

Seedless Vascular Plants (continued invasion of land)

Psilotophyta

Lycophyta —> [Lycopodiaceae
Selaginellaceae]

Sphenophyta... Equisetopsida... Equisetum (horse tails)

Pterophyta (ferns)

- As a photosynthetic organism, the higher you get, the closer you are to photosynthesizing and you're able to transfer water up to your photosynthetic branches. - have a selective advantage this way. Many examples of fossils that can do this.
- The gymnosperms- those are the conifers. The angiosperms- flowering plants. Relative abundance is insanely dominant now on the terrestrial grounds of flowering plants. Ferns still remain a relatively important part.
- All of this occurred in the context of its one thing of getting up high and transporting water. It has to get water from some place. When you're on dry land that proves to be a problem. Soil is a biotic outcome- made by living organisms.
- Another thing was the appearance of roots- that's how they could obtain the water- then you see the ability of an organism to reach deep down into the soil to be able to draw in water to allow for survival on dry land. This is the important aspect associated with this. The appearance of roots and soil.
- If you see any plant in its natural environment, the major part of its biomass is below the surface i.e. roots.

Psilotophyta

- Basically what you would think about being a primitive example of a vascular plant that can transport water on dry land. very poorly developed root structure. Stems will branch. The branching is known as dichotomous branching. Got a waxy feel to it- inhibits loss of water from the stem. If you take a cross section of the stem- it has what's known as a protostele form. The star like structure is known as the xylem for the transport of water- Phloem is for the transport of carbohydrates.