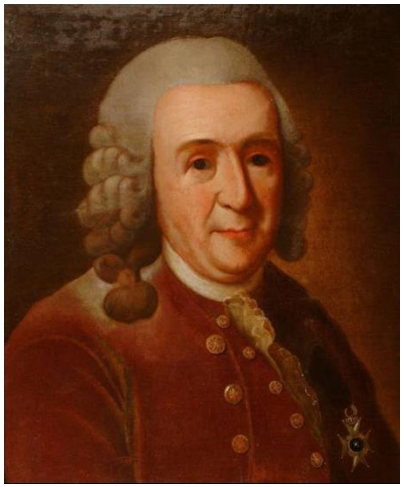
Life Science

Chapter 7 Part 2
Taxonomy

Taxonomy



- **The classification of living things into groups called** Taxons
- **Aristotle** classified as to the area they mainly lived in: **Land, Air or water**
- **Linnaeus** came up w/ the modern day classification system using binomial nomenclature

Dumb King Phillip Came Over For Golf Saturday!!

Kingdom
Phylum
Class
Order
Family
Genus
Species

Puma concolor

Binomial Nomenclature

- "Two names" genus+species
- Gives a unique **Scientific name** to all living things
- Protocols
  - Genus name first, species name second
  - Genus always capitalized, species always lower case
  - Name is either ***italicized*** or **<u>underlined</u>**

