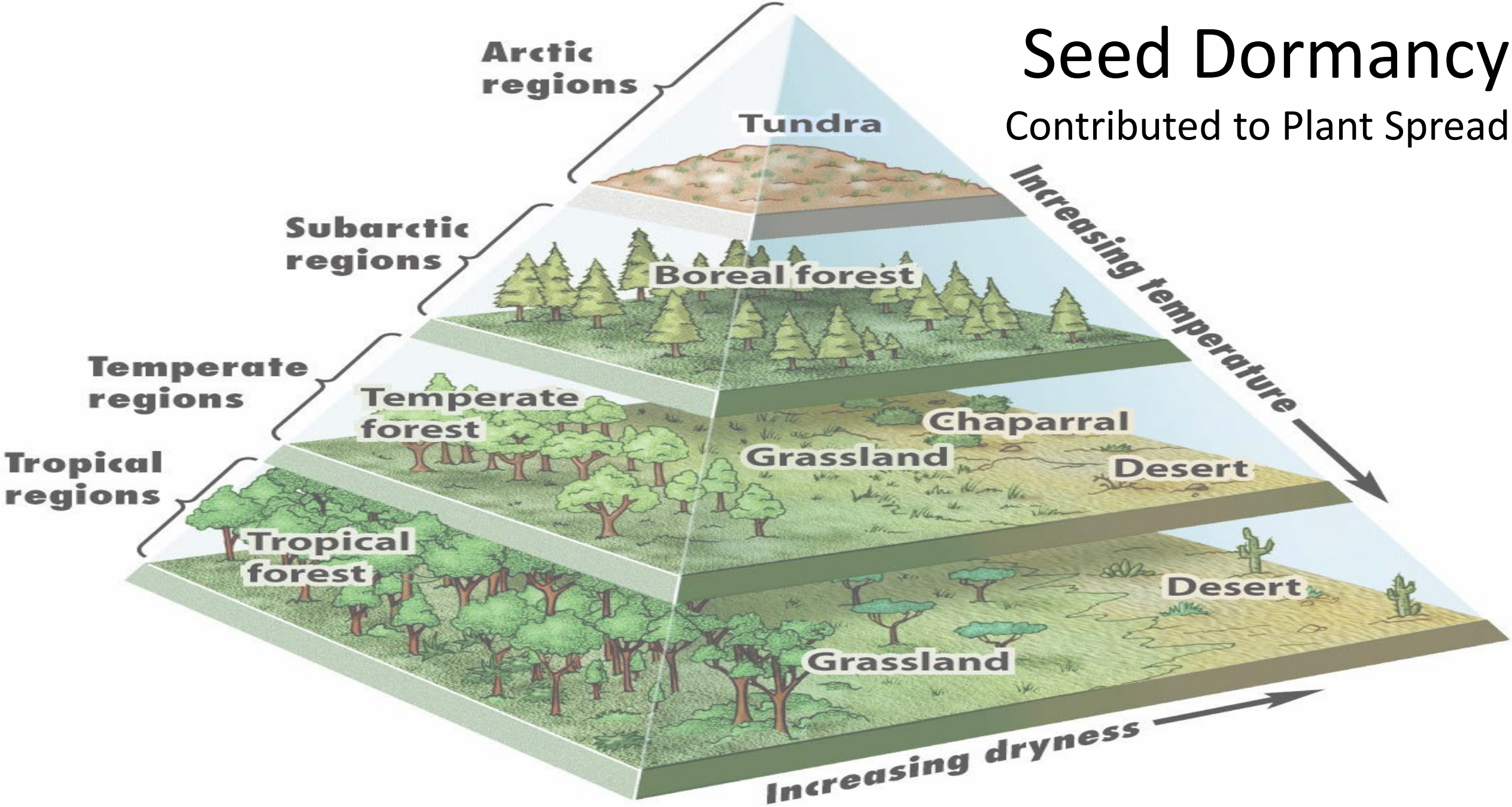
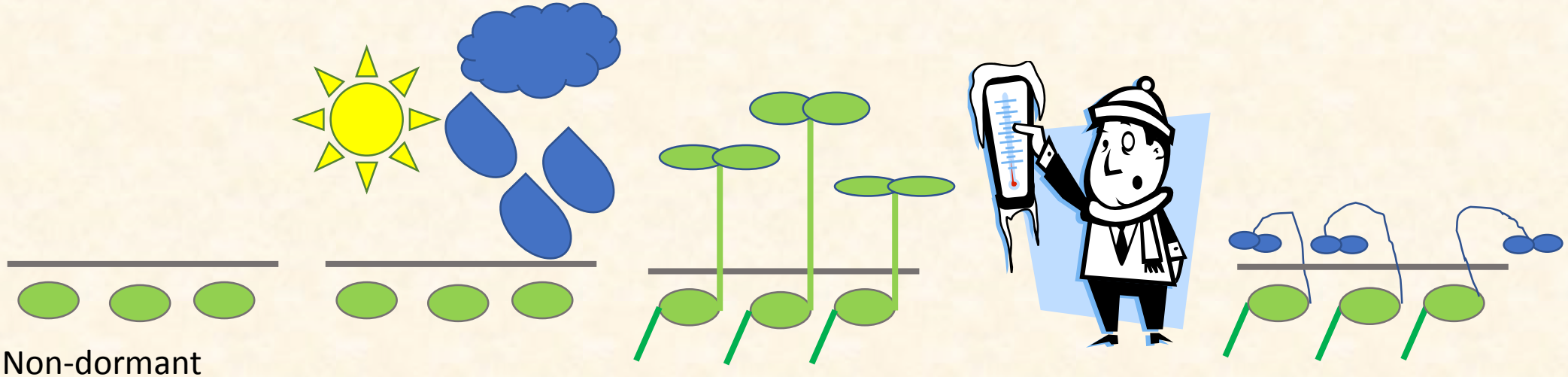


