

8

Basic Shellfish Features

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The shellfish includes two highly diversified phyla *i.e.* phylum Arthropoda and phylum Mollusca. These two groups are named as shellfishes because of the presence of exoskeleton made of chitin in arthropods and shells made of calcium in molluscs. These two major phyla are invertebrates. Phylum Arthropoda includes spiders, scorpions, ticks, mites, crustaceans, millipedes, centipedes and insects. The economically important groups of two phyla include lobsters, shrimps, crabs, clam, mussel, oysters, chank, squid and cuttlefish.

Crustaceans

Body of crustacean is divisible into head, thorax and abdomen. It has jointed appendages. These appendages get specialized for walking, swimming and reproduction. The appendages around the mouth get modified for different methods of feeding. It comes under Class - Crustacea.

Shrimp

Shrimp head is fused with the chest called the cephalothorax. This section consists of 13 sections. 8 segment on the chest and 5 segments on the head.

Body and the abdomen consists of 6 segments; each segment has a pair of swimming feet are also segmented.

The head protected by a shell called carapace. The front of the carapace tapered and curved, which is called rostrum. There are serrations at rostrum known as teeth. If serrations are present at the top of the rostrum it is called dorsal teeth, while teeth are present at ventral side of rostrum it is called ventral teeth. Another section present in the head includes: a pair of compound eyes, mouth with strong jaws (mandibles), a pair of large antennae, a pair of fins - head (scaphocerite), a pair of jaws auxiliaries (maxilliped), and 5 pairs of feet road (pereopod). In some shrimp, the propodus is prolonged beyond its articulation with dactylus and it looks like a chela or pincer. Abdomen enclosed by a 6 segment of one another connected by a thin membrane. There are five pairs of swimming legs attached to the first segment to

fifth segment, while the sixth segment swimming legs changes its form into a tail fan (Uropod). In some male shrimps, endopods of first pair of pleopods form petasma.

Functions of petasma is transferring spermatophores into thelycum of female. Above tail fan, there is a tail that tapers at the edges called the telson.

