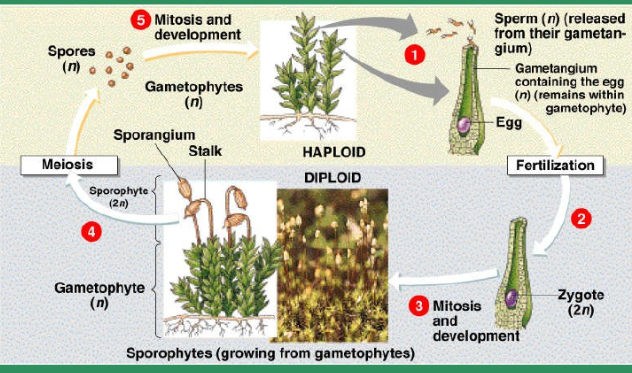
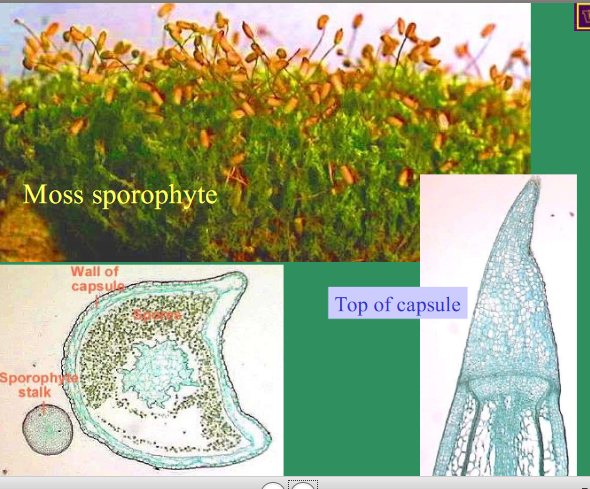
**Chapter 7 Ferns and Moss**

**Moss Life Cycle (Bryophytes)**





**Ecological and economic benefits of bryophytes**

**-Peat bogs**

**-Sphagnum**

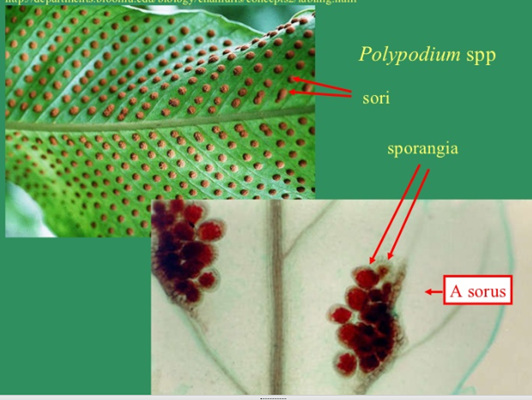
**.**



**Ferns**



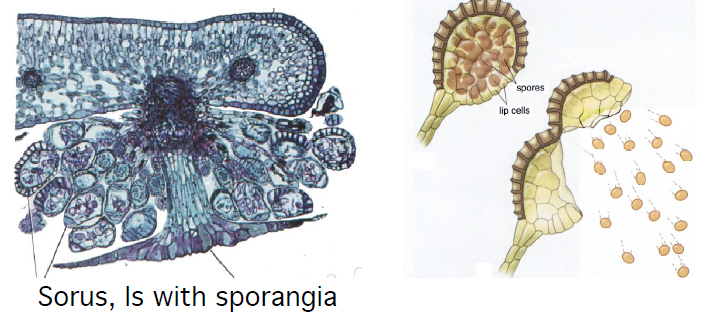
**-Spores**

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**-Spores are released when a layer (called the annulus) of a leptosporangiate**

