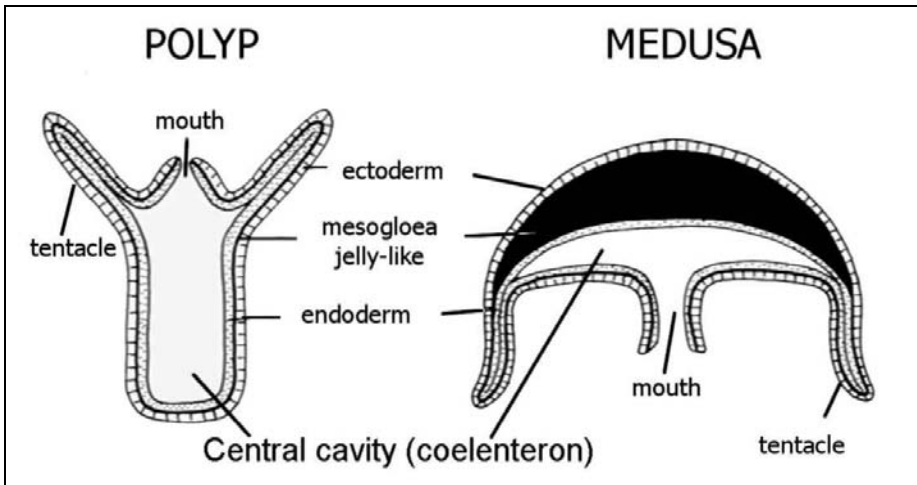


## PHYLUM: CNIDARIA (COELENTERATA)

Cnida = nettle (stinging)

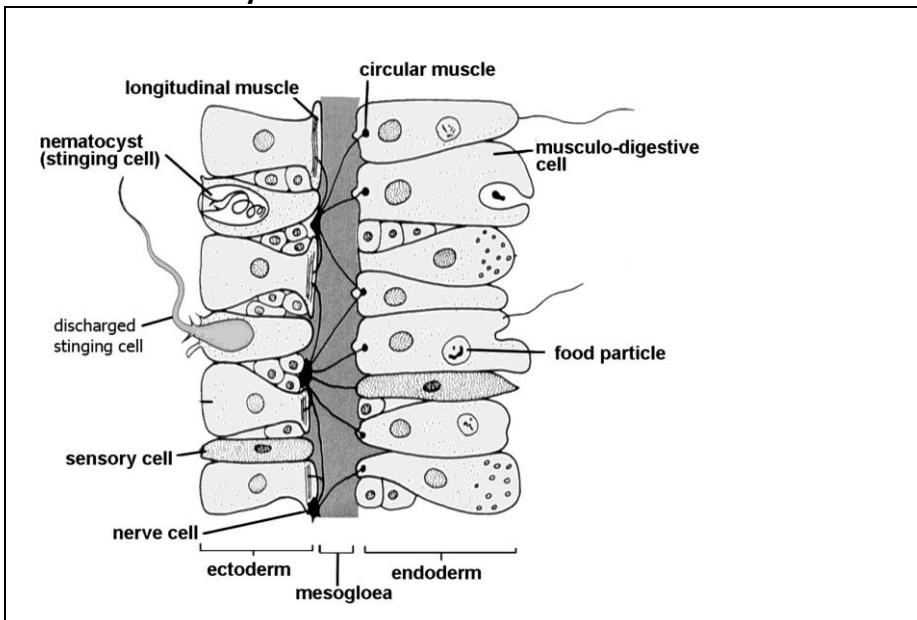
### CHARACTERISTICS

- Multicellular animals.
- Body is essentially a sac with two cell layers in the body wall and a single opening, the mouth.
- The mouth is surrounded by tentacles, which contain stinging cells (nematocysts) that assist in capturing the prey.
- They are built on a circular body plan and are radially symmetrical.
- There are two common forms: (also see next section figure 180 A)
  - the **polyp** which attaches itself to the rock for example the sea anemone and
  - the **medusa** which is bell shaped and floats mouth downwards in the water for example the jellyfish.