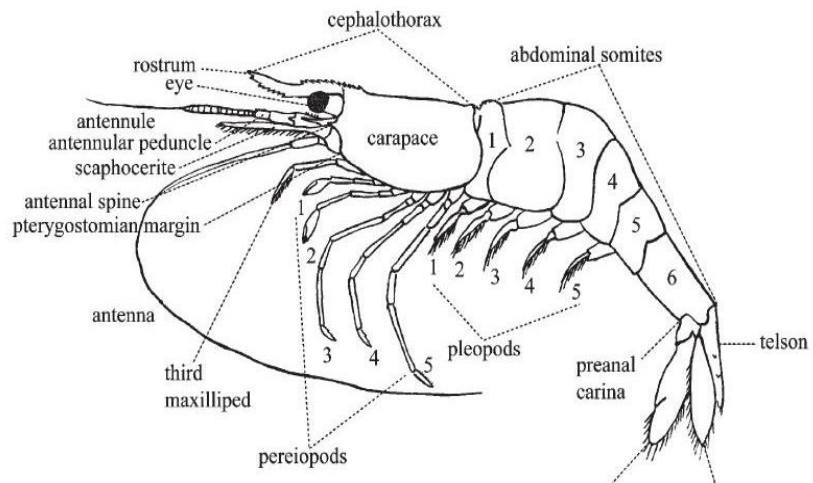


Figure 1. Morphology of shrimp

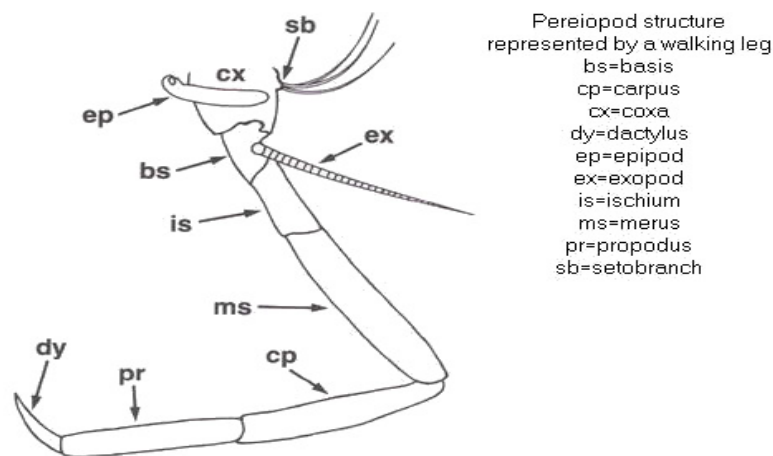


Figure 2. Morphology of pereopods in shrimp

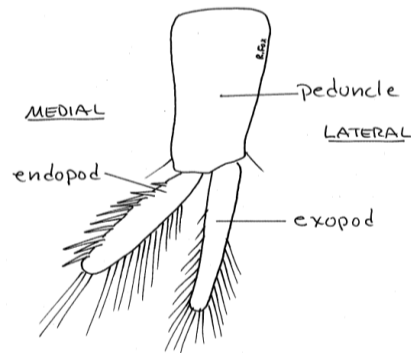


Figure 3. Morphology of pleopods in shrimp

CRAB

The axes and orientation, abdomen, carapace and limb structures are used to describe major morphological features as well as these characteristics are often used to distinguish among species.

Axes and Orientation

Axes and Orientation may be following:

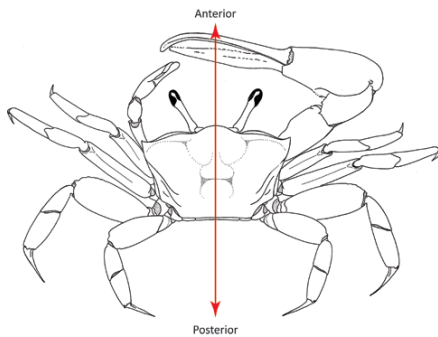


Figure 4. Front to-back

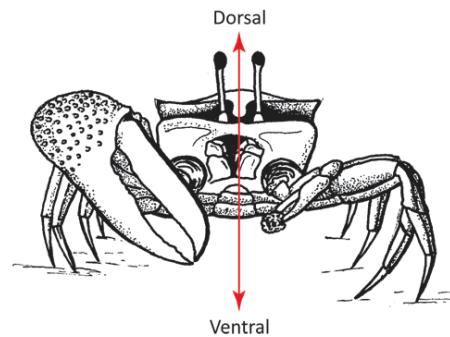


Figure 5. Top-to-bottom

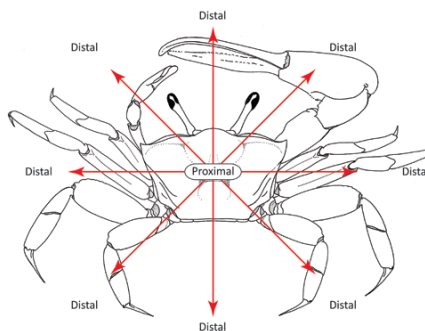


Figure 6. Center-to-exterior

Abdomen

In true crabs, the abdomen is normally wrapped under the body and pressed against the thorax. The width of the abdomen generally varies quite a bit, between male and female crabs. In males, the abdomen is relatively narrow. In females, the abdomen is substantially wider and round, taking up most of the ventral surface of the crab. The sex organs (gonopods and gonopores) are located on the hidden side of the abdomen, which can be moved away from the body during mating.

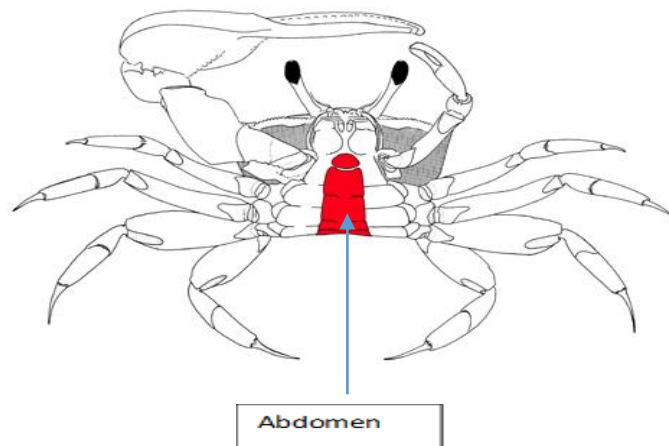


Figure 7. Abdomen

Limbs

Crabs have ten limbs. The first two limbs at the front of the crab with the claws are known as chelipeds; the other eight are walking legs (ambulatories).