Domain: Eukaryota

Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

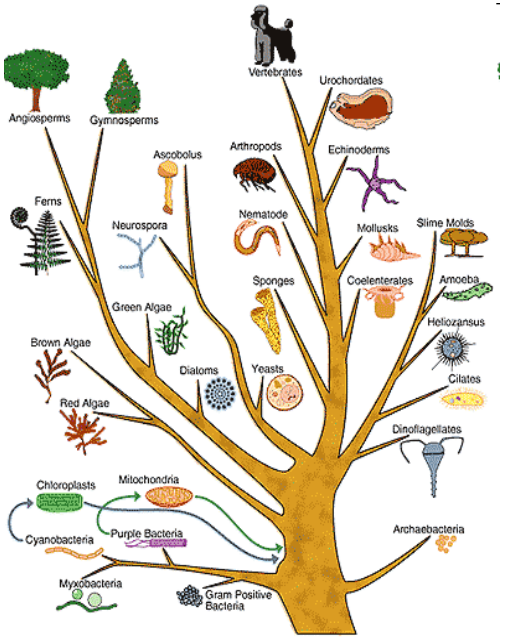
Order: Carnivora

Family: Felidae

Genus: Puma

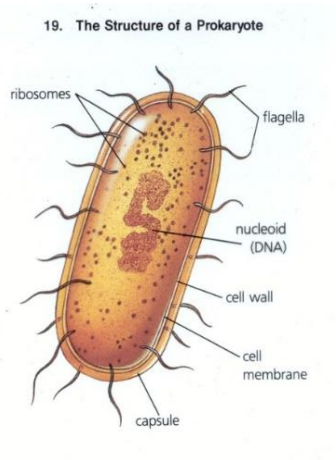
Species: concolor

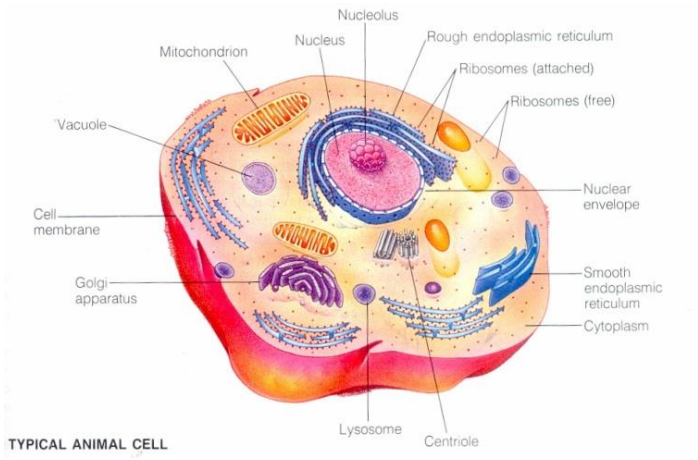
<u>Puma concolor</u>

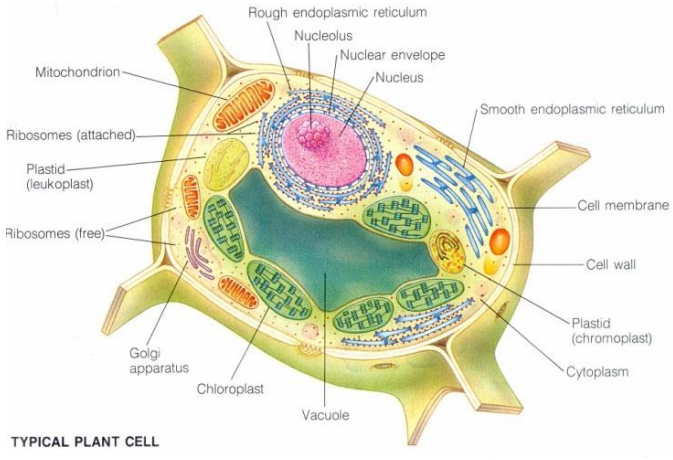


Prokaryotes vs Eukaryotes

- **Prokaryotes** are organisms without an organized nucleus and other membrane bound organelles (mitochondria, golgi bodies etc.)
  - Include organisms in the Kingdoms Archaebacteria and Kingdom Eubacteria.
- All other organisms are Eukaryotes
  - **Eukaryotes** are organisms whose cells contain an organized nucleus surround by a membrane. The cells also contain other organ bound structures like mitochondria, ER's, vacuoles, chloroplasts, etc.
  - Include organisms in the Kingdoms Protista, Fungi, Plantae & Animalia

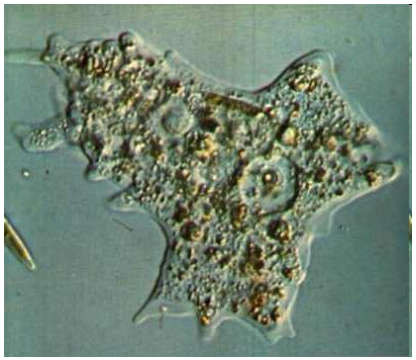


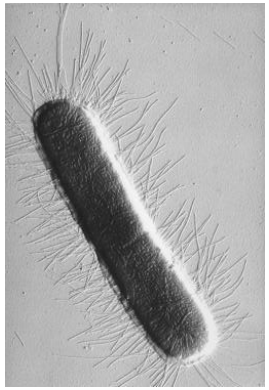


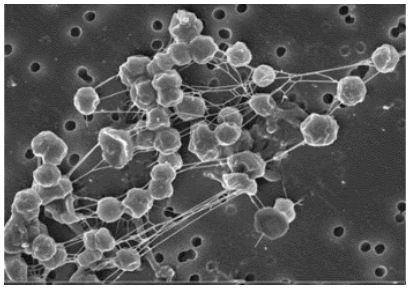


The 3 Domains

- **Domain:**
  - **Archae – includes the Kingdom Archaebacteria**
  - **Bacteria – includes the Kingdom Eubacteria**
  - **Eukarya include the remaining 4 Kingdoms**
    - **Protista**
    - **Fungi**
    - **Plantae**
    - **Animalia**

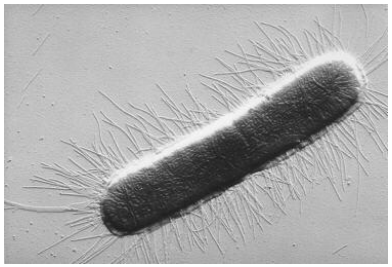


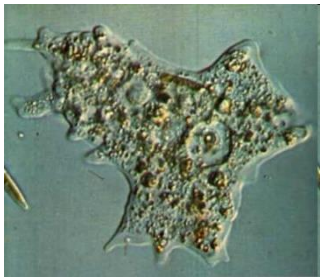


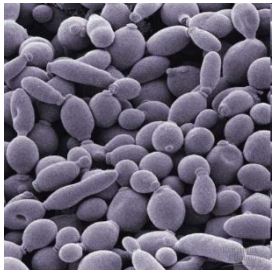


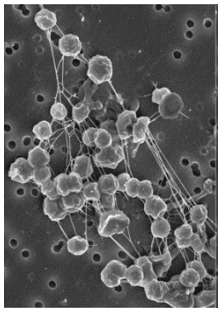
The 6 Kingdoms

- **Archaebacteria – Old Bacteria**
- **Eubacteria – New Bacteria**
- **Protista – "Junk Drawer" Kingdom**
- **Fungi – Mushrooms, Yeast, Molds**
- **Plantae** – Plants
- **Animalia** – Animals



