

The History of Classification

Classification:

- The organization according to common characteristics
- The grouping of like organisms
- Shows relationships among organisms
- Used to help identify unknown organisms and to differentiate between known organisms.

Taxonomy:

- Taxonomy is the science of classification of living organisms.
- Taxonomists: Scientists who classify living organisms.



Aristotle:

- 384-322 BC
- Greek Philosopher and Naturalist
- Classified organisms into 2 groups -- plants and animals



Aristotle's Animals:

- Aristotle divided animals up into 3 main groups according to their mode of locomotion:
 - a) Land animals (walking)
 - b) Air animals (flying)
 - c) Water animals (swimming)

Your turn:

- Using Aristotle's 3-group system, name two animals that would fit into each category.
- Are there any flaws that you can detect with Aristotle's system?

Theophrastus:

- 371-287 BC
- Greek Philosopher
- Pupil of Aristotle
- Further classified plants in 300 BC



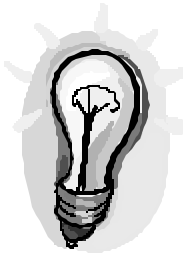
Theophrastus' Classification:

- Small plants with soft stems he called ***herbs***.
- Medium plants with woody stems he called ***shrubs***.
- Large plants with woody stems he called ***trees***.

Conrad Gessner

- March 26, 1516-Dec. 13, 1565
- Wrote "Historia Animalia" in 1555.
 - Ended up being 3 volumes 1555-1558
 - Written in Latin, with many pictures.
- Classified Quadrupeds, birds, fish, and snakes.
- Became known as the Father of Zoology.

John Ray:



- 1628-1705
- English Philosopher and Naturalist
- Coined the term "Species" meaning organisms that looked alike and could reproduce among themselves.

John Ray:

- Classified animals into specialized groups that he called species (Latin word for "kind".)
- Classified 18,000 plants into 2 main types (monocots and dicots)



Carolus Linnaeus:



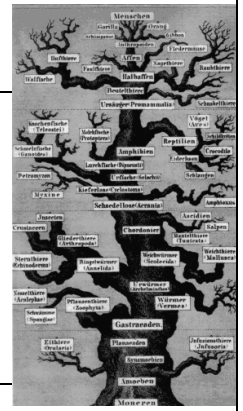
- Carl von Linné
- 1707-1778
- Swedish Botanist
- Founder of modern taxonomy

Linnaeus' contributions:

- Classification according to physical characteristics. (1735)
- Binomial Nomenclature: System of naming organisms with a genus and species name. (Organisms with more than 1 common name would now have a single name in the scientific community.)
 - First appeared in use in 1753 and 1758 books by Linnaeus.

Haeckel

- 1834-1919
- German Biologist
- "Tree of Life" in 1866 and redrew in 1894.
- 3 Kingdoms
- Plants, Animals, Protists



Herbert Copeland

- 1902-1968
- American Biologist
- In 1938 proposed a 4 kingdom classification system.
- He separated the Prokaryotes into their own kingdom - Monerans

Robert Whittaker

- 1920-1980
- American ecologist
- Vegetarian
- Proposed a 5 kingdom classification system in 1959.
- He Moved the Fungi to their own kingdom.

Willi Hennig



- April 20, 1913-Nov. 5, 1976
- German
- Introduced Cladistics in 1966
- Cladistics show relationships based on derived characteristics.

Carl Woese

- July 15, 1928- _____
- Proposed a 6 kingdom classification system in 1966.
- He Broke the Monerans into Archeobacteria and Eubacteria.
- In 1990, he introduced Domains.



Today:

- We now have a organisms broken down into 3 Domains (Archaea, Bacteria, and Eukaryota), and 6 kingdoms (plantae, animalia, eubacteria, archaeobacteria, protista, and fungi).
- Kingdoms are broken up into smaller groups which break up into even smaller groups (phylum, class, order, family, genus, species).
- We continue to use Linnaeus' binomial nomenclature system.