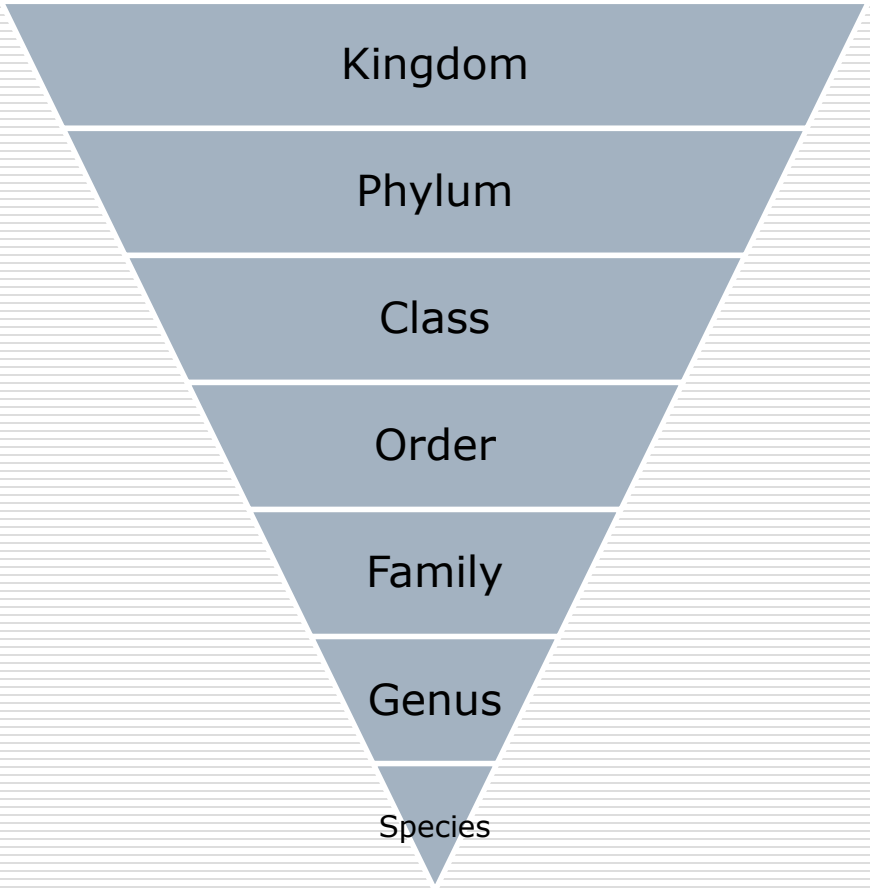
