

Prof. S. D. Rathod

# LEVELS OF ORGANIZATION

COURSE I (SEMISTER I)

# Importance -LEVELS OF ORGANIZATION

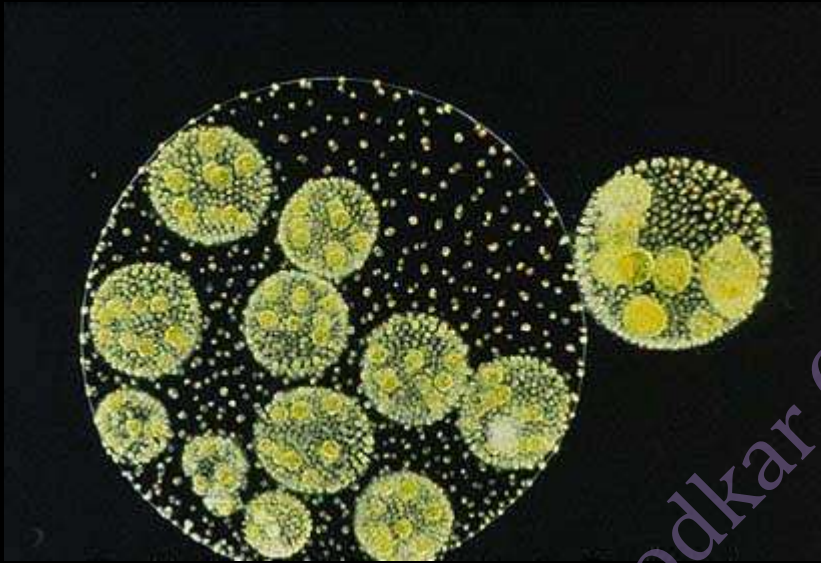
- Animal classification.
- Different characters such as cellularity, symmetry, germ layers, segmentation, cephalization etc.
- The **Taxa** such as phylum, class, order, family, genus and species are of descending order.

# Unicellularity vs. Multicellularity

- Number of cell
- Organization – Protoplasmic and cell, tissue and organ level



# Colonization



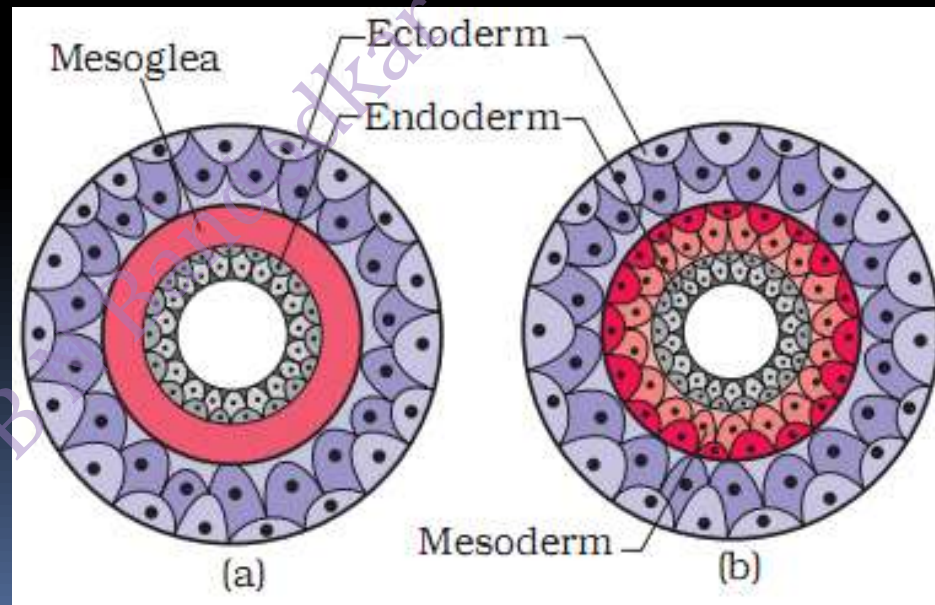
- *Volvox* colony (monomorphic)



