

4 - Animal Kingdom.

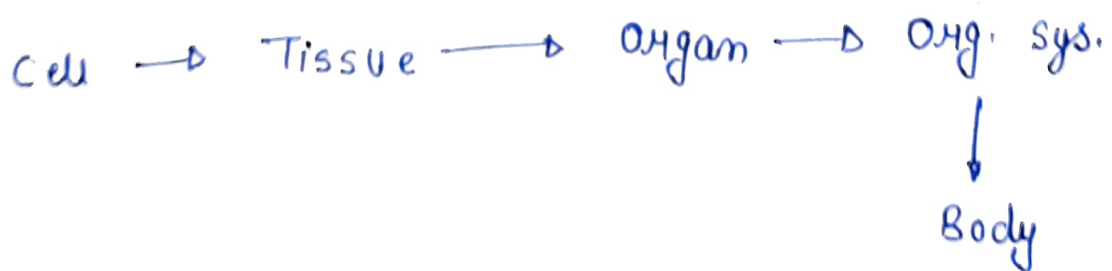
→ Classificaⁿ :- Arranging the organism on the basis of their similarities and dissimilarities.

Basis of Classification :-

- 1) Arrangement of cells
- 2) Body symmetry
- 3) Nature of Coelom.
- 4) Germ layer
- 5) Circulatory / Reproductive / Digestive Sys.



1) Cell organization / Arrangement of cells :-



2) Circulatory System :- The system that moves blood throughout the body.

Types :- There are "two" types.

I) Open type :- In which the blood is pumped out of the heart and the cells & tissues are directly bathed in it.

Ex:-

Prawn, Spider, Insects.

II) Closed type :- In which the blood is circulated through inside the blood vessels.

Ex:-

Arteries, Veins & capillaries.

↓
(Human beings.)

3) Symmetry :- Animals Can be Categorised on the basis of their Symmetry.

Types :-

1) Asymmetrical :- any plane that passes through the Centre does not divide them into Equal halves.

2) Radial :- when any plane passing through the Central axis of the body divides the org. into two identical halves. it is called $\rightarrow$ Radial Symmetry.

3) Bilateral :- where the body can be divided into identical left & right halves in only one plane.

4.) Germ layer :-

↳ Diploblastic germ layer :- There are two germ layer → Ectoderm &

Endoderm are present.

↳ Triploblastic germ layer :- There are three germ layer →

Ectoderm, mesoderm & Endoderm layer are present.

Ectoderm - outer layer.

Mesoderm - middle layer.

Endoderm - Inner layer.

5.) Coelom :- The body cavity between body wall and gut wall.

"Classification of Animals"

"Invertebrates"

- ↳ Also called as → Non - Chordates & lower animals
- ↳ Animal, in which spinal cord are absent, called as - Invertebrates.

** :- The imp. characteristics features of the different phyla are described.

1.) Phylum - Porifera.

- a) GR. word → Porus → pore
ferre → to bear.
- b) org. in which pores are present.
- c) These are primitive multicellular animals & have cellular level of organisation.

- d) Asymmetrical or radially symmetrical.
- e) Diploblastic organism.
- f) Mouth, digestive Cavity and Anus absent.

Eg:- Sycon, spongilla, Bath sponge.

2) Phylum - Coelenterata / cnidaria.

- a) Gr. word → Koilos - Hollow
Enteron - gut
- b) Aquatic, mostly marine.
- c) They have hollow gut in their body.
- d) Body shows Radial Symmetry.
- e) Diploblastic organism, Multicellular body.
- * f) Body shows, two main forms - The Polyp & the medusae.

Eg:- Hydra, Jelly fish, Obelia.

3.) Phylum - Platyhelminthes

- a) Gr. word $\rightarrow$ Platys - Flat
helminthes - worm
- b) Bilateral Symmetrical body.
- c) Body is thin, soft, leaf & Ribbon-like.
- d) Triploblastic animal $\rightarrow$ 3 germ layer present
- e) Suckers & Hooks are usually present.
- f) Hermaphrodite org. $\rightarrow$ Male & female reproductive organ occur in the same individual.
- g) circulatory, and respiratory sys. and skeleton are absent.

Eg:- Liver fluke, Planaria, Dugesia.

4) Phylum - Nematoda / Aschelminthes

- a) Commonly Known as - Roundworm.
- b) Bilateral Symmetrical body.
- c) Triploblastic, Pseudocoelomate
- d) well developed Alimentary canal.
- e) Sexes are Separate
- f) Most forms are parasitic, but some are free living in soil or water.

Eg:- Ascaris, hook-worm, pinworm,

5) Phylum - Annelida

- a) Latin word - Annelus - Segmented worms
Ring like struc.
- b) Triploblastic, True Coelomate animals -
- c) Bilateral Symmetrical, Metamerical Segmented body.
- d) Exoskeleton Absent, body is covered with thin cuticle.

e) Sexes may be United or Separate.

f) They live in a Variety of habits. mostly aquatic, marine or fresh-water. Some are terrestrial.

Eg :- Earthworm, Hirudinaria, Nereis.

g) Phylum - Arthropoda

a) Gr. word $\rightarrow$ Arthros - jointed
podos - foot

b) Bilateral Symmetrical

c) Triploblastic, body is divided into 3 regions -
Head, thorax and Abdomen.

d) Body Cavity is Haemocoel (filled with blood)

e) open circulatory system.

f) It is the largest phylum of Animal Kingdom.

g) Internal fertilization & Sexes are Separate

Eg :- Prawn, Spider, Ant, Butterfly, Mosquito.

7) Phylum - Mollusca

- a) Latin word → Molluscus - soft
- b) Bilateral Symmetrical body.
- c) Body is divided into - Head, Foot & Mass.
- d) Body Cavity is Haemocoel.
- e) Respiration through gills.
- f) Open circulatory system.
- g) Sexes are separate.
- h) Aquatic (mostly marine, few fresh water), & some terrestrial forms.

Eg:- Octopus, Sepia, Pila, Unio, Loligo.

8) Phylum - Echinodermata

- a) Gr. word $\rightarrow$ Echinus - Spines
derma - skin.
- b) Radial symmetry.
- c) Triploblastic
- d) Body Cavity is modified into a unique water Vascular Sys.
- e) Digestive Sys. Complete.
- f) Exclusively marine. $\approx$ Gregarious (live in groups) animals.
- g) Excretory organs absent.

Eg :- Star fish, Cucumaria, Antedon,
Holothuria.