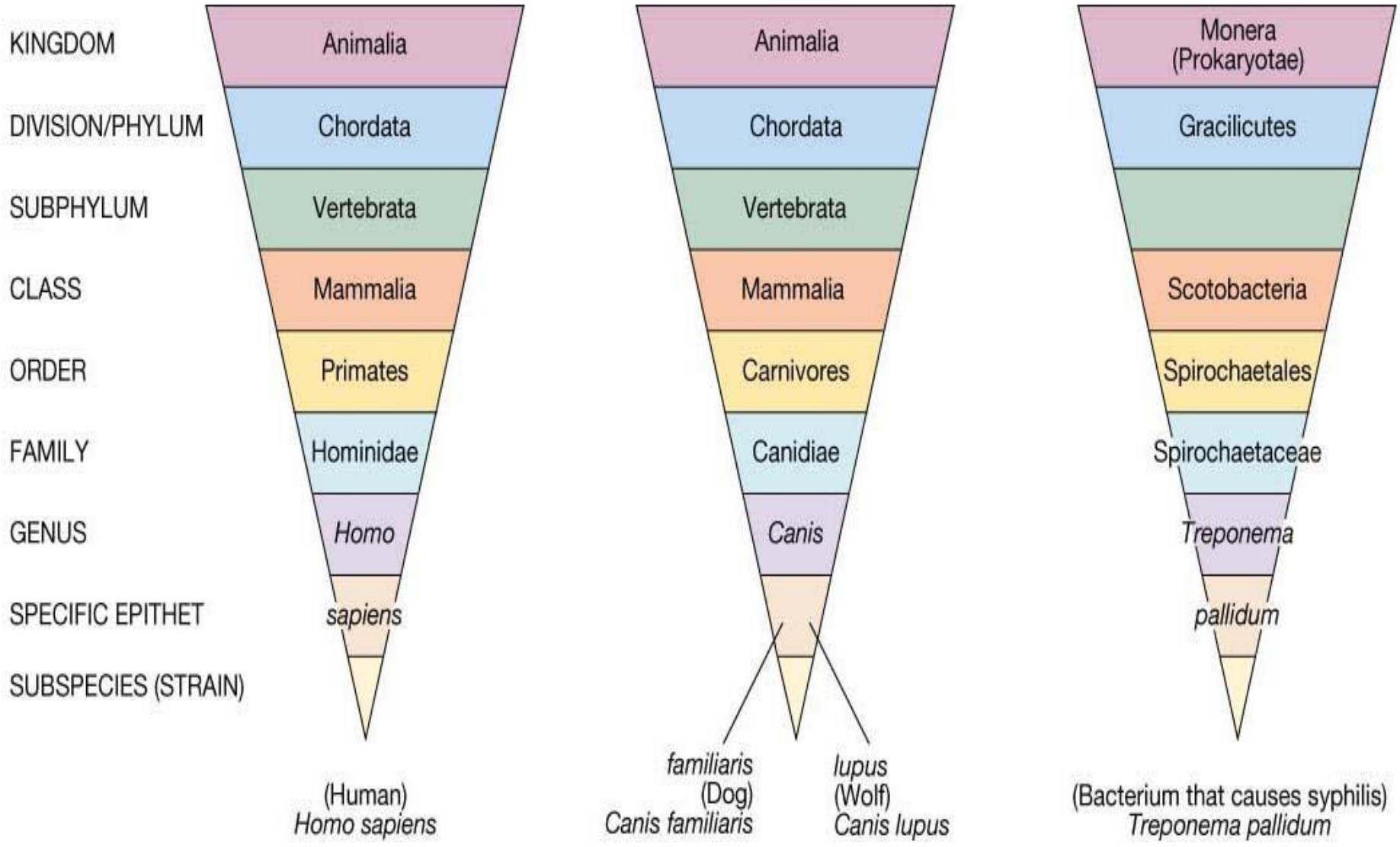
The 7 Taxa

