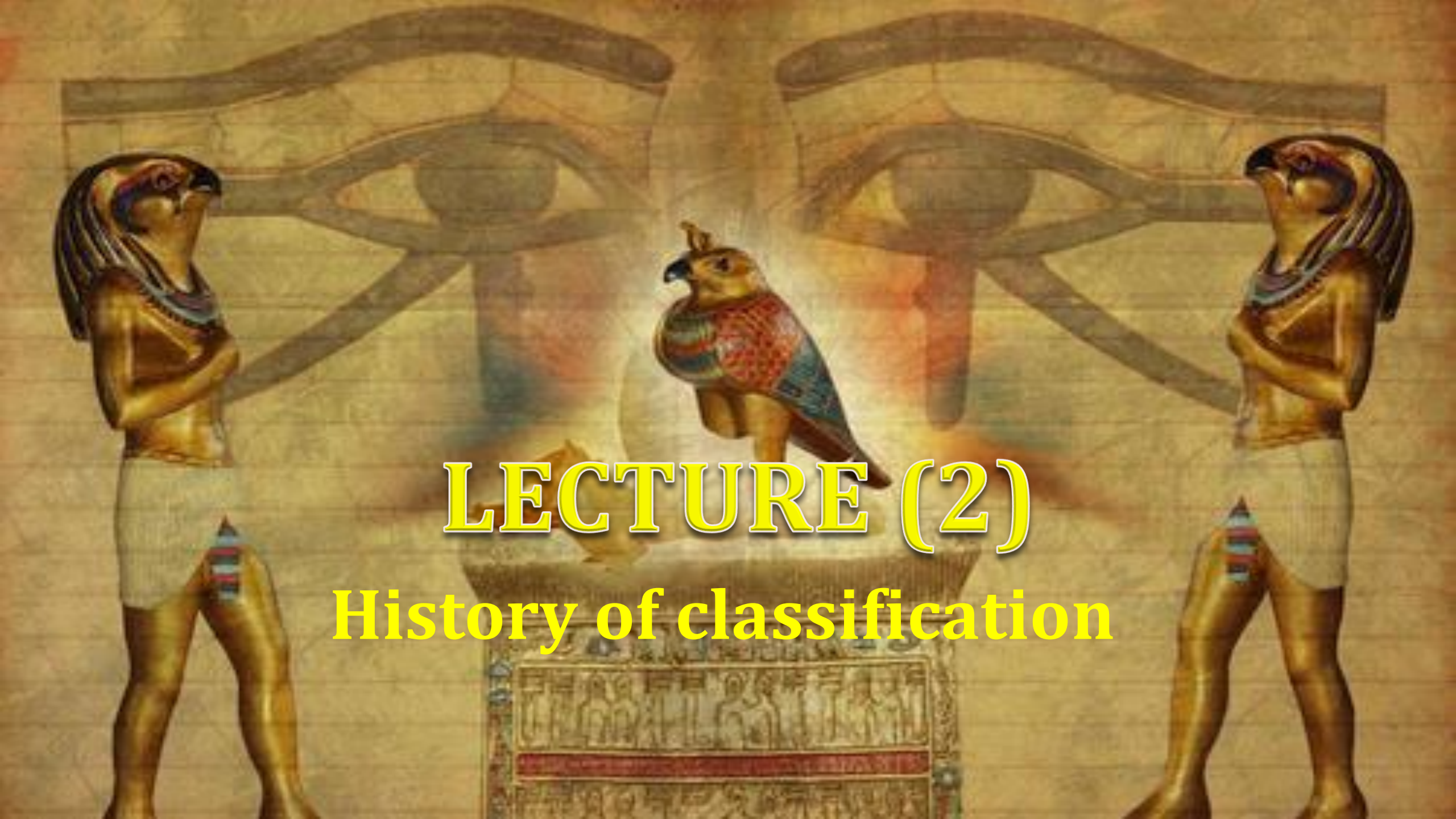


LECTURE (2)

History of classification

Scientists estimate that there are between **3 million** and **100 million** species of organisms on Earth.