- *Phsalia* colony (polymorphic)

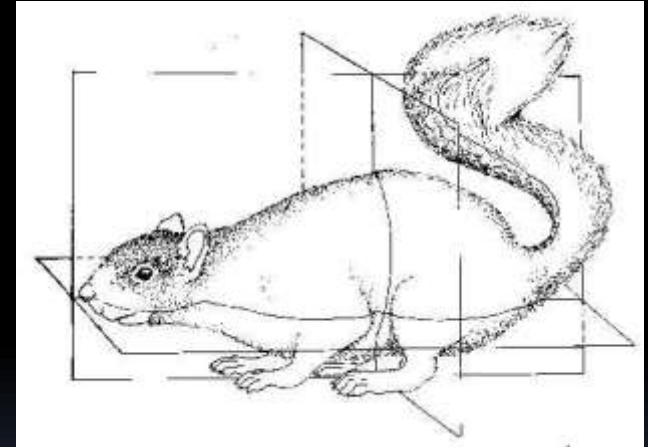
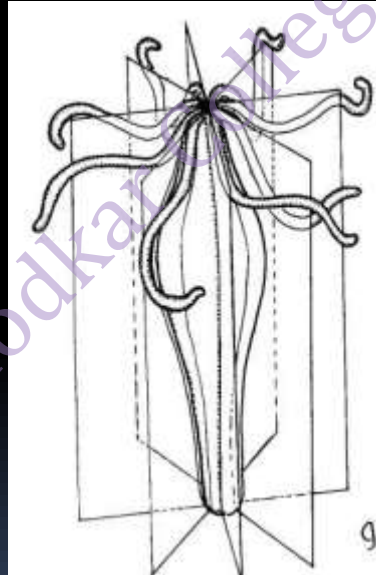
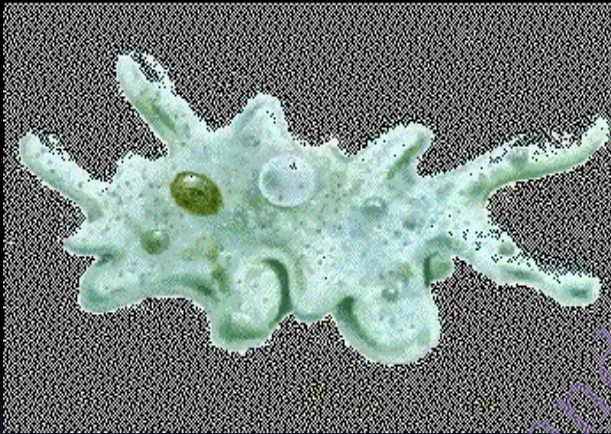
# Diploblastic and triploblastic organisms

- (a) Two germ layered gastrula (ectoderm and endoderm) – **Diploblastic**
- (b) Three germ layered gastrula (ectoderm, mesoderm and endoderm) - **Triploblastic**



# Symmetry

- Asymmetry      Radial symm.      Bilateral symm.



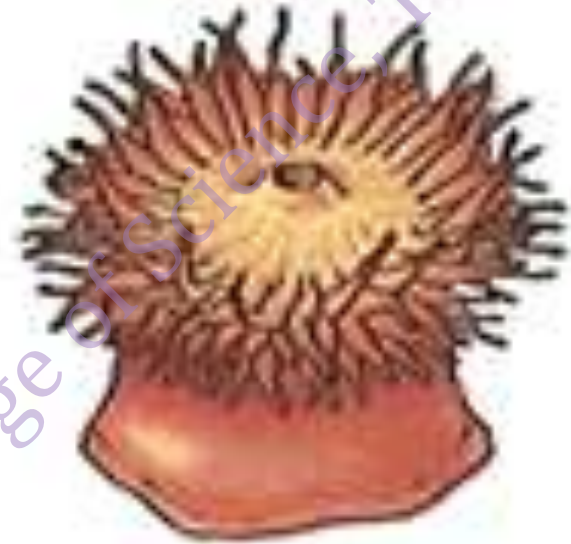
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Asymmetrical



