SCIENCE

CLASSIFICATION OF CHORDATA

CHORDATA

The Phylum Chordata is the most advance group of animals.

The main distinctive characters of this group are the presence of

(a) Notochord **(b) Dorsal, tubular, hollow nerve cord**

(c) Presence of pharyngeal gill slits **(d) Post anal tail.**

(i) It is a long rod-like structure that develops between **dorsal nervous syste**m and **gut.** In higher chordates, **notochord** is transformed into **cranium** and **vertebral column.**

(ii) **Dorsal Hollow Nerve Chord** : It occurs above the notochord. In higher chordates it gets transformed into brain and spinal cord.

(iii) **Pharyngeal Gill Slits** : (Gill Pouches) : They are paired respiratory structures which remain functional throughout life in fishes and some amphibians. In others they occur only in embryo.

(iv) **Post-anal Tail** : It occur in most chordates for balancing, protection of genital and anal regions.

Other Characteristics : Chordates have **bilateral symmetry, organ system level organisation triploblastic development, closed circulatory system, well developed excretory** system based on kidneys and an integumentary system (single layered in protochordates and multilayered in vertebrates).

Chordates are divided into three subphyla :

(i) Subphylum Urochordata (Uros = tail + chordata = notochord)

Examples : Herdmania, Doliolum, Pyrosoma.

(ii) Subphylum Cephalochordata (Cephalos = head + chordata = notochord).

Example: Amphioxus.

(iii) Subphylum Vertebrata (Craniata)

Differences between Nonchordates and Chordates

Nonchordates	Chordates
1. Notochord is absent.	1. Notochord is present at some stage of development
2. Central nervous system is solid and ventral.	2. It is hollow and dorsal.
3. Heart, if present, in dorsal.	3. Heart is ventral.
4. Vascular system may be open or closed.	4. Vascular system is closed.
5. Haemoglobin, if present, is dissolved in plasma.	5. Haemoglobin is present in red blood corpuscles.
6. Pharyngeal gill slits are absent.	6. Pharyngeal gill slits are present.
7. The anus is posterior, so no post-anal tail.	7. A post-anal tail is present.