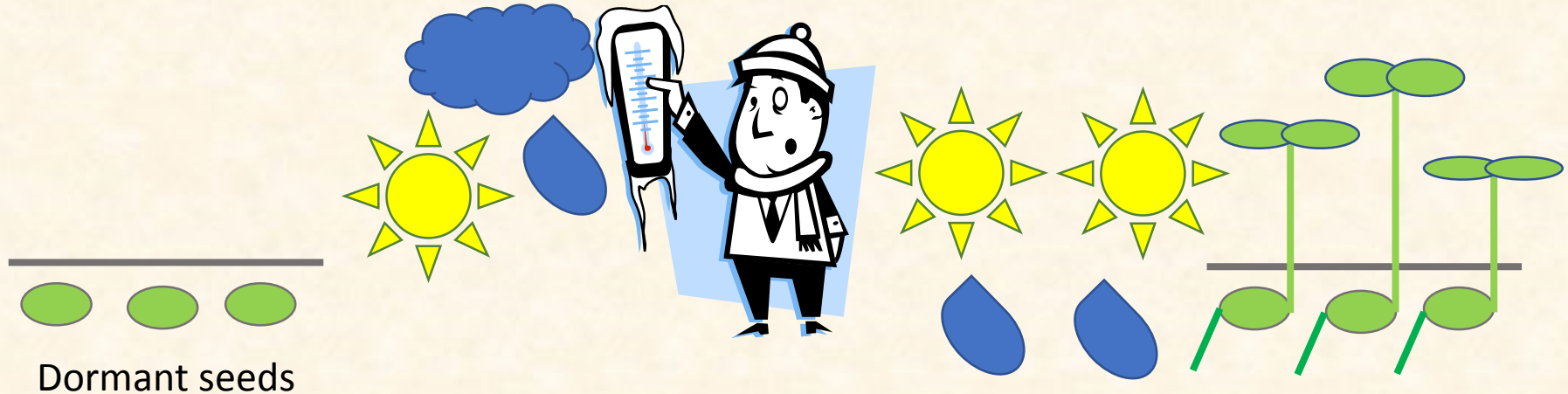
Figure 33-10 Discover Biology 3/e

Seed Dormancy

Enhances Seedling Survival



Non-dormant seeds

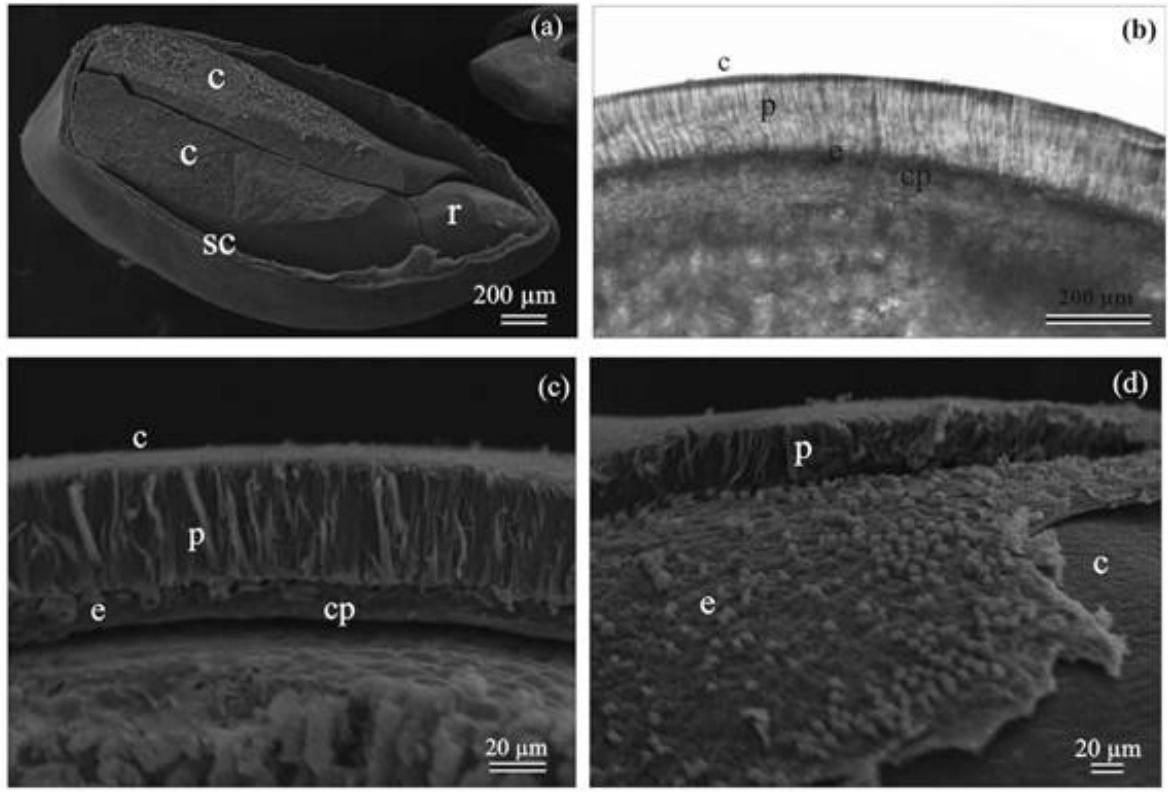


Dormant seeds

Seed Dormancy Classes