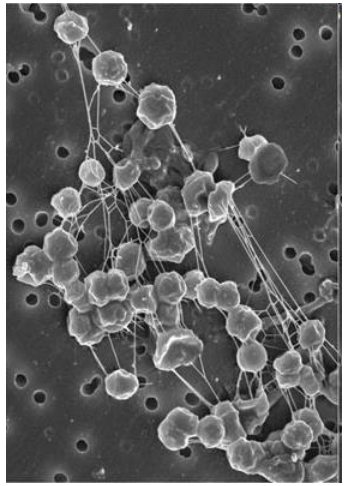


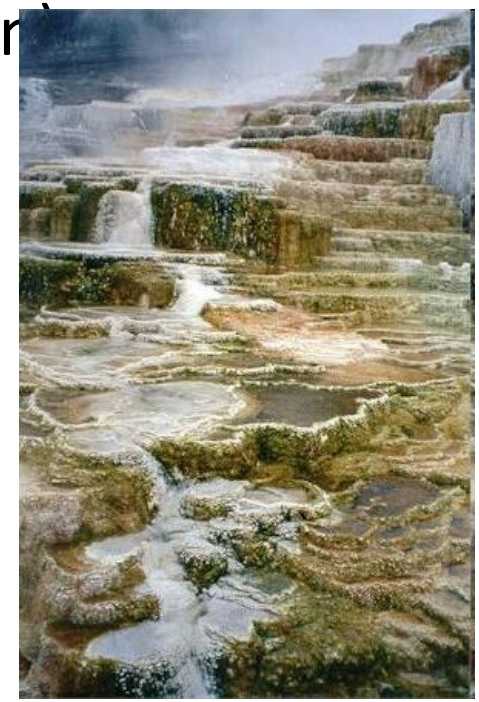




Archaebacteria

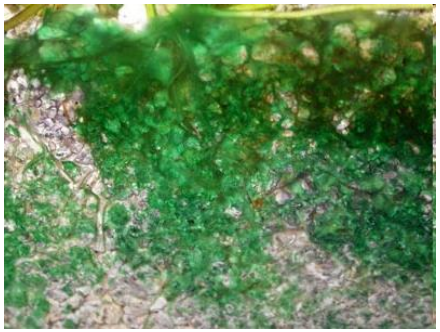
- **Archaebacteria**: the Latin name means "Old Bacteria", examples are the **methanogens**. They are all Prokaryotes (w/out an organized nucleus), and are unicellular, some are autotrophs, most are heterotrophs. Cell wall is present and composed of amino acids or polysaccharides. Many have flagella or cilia and are able to move (locomotion)
- Live in very harsh environments -

