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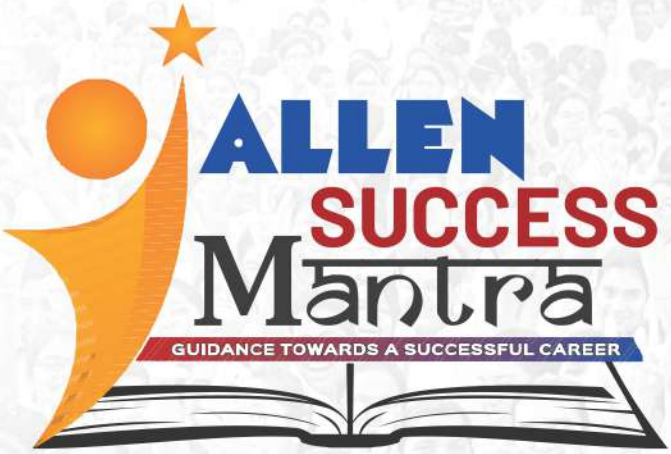

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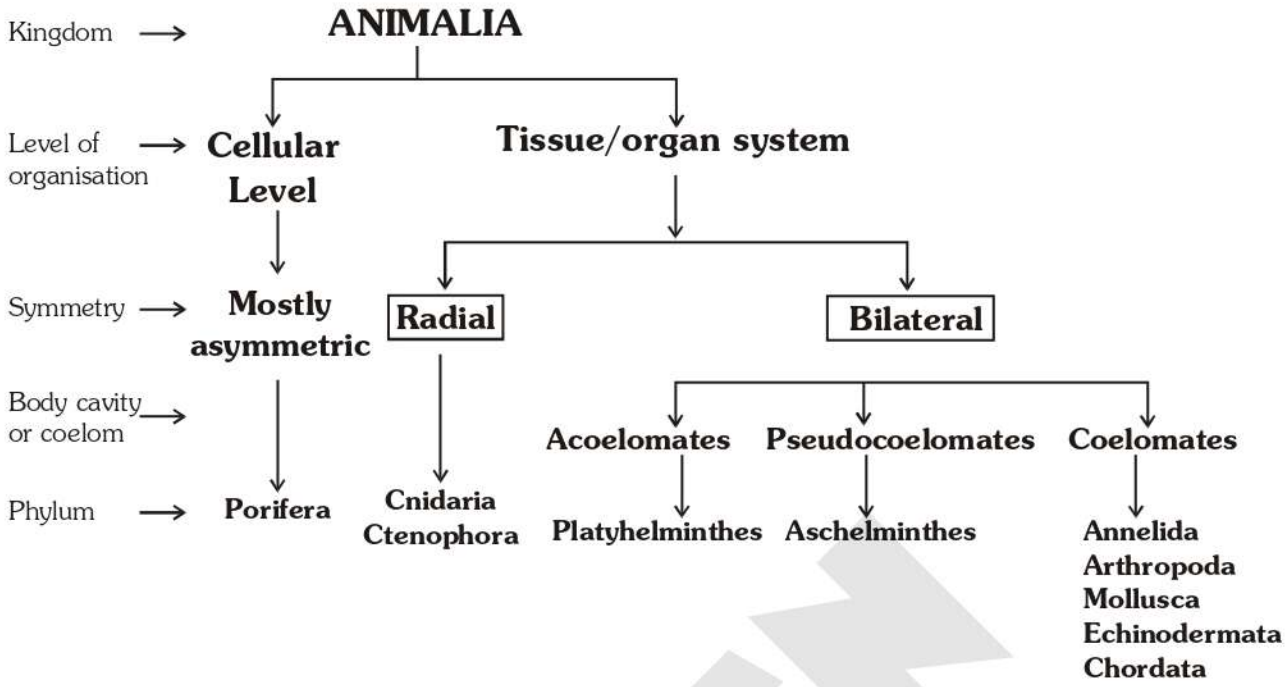
ANIMAL KINGDOM



INTRODUCTION

Animals show different types of of body organisation

(i) Protoplasmic level Eg. – **Protozoa**

(ii) Cellular level Eg. – **Porifera**

(iii) Tissue level Eg. – **Coelenterata** & **Ctenophora**

(iv) Organ/organ system level Eg. – **Platyhelminthes** onwards to **Chordata.**

Animals can be Asymmetric, Radial and Bilateral symmetric.

Most of the animals are **triplobastic**.