**sporangium responds to humidity – lip cells of the annulus break open and this**

**essentially catapults the spores out of the sporangium**

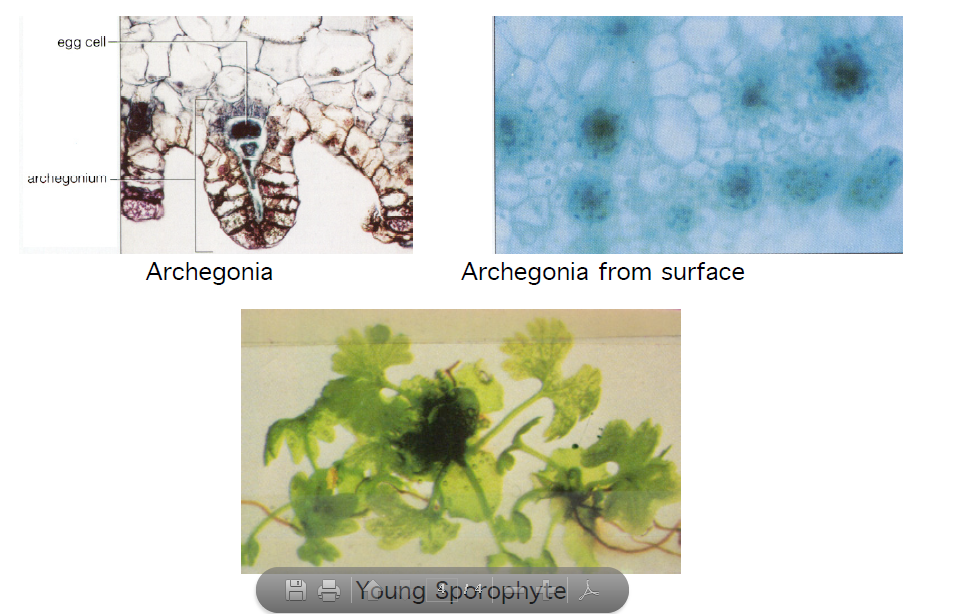


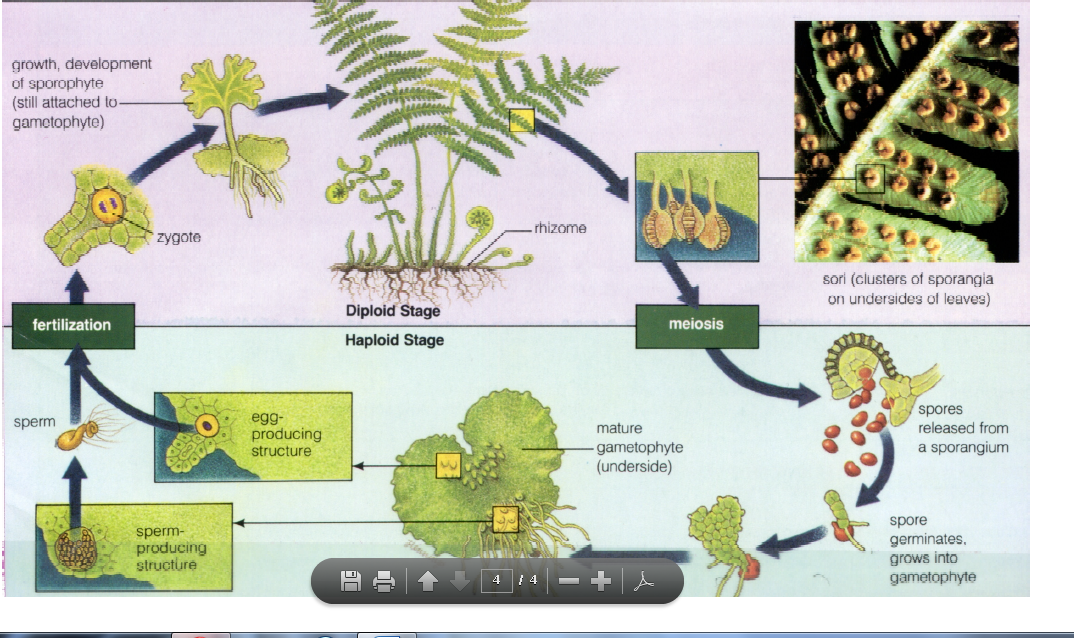
**-The fern gametophyte, often called a prothallium, or prothallus, is small but**

