

# Classification OF Cnidaria

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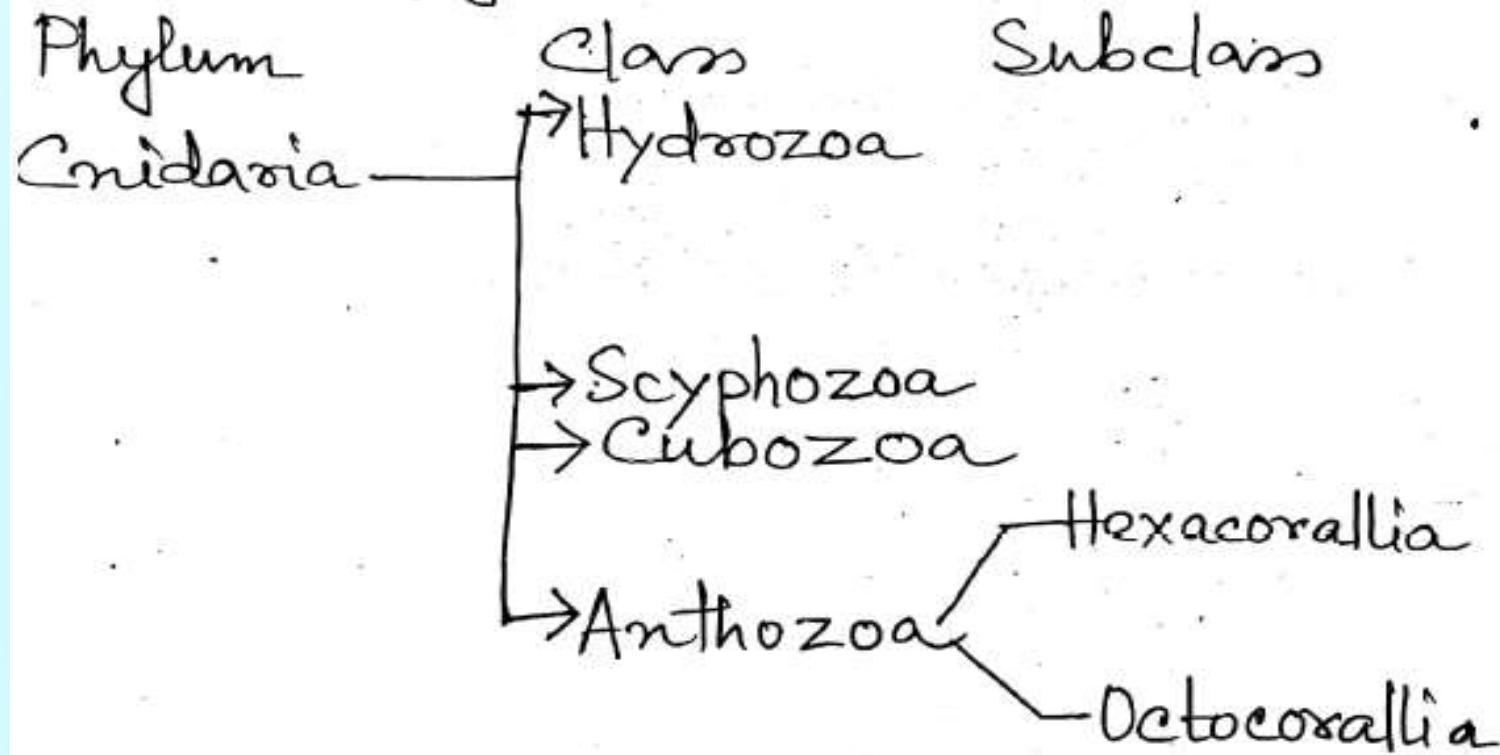
Phylum Cnidaria (Gr. Knide = nettle) is a diverse group with cosmopolitan distribution. Previously this phylum was included into coelenterata.