Radial



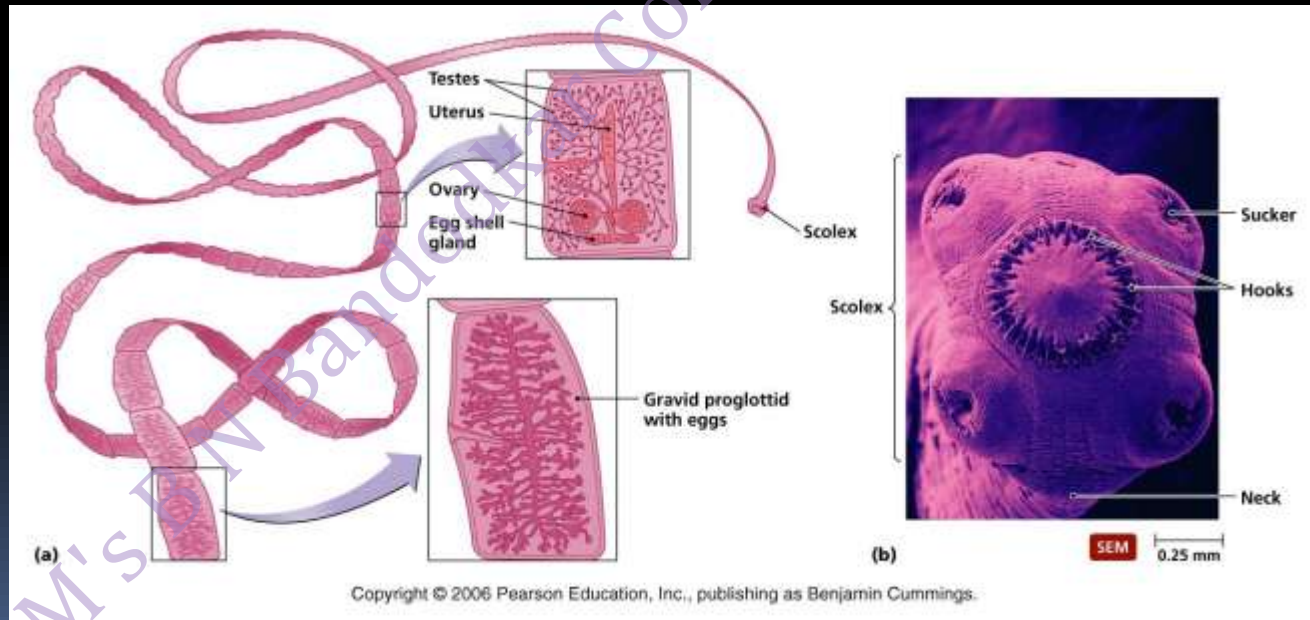
bilateral



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# Segmentation

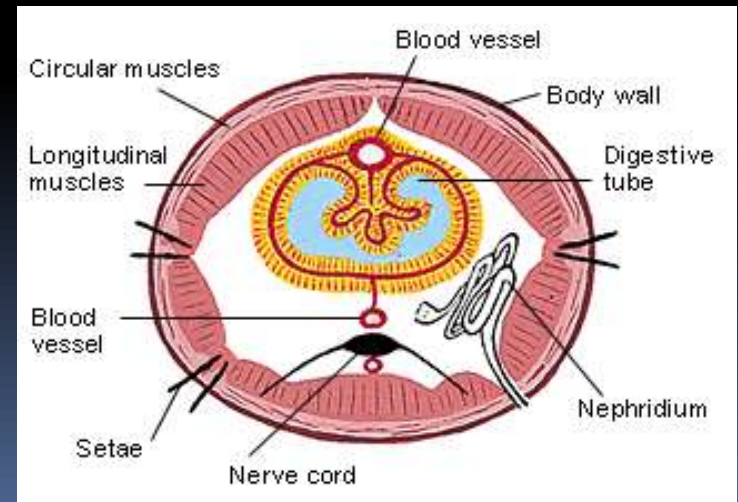
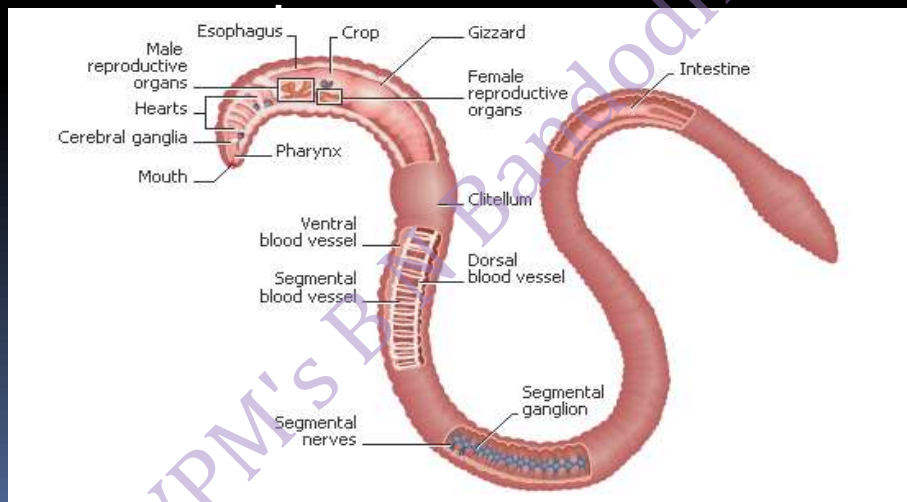
- Pseudo-segmentation
- False segments are superficial, incomplete and non-identical.





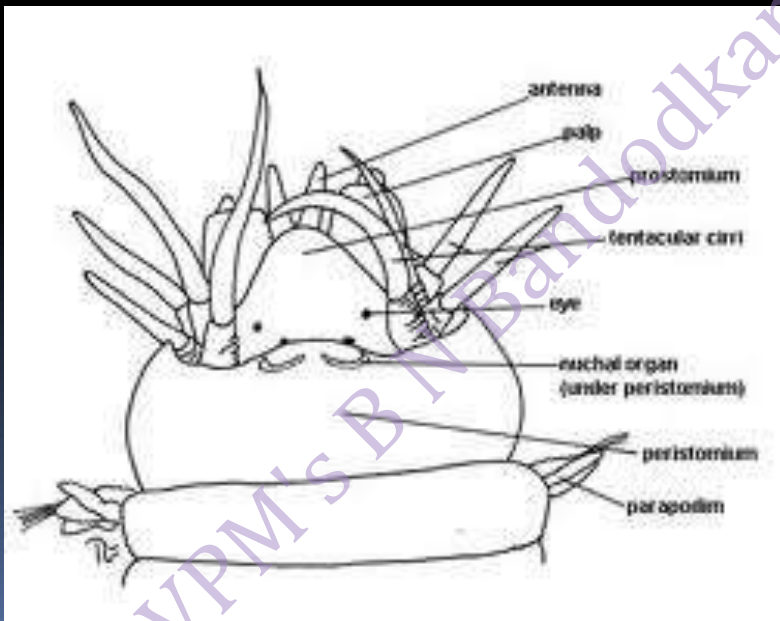
# Metamerism

- True segments are typical, complete and identical.
- A true segment contains part of all the systems like reproductive, digestive, excretory, circulatory, nervous etc. and internally divided by



# Cephalization

- Cephalization means **development of head**.
- In higher animals all important sensory organs are concentrated towards anterior side as they are **highly active**.



# Cephalization

Beetle



Human





THANK YOU



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