

Aim: To identify and study the coral.

Requirements: Coral specimens or photographs.

Background information : Corals belong to phylum Coelenterata (Cnidaria). Coelenterates exist in 2 forms viz. polyp and medusa. Polyps are cylindrical, elongated individuals while medusae are umbrella shaped. Corals are marine, mostly colonial, polypoid coelenterates which secrete calcareous hard skeleton. They belong to class Anthozoa or Hydrozoa. Some corals grow into massive solid structures or form large and continuous branched colonies which are referred to as coral reefs. It provides an ideal habitat for sponges, molluscs, echinoderms and ornamental fishes. Since the corals have medicinal or decorative value in the international market, they have been overexploited leading to destruction of reefs and extinction of some of the species.

Example 1. Brain Coral (Genus: *Meandrina*)

- 1) The distinguishing feature of this anthozoan coral is the presence of ridges and grooves which resemble the mammalian brain, hence called brain coral. It occurs in the Indian ocean, West Indies and Florida.
- 2) It is a giant colony of round masses of limestone and may measure at times up to 2.5m in diameter.
- 3) There is an accumulation of several generations of polyps which in fact form brain coral.
- 4) The polyps remain confluent, mingled and closely set while alive.
- 5) Polyps contract during day time when they are dormant while they are agile at night in extended form.

Example 2. Organ pipe coral (Genus : *Tubipora*)

- 1) It is a highly calcified anthozoan comprising of compact red coloured vertical tu...

