

Classification of Animals

Kingdom Animalia

- Kingdom Animalia can be divided into two major groups on the basis of the presence or absence of notochord- **Non-chordata** and **Chordata**

- Non-chordata can be further divided into the following phyla:

i. Phylum Porifera: Includes sponges such as *Spongilla*, *Euplectella*, etc

- **Characteristic features of Porifera:**

- Cellular level of organisation
- Mainly found in marine habitats
- Posses canal system for circulating water.

ii. Phylum Coelenterata: Includes organisms such as hydra, sea anemone, etc.

- **Characteristic features of Coelentrata:**

- Tissue level of organisation
- Body cavity (coelom) is present
- Diploblastic i.e body is made of two layers of cells.

iii. Phylum Platyhelminthes: Includes flatworms, liver flukes and planarians

- **Characteristic features of Platyhelminthes:**

- Bilateral symmetry
- Triploblastic i.e. three layers of cells are present
- true internal body cavity is absent

iv. Phylum Nematoda (Aschelminthes): Includes roundworms - *Ascaris*

■ **Characteristic features of Nematoda:**

- Bilaterally symmetrical
- Triploblastic
- Pseudocoelom (false coelom) is present

v. Phylum Annelida: Includes segmented worms such as earthworms and leeches

■ **Characteristic feature of Annelida:**

- Bilaterally symmetrical
- Triploblastic
- Body is segmented

vi. Phylum Arthropoda: Includes crabs, prawns, insects, spiders, scorpions, etc

■ **Characteristic features of Arthropoda:**

- Largest group of the animal kingdom.
- Bilaterally symmetrical and segmented
- Coelomic cavity is blood-filled
- Presence of Jointed legs and open circulatory system

vii. Phylum Mollusca: Includes snails, octopus, *Pila*, etc

■ **Characteristic features of Mollusca:**

- Bilaterally symmetrical, little segmentation
- Coelomic cavity is reduced
- Open circulatory system and kidney-like organ for excretion is present.

viii. Phylum Echinodermata: Includes marine animals such as starfishes, sea urchins, etc

■ **Characteristic feature of Echinodermata:**

- Spiny skinned organisms
- Free living marine organisms
- Triploblastic and coelomate
- Skeleton is made of calcium carbonate

Chordata can be further divided into sub-phyla **Protochordata** and **Vertebrata**

(1) Protochordata: Includes *Herdmania* and *Amphioxus*

Characteristic features of Protochordates

- Triploblastic, and have a coelom
- Bilaterally symmetrical
- Notochord at some stages of life is present.
- Notochord is a flexible rod-like structure that forms the supporting axis of the body in the chordates.

(2) Vertebrata: Animals having true vertebral column. Some common features are- presence of notochord, coelom, dorsal nerve chord.

The sub-phylum Vertebrata is further divided into five classes:

i. Class Pisces: Includes all fishes

Characteristic features of Pisces:

- Exclusively aquatic animals
- Body is streamlined and covered with scales
- They are cold blooded animals
- Heart is two chambered
- Skeleton is bony or cartilaginous
- Oviparous, they lay eggs in water

ii. Class Amphibia: Includes frogs, toads, and salamanders

Characteristic features of Amphibia:

- Scales are absent
- Cold blooded animals
- Heart is three chambered
- Respire through gills /lungs
- Oviparous, they lay eggs in water

- These animals have a dual mode of life (in water and land); respire through gills, skin, and lungs

iii. Class Reptilia: Includes reptiles such as lizard, snake, turtle, etc

Characteristic features of Reptilia:

- Cold blooded animals
- Most of them have three chambered heart (Crocodiles have four chambered heart)
- Skin is covered with scales
- These animals are completely terrestrial. They breath through lungs
- Lay eggs on land (oviparous)
- Heart is four chambered

iv. Class Aves: Includes all birds

Characteristic features of Aves:

- Warm-blooded animals with four chambered heart
- They breathe through lungs
- Have feathers and forelimbs modified for flight.
- Exclusively egg-laying animals

v. Class Mammalia: Includes kangaroo, rat, dolphin, elephant, horse, human, tiger, etc

Characteristic features of Mammalia:

- Warm-blooded animals with four chambered heart
- Most of them are viviparous except for platypus and *Echidna* which are oviparous.
- These animals have milk-producing glands (mammary glands) to nourish their young ones.