Taxa are categories used to further classify organisms.
Each category by itself is called a Taxon.

Kingdom	**King**	**Kindly**
Phylum	**Phillip**	**Professors**
Class	**Came**	**Can not**
Order	**Over**	**Often**
Family	**For**	**Fail**
Genus	**Ginger**	**Good**
Species	**Snaps**	**Students**

K-P-C-O-F-G-S




KINGDOM
DIVISION/PHYLUM
SUBPHYLUM
CLASS
ORDER
FAMILY
GENUS
SPECIFIC EPITHET
SUBSPECIES (STRAIN)
Animalia
Chordata
Vertebrata
Mammalia
Primates
Hominidae
Homo
sapiens
(Human)
Homo sapiens
Animalia
Chordata
Vertebrata
Mammalia
Carnivores
Canidiae
Canis
familiaris
(Dog)
Canis familiaris
lupus
(Wolf)
Canis lupus
Monera
(Prokaryotae)
Gracilicutes
Scotobacteria
Spirochaetales
Spirochaetaceae
Treponema
pallidum
(Bacterium that causes syphilis)
Treponema pallidum

Classifying Humans

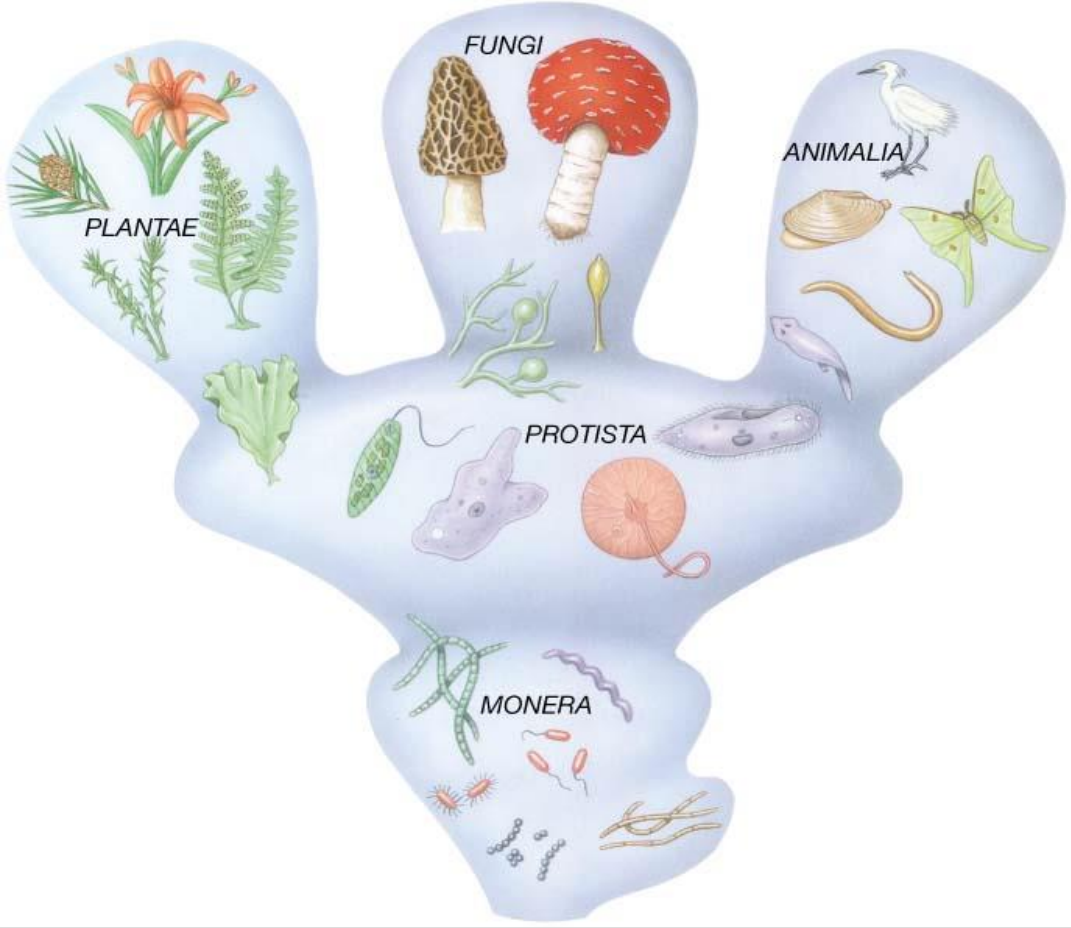
Kingdom	**Animalia**
Phylum	**Chordata**
Class	**Mammalia**
Order	**Primates**
Family	**Hominidae**
Genus	**Homo**
Species	**sapiens**

The Genus & Species name gives us our scientific name Homo sapiens

6 Kingdoms

- Archaebacteria
- Eubacteria
- Protista
- Fungi
- Plantae
- Animalia

Evolution of the 6 Kingdom System



(Monera)
Kingdom Archaebacteria

- Unicellular
- Prokaryotic
- Motile
- Autotrophs and Heterotroph
- Asexual
- Can live in extreme environments (anaerobic)
- Thought to be most like the organisms that exhisted 3.5 billion years ago.