***Taxonomy*—**The grouping of organisms based on similarities in structure.

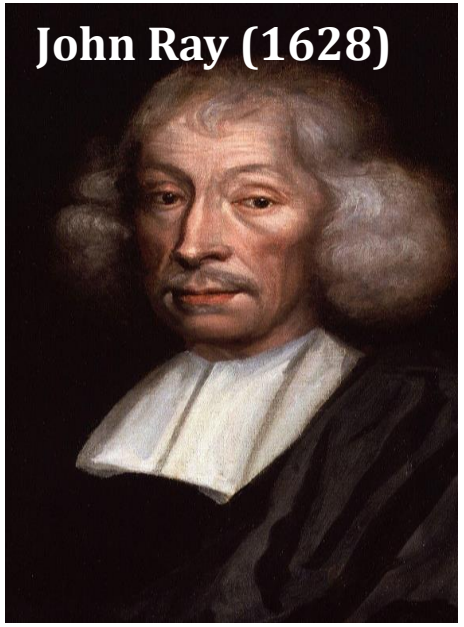
***Taxonomists*—**Biologists who specialize in identifying and classifying life on our planet--have named approximately **1.7 million** species so far.

Each year, about **13,000** **new species** are added to the list of known organisms.

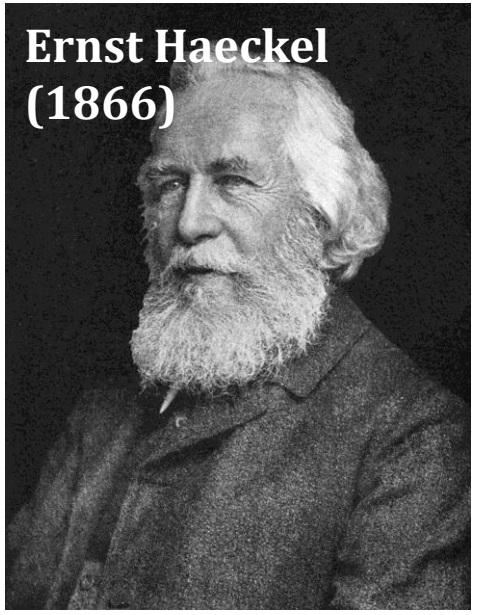
So, how do scientists **classify** (organize) all these millions of species?

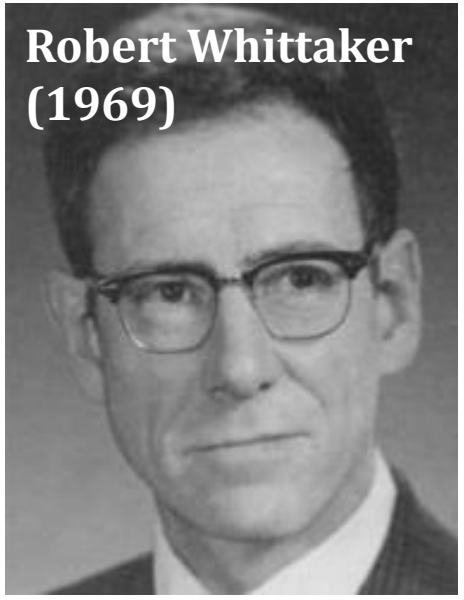
What is the history and bases of animal classification?

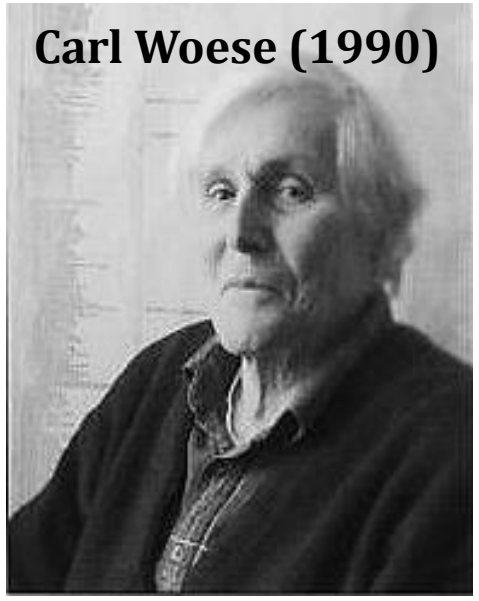
First line of classification



Second line of classification







etc…

(I) Aristotle (Greek Scientist) (384-322 B. C.)

