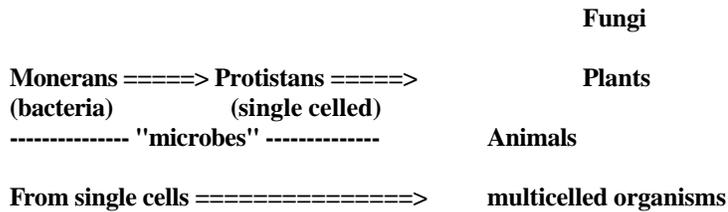**GENERAL BOTANY Lecture 27 - Classification**

I.   **Science of classification: taxonomy**
   A.   **Most useful unit - species**
      1.   **Biological species - same species if members mate and produce fertile offspring under normal conditions**
      2.   **Species can evolve through natural selection**
         a)   **Sources of variation**
            1)   **Mutations - DNA substitution, deletion, and insertion**
            2)   **Migration - move to another location**
            3)   **Recombination - meiosis, crossing over**
      3.   **Speciation**
         a)   **Reproductive isolating mechanisms**
            1)   **Mechanical, behavioral, gamete isolation, time isolation, hybrid inviability**
         b)   **Modes of specitation**
            1)   **Allopatric (isolated location), parapatric (transition area), sympatric (others - ecological, behavioral, etc.)**
II.   **How taxonomy got started**
   A.   **Important dude - Carolus Linnaeus - made up descriptive latin names**
      1)   **Last two words most important - binomial system**
      2)   **Classification - KPCOFGS**
         a)   **Basis of appearance - phenetic**
         b)   **Evolutionary basis - phylogenetic**
III.   **Overall scheme to evolution - important because it helps us understand life**

                                                    Fungi

Monerans =====> Protistans =====>   Plants
(bacteria)   (single celled)
-------------- "microbes" --------------   Animals

From single cells ===============>   multicelled organisms

IV.   **Where we go from here: Fungi (MYCOTA), Algae (PROTISTA) and Plants (PLANTAE - mosses, ferns, conifers, angiosperms)**