

STD. : 9TH (SHIVNERI)

SUBJECT : SCIENCE II

DATE :

CLASSIFICATION OF ANIMALS

Non- Chordates



Chordates

There are about 50 million animal species living on earth today.

NON-CHORDATES

Phylum 1 : PROTOZOA
e.g. Amoeba

Phylum 6 : ANNELIDA
e.g. Earthworm, leech

Phylum 2 : PORIFERA
e.g. Bath sponge

Phylum 7 : ARTHROPODA
e.g. Crab, Cockroach

Phylum 3 : COELENTERATA
e.g. Hydra, Physalia

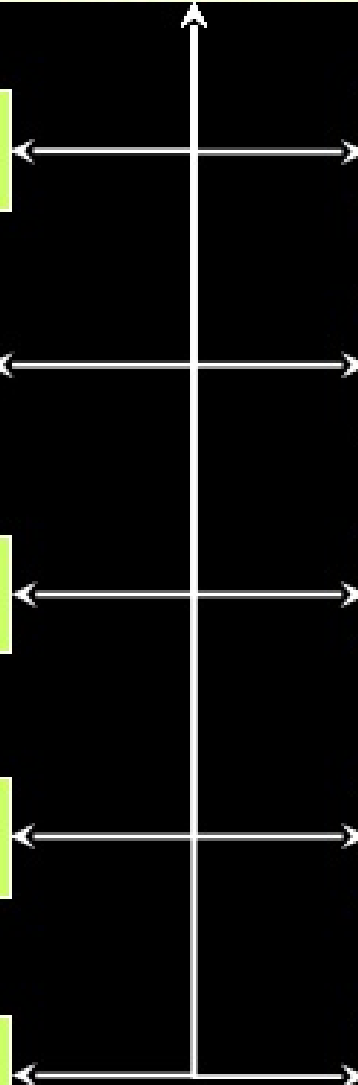
Phylum 8 : MOLLUSCA
e.g. Pila, Bivalve

Phylum 4 : PLATYHELMINTHES
e.g. Planaria, Liver fluke

Phylum 9 : ECHINODERMATA
e.g. Starfish, Sea urchin

Phylum 5 : NEMATHELMINTHES
e.g. Ascaries, Filaria

Phylum 10 : HEMICHORDATA
e.g. Balanoglossus



NON-CHORDATES

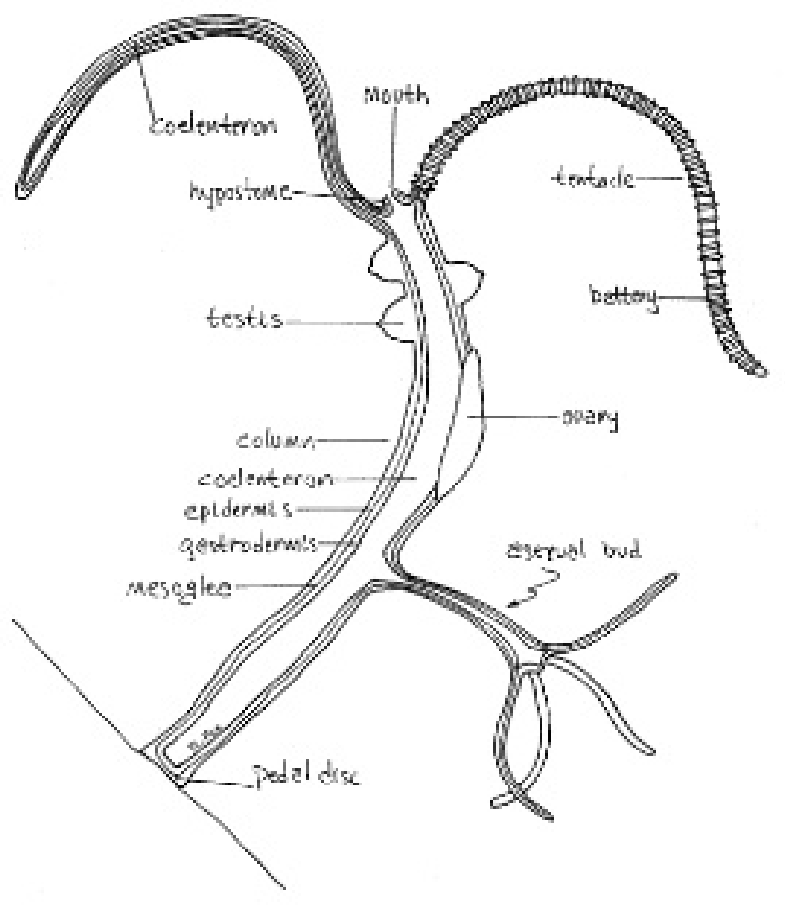
- Lack the Notochord.
- The pharynx is without paired openings called gill-slits.
- Absence of notochord. If present, it is double, ventral and solid.
- The heart, if present, is dorsal in position.

