

Wednesday, Feb 22, 2017

Pick up: self check ISN pg 162

Today you will:

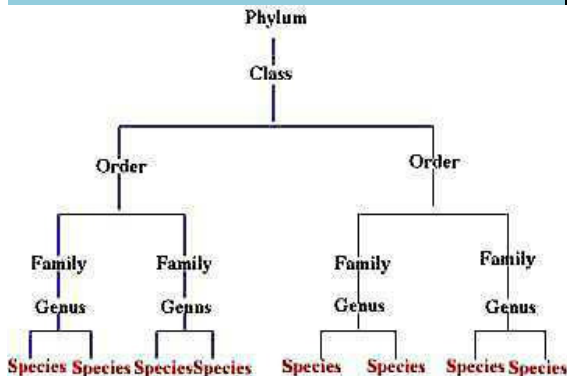
1. Review basic Taxonomy

Homework/Planner:

Complete ISN pg 167

# NOTES: Classification

Why do we need to classify living things?



- Allows easy retrieval of info.
- To show that things are alike
- Brings order
- Logical way of naming organisms
- Basis for identification

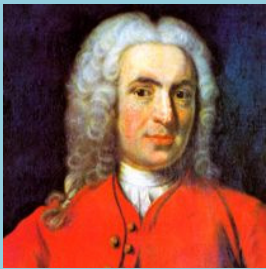
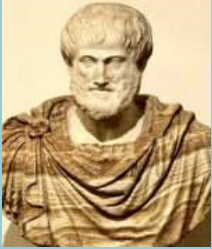
What is taxonomy?

*The science of naming and classifying (grouping) organisms*

# History of Classification:

TB page 518

Aristotle:  
Linnaeus:



- Plants: sm., med, lg.
- Animals: land, sea, air
- *Too basic...*
  
- Developed a standardized, more practical system of grouping organisms.
  - 7 groups- a hierarchy
    - Largest at the top
    - Smallest at the bottom

What are the  
LEVELS of  
CLASS-  
IFICATION?

- DOMAIN

- Kingdom

- Phylum

- Class

- Order

- Family

- Genus

- species

Specificity

taxon

?

# How Things are Classified

## TB Page 520

How is  
life  
organ-  
ized?

- Into kingdoms... 6
- Taxa - K,P,C,O,F,G,S – each one is larger than the previous
- *Newly discovered species are placed in their appropriate category based on characteristics & given a descriptive name using Binomial nomenclature*
- Create a memory aid to remember this
- EX: King Phillip Came Over For Good Soup

# Kingdoms in system of classification?



**Fungi**  
(eukaryotic, multicellular)

**Animalia**  
(eukaryotic, multicellular)

**Plantae**  
(eukaryotic, multicellular)

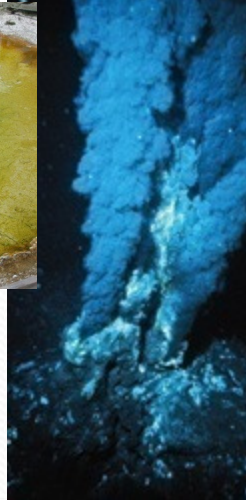
**Protista**  
(eukaryotic, uni- or multicellular)