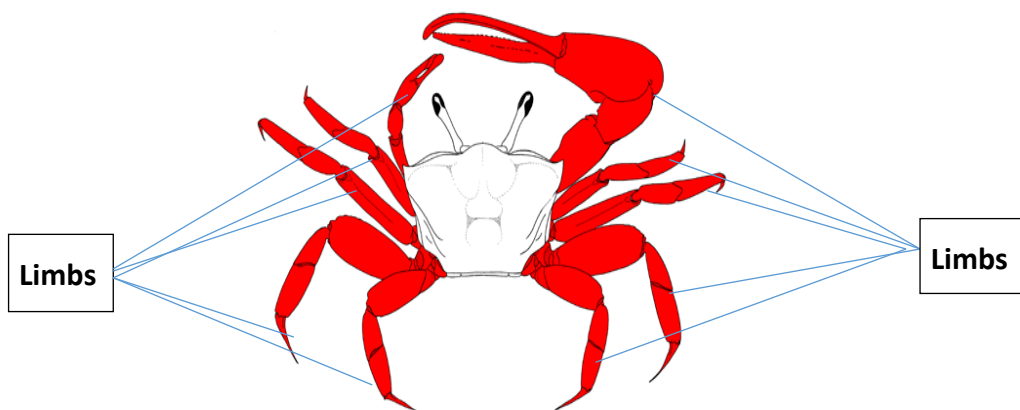


Figure 8. Limbs

Lobster

The body of a lobster consists of two recognizable parts: the cephalothorax with its appendages. The abdomen of lobster consists its appendages.