"Father of Zoology"

- Pointed out that animals could be grouped on basis of their characteristics.

- Classified animals according to presence or absence of red blood into:

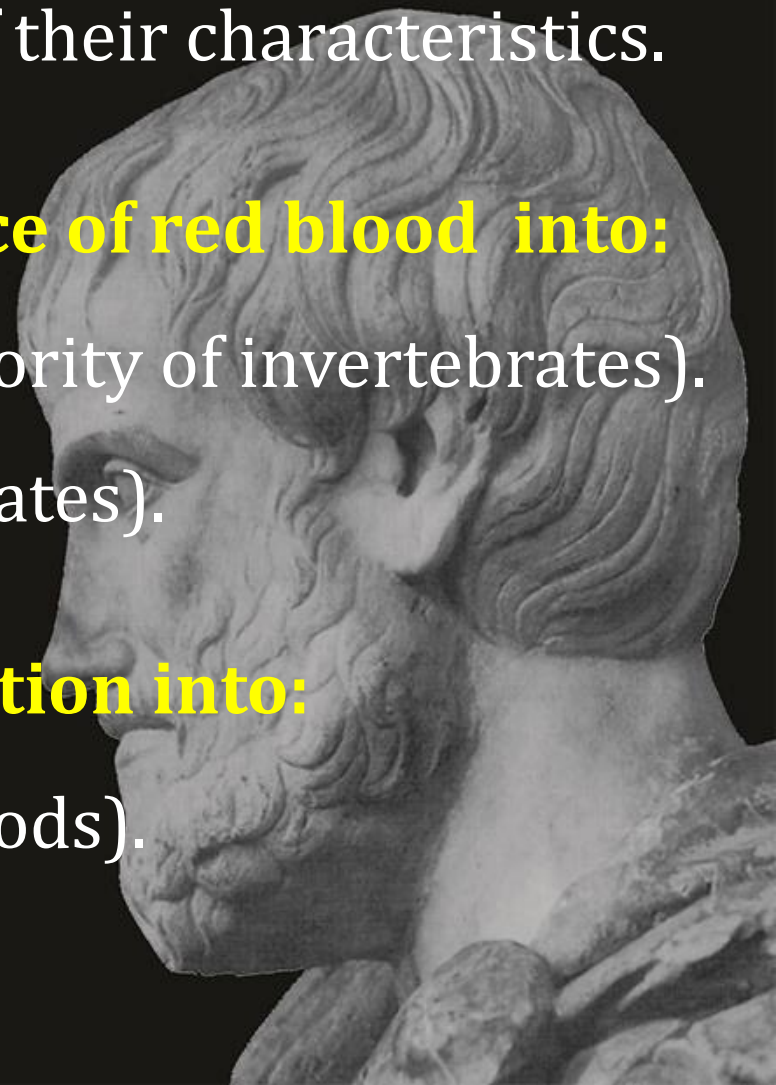
A-**Anaima** (animals without red blood which are majority of invertebrates).

B-**Enaima** (animals with red blood which are vertebrates).