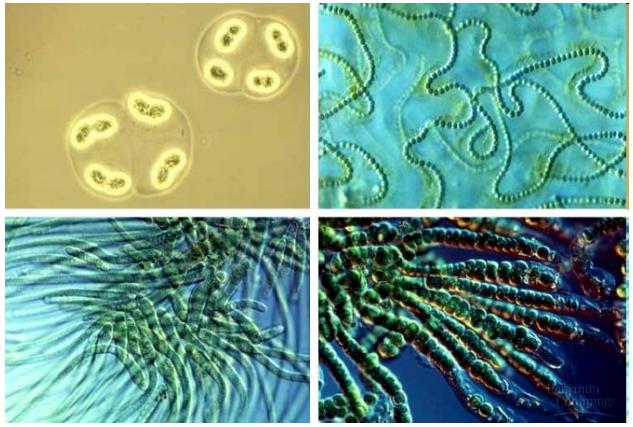


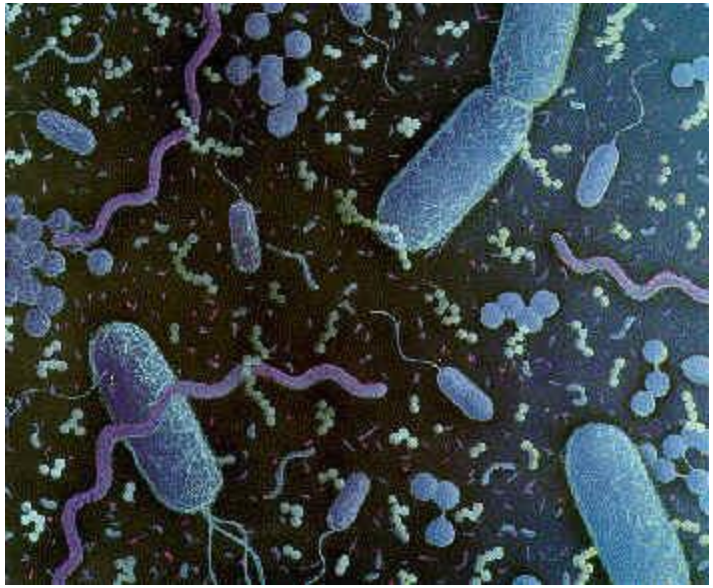


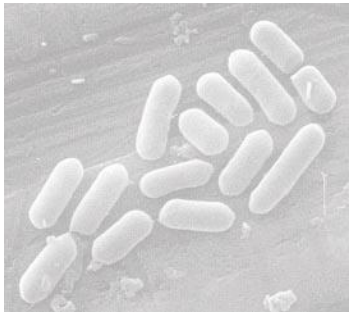
Eubacteria

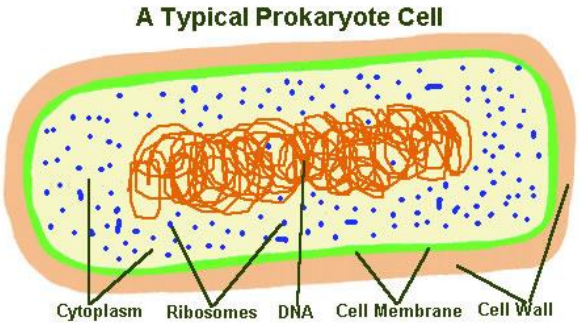
- “New Bacteria”, examples are the bacteria and blue-green algae. They are all Prokaryotes. Cell wall is present and composed of amino acids or polysaccharides.