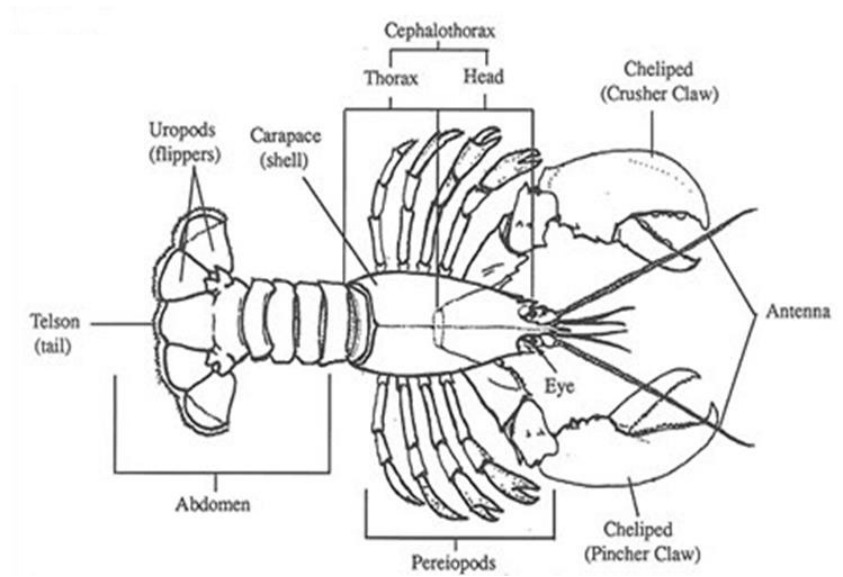


Figure 9. Dorsal view

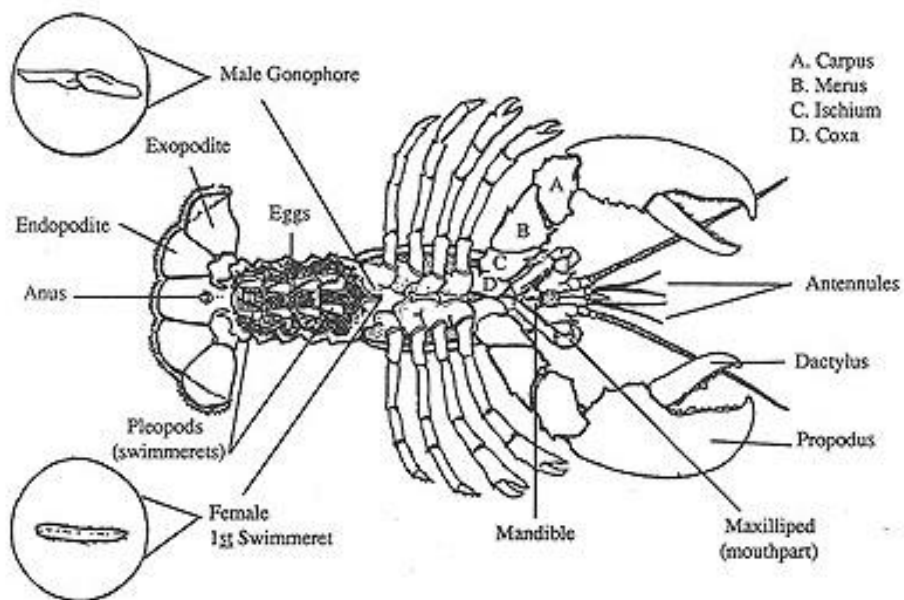


Figure 10. Ventral view

Mollusc

All organisms of mollusc belong to Phylum Mollusca. A great variety of organism are available in marine waters. This phylum can be segregated into seven classes: Aplacophora, Monoplacophora, Polyplacophora, Bivalvia, Gastropoda, Cephalopoda, and Scaphopoda. But, commercially important molluscan fisheries come under mainly in three class such as Bivalvia, Gastropoda and Cephalopoda.

Bivalvia

Bivalvia is also referred as Lamellibranchiata and Pelecypoda. Organism of bivalvia has shells in two halves. It has adductor muscle for opening and closing the shell. Bivalvia includes the clams, oysters, cockles, mussels and scallops.



Figure 11. Bivalvia

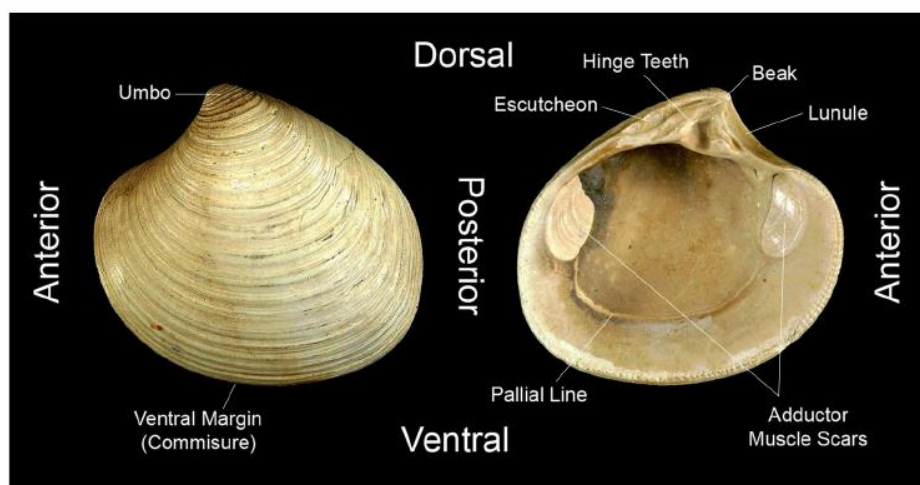


Figure 12. Different views

Gastropoda

Gastropoda is also known as univalves. They have coiled shell. They can live in the ocean, fresh waters, and land.



Figure 13. Gastropods

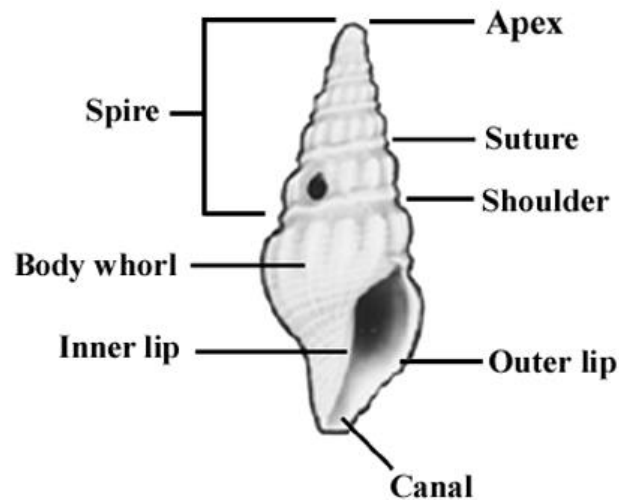


Figure 14. Parts of gastropods

Cephalopod

Cephalopod consist of head, muscular foot, visceral mass and mantle. Mantle is a sheet of tissue that covers the body and secretes a calcareous shell. These exclusively marine animals are characterized by bilateral body symmetry. Octopus, squid and cuttlefish are commercially important organisms in this class.

