

## *General Characteristics of Phylum Ctenophora:*

There are about 50 species of ctenophores.

### **1. Habitat:**

All ctenophores are exclusively marine.

### **2. Habits:**

They feed on plankton, swim by cilia. Power of regeneration is well marked.

Bioluminescence (the property of living organism to emit light) is well-marked in ctenophores.

### **3. Body Form:**

Body form is variable.

### **4. Symmetry:**

Symmetry is biradial (radial + bilateral). The arrangement of comb plates gives the appearance of radial symmetry; the tentacles and branching of gastro vascular canals are of bilateral type.

### **5. Germ Layers:**

They are diploblastic having ectoderm and endoderm.

### **6. Level of Organisation:**

Tissue level of organization is present.

### **7. Appendages:**

Tentacles may or may not be present. When present, they are two in number.

### **8. Body Wall:**

The body wall consists of outer epidermis, inner gastro-dermis and middle mesogloea (= collenchyma). The mesogloea is different from that of cnidaria as it contains amoebocytes, elastic fibres and muscle cells. From this reason ctenophores may be considered as "triploblastic". Special adhesive cells called colloblasts (= lasso cells), are present in the epidermis of tentacles which help in food capture.

The ctenophores do not have nematocysts except *Euchlora rubra*. *Euchlora rubra* has nematocyst on tentacles. It does not have coloblasts. The presence of nematocysts in this species is an evidence of the cnidarian origin of the ctenophores.

### **9. Locomotion:**

Comb like eight ciliary plates called comb plates are present on the body. The cilia of these plates help in swimming. Ctenophores are hence called comb Jellies.

### **10. Body Cavity:**

They are acoelomates.

### **11. Digestive Tract (= Gastro vascular tract):**

It consists of mouth, pharynx or stomodaeum, stomach or infundibulum, anal canals and two anal pores. The stomach is highly branched to form a complex system of gastro vascular canals. Since there are mouth and anal pores, the digestive tract is complete. Digestion is both extracellular and intracellular.

### **12. Skeletal:**

Circulatory, respiratory and excretory systems are absent.

### **13. Nervous System:**

The nervous system is diffused as in cnidarians.

### **14. Sense Organ:**

The aboral end (opposite end of mouth) bears a sense organ, called statocyst for equilibrium (balance).

### **15. Reproduction:**

They are monoecious (= hermaphrodite or bisexual). Fertilization is generally external. Asexual reproduction is not present. Paedogenesis is common.

### **16 Development:**

Egg contains yolk, hence called lecithal. Yolk is initially accumulated at the centre (centrolecithal condition) but later on when cleavage starts yolk shifts to one side (telolecithal condition).

Cleavage is complete, holoblastic, unequal, biradial and determinate (a complete embryo is formed if all the blastomeres remain together). Gastrulation occurs by epiboly. The development is indirect with a ciliated sphenical cydippid larva.

**Unique Features:**

- (i) Comb like ciliary plates for swimming,
- (ii) Special adhesive cells, the colloblasts for capturing the prey,
- (iii) Mesogloea with amoebocytes and smooth muscle cells,
- (iv) Two anal pores.

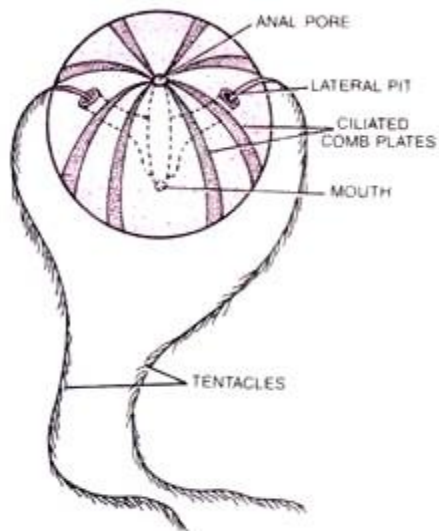


Fig. 4.19. *Pleurobrachia*.

