Classification and Taxonomy

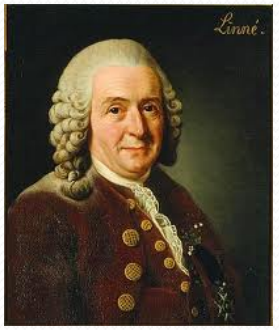
How to make a Dichotomous Key (Amoeba Sisters)

Why Classify???

- Scientists classify organisms in order to organise the great diversity of organisms into manageable groups to aid study
- Classification systems have two features:
  - A universally accepted name for each organism (so all scientists all over the world know they are talking about the same thing)
  - A placement of organisms into groups that have a real biological meaning
- Organisms in the same group share important traits or characteristics.

The System of Carolus Linnaeus

- Developed by Carolus Linnaeus, a Swedish botanist



- It is called: binomial nomenclature
- Details:
  - Gives each organism a two part name
  - The first part tells the genus of the organism
  - The second part tells the species – often a Latin description of some important characteristic

Example of Binomial nomenclature

Acer rubrum

- Acer – the genus name for all maples
- Rubrum : latin word for red

Acer palmatum

- Acer- maple
- Palmatum – latin for hand

Notation:

- Capitalize the genus name, but not the species
- The name must be written in *italics*

- *Orcinus orca*

- *Haliaeetus leucocephalus*

The Classification System of Linnaeus

- After naming organisms he grouped them according to shared body features.
- Organisms that shared important characteristics were classified as the same group.
- Taxa = groups
- Taxonomy = the science of naming organisms and assigning them into species

Details:

- The smallest taxon is *species*: a group of organisms that share similar characteristics and that can breed with one another
- If two species share many features, but are clearly separate biological units, they classified as different species within the same *genus*
- eg. *Felis domesticus*

- Eg. *Felis concolor*

Family

- A *family* is a larger taxon than a genus
  - For example the genera *Felis* and *Panthera* belong to *Felidae* (cats)

- *Felidae Panthera tigris*

Felidae Felis lynx