**independent from the sporophyte and photosynthetic. It is often heart shaped.**

**-The motile sperm require H20 for transport to egg.**

**-Antheridia and archegonia**





**Chapter 8 gymnosperms**

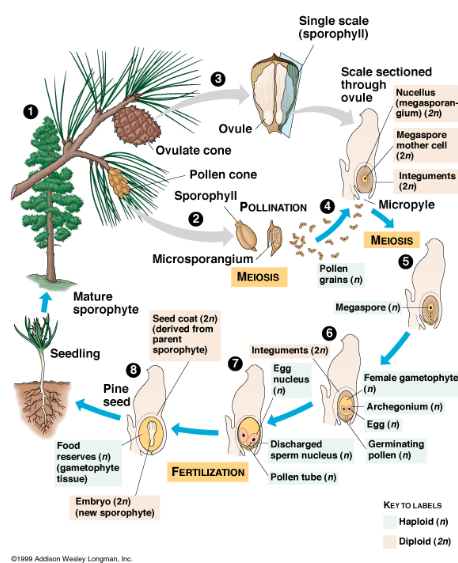
**Gymnosperms**

**Covered by resins – for protection from predators, fire, etc**

**-Examples of gymnosperms include cycads, ginkgo, and conifers**

**-Most important group of gymnosperms- conifers**

**the male cones and the ovulate(eggs) cones are female**



**-A pollen grain (male gametophyte) is transferred by wind from a pollen cone to an ovulate**

**cone (pollination) where it comes into contact with an ovule**

**-The pollen grain germinates and the tube cell produces a pollen tube, which grows through**

**the tissues of the megasporangium to an archegonium of the female gametophyte**

**-A haploid (n) sperm cell migrates through the pollen tube and fuses with a haploid (n) egg cell (fertilization) to produce a diploid (2n) zygote**

**-The diploid (2n) zygote divides by mitosis within the female gametophyte to produce a diploid (2n) multicellular embryo (new immature sporophyte); old tissue of the femalegametophyte serves as a food reserve**

**-The ovule (still attached to the scale of the ovulate cone) matures**

**Significance of gymnosperms**

**Ecological importance**

**Commercial importance**

**Chapter 7 angiosperms**

**Sexual Reproduction in Flowering Plants**

**Angiosperm Life Cycle**

**-Alternation of Generations-Alternates between multicell haploid form**

**(the gametophyte) and diploid form (the sporophyte)**

**Sporophyte-**

**-Spores undergo Mitosis to produce male/female**

**gametophytes**

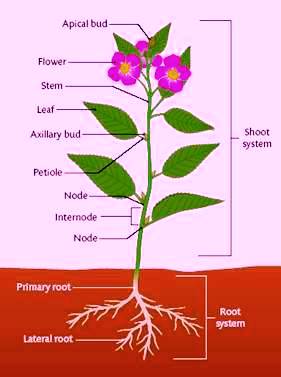
**-Gametophytes produce gametes (sperm/egg) by mitosis.**

**-Gametes fuse to form zygote which develops into multicelled sporophyte.**

**Flowers are the reproductive structures**

**-4 main parts-Sepals, Petals, Stamens (male), Carpel**

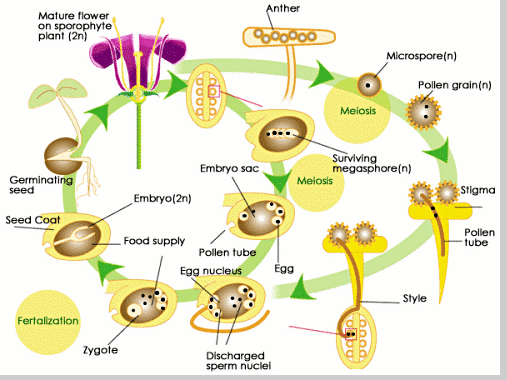
**(female) The latter two contain sporangia**



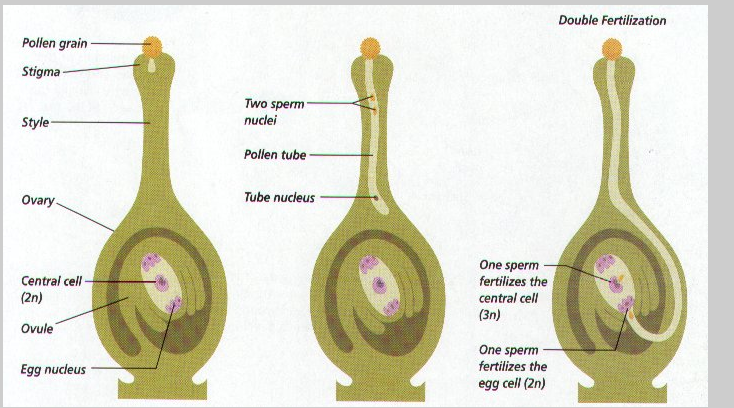
**-Stamens-**

**-Carpels**

**Pollination and Fertilization**



**-Pollination-**



**-Fertilization-**

**-Zygote**

**-Germination**

**a. If conditions are right (moisture/nutrition/temp etc)**

**germination occurs**

**b. Embryo grow into new sporophyte. Starts cycle over**