CLASSIFICATION OF ANIMALS

- **NON-CHORDATES**
- **Absence of notochord.**
- **Pharynx not perforated by gill-slits.**
- **Nerve chord, if present, double, ventral and solid.**
- **Heart, if present, dorsal in position.**

- **CHORDATES**
- **Presence of notochord at some stage of development.**
- **Pharyngeal gill-slits present at some stage of life.**
- **Single, dorsal and hollow nerve chord.**
- **Heart – Ventral in position.**

Phylum - Coelenterata



- Cylindrical (polyp) or umbrella (medusa) like animals.
- Radially symmetrical and diploblastic body.
- Solitary or colonial and sessile or free-swimming.
- Mouth is surrounded by tentacles having cnidocytes.
- Tentacles – food capturing.
- Stinging cells – offence, defense organs.
- Asexual reproduction by budding. Have a great power of regeneration.
- E.g. Hydra, Sea anemone, physalia, Aurelia.

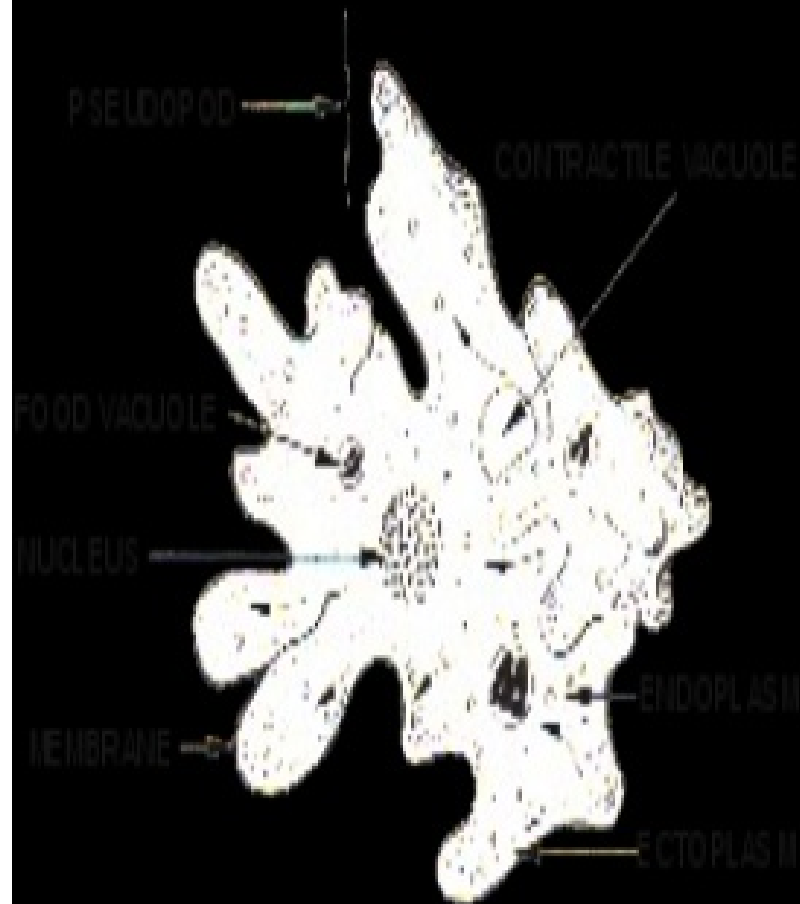
Phylum - Porifera



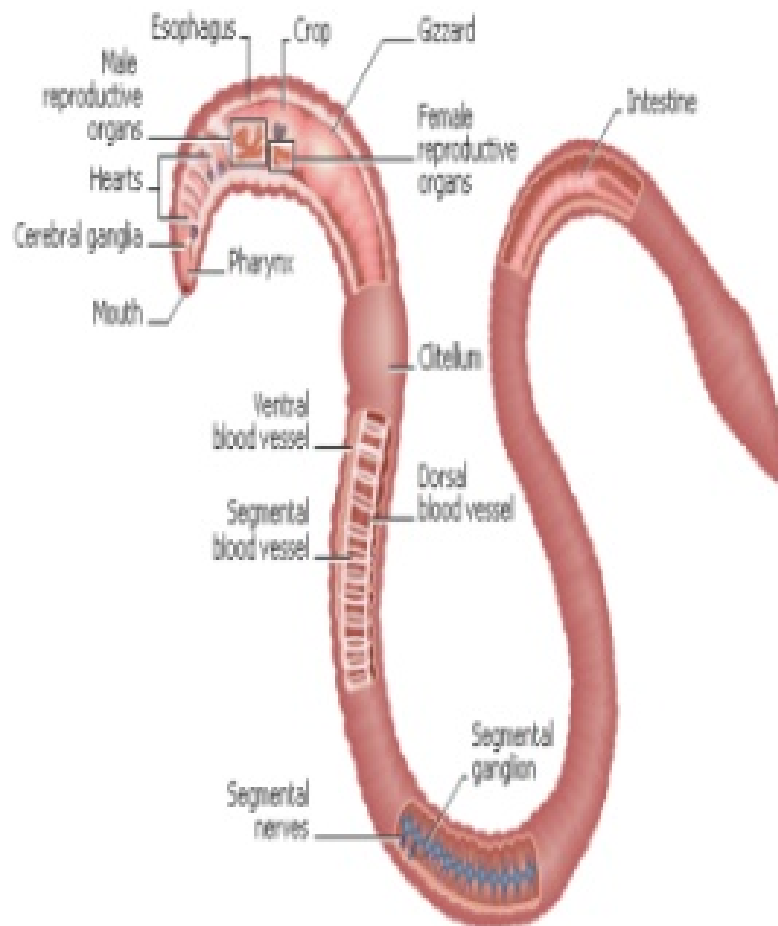
- **Simplest animals having pores called ostia.**
- **Aquatic. Mostly marine.**
- **Sessile ,i.e., not locomotive.**
- **Body is supported by spicules.**
- **Feed on small organisms or nutrients. Ingestion by ostia or large openings – oscula.**
- **Asexual reproduction by budding. Have a great power of regeneration.**
- **E.g. Sycon, Euspongia, Hyalomena.**

Phylum - Protozoa

- **Unicellular, Microscopic**
- **Free-living, symbiotic or parasitic. Free-living forms are mostly aquatic or terrestrial.**
- **Locomotion by pseudopodia, cilia, flagella.**
- **Ingestion of food by phagocytosis or pinocytosis.**
- **Asexual reproduction by binary/multiple fission and sexual by conjugation.**
- **E.g. Amoeba, Entamoeba, Plasmodium, Paramecium, Euglena**