## General Characters

- i) All are aquatic with diploblastic body.
- ii) They exhibit radial symmetry.
- iii) Two different body forms - attached 'polyps' (asexual phase) and free swimming 'medusa' (sexual phase). Some species are notable for polymorphism or variety of forms.
- iv) Head and body segmentation absent.
- v) Short and slender tentacles encircle the mouth in one or more whorls.

# Scheme of Classification

According to Ruppert and Barnes (1994) phylum Cnidaria is classified accordingly.



# ① Class - Hydrozoa (Gr. Hydra = water + zoon = animal)

➤ Fresh water or marine and Solitary or colonial.

ii) ➤ Only polyps or both asexual polyps and sexual medusa present.

iii) ➤ Mesoglea acellular.

iv) ➤ Medusa with true velum.

v) ➤ Polyps without stomodaeum and septa.

vi) ➤ Gonads epidermal in origin.

Eg. - Hydra, Obelia, Physalia, Porpita.

- ② Class - Scyphozoa (Gr. Skyphos  
= cup)
- i) Exclusively marine and solitary forms.
  - ii) Medusa stage dominant, polyp stage is very insignificant.
  - iii) Mesoglea cellular.
  - iv) Velum absent.
  - v) Gonad endodermal.
- Eg. - Aurelia.

### ③ Class - Cubozoa (Gr. Cubo = cube)

- i) Medusoid cnidarians with bells.
  - ii) Body distinctly flattened to form four sides.
  - iii) Bell margin simple.
  - iv) Presence of velum along the margin of the medusa.
  - v) Four per radial tentaculocysts present at the four corners of the margin.
- Eg. - Tripedalia.

## ④ Class - Anthozoa (Gr. Anthos = flower)

- i) Exclusively marine and solitary or colonial.
- ii) All are polyps, no medusa.
- iii) Mesoglea stout and cellular.
- iv) Mouth leads into a tubular Stomodaeum.
- v) Germads endodermal.



## a) Subclass - Hexacorallia

i) Solitary or colonial Cnidarians with hollow and unbranched tentacles and tentacles are six or multiplication of six between eight.

ii) Gullet - Commonly with two siphonoglyphs.

Eg. Sea-anemones. (Edwardsia)

## b) Subclass - Octocorallia

i) Exclusively colonial.

ii) Polyps with eight pinnate tentacles and eight septa.

iii) Gullet with one siphonoglyphs.