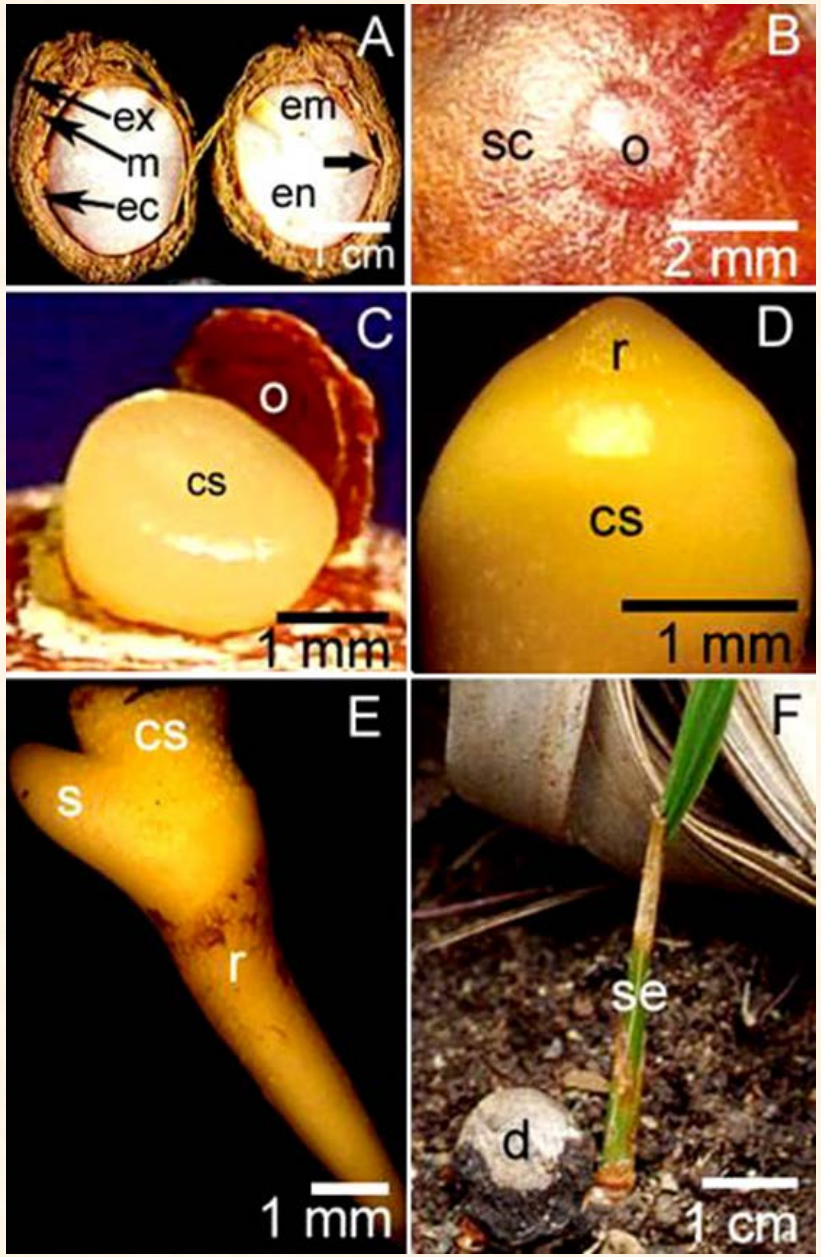
Physiological Dormancy

Morphological Dormancy

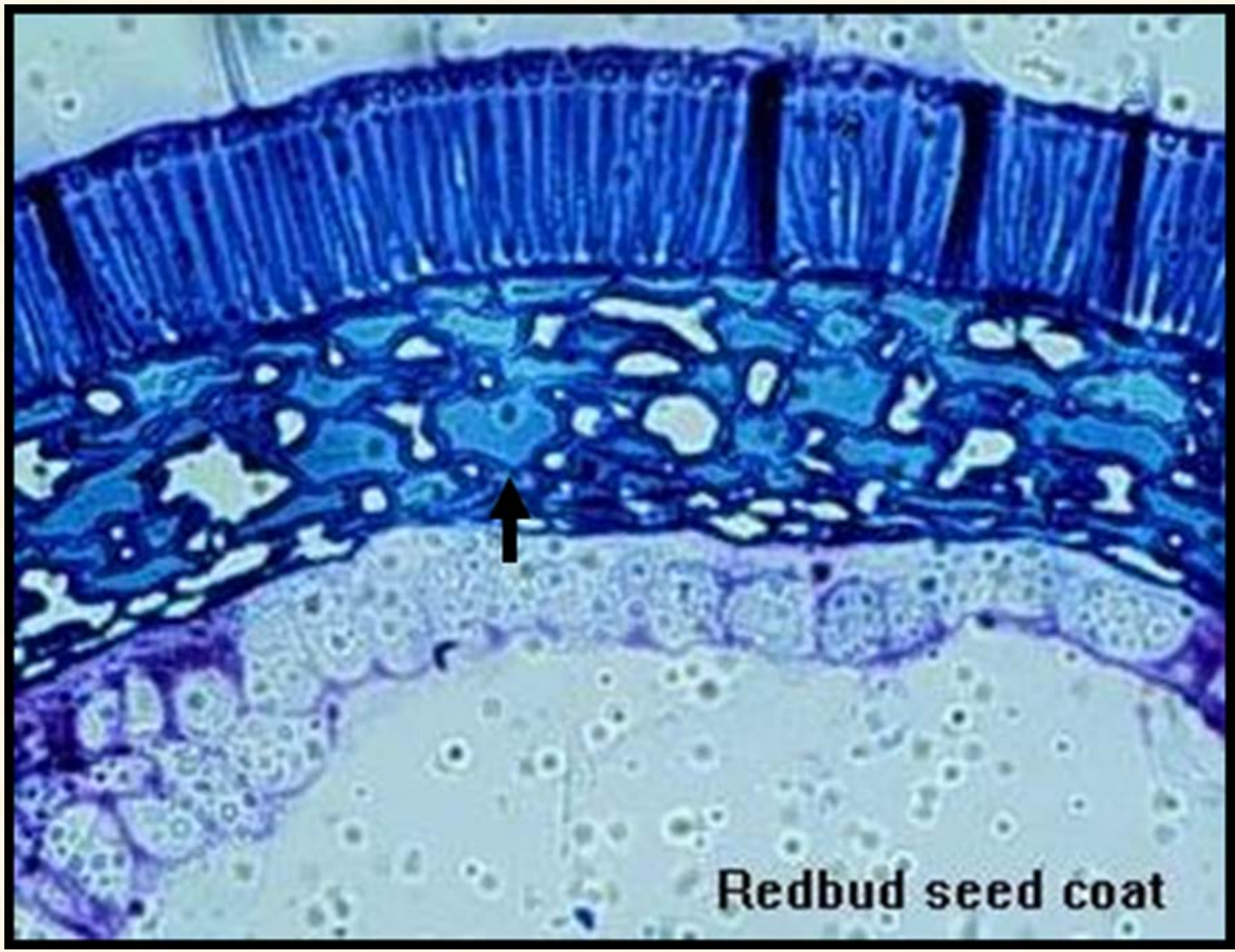


Physical Dormancy

Seed Dormancy Classes



Morpho-physiological



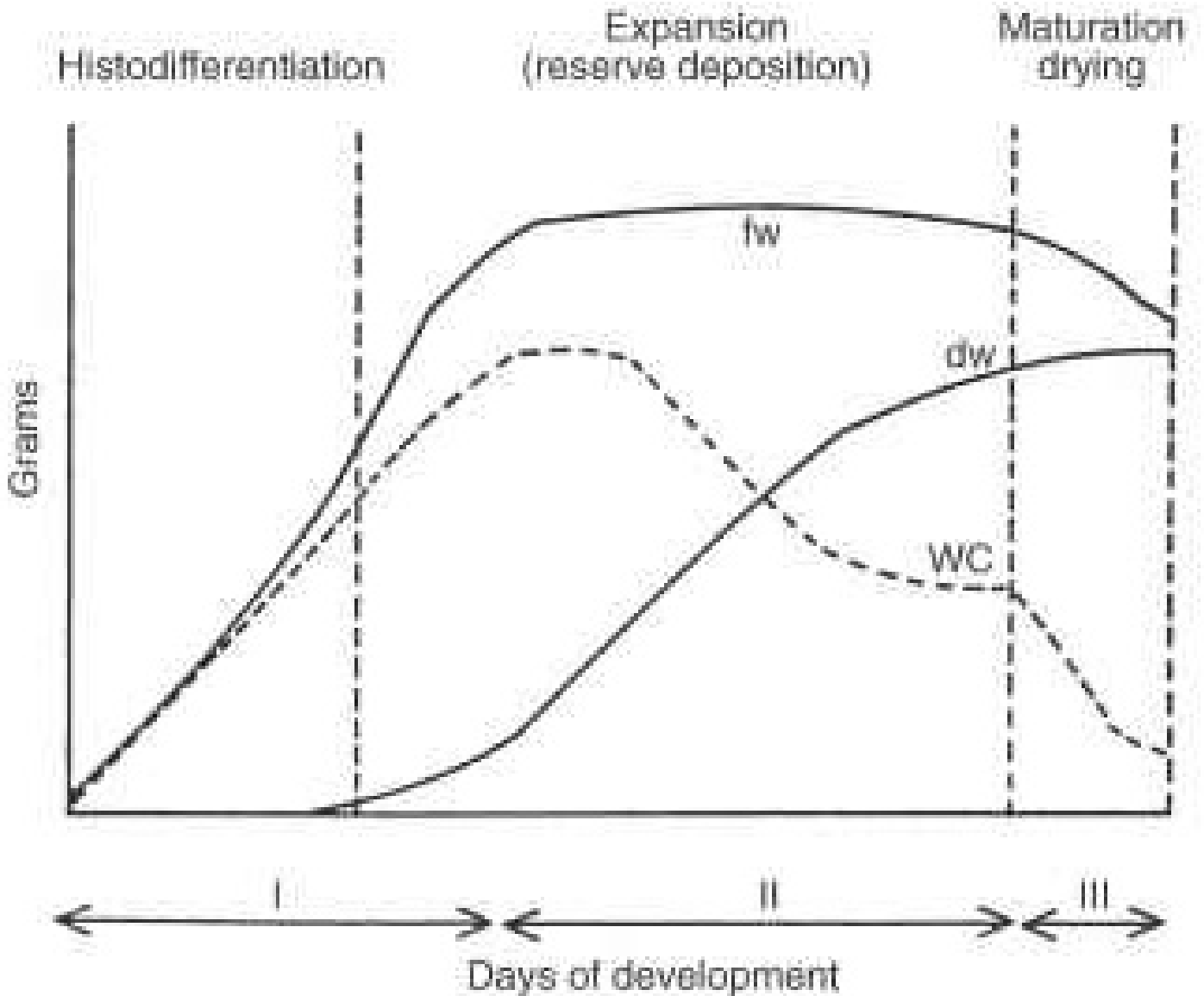
Combinational (PY+PD)

Seed Dormancy

Bred Out of Most Vegetable and Flower Seeds

Seed Desiccation Tolerance

Ecologically and Agriculturally Important



Seed Storage

5-10% Moisture

Humans are about 55% water

3-4% loss
(53% water)

10% loss
(49% water)
Physical/mental deterioration

5-8% loss
(51% water)
Fatigue/dizziness

15% loss
(47% water)

Evolution
Dispersal
Dormancy
Stress

Will You Share The Wonders of Seeds?

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