

## SCIENCE

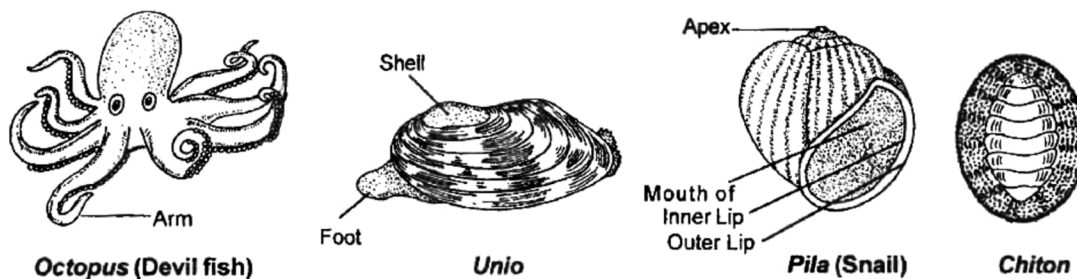
## MOLLUSCA, ECHINODERMATA AND CHORDATA

## PHYLUM MOLLUSCA (Molluscs = soft)

## General Characters:

- (i) Mollusca is the **second largest phylum**.
- (ii) **Soft-bodied animals** with a protective shell.
- (iii) Body cavity is filled with blood (Haemocoel). **Circulatory system is open**.
- (iv) **Muscular foot** is present for locomotion.
- (v) Body is divided into three regions : **(head, visceral mass and foot)**.
- (vi) Outer surface is covered by a hard **calcareous shell**.
- (vii) Respiration is by gills called **ctenidia**.
- (viii) The **sexes** are usually **separate**.
- (ix) They are usually bilaterally symmetrical.

**Example:** Pila (apple snail), Unio (fresh water mussel), oyster, Sepia (cuttle fish), Loligo (squid) and Octopus, Chiton (Coat of mail shell).



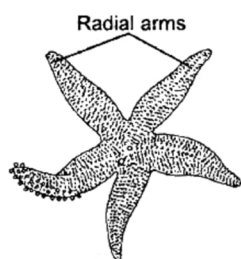
**PHYLUM ECHINODERMATA (Spiny skinned animals)**

(Echinos = Epines ; Derma = Skin / covering).

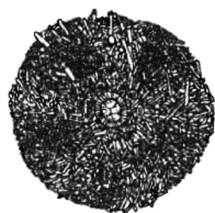
**General Characters:**

- (i) They are **marine, gregarious** (live in groups) and **free-living animals**.
- (ii) Shape may be star-like, spherical or elongate.
- (iii) Body surface is covered all over by **calcareous spines**.
- (iv) Their symmetry is **radial** in **adults** but **bilateral** in **larvae**.
- (v) These are unsegmented.
- (vi) Body cavity is modified into a **water-vascular system** with tube like outward extension for locomotion, called **tube feet**. **Water-vascular system** health in respiration and locomotion.
- (vii) They have extensive power of regeneration.

**Examples:** Asterias (star fish), Echinus (sea urchin), Holothuria (sea cucumber), Antedon (feather star).



**Asterias (Star fish)**



**Echinus (Sea urchin)**



**Holothuria (Sea cucumber)**



**Antedon (Feather star)**

**PHYLUM HEMICHORDATA (Hemi = half + chordata = notochord).**

Phylum Hemichordata includes worm-like, unsegmented animals which are exclusively marine.

These possess a combination of invertebrate and chordate characters.

They are connecting link between non-chordates and chordates.

- (i) Body is divided into **proboscis, collar and trunk.**
- (ii) **Symmetry** is **bilateral.**
- (iii) **Respiration** is through **gill slits.**
- (iv) **Sexes** are mostly **separate.**

Example: *Balanoglossus* (tongue worm), *Herdmania* and *Amphioxus*.

