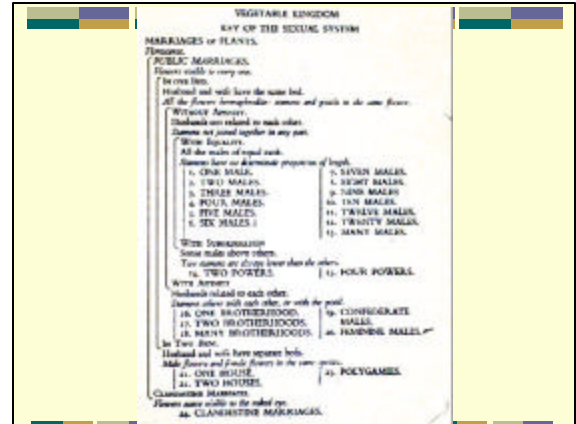


# Kingdoms and Domains

## Classification Continues



## Changing Numbers of Kingdoms

First Introduced	Names of Kingdoms					
1700's	Plantae					Animalia
Late 1800's	Protista		Plantae		Animalia	
1950's	Monera	Protista	Fungi	Plantae	Animalia	
1990's	Eubacteria	Archaeobacteria	Protista	Fungi	Plantae	Animalia

## 3 Domains

- Eukarya: Fungi, Plantae, Animalia, Protista
- Bacteria: Eubacteria
- Archaea: Archaeobacteria

## Domain Bacteria:

- Unicellular
- Prokaryotic (—only a circle of DNA)
- Cells are thick with rigid cell walls surrounding a cell membrane.
- Cell walls contain peptidoglycan.
- Cell division by binary fission.

## Kingdom Eubacteria:

- True bacteria.
- Most abundant organisms on Earth (5 x 10<sup>30</sup> eubacteria)
- One bacterium can produce 10 million in 24 hours.

## Domain Archaea:

- Unicellular
- Prokaryotic (—only a circle of DNA)
- Cell walls contain no peptidoglycan.
- Live in most extreme environments possible: volcanic hot springs, brine pools, black organic mud...
- Many can survive only in the absence of oxygen.
- Cell division by binary fission.

## Kingdom Archaeobacteria:

- Means “Ancient Bacteria” though this is a misnomer because they are no more ancient than eubacteria.
- Thermophiles: “Heat Lovers”, 70-110°C
- Halophiles: “Salt Lovers”, Require H<sub>2</sub>O at 15-20% salt (sea H<sub>2</sub>O is 3% salt.)

## Domain Eukarya:

- Eukaryotic
- Protista, Fungi, Plantae, Animalia

## Kingdom Protista:

- Eukaryotic organisms that can not be organized into animals, plants, or fungi.
- Photosynthetic or heterotrophic.

## Kingdom Fungi:

- Eukaryotic
- Heterotrophic
- Secrete digestive enzymes into their food  
SOURCES. (Specialized to be decomposers)
- Absorb small food molecules into their bodies.
- Main body is the *mycelium* which is made of threadlike projections called *hyphae* that grow into soil or the tissues of organisms being broken down.
- Mushrooms are reproductive structures.
- Spread by spores.
- Athlete's foot is a parasitic fungi that grows its hyphae through living tissue.
- Many can produce antibiotics to kill bacteria. (e: penicillin)

## Kingdom Plantae:

- Eukaryotic
- Mostly multicellular
- Mostly photosynthetic and autotrophic
- Non-motile
- Cells contain cellulose
- 4 Groups: Mosses (the only non-vascular plants), Ferns, Gymnosperms, Angiosperms



## Kingdom Animalia:

- Eukaryotic
- Multicellular
- Heterotrophic
- Have no cell walls
- Motile (for at least some of their life cycle)