

Phylum Chordata :- General Character

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- Aquatic, aerial, terrestrial
- Bilateral symmetry, triploblastic
- Coelomate, cartilaginous or bony endoskeleton
- Digestive sys. complete with digestive glands
- B.V.S. closed.
- Excretory sys. → Maybe proto, meso or metanephric.

Wonder

Teacher's Signature

~~Subphylum~~

Protochordata → marine, small,
without vertebral column
(also called non-vertebrates)

but not invertebrates

⇒

They are early, primitive, borderline
first chordates

⇒ lack a head & a cranium (Acraniata)

⇒ lack true jaws & paired appendages (Agnatha)
Agnatha include small no. of primitive but
fish like forms i.e. ↓

- (i) ostracoderms (extinct)
- (ii) cyclostomes.

Subphylum I. Hemichordata

(Gr., **hemi**, half; **chorde**, cord). Body divided into 3 regions : proboscis, collar and trunk. Notochord doubtful, short, confined to proboscis and non-homologous with that of chordates.

Class 1. Enteropneusta. (Gr., **enteron**, gut; **pneustos**, breathed). Body large and worm-like. Gill-slits numerous. Intestine straight. Acorn or tongue worms. 3 families, 15 genera and 70 species. *Balanoglossus*, *Saccoglossus*.

Class 2. Pterobranchia. (Gr., **pteron**, feather; **branchion**, gill). Body small and compact. Gill-slits one pair or none. Intestine U-shaped. Pterobranchs includes 2 orders, 3 genera and 20 species. *Cephalodiscus*, *Rhabdopleura*.

Class 3. Planctosphaeroidea. Transparent, round and specialized tornaria larva, having extensively branched ciliary bands and L-shaped alimentary canal, represents this class. *Planctosphaera pelagica*. This form is regarded as the larval form of some unknown hemichordates.

Class 4. Graptolita. The fossil graptolites (*e.g.*, *Dendrograptus*) were abundant in Ordovician and Silurian periods and often placed as an extinct class under Hemichordata. Their tubular chitinous skeleton and colonial habits show an affinity with *Rhabdopleura*.

Subphylum II. Urochordata or Tunicata

(Gr., **oura**, a tail; L., **chorda**, cord). Notochord and nerve cord only in tadpole-like larva. Adult sac-like, often sessile and encased in a protective tunic. Tunicates.

Class 1. Ascidiacea. Sessile tunicates with scattered muscles in tunic. Solitary, colonial or compound. Gill-clefts numerous. Ascidians or sea squirts. 2 subclass, 3 orders, 12 families, 37 genera and 1,200 species. *Herdmania*, *Ciona*, *Molgula*.

Class 2. Thaliacea. Free-swimming or pelagic tunicates with circular muscles in tunic. Sometimes colonial. Salps or chain tunicates. 3 orders, 5 families, 9 genera and 30 species. *Salpa*, *Doliolum*, *Pyrosoma*.

Class 3. Larvacea or Appendicularia. Tiny, transparent, free-floating. Adults retain many larval features including tail. Only two gill-slits. 2 orders, 2 families, 5 genera and 30 species. *Oikopleura*.

Subphylum III. Cephalochordata

(Gr., **kephale**, head; L. **chorda**, cord). Notochord and nerve cord present throughout life along entire length of body.

Class Leptocardii. Body fish-like, segmented with distinct myotomes and numerous gill-slits. Free-swimming and burrowing Lancelots. One class, one family, 2 genera and 30 species. *Branchiostoma* (= *Amphioxus*), *Asymmetron*. About eight species have been recognized under the genus *Branchiostoma* and six species have been recognized from the genus *Asymmetron*.

Division 1. Agnatha

(Gr **a**, not; **gnathos**, jaw). Jawless primitive fish-like vertebrates without true jaws and paired limbs.

Class 1. Ostracodermi. (Gr., **ostrakon**, shell; **derma**, skin). Several extinct orders of ancient primitive heavily armoured, Palaeozoic, world's first vertebrates, collectively called the ostracoderms. *Cephalaspis*, *Drepanaspis*.

Class 2. Cyclostomata. (Gr., **cyklos**, circular; **stoma**, mouth). Body eel-shaped, without scales, jaws and lateral fins. Mouth rounded and suctorial. Gills 5-16 pairs. Parasites and scavengers. 45 species. Lampreys (*Petromyzon*) and hagfishes (*Myxine*).