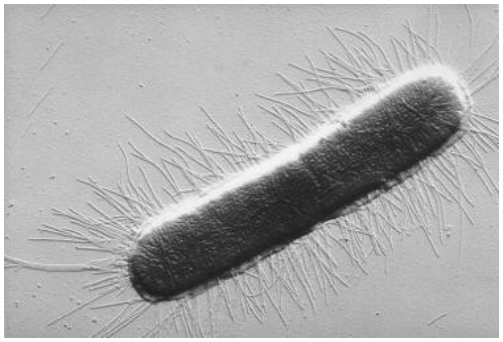






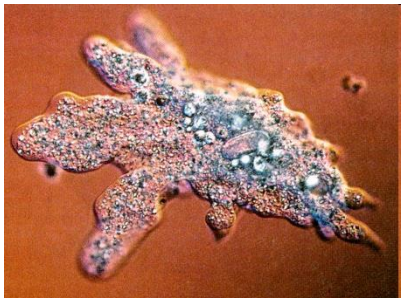


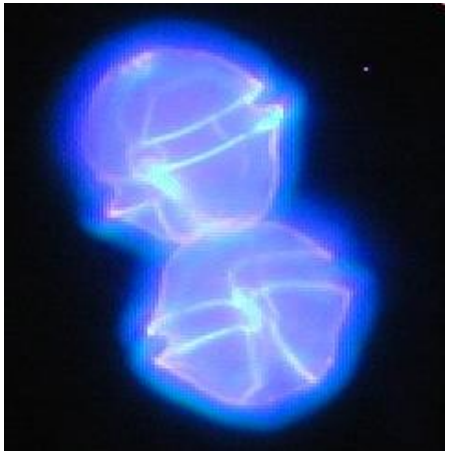


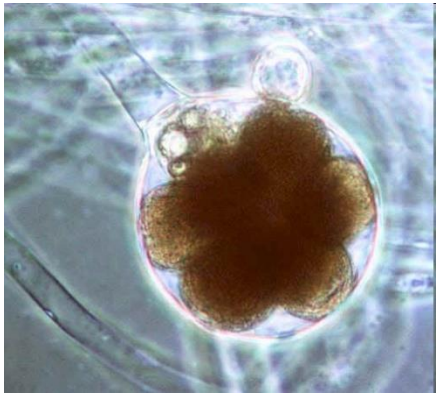


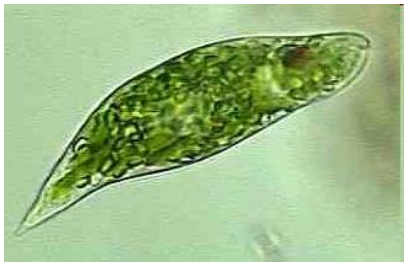
Protista

- **Junk drawer**" kingdom – a little bit of everything, some w/ cell walls (composition varies), some w/out.
- All are **Eukaryotes**, autotrophs and heterotrophs represented.
- Single cellular to multi-cellular and over 300 ft long.
- Divided into three categories:
  - **Animal-like**
  - **Plant-like**
  - **Fungus-like**







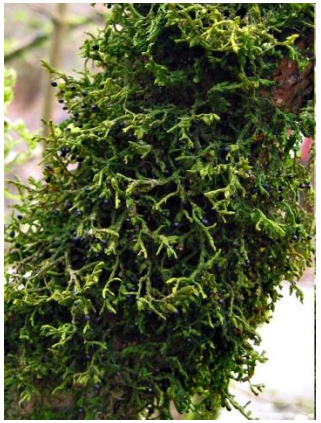


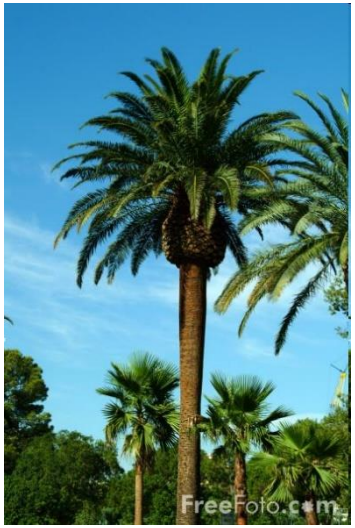
Fungi

- **water molds, bread molds, Sac fungi, yeasts, mushrooms and *Penicillium sp.***
- Usually require moist, dark and warm habitats.
- **Characteristics:**
  - i. Eukaryotic heterotrophs decomposers
  - ii. Many are Saprophytes or parasites
  - iii. Most are Multicellular however yeast are unicellular
  - iv. Most are immobile
  - v. Cell Wall present and composed of Chitin (except Oomycota)
  - vi. Sexual and asexual reproduction present

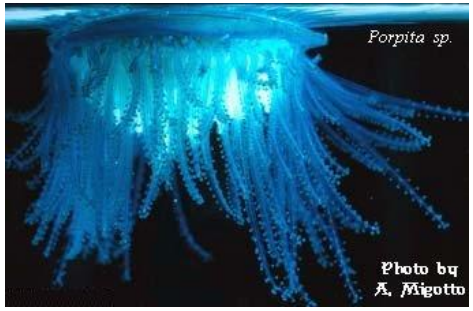
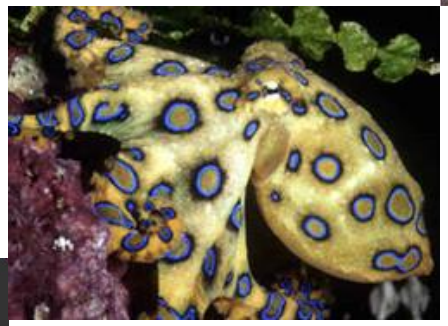
Kingdom: Plantae

- Eukaryotic Autotrophs
- cell walls present and composed of Cellulose.
- Multicellular





Knigdom Animalia



- Eukaryotic **heterotrophs**
- Cell membranes **w/out cell walls**
- Multicellular
- Mobile