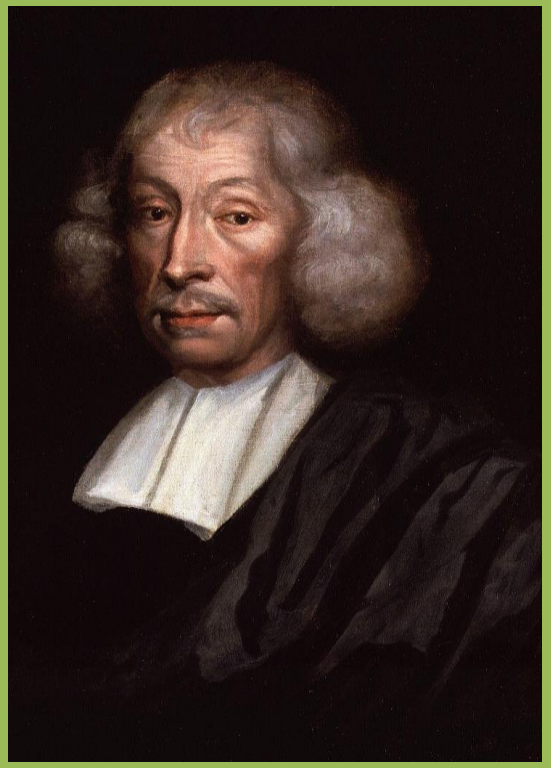
- Also, classified animals according to mode of nutrition into:

A-**Herbivorous** (animals that adapted to eat plant foods).

B-**Carnivorous** (meat eaters).



(II) John Ray (English Scientist), (1628-1705)

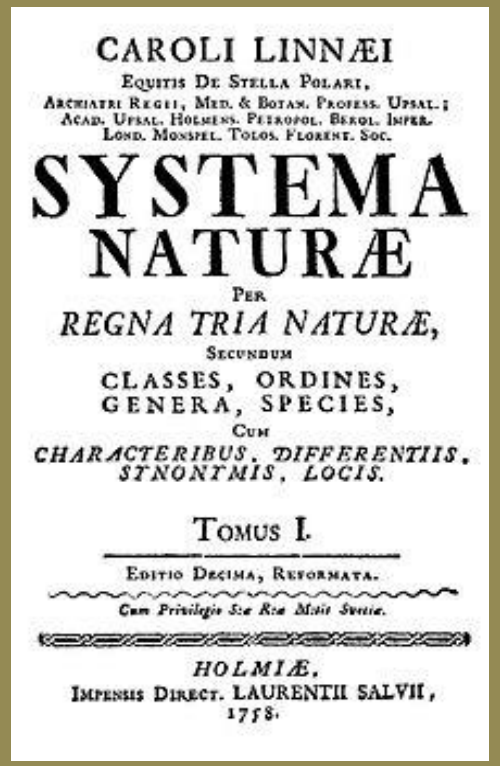


- He divided the living organisms into plant and animal kingdoms.
- Each kingdom was classified into → Phyla → classes → orders → families → genera → species.
- **The term (concept) "Species" is defined as:**

An assemblage or grouping of animals which are morphologically similar and which able to interbreed freely with one another, but they commonly do not interbreed with other species, and if they do so they produce infertile (sterile) hybrids.

(III) Carllus Linnaeus (Swedish Scientist) (1707-1778)

- Laid real bases for modern classification and nomenclature
- Subdivided organisms based on the degree of relatedness by structure and appearance
- In his *Systema naturae* (10th edition, 1758), recognized six classes of Animal Kingdom which are:
  - A- Mammalia.
  - B- Aves (Birds).
  - C- Amphibia (Reptiles and Amphibians).
  - D- Pisces (Fish).
  - E- Insecta.
  - F- Verms (All other invertebrates).


CAROLI LINNÆI
EQUITIS DE STELLA POLARI,
ARCHIATRI REGII, MED. & BOTAN. PROFESS. UPSAL.;
ACAD. UPSAL. HOLMENS. PETROPOL. BEROL. IMPER.
LOND. MONSPEL. TOLOS. FLORENT. SOC.

SYSTEMA NATURÆ

PER
REGNA TRIA NATURÆ,
SECUNDUM
CLASSES, ORDINES,
GENERA, SPECIES,
CUM
CHARACTERIBUS, DIFFERENTIIS,
SYNONYMIS, LOCIS.

TOMUS I.

EDITIO DECIMA, REFORMATA.

Cum Privilegio Sæ Reæ Mtis Sveciæ.

HOLMIÆ.
IMPENSIS DIRECT. LAURENTII SALVII,
1758.

