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ANIMAL KINGDOM

- Animals are classified on the basis of arrangement of cells, body symmetry, nature of coelorn. pattern of digestive,, drculatorir and reproductive system.
- Open circulatory system- blood is pumped out of heart and cells and tinue are directly bathed in it.
- OINK! fdirlAilatOry 5y stem - 1:1NICI i5..Circ1,11Pied through arterie5, veins and capillaries.
- The animals in which cells are arranged in two embrionic layer, external ectoderm and internal enclodeng are calkd diplablattle. Eg. Porifera And Criclaria.

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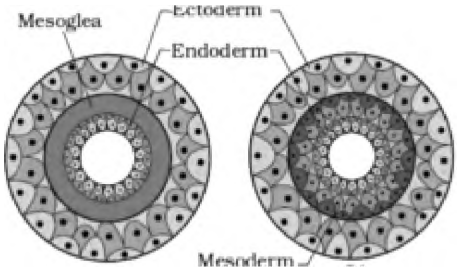
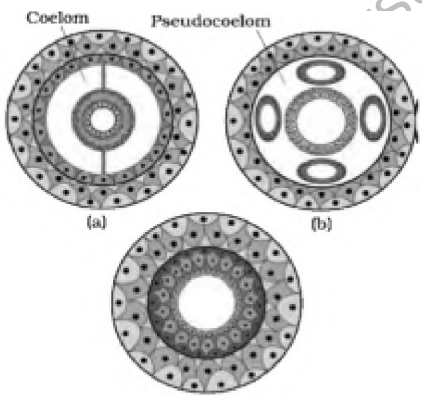


- The animals In which developing embryo has a third germinal layer, mesoderm besides ectoderm and endoderm are called triploblastic. Platvhelminthes. Chordates.

The body cavity which is lined by mesoderm is called coelom. Animals possessing coelorn are called coelornote {Anntelida, Chordates, Mollusca). In 51}me animals cavity is not lined by mesoderm but scattered as pouches in between ectoderm and endoderm, are called pseudo.f.celornotes {AschelmInlthes}. The animals in which body cavity is absent are called abookimate (Platyhelminti)_



In some animals,. body is externally and internally divided into segments with serial repetition as in earthworm,. called metarnerlc segmentation.

CLASSIFICATION OF ANIMALS

1. Phylum Porlfera-

Members of this phylum are commonly known as sponges. Mostly marine, asymmetrical and have level of organization.

They have water transport of canal system_ Water enters through minute pores, Ostia into oentra I cav Spongocoel from where It goes out through Osmium.

Nutrition, ntspi ration and exeretian is pErkgrfiEd Ely pathway of water transport system_

Skeleton made up of soicu les or spongin fibres.

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* *Egg* and sierras are produced by same orgacdsm Oherrnaphrod It-a Asexual reproduction by fragmentation and sexual reproduction by gametes formation.
- Example- Sycon„ 5p ngrJra.

2. Phylum Coidaria Coelenterate).

- They aro aquatic., mostly marine, sessile, free swimming, radially symmetrical animals..
- They exhibit tissue leyel of organization,. diploblastic„ roelornate with single opening.
- They show two types of body calied polyp and medusa.
- Polyp is sessile,. fixed, and cylindrical, without .gonads such as Hydra, Adurnsia and Medusa is free swimming„ umbrella I Ike hawing lour gonads like Aureilio and Je0 /15h.

* Some chidarlarvs exhibits both forms (Melia pole') produce medusa asexually and medusa produce polyp sexually_

a Phylum Ctenophara.

- Commonly known as the Comb Jellies or Sea Wainut.
- Extlusively marine, diploblastic. radially symmetrical,. with tissue lewel of orga nization.
- Body bears eight ciliated comb plates which help in locomotion.
- Bioluminescence (Ito emit light) is present in Ctenophores_
- Hermaphrodite, fertilization external, development indirect,.
- Example- *Ctenctplang.* Preorobronchia.

4_ Phylum Platyheirninthes (The Flat worms)

- Horso-ventrally Flattened body, bilaterally symmetrical , triplablastic , acne Ipmate with organs levels of organi2ation.
- Hooks and sucker are present in [parasitic forms. Flame cells help in osrnoregulation and excretion.
- Fertilization is internal.. development is indirect,. hermaphrod ite_
- Example- Tuenicr, Pion *aria., Fasciolo.*

5_ Phylum Aschelminth es The Round 'Norm'.

- They may be free-living: aquatic: terrestrial or parasitic in planrs or animals_
- Matera II vsymmetrical„ triploblastic, pseudo coelomate.
- Alimentary canal is complete with well-developed muscular pharynx.
- DigiecjQii5, females *are* longer than male,
- Example- AStariS [round worm). *Weicheftria* (filarial worm),. Ancycrostarna.

6- Phylum Annelidan

- Aquatic or terrestrial, bilaterally symmetrical, segmented with organ system level of organization.

* Aquatic Annelids like Nereis possesses lateral appendages oara podia, for swimming. Neohridia help in osmoregulation and excretion_ Neural system consists of paired ganglia.

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* Dic-ecious (Nerels) or monocious {earthworm, leech}
- Example. Pheretirna learthworirn).. Hiruniclaria (Blond sucking lee69.

