CHARACTERS AND CLASSIFICATION OF CTENOPHORA

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Ctenophoras are free-swimming, transparent, jelly-like, soft-bodied, marine animals having biradial symmetry, comb-like ciliary plates for locomotion, the lasso cells but nematocytes are wanting. They are also known as sea walnuts or comb jellies.

Though comb jellies are, for the most part, of small size, at least one species, the Venus's girdle, may attain a length of more than 1 m (3 feet). One parasitic species is only 3 mm ($^1/_8$ inch) in diameter. Some ctenophores live in somewhat brackish water, but all are confined to marine habitats. They live in almost all ocean regions, particularly in surface waters near shores. At least two species (Pleurobrachia pileus and Beroe cucumis) are cosmopolitan, but most have a more restricted distribution.

Apart from a few creeping and parasitic species, ctenophores float freely suspended in the water. They are frequently swept into vast swarms, especially in bays, lagoons, and other coastal waters. Except for one parasitic species, all of them are carnivorous, eating myriads of small planktonic animals. When abundant in a region, ctenophores consume most of the young of fish, larval crabs, clams, and oysters, as well as copepods and other planktonic animals that would otherwise serve as food for such commercial fish as sardines and herring. In turn, however, comb jellies are themselves consumed by certain fish.

Phylum Ctenophora Characteristics

- They are free-swimming, marine, solitary, pelagic animals. No polymorphism and no attached stages were found.
- The body is transparent, gelatinous, pear-shaped, cylindrical, or flat or ribbon-shaped.
- They have a biradially symmetrical body along an oral-aboral axis.
- They have an external surface with comb-like 8 ciliary plates for locomotion. Hence name as comb jellies.
- They have a pair of long, solid, retractile tentacles.
- Their body organization is cell- tissue grade.
- Their body is acoelomate and triploblastic, with the outer epidermis, inner gastrodermis, middle jelly-like mesoglea with scattered cells, and muscle fibers.
- Their digestive system contains the mouth, stomodaeum, complex gastrovascular canals, and 2 aboral anal pores.
- They lack nematocysts.
- They have special adhesive and sensory cell i.e. colloblasts or lasso cells present in tentacles which helps in food captures.
- They lack skeletal, circulatory, respiratory, and excretory organs.
- Their nervous system is diffused types and the aboral end bears a sensory organ, called statocyst.
- They are monoecious (hermaphrodite); gonads are endodermal situated on walls of digestive canals.
- Their development direct with characteristic cydippid larva.
- They lack asexual reproduction and alternation of generation.
- Regeneration and paedogenesis are common in them.

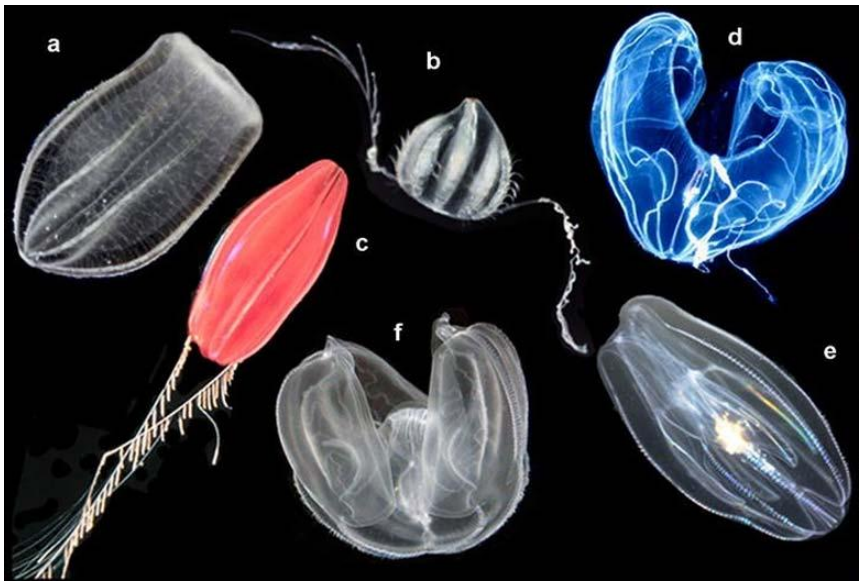

Figure: Pelagic ctenophores: (a) Beroe ovata, (b) Euplokamis sp., (c) Nepheloctena sp., (d) Bathocyroe fosteri, (e) Mnemiopsis leidyi, and (f) Ocyropsis sp.

Phylum Ctenophora Classification

Phylum Ctenophora contains about 100 know species and grouped in 2 classes

Class 1. Tentaculata

- Adults with 2 long aboral tentacles.
- In some larva has tentacles, while adults have oral lobes.
- Mouth narrow and pharynx small.

Order 1. Cydippida

- Body simple, round, and oval.
- Digestive canals terminate blindly; no anal pores.
- Tentacles are two long and branched.
- Tentacles are retractile into pouches or sheath.

- Examples: Mertensia, Pleurobrachia, Hormiphora

Order 2. Lobata

- Body oval, laterally compressed.
- Adults with 2 large oral lobes and 4 slender flap-like auricles around the mouth.
- Pouched or sheath tentacles in the larva.
- Tentacles reduced and without sheath in adults.
- Gastrovascular canals are connected by a ring at oral ends.
- Examples: Mnemiopsis, Bolinopsis

Order 3. Cestida

- Body elongated compressed/flat, ribbon-like.
- Two main tentacles in the sheath but reduced.
- Many small lateral tentacles along the oral edge.
- Combs plates in 4 rows but rudimentary.
- Examples: Cestum, Velamen

Order 4. Platyctenea

- Body greatly compressed/flat in the oral-aboral axis.
- 2 well- developed tentacles with sheath.
- Comb plates reduced in adults.
- Adapted for creeping.
- Examples: Ctenoplana, Coeloplana

Order 5. Thalassocalycida

- They are found surface waters down up to 2,765 Ms in Atlantic oceans and the Mediterranean Sea.

- The body is a bell of Medusa shaped and may be up to 15 cm in diameter.
- Mouth slit holds by a central cone-shaped peduncle.
- A pair of small tentacles hang from the side of the peduncle.
- Com jelly is with its transparent and colorless body. Usually different to see.
- They hold the bell wide opens to captures prey i.e. Zooplankton.
- Presumably hermaphroditic.
- This species has limited swimming ability compared to other comb jellies.
- Examples: Thalassocalyce inconstans.

Class 2. Nudu

- Body large, conical, and compressed laterally.
- Without tentacles and oral lobes.
- Wide mouth and large pharynx.
- Voracious feeder.

Order 1. Beroida

- No tentacles and oral lobes.
- Body large, conical, and laterally compressed.
- Mouth large.
- Voluminous Stomach.
- Examples: Beroe