

ATOMIC ENERGY CENTRAL SCHOOL, INDORE

MODULE 4.2

What Is an Invertebrate?



Octopus
(soft-bodied animal)



Ant
(animal with jointed legs)



Amoeba
(one-celled animal)

An invertebrate is an animal that has no backbone. There are more than one million kinds of invertebrates. They can be divided into several groups.



Tube Sponge
(sponge)



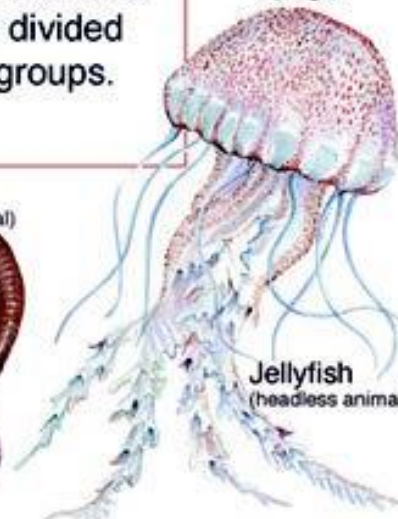
Snail
(soft-bodied animal)



Starfish
(spiny-skinned animal)



Earthworm
(worm)



Jellyfish
(headless animal)

UNIT 1 : DIVERSITY IN THE LIVING WORLD

CHAPTER 4 ANIMAL KINGDOM

PREPARED BY-

NEERAJ KUMAR
BAMANIA

PGT(SS) – BIOLOGY

AECS INDORE.

Animal Kingdom Classification System

Phylum Porifera -

- ✚ Marine.
- ✚ Multicellular, cellular grade body.
- ✚ Asymmetrical.
- ✚ Water canal system for food, respiration and excretion.
- ✚ Body wall with many pores - Ostia.
- ✚ Diploblastic.
- ✚ Water enters through Ostia and goes out through Osculum.
- ✚ Skeleton of spicules or spongin fibres.
- ✚ Hermaphrodite.
- ✚ Reproduction asexual by fragmentation and sexual by gametes.
- ✚ Fertilisation is internal, development indirect.

eg. *Sycon*, *Spongilla*, *Euspongia* etc.

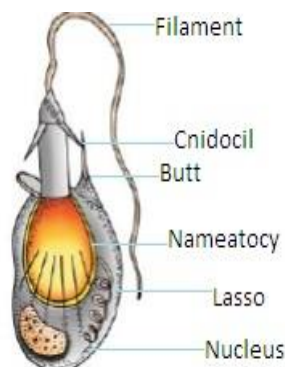
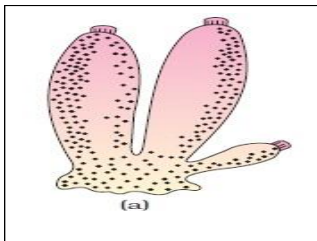


Figure 4.7
Diagrammatic view of
Cnidoblast

Phylum Coelenterata (Cnidaria)

- ✚ Aquatic (marine), Sessile or free living.
- ✚ Presence of Cnidoblasts or Cnidocytes - Stinging cells.
- ✚ Cnidoblasts are for defence, anchorage or predation.
- ✚ Tissue level body organisation.
- ✚ Diploblastic.
- ✚ Central gastro vascular cavity, single opening mouth.
- ✚ Two body forms - Polyp (Asexual), Medusa (Sexual) stage.

eg *Hydra*, *Physalia*, *Obelia*, *Aurelia* etc.

Phylum Ctenophora

(sea walnuts or comb jellies)

Marine, radial symmetry, Diploblastic, tissue grade.

Eight external rows of Comb Plates.

Bioluminescence.

eg. *Ctenoplana*, *Pleurobrachia* etc.

Reproduction sexual.

WWW.NCERTHELP.COM

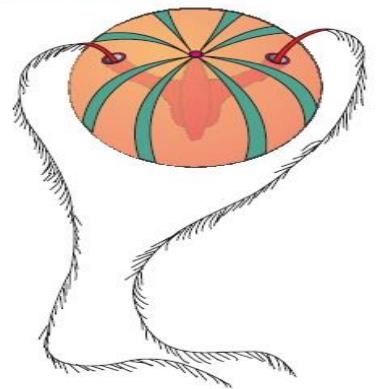
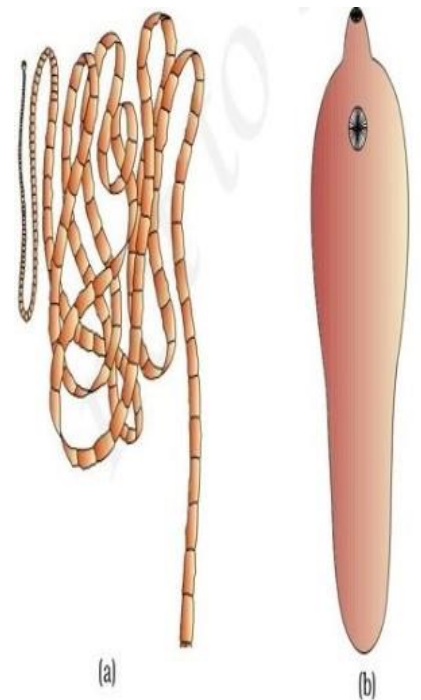


Figure 4.8 Example of Ctenophora

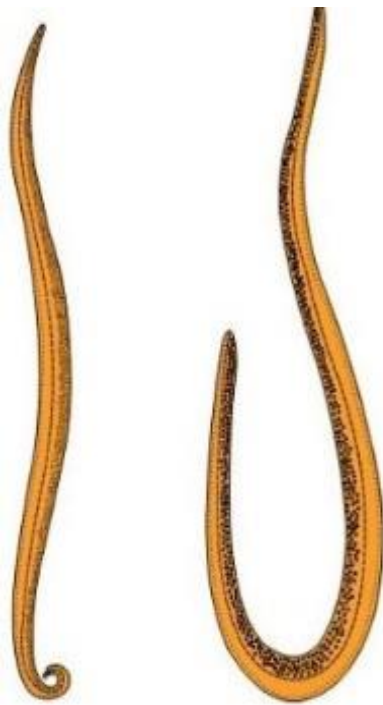
Phylum Platyhelminthes

(Flat worms)

- + Body dorsiventrally flattened.
- + Endoparasite.
- + Triploblastic, bilateral symmetry.
- + Acoelomate
- + Flame cells- for excretion & osmoregulation.
- + Flame cells- for excretion & osmoregulation.
- + Hermaphrodite
- + Reproduction - Sexual - Fertilisation internal.
- + Organ level organisation.
- + eg. *Taeniasolium*(Tape worm), *Fasciola hepatica* (liver fluke).



Examples of Platyhelminthes : (a) Tape worm (b) Liver fluke



Male

Female

Aschelminthes-Roundworm

Phylum Aschelminthes

(Round Worm)

Free living or parasitic, aquatic and terrestrial. Bilateral symmetry and Triploblastic.

Pseudocoelomate. Muscular pharynx.

Male smaller and thinner than female.

Fertilisation internal, development direct or indirect.

eg. *Ascarislumbricoides*,
*Wucherariabancroftii*etc

References

1. NCERT. BIOLOGY TEXTBOOK FOR CLASS XI
2. CONCEPTS OF BIOLOGY (R.L. KOTPAL / BENDRE/TYAGI)

<https://www.ruf.rice.edu/~bioslabs/studies/invertebrates/kingdoms.html>