7. Phylum Arthropoda

- Largest phylum of animals which includes insects. Org,an system of organization. triploblastic. coelornate, bilaterally symmetrical with chitinous exoskeleton.
- Body corksins f head, thorax and abdomen, jointed apperida,ges (jointed feet). Respiratory organs are gills, book lungs *or* tracheal system with open circulatory system_
- Excretion through rnalpighian tubules, sense organs antenna or eyes. Fertilization internal,. mostly oviparous,
- Example_ Economically important. *API5* (honey bee}, Bovaibpx (silk worm",
  Vectors- Anopheles, Ades,. Culex (mosquito).
  Living fossils- Lim ulus {kingcra b]

S. Phylum Mollusc'

- Terrestrial or aquatic, organ level of organization, bilaterally symmetrical, triploblastic and coelomate.
4 RICIV divided Into head, muscular foot and visceral hump. Unregimented and covered yylkh calcareous shell.
- Feather like gills are present between hump and mantle.
- Mouth contains file like rasping organ for feeding called radu la.
- Example- Pa'o, Octopus.

9. Phylum Erhinoclerrnata I The Spiny Skinned Animals)

- Encloskelewn of calcareous ossicles, marine with organ system of organization.
- Triploblastic, coelomate, presence of water vascular system help in locomotion, capture of food and respiration.
- Sexes are separate, fertilization Is external and development Is indirect.
- Example. Asterias (star fish), Cucunriaria 0.ea cucumber), Antedon (Sea lily).

10. Phylum Hamlchordata

- Worm-like marine animals with *cle* **w** system of organization, bilaterally peril metrical,. triploblastic and coelomate animals.
- Body is cylindrical, composed of anterior proboscis, a collar and a long trunk.
- Open circulatory system, respiration Neils, excretory, organ is proboscis glands.
- Sex separate, fertilization Is external, Indirect development.
- Example- Erpdorpogiiossus, *Saccogliossirs,*

11. Phylum Chordates

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- Presence of notochord, *a* dorsal hollow nerve chord and paired pharyngeal gill silts.
- Bilaterally symmetrical, briploblastio, coelornate with organs system levels of organization..
- Closed -circulatory system, ventral heart, post•anal tail is present.
- Subphylum's *are* Urochordata, Cephalochordeta, Vertebrate.
- In LI rochordata, notochord is present only in larval tail.
- In Cephalochordate it extends from head to tail and persists throughout the life_
- Vertebrata possesses notochord in embryonic period which is replaced by vertebral column in the adults_
- Sub-phylum Vertebrata i further divided into two division Agnatha (lacks laid") and Guathogompui (Pears

- Griathottomata is further d iwitied *into* two super class. Pisces (bears fins) and Tetrapoda [bears limbs).

Class Cyclostomata {Circular mouthed fishes).-

- They are ectoparasites on some fishes.. Having sucking. and Circular mouth without jaws.
- Body devoid of scales, giIl slits for respiration, cranium and vertebral column is cartilaginous.
- Circulation is closed type. They are marine but migrate to fresh water for spawning and die after few days. Larva return to seas after metamorphosis.
- Example• Petromyzon Lamprey), Maxine (Hag flshi.

Class Chondrlitithyers (The Cartilaginous Fish)

- They are marine, streamlined body, bears cartilaginous endoskeleton, cold blooded, tou.gh skin with minute plaCoicl le5-
- Gill slits are separate with operculum, powerful jaw and predator_
- Air bladder i5 absent, to avoid sinking swims constantly. Heart is two chambered., cold blooded (PdikilotherMus).
- Sexes separate, iri males pehrie fins bears ClaSperS. Internal fertilization, many are wiviparous.
- Electric organ is present in *Torpedo* and Poison sting in Trygon
  Example - *Scariedon (Dog 1E10).. COtetiorockori* (great white shark).

O E65 CIstechthyes (The body fish i

- Marine and fresh water both with bony endoskeleton. Streamlined body with four pair of gills covered by opercul urn.
- Skin is covered with scales, air bladder is present and heart is two chambered cold blooded.
- Sexes are separate, fertilization i5 eXternal, oviparous and development direct.
  Example; Marine- iiiopOCarrIpti (Sea horS0}, Eicaeteha {Flying fish).
  Fresh water- *Lat.EQ* (I ohuM. CoTkr,, CYprips (Magurli_

aas_ Totrapoda:

Subdivided as: Am phifxia, Reptil ia, Av@s, Marnrna l$_

Reptilia	Ayes	Mammals

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Lives in aquatic as well as terrestrial habitat.	IVl ostly terrestrial animals_	Presence of feathers for flying.	Mostly terrestrial, a few can fly and live in water_
Two pairs of limbs.	Li mbs two pair if present.	Forelimb is modified into wings.	Two pair of limbs.
Moist skin without similes_	'Dry and corrilfled skin having scale or scum_	Skin is dry without glands. Long bones are hollabv with air cavities.	Mammary gland Is present to produce milk_ Skin possesses hairs.
Respiration by gills.. lungs or skin_	Respiration b lungs.	Respiration by lungs.	Respiration by kings.
Heart three chambered, cold blooded.	Heart three chambered.. Crocodile 4 · chambered.	Heart is four chambered, ware blooded.	Heart is four chambered.
Oviparous,	Oviparous.	Oviparous.	Viviparous or Oviparous.
A n (frog", Salamander.	Chem n, CrocodiNs, 1'4.90	redurrite.. Pam,. Ostrich.	Ilatypusfoviparous).. Camel.. Blue whale_

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