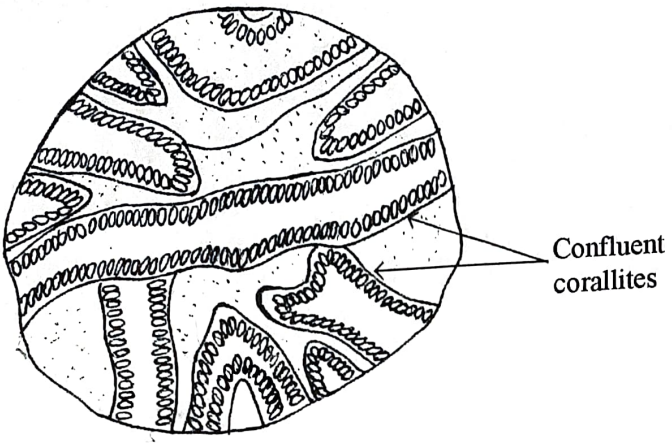


Fig : 2.1 Brain coral

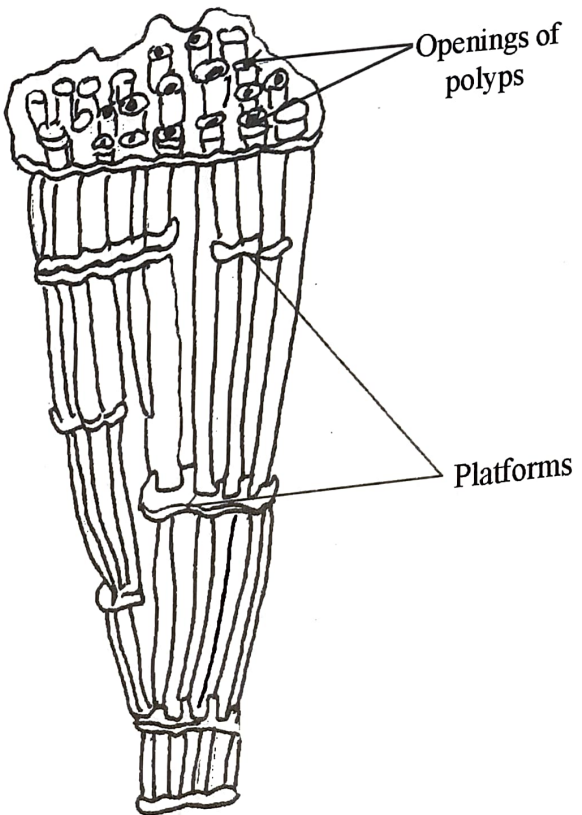


Fig : 2.2 Organ pipe coral

Draw a diagram as seen in the specimen photograph

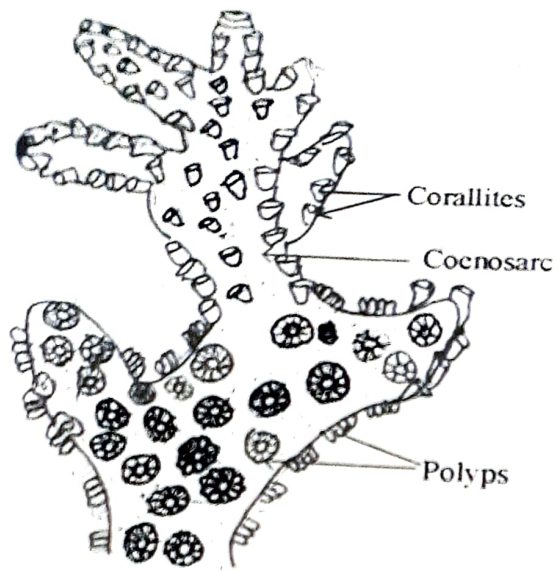


Fig : 2.3 Staghorn coral

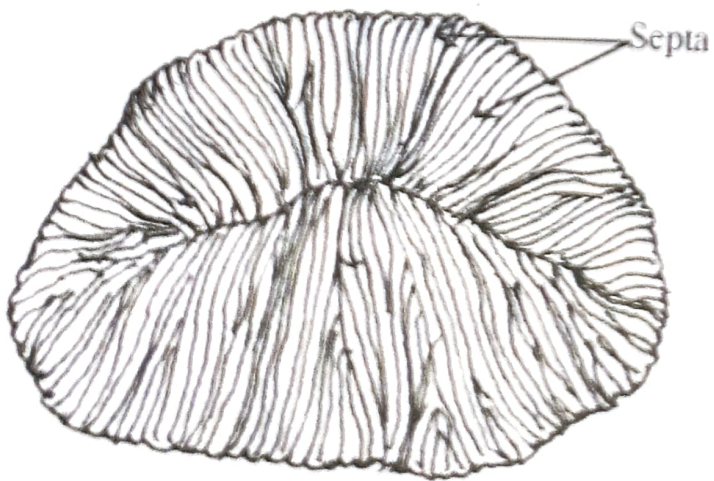


Fig : 2.4 Mushroom coral

Example 3. Staghorn Coral (Genus: *Madrepora*)

- 1) It is a colonial marine anthozoan mainly found in Australia, West Indies and India it is found in Arabian Sea.
- 2) The colony is branched resembling antlers and therefore called staghorn or horn coral.
- 3) It is made up of small polyps with perforated cylindrical cups.
- 4) The gastro-vascular cavity of each polyp is divided into bilaterally arranged compartments by septa or mesenteries.
- 5) Terminal polyps bear six tentacles while lateral polyps bear twelve tentacles.
- 6) This coral is the main contributor in the formation of coral reefs.

Example 4. Mushroom Coral (Genus: *Fungia*)

- 1) It is a solitary, free-living, marine polyp.
- 2) It is a mushroom shaped anthozoan and occurs in warm seas usually in Gulf of Aden.
- 3) It is large, disc-like, convex on the upper surface and concave on the lower surface.
- 4) Septa are connected together by calcareous rods called synapticula.
- 5) It undergoes budding continuously throughout life thus forming a plate coral.
- 6) Mushroom coral is therefore also referred as plate coral.

PRACTICAL - 3

A. SYMBIOSIS

Aim: To study symbiotic association in animals.

Requirements: Authorized specimens/photographs

Background Information: An interaction between different species in which both the species are benefited is called symbiosis. The animals which show such relationship are called symbionts.

Example 1. Termites and Trichonympha

1. Termites are colonial, polymorphic, social insects.
2. They feed on wood particles which contain cellulose but do not secrete the required enzyme cellulase needed for digesting it.
3. So they form an obligatory relationship with a protozoan called Trichonympha which lives in its gut.
4. Trichonympha is a multiflagellated, anaerobic protozoan which secretes the enzyme cellulase. It hydrolyses complex sugars and cellulose and thus provides nutrition to the termite.
5. The protozoan in turn gets food and shelter in the intestine of termites.
6. Since both partners are benefitted from this association, it is a symbiotic relationship.