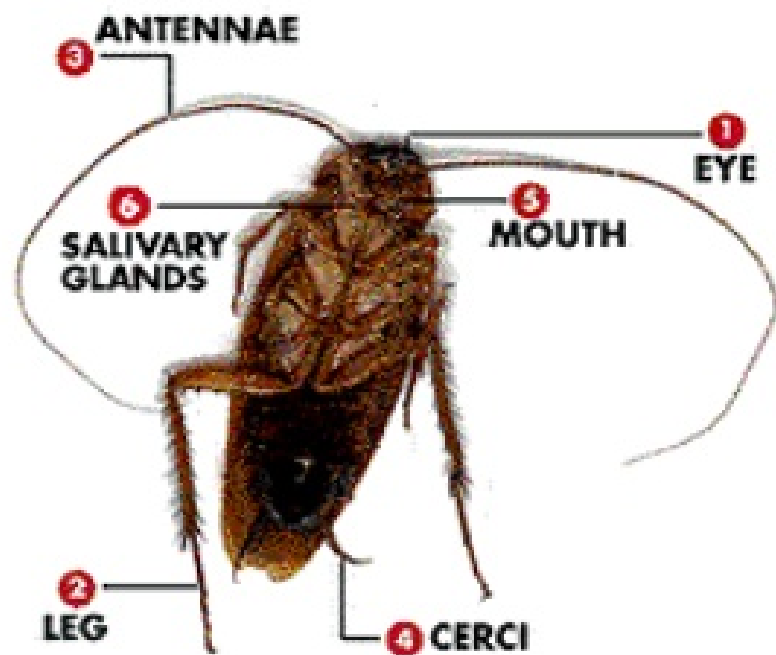


Phylum - Annelida



- **Elongated, cylindrical, metameric segmented animals.**
- **Free living/ectoparasitic**
- **Marine / terrestrial.**
- **Triploblastic, bilaterally symmetrical coelomates.**
- **Locomotive organs : setae, parapodia, suckers.**
- **Hermaphrodite or separate sexes.**
- **E.g. Earthworm, Leech, Nereis.**

Phylum - Arthropoda



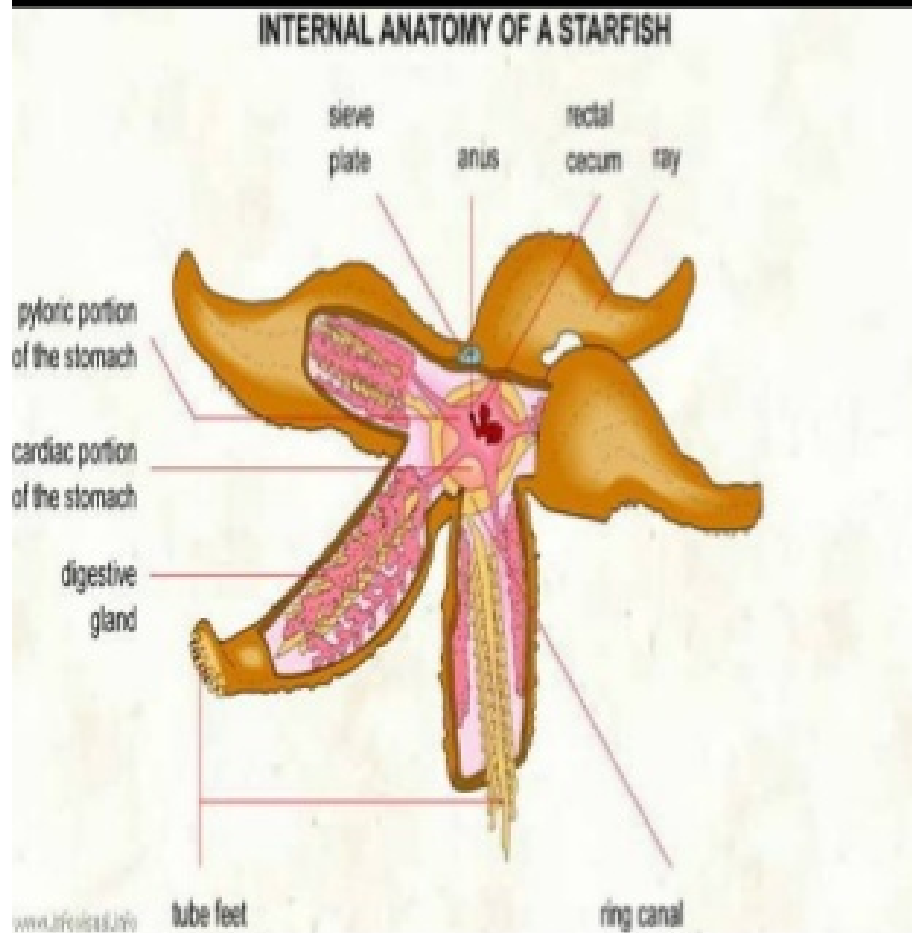
- Most successful, largest animal group.
- Found in all habitats.
- Triploblastic, coelomate and bilaterally symmetrical segmented animals with heads.
- Have paired jointed appendages for locomotion.
- Chitinous exoskeleton covering the body.
- Separate sexes.
- E.g. Crab, Spider, Millipede, Cockroach.