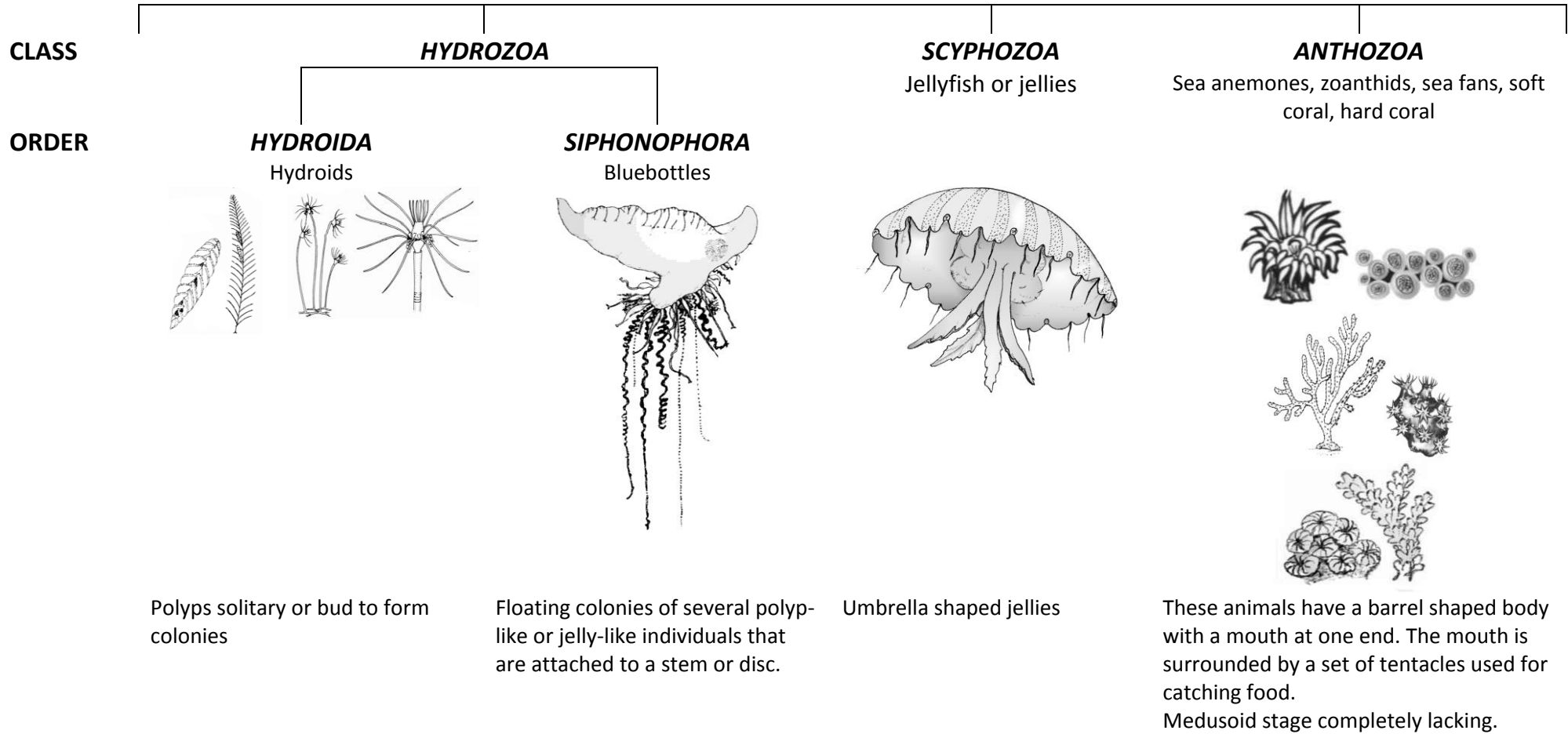
Living Shores: Figure 180 A

### Detail of the body wall of a cnidarian



Living Shores: Figure 180 B

**PHYLUM CNIDARIA**



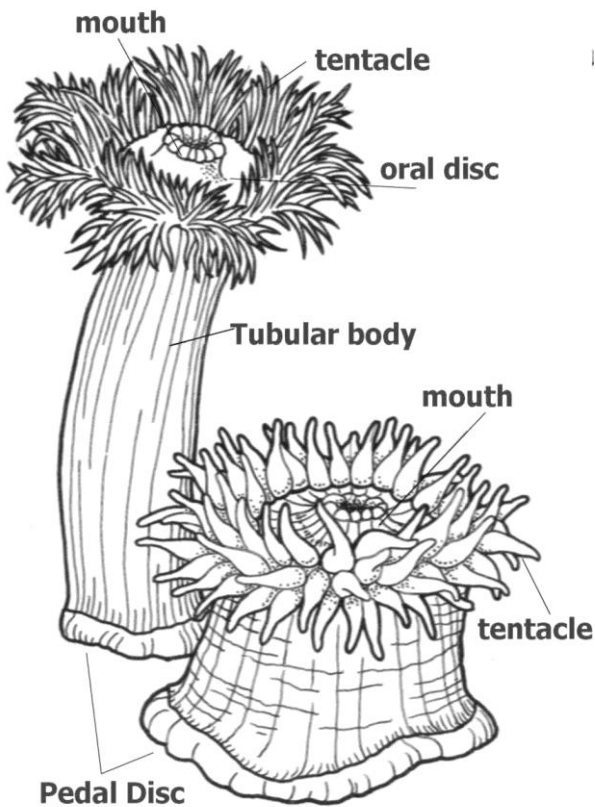
## CLASS: ANTHOZOA



### ANEMONES

#### Habitat

Some anemones, such as the plum anemones live in small holes and cracks in intertidal zone in rock pools. Others live in caves and on reefs below the low tide. Sandy anemones crowd into sandy gullies.



#### Description

Anemones are simple solitary polyps. They look like brightly coloured flowers and show a great variety of sizes and colours. Their bodies' look like thin sacs filled with water – like water balloons.

Its mouth is surrounded by tentacles and a curtain-like pharynx that hangs down inside the body and acts like a valve. This allows food to enter without water loss.

When exposed to air they withdraw their tentacles, preventing them from drying out or being damaged.