**Archaeobacteria**  
(prokaryotic, unicellular)

**Eubacteria**  
(prokaryotic, unicellular)

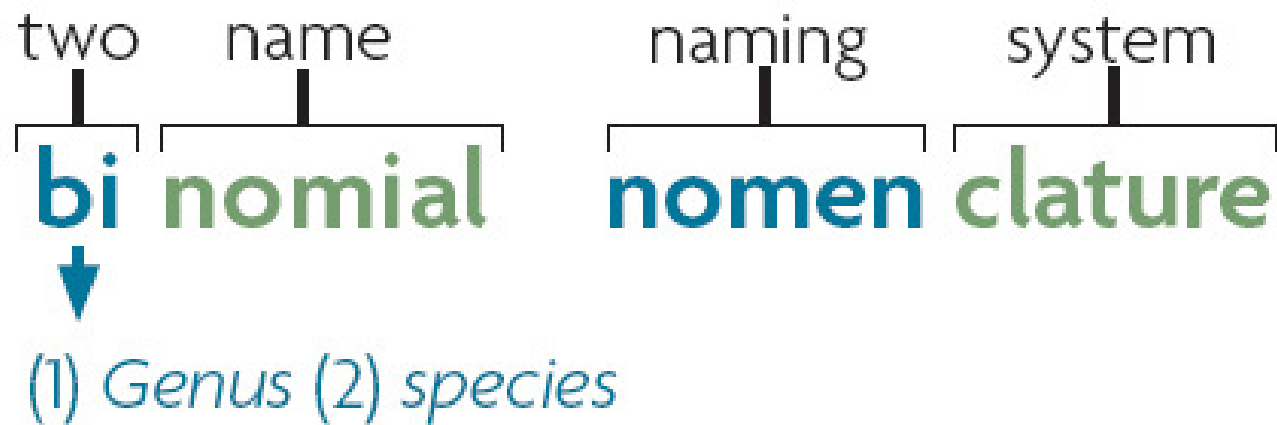


Universal ancestor



## What is Binomial Nomenclature?

- Binomial nomenclature is a two-part scientific naming system.
  - uses Latin words
  - scientific names always written in italics
  - two parts made up of the genus name and species descriptor



- A genus includes one or more physically similar species.
  - Species in the same genus are thought to be closely related.
  - Genus name is always Capitalized.
- A species descriptor is the second part of a scientific name.
  - May refer to a trait, location found or scientist that discovered it.
  - always lowercase
  - always follows genus name; never written alone

❖ If handwritten the whole name is underlined

❖ If typed, the whole name is *italicized*



*Tyto alba*



## Why do biologists use scientific names?



You failed your Latin exam!  
But Sweety, it's important to learn Latin:  
All your friends' names have Latin roots...

- One species may have many common names.
- Some species may have very similar common names.
- Scientists can communicate about a species w/o confusion.



# What's in a Scientific Name?

## Page 519

Why are common names a problem?

- Common names pose problems:
  - Mt. Lion - cougar – puma - panther
  - Jellyfish - starfish – silverfish
  - Sand knat- sand flea – ‘no see ums’
  - All lead to confusion...
- Scientific names avoid these problems

COMMON NAMES	SCIENTIFIC NAME	
	Genus	species
Roly-poly, pill bug, sow bug, potato bug	<i>Armadillidium</i>	<i>vulgare</i>
Dandelion, Irish daisy, lion's tooth	<i>Taraxacum</i>	<i>officinale</i>
House sparrow, English sparrow	<i>Passer</i>	<i>domesticus</i>
Mountain lion, cougar, puma	<i>Puma</i>	<i>concolor</i>
Red maple, scarlet maple, swamp maple	<i>Acer</i>	<i>rubrum</i>

# Linnaeus' classification system has seven levels.

- Each level is included in the level above it.
- Levels get increasingly specific from kingdom to species.

**KINGDOM: Animalia**



**PHYLUM: Chordata**



**CLASS: Mammalia**



**ORDER: Carnivora**



**FAMILY: Canidae**



**GENUS: Canis**



**SPECIES: Canis lupis**



Analyze this table.... What do you notice????

KINGDOM Animalia	American Lobster	Market Squid	Blue Mussel	Virginia Oyster	European Oyster
Phylum	Arthropoda	Mollusca	Mollusca	Mollusca	Mollusca
Class	Malacostraca	Cephalopoda	Bivalvia	Bivalvia	Bivalvia
Order	Decapoda	Decapoda	Mytiloida	Pterioda	Pterioda
Family	Nephropidae	Loliginidae	Mytilidae	Ostreidae	Ostreidae
Genus	<i>Homarus</i>	<i>Loligo</i>	<i>Mytilus</i>	<i>Crassostrea</i>	<i>Ostrea</i>
Species	<i>americanus</i>	<i>opalescens</i>	<i>edulis</i>	<i>virginica</i>	<i>edulis</i>

1. From Top to Bottom, the char. of each org. gets increasingly MORE similar
2. What phylum do most of these animals have in common? Mollusca
3. What class do most of these animals have in common? Bivalvia
4. What kingdom are they in? Animalia
5. Can you tell what organisms are more closely related than others? Why? They are in the same group lower down the chart

- What are the limitations to the classification system?
- Doesn't account for some species having similarities but NOT being related.
  - Ex. Giant panda & Red panda
  - Ex. Red panda & raccoon