Phylum - Mollusca



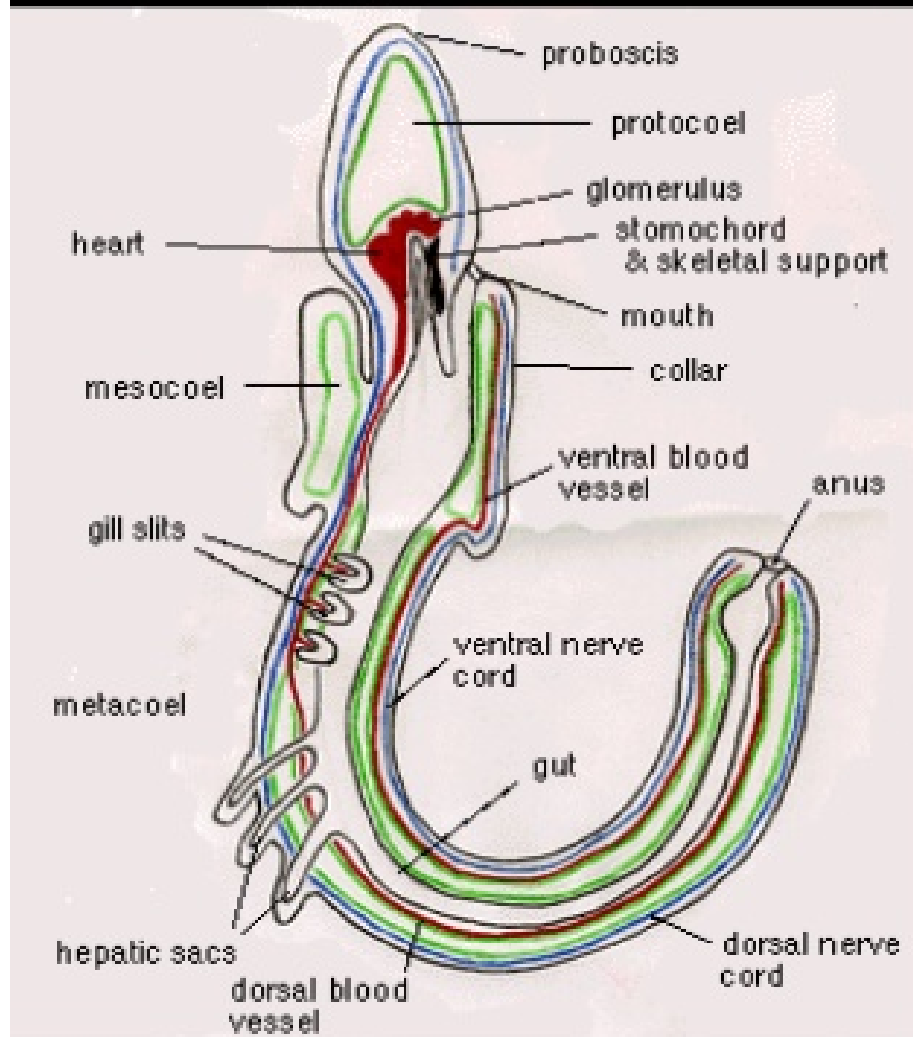
- Aquatic or terrestrial.
- Triploblastic, coelomate and unsegmented soft-bodied animals.
- A large muscular foot modified for creeping, burrowing, swimming.
- Body enclosed in membranous structure (mantle) secreting calcareous protective shell.
- Separate sexes.
- E.g. Pila, Bivalve, Snail, Octopus.

Phylum - Echinodermata



- Exclusively marine animals.
- Triploblastic, coelomate
- Pentaradial symmetry in adults. Bilateral symmetry in larvae.
- Move by tube feet also for grasping the food.
- Few are sessile.
- Skeleton of calcareous plates or spines.
- Separate sexes.
- E.g. Starfish, Sea urchin, Brittle star, Sea cucumber.

Phylum - Hemichordata



- **Acorn worms.**
- **Marine animals living in burrows.**
- **Divisible in 3 regions : proboscis, collar, trunk.**
- **May have one to several gill – slits.**
- **Sexes are separate.**
- **May be hermaphrodite.**
- **E.g. Balanoglossus, Saccoglossus.**

CHORDATES

- Presence of notochord at some stage of development.
- Presence of pharyngeal gill-slits.
- Presence of single, dorsal, tubular, hollow nerve chord.
- Heart in ventral position.