- Also, he established the **binomial nomenclature** by which each organism is given a name made of 2 Latin words:

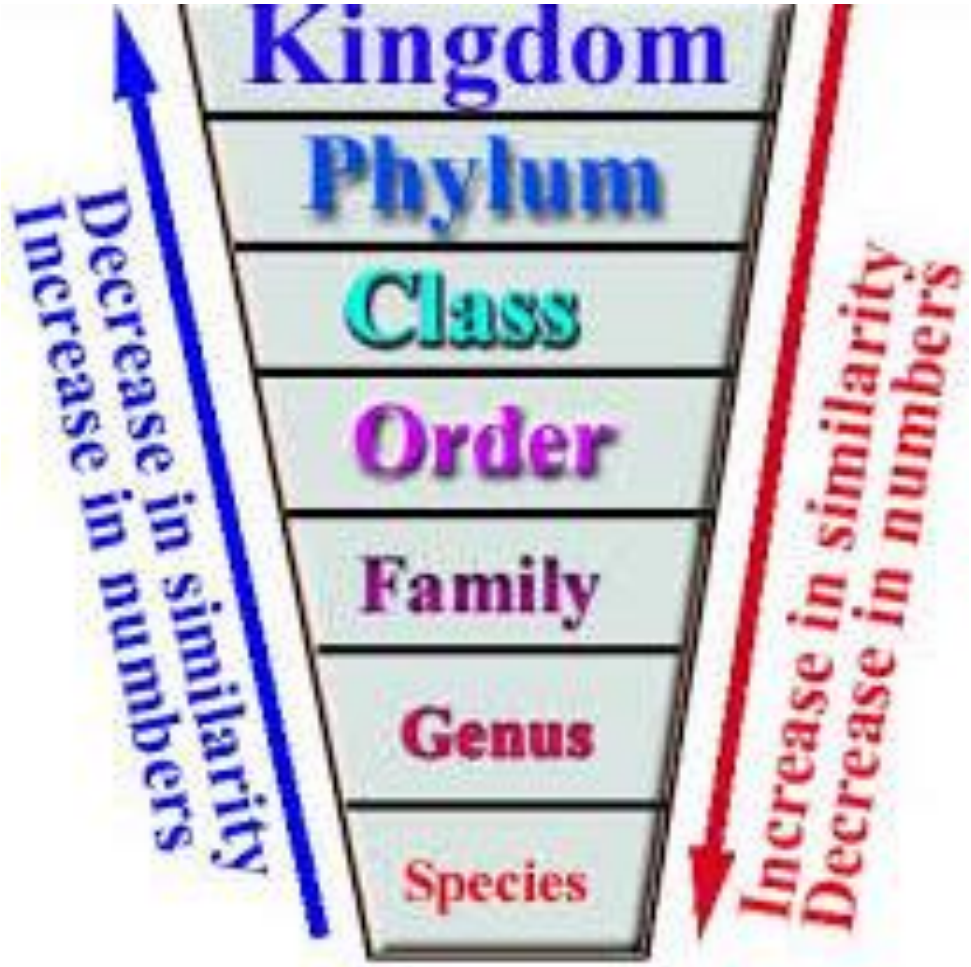
  A- The first is the name of the genus (generic name)

  B- The second is the name of the species (specific name)