Flatworms are **Acoelomate**, Round worms are **pseudocoelomate** where as rest of the animals are **coelomates.**

Digestive tract is **incomplete** in coelenterata, ctenophora and platyhelminthes where as it is **complete** in rest of the phyla.

Modes of respiration can be Body surface, cutaneous branchial and pulmonary.

Circulatory system is **open** in Arthropoda, Mollusca, Echinodermata, Hemichordata and in Urochordata where as it is **closed** in annelida and rest of the chordates

Modes of Excretory system includes Flame cells, Nephridia. Malpighian tubules, Green glands and Kidneys in animals.

PORIFERA

Mostly marine, cellular level body organistation with **water transport system / Canal system** having ostia, osculum and choanocytes (Collar cell) etc.

Sponges are **hermaphrodite** and their Fertilization is **internal.**

Eg. – **Sponges,** Like – ***Sycon*** (Scypha), ***Spongilla*** (Fresh water sponge), ***Euspongia*** (Bath spange)

COELENTERATA

Mostly marine, radially symmetrical with stinging cell known as ***Cnidoblast***. Mainly two forms i.e. **polyp** & **medusa** which exibit alternation of generation **(Metagenesis)**

Eg. – ***Hydra Aurelia*** (Jelly Fish), ***Adamsia*** (Sea anemone), ***Pennatula*** (Sea pen), ***Gorgonia*** (Sea Fan), ***Meandrina*** (Brain coral), ***Physalia*** (Partuguese man-of-war).

CTENOPHORA

Exclusively **marine** popularly known as sea walnuts or **comb jellies** due to presence of 8-cillary comb plates which help in locomotion. They show Bioluminescence.

Eg. → ***Ctenoplana, Pleurobrachia***

PLATYHELMINTHES

They are known as **Flatworms** and mostly **endoparasitc**. Hooks and suckers are found.

Eg. → **Taenia,** (Tape worms), ***Planaria,*** *(High regeneration of capacity),* ***Fasciola*** (Liver Fluke), etc.

ASCHELMINTHES / NEMATODA

They are known as **round worm.** Complete Alimentary Canal with muscular Pharynx. **Sexual dimorphism** is well marked. Often male is small with curved tail where as Female is large & straight.

Eg. → ***Ascaris*** (Round worm), ***Wuchereria*** (Filaria worm), ***Ancyclostoma*** (Hook worm).

ANNELIDA

Body surface with **segments** or **metamere**. Possess Longitudinal and circular muscles. Parapodia help in swimming. In Nervous system, nerve cord is double, mid ventral, solid and gangliated

Eg. → ***Nereis, Pheretima*** (Earthworm), ***Hirudinaria*** (Blood sucking Leech).

ARTHROPODA

Arthropoda is the **largest** phylum with **jointed appendages** and chitinous exoskeleton. Mainly body is divided into **head, Thorax** and **Abdomen**. Few Arthropods have economic importance and few are vectors for various pathogens statocysts balance organs are present.

Eg. (i) Economically important insects – ***Apis,*** Bombyx, Laccifer

(ii) Vector – Anopheles, Culex, Aedes.

(iii) Gregarious pest – ***Locusta*** (Locust)

(iv) Living fossil – ***Limulus*** (king crab)

MOLLUSCA

It is the **second largest** phylum. Basically they are **soft body** and hence covered with calcareous shell. Normally body is divided into **Head, muscular foot** and **visceral hump**. Spongy fold **mantle** and rasping organ for feeding-**radula** is also found

Eg. ***Pila, Pinctada, Sepia, Loligo, Octopus, Aplysia, Dentalium, Chaetopleura*** (Chiton)

ECHINODERMATA

An exclusively **marine phylum** and having **spiny body.** Their larva is **bilateral** symmetrical where are adult is **radially symmetrical.** They have an endoskeleton of calcareous ossicus.