(Monera)
Kingdom Eubacteria

- Unicellular
- Prokaryotic
- Motile
- Autotrophic and Heterotrophic
- Asexual
- "New bacteria" – E.coli

Kingdom Protista

- Unicellular or Colonial (many identical cells)
- Eukaryotic
- Motile and sessile
- Autotrophic and Heterotrophic
- Reproduce asexually

Kingdom Fungi

- Multicellular
- Eukaryotic
- Sessile
- Heterotrophs (either decomposers or parasites)
- Reproduce sexually and asexually

Kingdom Plantae

- Multicelluar
- Eukaryotic
- Sessile
- Autotrophic
- Reproduce sexually

Kingdom Animalia

- Multicellular (many specialized cells)
- Eukaryotic
- Motile (one exception)
- Heterotrophs
- Reproduce sexually

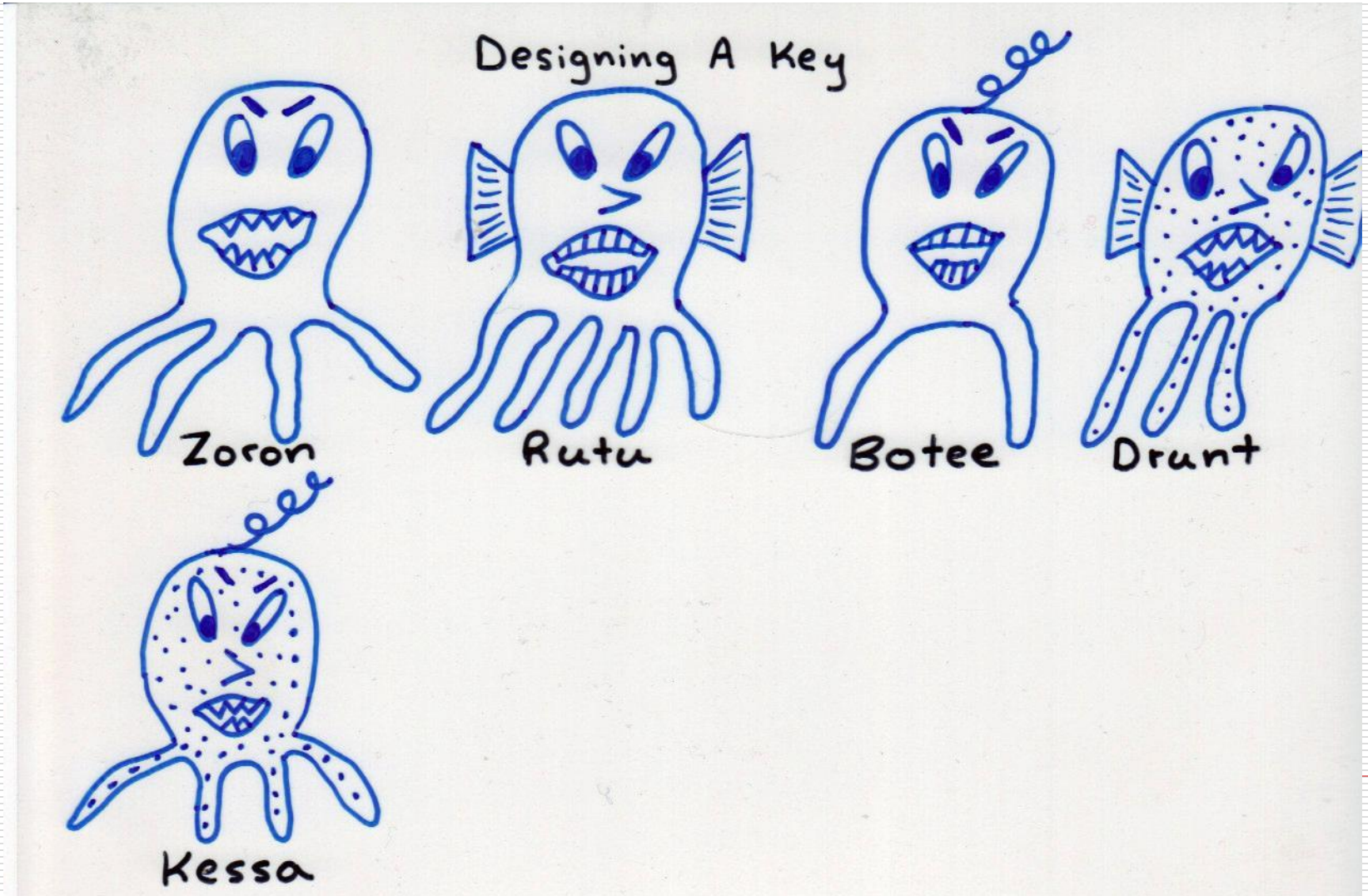
Classification Keys

- Device created by taxonomists to help name a discovered organism.
- Consists of several statements, each with 2 parts (dichotomous=2)
- Only one part in each statement can be true for an organism.