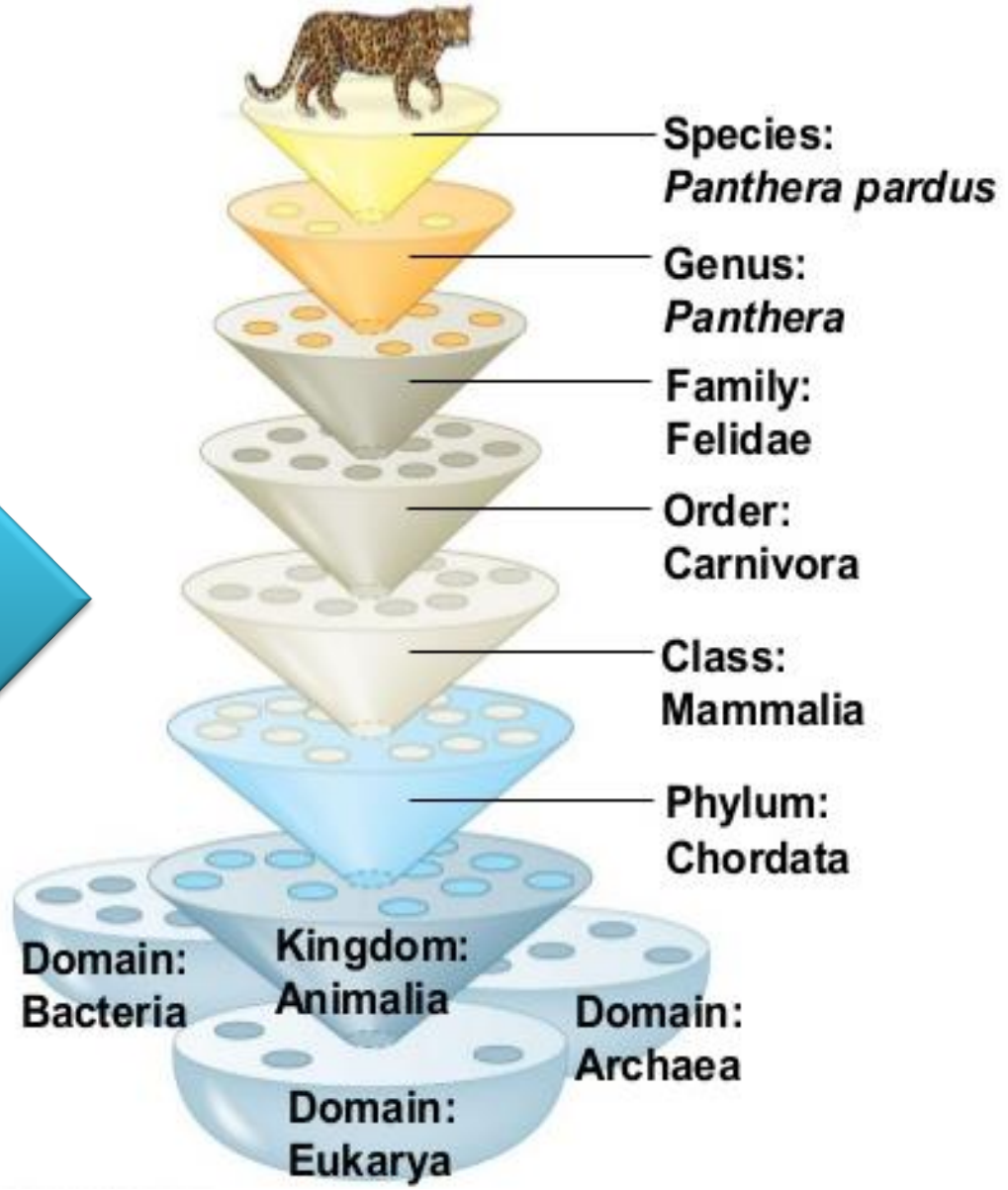
- Both names are written underlined or typed in italics.

- The generic name starts with a capital letter while the specific name starts with a small letter as in the following examples:

1- Egyptian toad	Bufo regularis or *Bufo regularis*
2- Cat	Felis domestica or *Felis domestica*
3- Dog	Canis familiaris or *Canis familiaris*
4- Man	Homo sapiens or *Homo sapiens*


Kingdom
Phylum
Class
Order
Family
Genus
Species
Decrease in similarity
Increase in numbers
Increase in similarity
Decrease in numbers

Example


Species:
Panthera pardus
Genus:
Panthera
Family:
Felidae
Order:
Carnivora
Class:
Mammalia
Phylum:
Chordata
Domain:
Bacteria
Kingdom:
Animalia
Domain:
Archaea
Domain:
Eukarya

Thank you