

# Characters and classification of

## Mollusca

### General characters

- ① Aquatic animal. Mostly marine, a few freshwater and some terrestrial.
- ② They have tissue-grade of organization.
- ③ Body is soft, unsegmented and made of four parts (a) visceral mass (b) head (c) foot and (d) Mantle.
- ④ generally bilaterally segmented, but some gastropod and cephalopods asymmetrical.
- ⑤ skin is single layered epithelium, mostly ciliated, kept moist and supply by mucous gland.
- ⑥ there is a distinct head, bearing terminal mouth, eyes, tentacles and other sensory organs.
- ⑦ Foot is ventral, thick, muscular and locomotory, and variously modified for creeping, burrowing or swimming.
- ⑧ visceral mass, containing most of the vital organs.
- ⑨ Mantle is thick, muscular fold of the body covering the visceral mass dorsally and laterally.
- ⑩ the space between the animal and the visceral mass is called mantle.
- ⑪ the outer surface of the mantle secretes a hard calcareous shell forming a protective covering.
- ⑫ the body is triploblastic.
- ⑬ the alimentary canal is simple and straight. often U shaped and coiled. Some have chitinous teeth called radula.

A large digestive gland and liver and often salivary glands are present.

(14) Respiratory organs consist of gills or ctenidia. Lung is developed in terrestrial forms.

(15) Circulatory system is open and blood is colourless, red, blue or green and respiratory pigment is usually haemocyanin.

(16) Excretory system consist of six pairs of sac like kidneys.

(17) Nervous system consist of paired cerebral, pleural, pedal and visceral ganglia.

(18) The sensory organs consist of the eyes and tentacles on head, the lithocytes in the foot and the osphradia near the base of the gills.

(19) Sexes are mostly separate. Some hermaphrodite and a few protandric.

(20) Cleavage is spiral, determinate, unequal and total. Development is either direct or with metamorphosis, it include a trochophore stage called the veliger larva. Asexual reproduction is absent.

## Classification

### class 1 - Monoplacophora

- ① Body oval and bilaterally symmetrical
- ② Shell is made of a single piece.
- ③ Foot is ventral with a flat creeping sole
- ④ 2 ventricle, 5 or 6 pairs of gills and 6 pairs of ~~the~~ nephridia present.
- ⑤ Mostly extinct. e.g. Neopilina galathea

### class 2, Amphinura

- ① Do not undergo torsion
- ② Body oval or long, cylindrical and bilaterally symmetrical.
- ③ Body naked or with a shell
- ④ Mouth and anus terminal.
- ⑤ Nervous system primitive. e.g. Neomenia

### class 3, Scaphopoda

- ① Burrowing and marine molluscs, commonly known as 'tooth' or 'tusk' shells.
- ② Body bilaterally symmetrical, elongated with no head, eyes and gills.
- ③ Shell and mantle univalved open at both ends.
- ④ Foot small and conical, pointed for burrowing.
- ⑤ Sexes separate. e.g. Dentalium.

### class 4, Gastropoda

- ① Asymmetrical molluscs having undergone torsion and detorsion and coiling.
- ② Head distinct with one or two pairs of tentacles and eyes. possess scraping radula
- ③ Large ventral foot in the form of a creeping sole.

④ Shell univalved, often spiral or conical or absent.

⑤ Marine, freshwater or terrestrial  
eg Pila

### class 5. pelecypoda

① Do not undergo torsion

② Body bilaterally compressed, no distinct head.

③ Shell bivalved

④ Sexes separate

⑤ Marine and freshwater,  
eg - Mytilus

### class 6 cephalopoda

① Body elongated, dorso-ventrally and bilaterally symmetrical. Distinct head bearing large eyes, radula and jaws

② Shell external, internal, degenerate or absent.

③ Foot modified into arms or tentacles attached to the head and the siphon.

④ Dioecious, development direct.

⑤ All marine and free swimming  
eg Loligo