- The key directs you to another step until you can identify the organism by scientific name.

Creating a Classification Key

- Take a collection of organisms and chose a characteristic that divides them "dichotomously"
- Indicate where each part of the key will take you next.
- When you are down to one organism, you name it!
- Let's use our class as an example.

Another key:



Classification Key for the Creatures

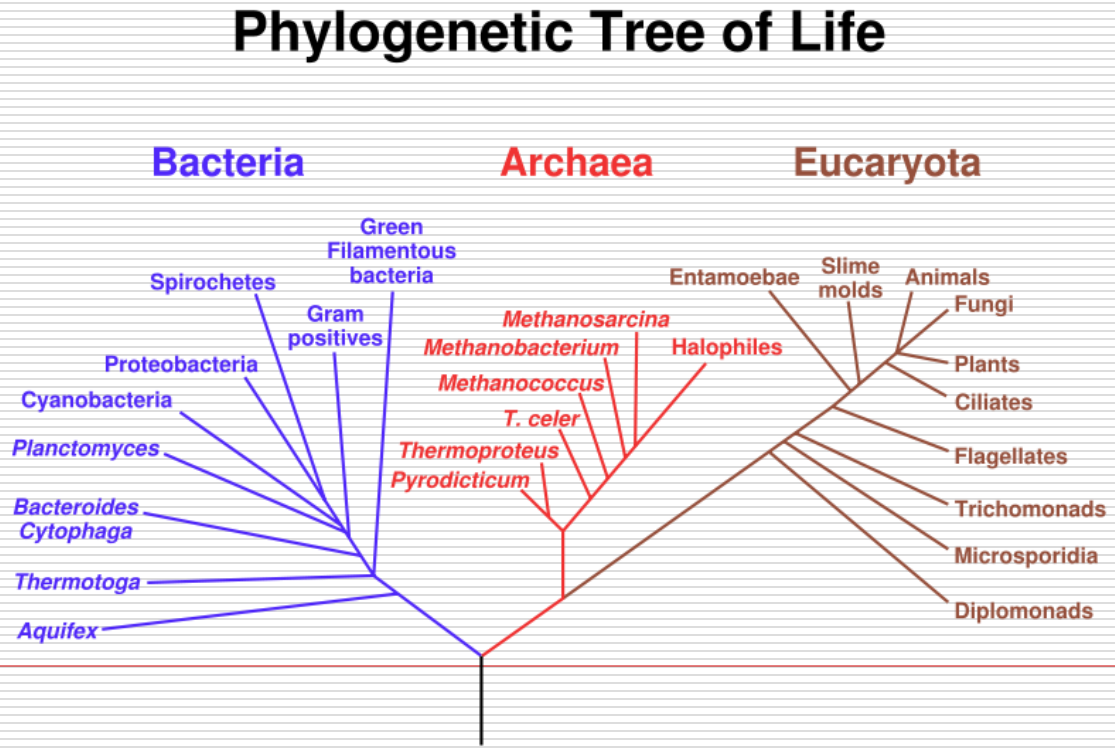
- 1. a) Antennae go to 2
- b) No Antennae go to 3
- 2. a) Spots …… *Creaturius spotius*
- b) No spots.. *Creaturius plainius*
- 3. a) Ears go to 4
- b) No ears *Creaturius noearius*
- 4. a) Spots *Creaturius druntius*
- b) No spots *Creaturius rutuius*

Criteria used by Modern Taxonomists to show connections

- Structural similarities and differences
- Similarities in Biochemistry (protein structure/DNA structure)
- Comparison of Embryological development