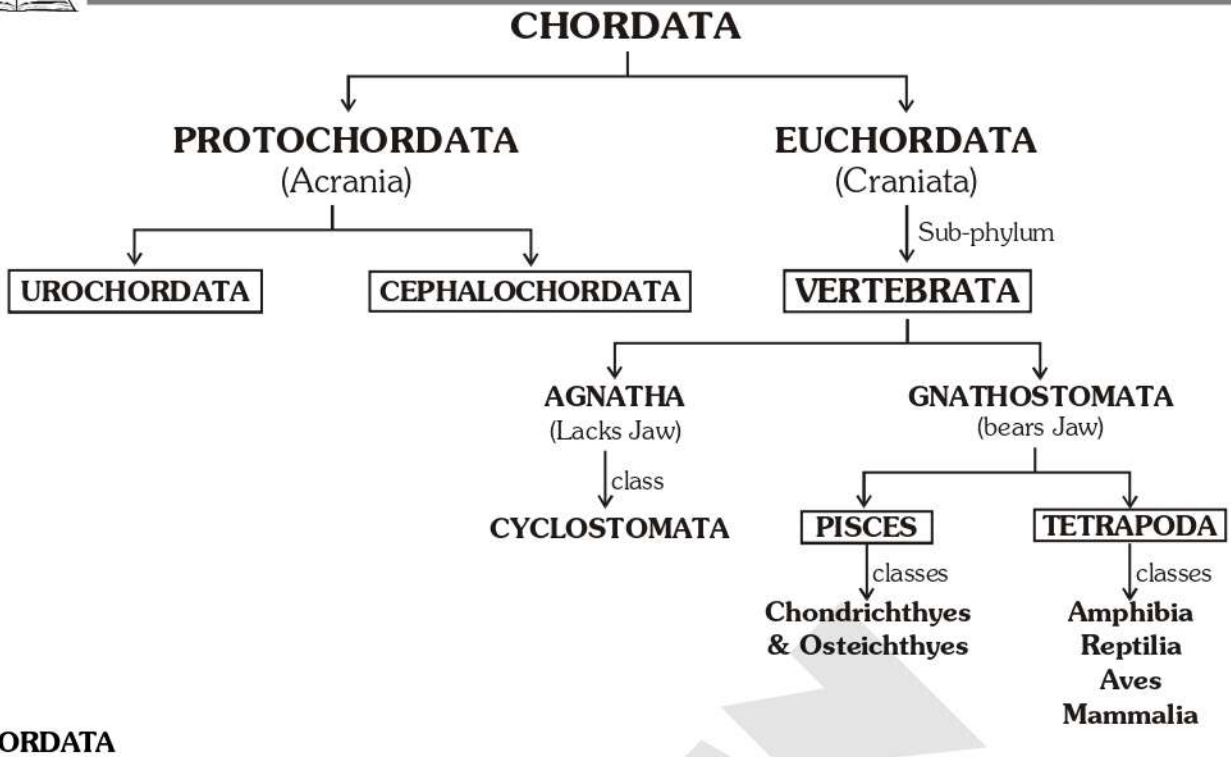
Unique **water vascular system** helps in locomotion, nutrition and respiration

Eg. ***Asterias*** (Star fish), ***Echinus*** (Sea urchin) ***Antedon*** (Sea lily), ***Cucumaria, Ophiura*** (Brittle star)

HEMICHORDATA

Earlier considered as sub-phylum of chordata. Body is divided into **proboscis, collar** & **Trunk.** Animals are worm like

Eg. → ***Balanoglossus, Saccoglossus.***



CHORDATA

Chordata are fundamentally characterised by presence of **Notochord, dorsal hollow Nerve** cord and **paired pharyngeal gills slits.**

- There are three sub-phylas of chordata –
  - (i) **Urochordata** – Eg. ***Herdmania, Ascidia, Salpa***
  - (ii) **Cephalochordata** Eg. ***Amphioxus*** or ***Branchiostoma*** (Lancelet)

    Urochordata and Cephalochordata are also known as **Protochordata**.
  - (iii) **Vertebrata** - This subphylum is divided as **Agnatha** and **Gnathostomata.**
- Agnatha do not possess jaw where as Gnathostomata **possess** Jaw.
- Cyclostomata are agnatha and considered as most primitive vertebrates. Gnathostomata has two super classes **Pisces** & **Tetrapoda**
- Class chondrichthyes (**Cartilaginous**) and osteichthyes (**Bony**) are pisces classes and bear **fins** for locomotion.
- **Tetrapoda** divides into four classes - **Amphibia, Reptilia, Aves** and **Mammalia.** They have **two pairs** of Limbs and thus grouped under tetrapoda.
- **Amphibian** have adapted for both on Land and water where as **reptiles** are characterised by the presence of **dry** and **cornified** skin and thus considered as **successful terrestrial animals**.
- Fishes, Amphibians and Reptiles are **poikilothermic** (cold blooded) where as Aves and mammals are **Homothermic** (warm blooded). Birds with **feathers** on their bodies.
- Their fore limbs modified into **wings** where as hind limb are adapted for **walking, swimming** and **clasping.**
- The most unique mammalian charateristic is the presence of **mammary glands**. Skin is **hairy** and presence of **diaphragm** are salient features of mammals. **Pinna** are also present. All are **homeothermic animals**.