Example 2. Hermit crab and Sea anemone

1. occupies empty shells of molluscan gastropods and lives in them for protection to the shell

Fig : 3a.1

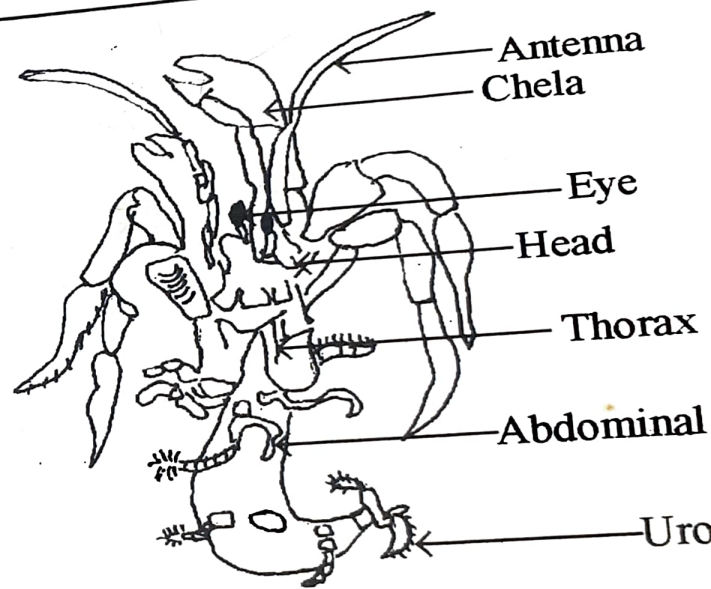
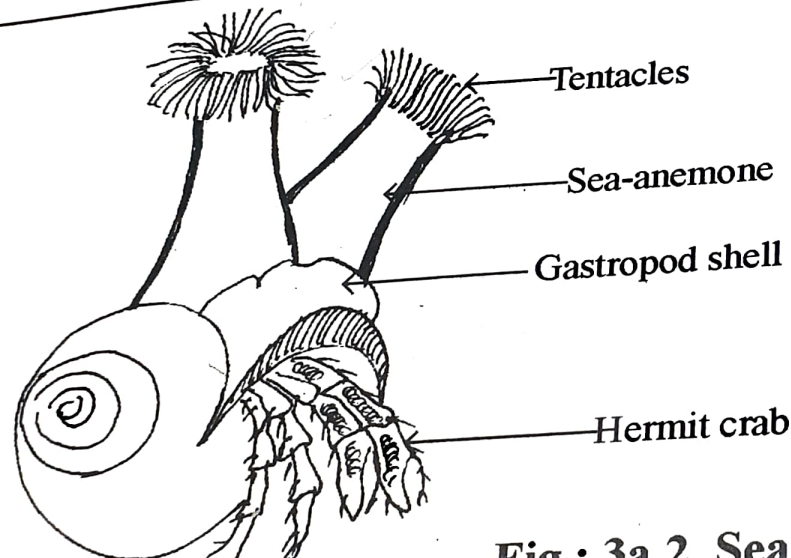
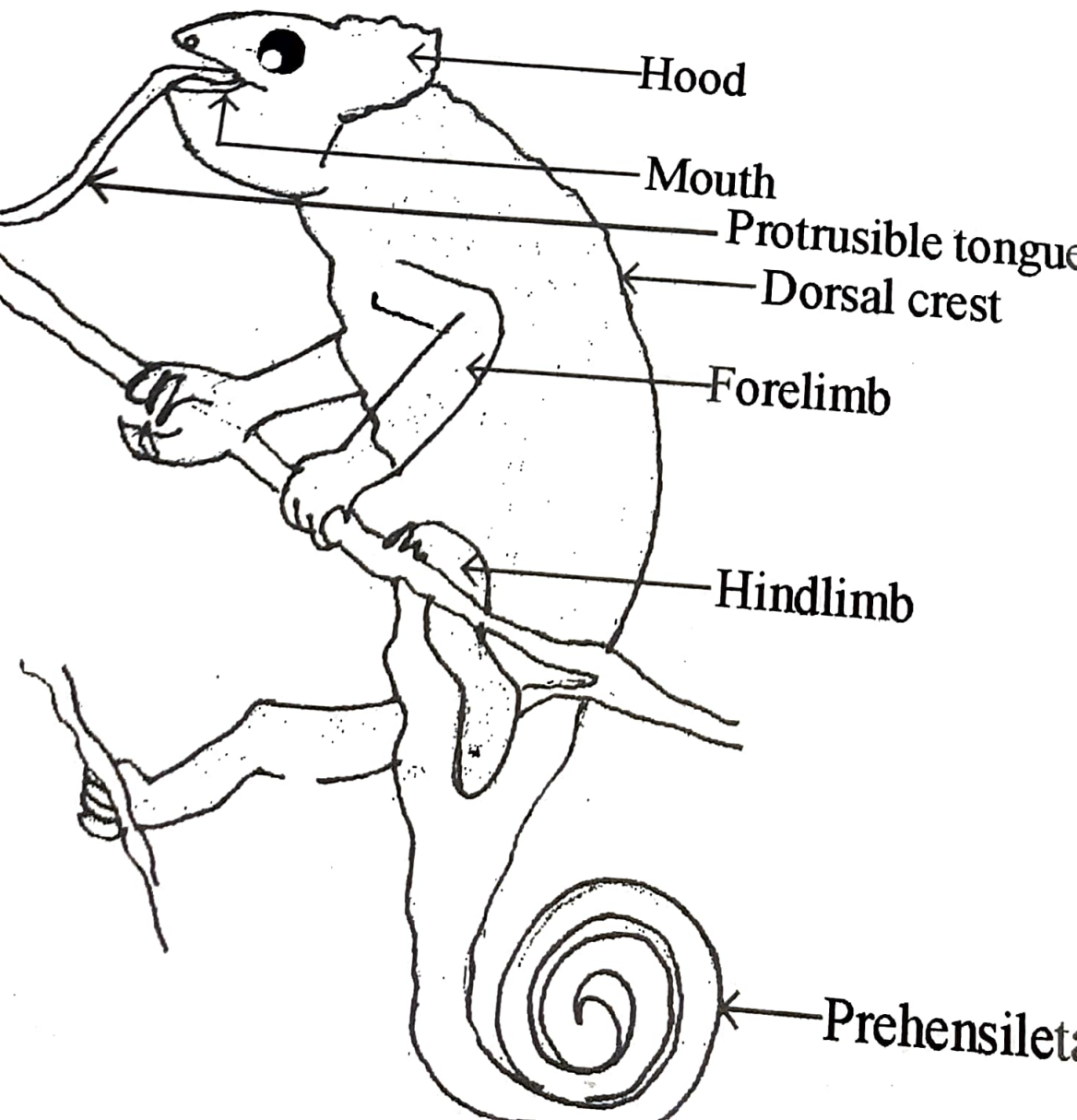