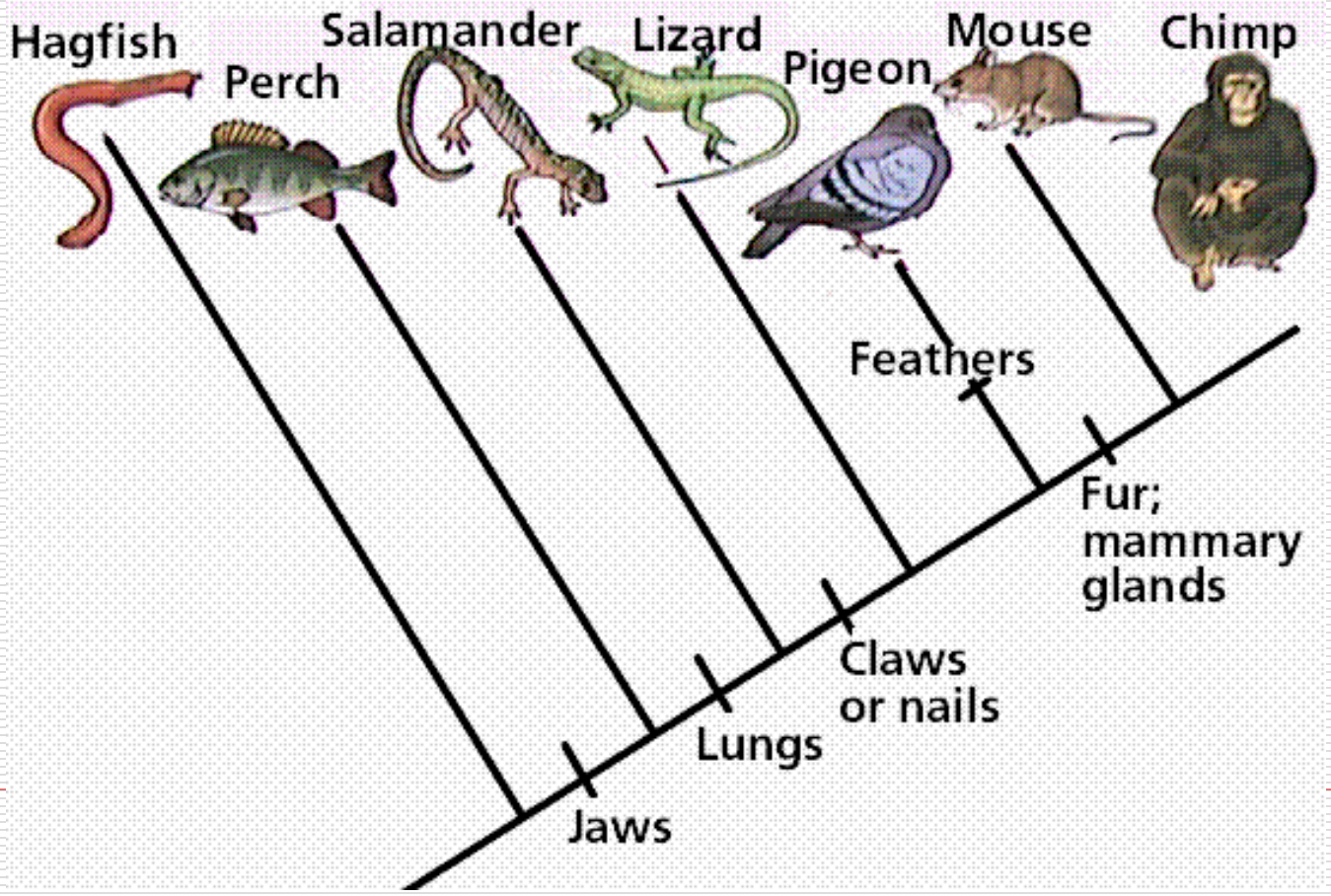
Phylogeny

- - evolutionary history of an organism
- A) Phylogenic trees