Eg. - Gorgonia, Pennatulula (Sea fan),  
(Sea fan),

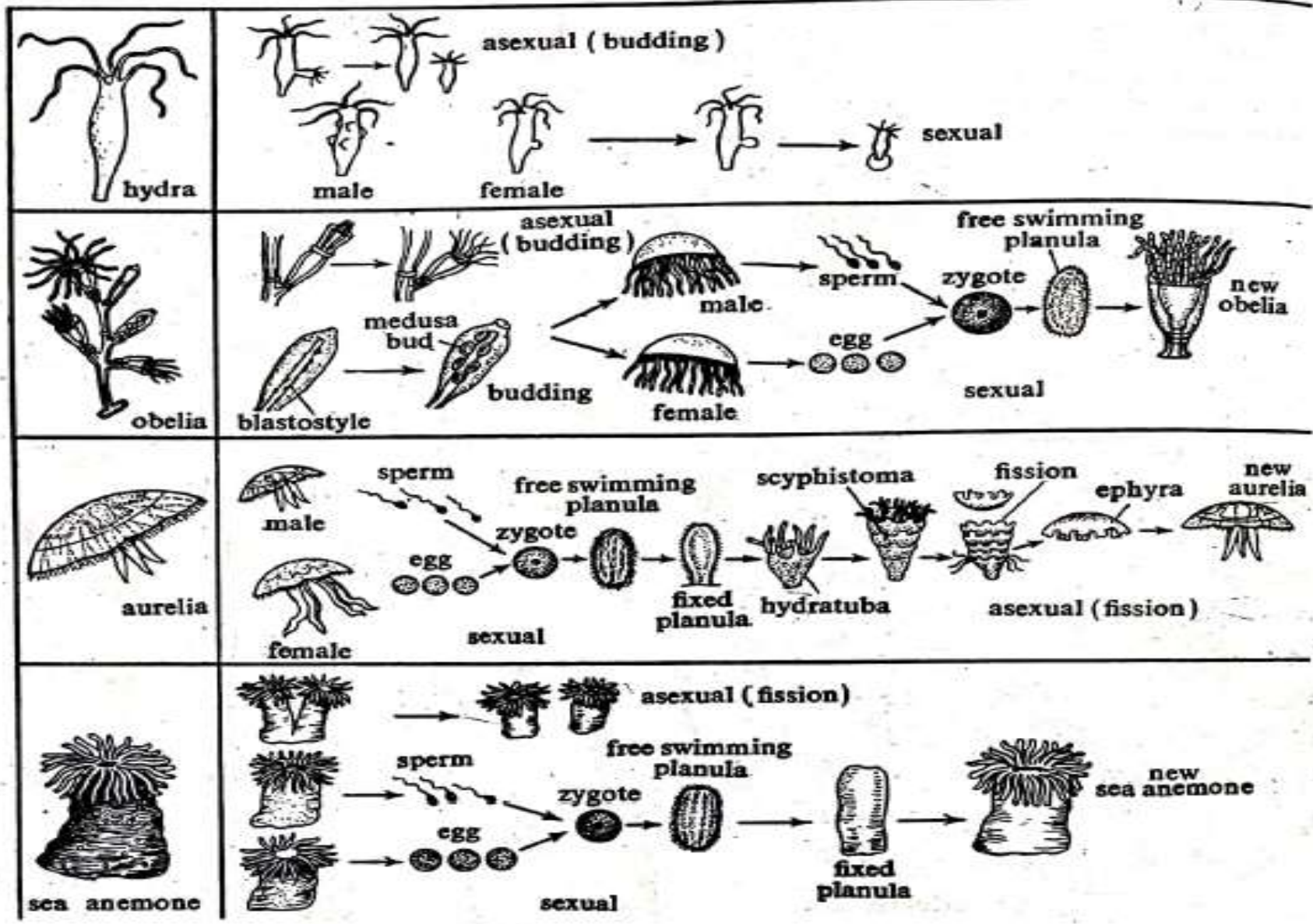


Fig. Showing important features in the life-history of a few Cnidarians.

## Similarities & Dissimilarities between Polyp and Medusa:

Polyp	Medusa
1. Fixed, rarely free, found near water mark attached to rocks.	1. Free swimming, found in open waters.
2. Body cylindrical with a long stalk ( <i>Hydra</i> ).	2. Body saucer shaped, umbrella like with a reduced stalk (Jellyfish).
3. Body attached below so that manubrium is directed upward.	3. Base above so that membrum hangs downward.
4. Velum is absent.	4. Velum is present.
5. Sense organs absent.	5. Statocysts present at the bases of eight adradial tentacles.
6. Gastrovascular cavity simple without radial and circular canals.	6. Gastrovascular cavity represented by stomach, four radial canals and one circular canal.
7. Gonads absent.	7. Four gonads on radial canals.
8. Reproduces asexually by budding.	8. Reproduces sexually by gametes.
9. Concerned with feeding, protection and asexual reproduction.	9. Concerned with sexual reproduction.

### **Similarities :**

1. Diploblastic radially symmetrical body.
2. Ex-umbrellar surface of the medusa, by which it is attached to blastostyle, corresponds with the base of the polyp.
3. Mouth situated at the tip of the manubrium.
4. Tentacles are solid with central core of endoderm.
5. Carnivorous. Ingestion by tentacles.