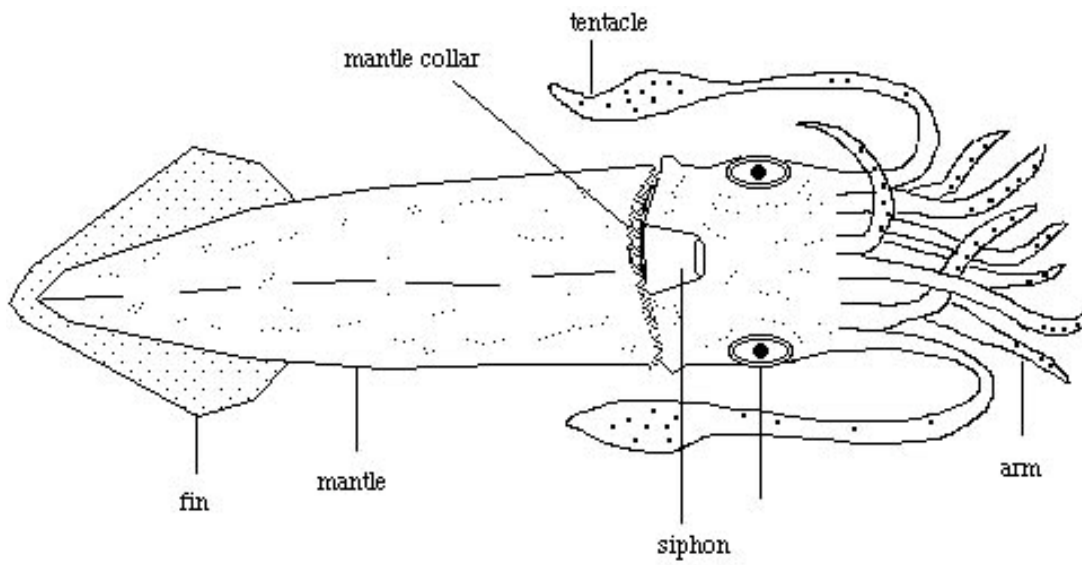


Figure 15. Parts of Cephalopod

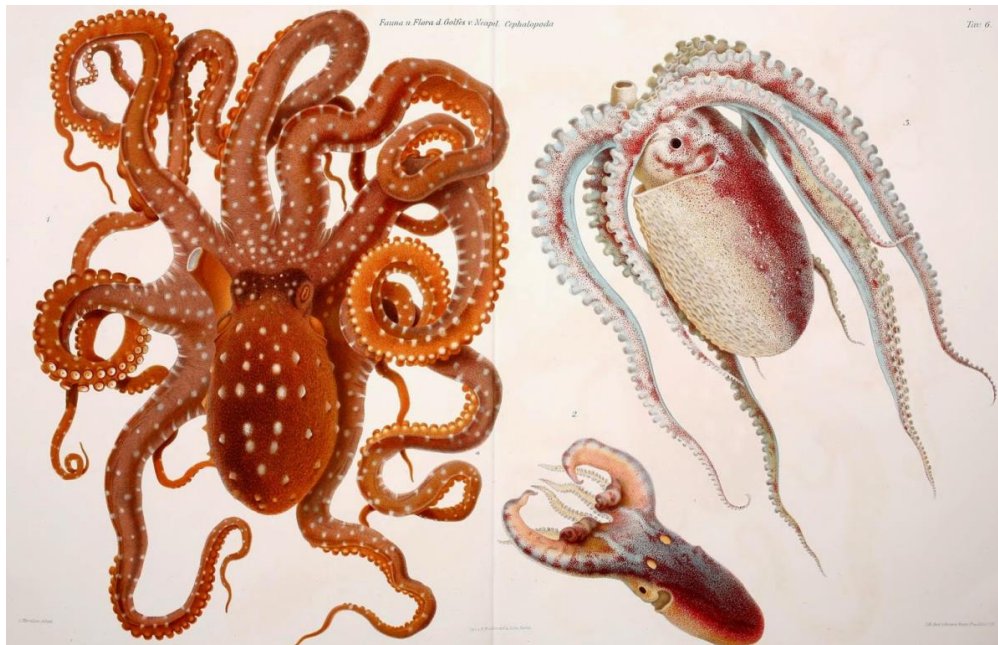


Figure 16. Octopus



Figure 17. Squid



Figure 18. cuttlefish