

## 1. The Living World

### POINTS TO REMEMBER:

**Characteristics of Living Organisms :** Growth, reproduction, metabolism, cellular organization, consciousness (ability to sense environment), self-replicating and self regulation.

- Reproduction and growth are NOT defining properties.
- Metabolism, cellular organization and consciousness are defining properties.

**Biodiversity :** Term used to refer to the number of varieties of plant and animals on earth.

**Nomenclature:** standardize the naming of living organism such that a particular organism is known by the name all over the world.

**Identification:** nomenclature or naming is only possible when the organism is described correctly and we known to what organism the name is attached to.

**Need for classification:** To organize the vast number of plants and animals into categories that could be named, remembered, studied and understood.

### Rules for Nomenclature:

- Latinized names are used, written in italics
- First word represents the genus, second word is species name.
- Printed in italics; if handwritten then underline separately.
- First word starts with capital letter while species name written in small letter.

**ICBN:** International Code of Botanical Nomenclature (for giving scientific name to plants.)

**ICZN:** International Code of Zoological Nomenclature (for giving scientific name to animals.)

**Taxonomy:** Study of principles and procedures of classification.

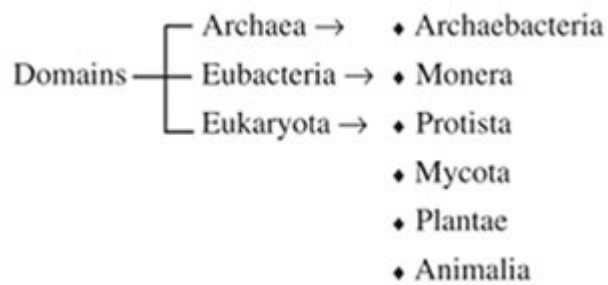
**Binomial Nomenclature:** Given by Carolus Linnaeus. Each scientific name has two components - Generic name + Specific epithet.

**Systematics:** It deals with classification of organisms based on their diversities and relationships among them. Term was proposed by Carolus Linnaeus who wrote 'Systema Naturae'.

**Taxonomic Hierarchy:** Arrangement of various steps (categories or taxa Species → Genus → Family → Order → Class → Phylum (for animals) /Division (for plants) Kingdom→

**Species:** All the members that can interbreed among themselves and can produce fertile offsprings are the members of same species. This is the bio-logical concept of species proposed by Mayer.

**Three Domains of Life:** Proposed by Carl Woese in 1990 who also proposed the six kingdom classification for living organisms. The three Do-mains are Archaea, Eubacteria and Eukarya.



**Herbarium:** Storehouse of dried, pressed and preserved plant specimen on sheets.

**Botanical Garden:** Collection of living plants for reference.

**Taxonomical aids:** Zoological Park (Places where wild animals are kept in protected environment.)

- **Keys** (Used for identification of plant and animals on the basis of similarities and dissimilarities.)
- **Fauna:** (Index to animal species found in a particular area)
- **Flora** (Index to plant species found in a particular area.)
- **Manuals** (Provide information for identification of name of species in an area.)
- **Monograph** (Contain information on one taxon.)