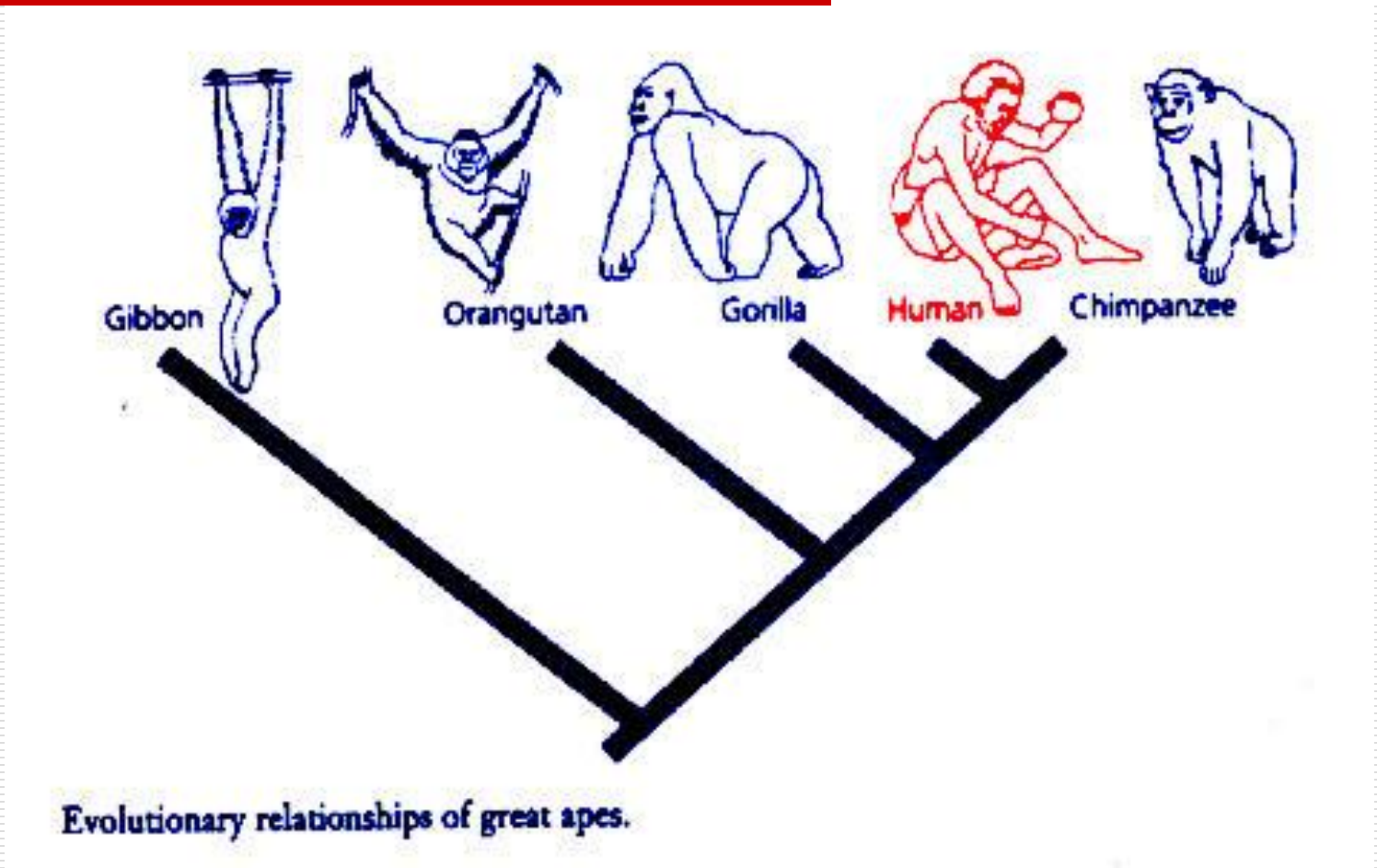


Phylogeny

- B) Cladogram



So who are we closely related to?



Evolutionary relationships of great apes.