Sub- Phylum - Urochordata



- Marine animals.
- Body surrounded by leathery covering (tunic / test).
- Larvae are free swimming & notochord is only in tail in larvae.
- After settling on seashore, they get transformed into sessile adults.
- Generally hermaphrodite.
- E.g. Ascidians, Doliolum, Oikopleura.

Sub-phylum = Cephalochordata



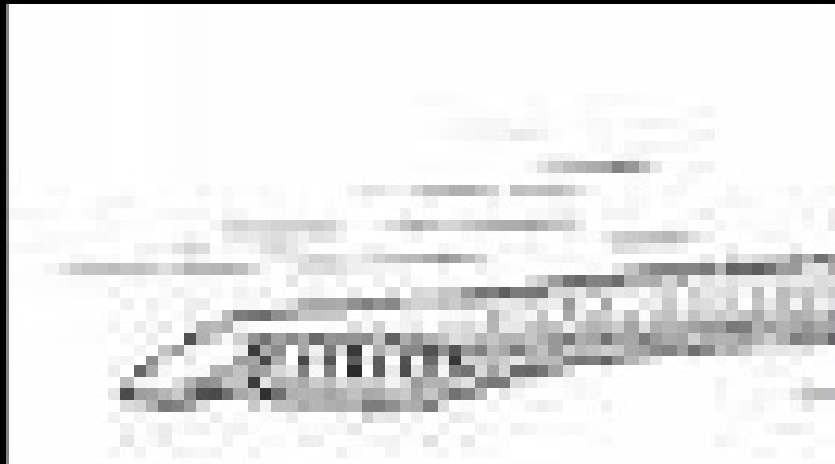
- **Small fish-like marine animals.**
- **Notochord extends along the entire body.**
- **Pharynx is large with numerous gill-slits.**
- **Sexes are separate.**
- **E.g. Amhioxus.**

Sub-phylum - Vertebrata

- The notochord is replaced by a vertebral column.
- The head is well developed.
- Brain is protected in a cranium.
- Endoskeleton may be cartilaginous or bony.
- They may be jaw-less (Agnatha), with jaws (Ganathostomata).

Class Cyclostomata

- They have suctorial mouths without jaws.
- Skin is soft and devoid of scales.
- Absence of paired appendages.
- Cartilaginous endoskeleton.
- Mostly ectoparasites.
- E.g. Petromyzon, Myxine.



Class Pisces (Fishes)



- **Cold blooded, aquatic.**
- **Stream-lined body.**
- **Fins – Swimming.**
- **Tail-fin – Direction changing.**
- **Exoskeleton is the form of scales. Endoskeleton may be cartilaginous or bony.**
- **Respiration by gills.**
- **Eyes without eye-lids.**
- **E.g. Dogfish, Rohu**

Class Amphibia

- Cold-blooded and freshwater or terrestrial.
- Limbs are two pairs.
- No claws.
- No skeleton.
- Skin for



- Presence of ear drum.
- Eyes are protruding & provided with eyelids.
- E.g. Frog, Toad, Salamander.

Class Reptilia



are cold-blooded animals.

live on the ground.

most in bears scales
on their bodies.

have a long neck.

are

with

hard,

Encarta Encyclopedia, Animals/Animals

Encarta Encyclopedia, Animals/Animals/Zig Leszczynski

Class Aves (Birds)



- Warm-blooded animals.
- Stream lined body for lower air resistance during flight.
- Fore-limbs are modified into wings. Digits are clawed and covered with scales.
- Exoskeleton is in the form of feathers.
- Neck, beak are present.
- E.g. Parrot, Pigeon, Duck.

Class Mammalia



- **Presence of mammary glands.**
- **Warm-blooded animals.**
- **Body is divisible into Head-Neck-Trunk-Tail.**
- **Digits are provided with nails, claws, hooves.**
- **Exoskeleton is in the form of hairs or fur.**
- **External ear is absent.**
- **E.g. Bat, Squirrel, Rat, Lion, Monkey, Man.**