Fig : 3a.2 Sea anemone & Hermit crab

Fig : 3b.1 Leaf insect



PRACTICAL – 3

B. CAMOUFLAGE

Aim: To study camouflage as an adaptation of animal behaviour.

Background Information: ^{Camouflage of plants} Camouflage is an adaptation by which an animal is able to hide himself from predator and prey. It increases the animal's chance of survival and reproducing. Camouflage is used by organisms to blend with their surroundings and mask their location, identity and movement.

Example 1. Leaf insect.

1. This insect is green coloured and resembles the green leaves of plants.
2. It shows a high degree of camouflage as body, wings and legs are flattened like leaves of plants.
3. The wings are vestigial and become veined like leaf veins.
4. This insect resembles and appears like foliage, so that they almost are invisible and are protected from their enemies.
5. To further confuse the predator this insect moves in a manner similar to a real leaf being blown by wind.
6. An example of leaf insect found in India is *Phyllium scythe*.

Example 2. Chameleon

1. Chameleon is a tree dwelling lizard with laterally compressed body.
2. It uses camouflage to hide from predators, to hide when it stalks prey and during courtship and mating rituals.
3. It is capable of changing the colour of its skin according to the surrounding.
4. The skin has numerous chromatophores which can alter the amount of exposed pigment the skin so that animal appears darker or lighter matching with the background.
5. The colour of skin can change to green, yellow, brown or even black.