#### Feeding

They feed on small animals such as shrimps and fish, which they catch with the aid of the stinging cells in their tentacles. Many stinging cells (nematocysts) contain venomous liquid that subdues the prey. Some types of stinging cells are barbed and sticky, some actually wrap around the prey.

#### Predators

They are eaten by some fish e.g. Butterfly fish and by some nudibranchs.

#### Did you know?

Nemo and his dad Marlin – two clownfish- are exceptions to this, they live symbiotically with the giant anemone. The clownfish – also known as anemone fish - shelter amongst the tentacles of the sea anemone and are protected from the stings by a special coating of slime.



Clownfish living amongst the tentacles of a sea anemone



## SOFT CORAL

### Habitat

Soft coral is abundant in sub-tidal zones with a wide depth range off both the west and East Coast.

### Description

They form colonies of polyps with eight feathery tentacles and are sometimes brilliantly coloured to warn of their stinging capabilities. No solid limestone skeleton.

### Feeding

They catch **zooplankton** (small microscopic animals) with the stinging cells in their tentacles.

### Predators

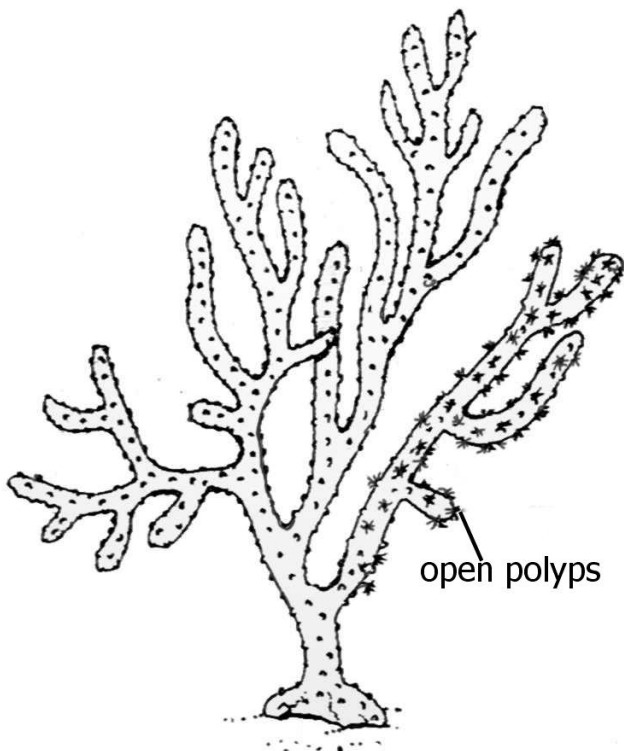
Soft corals cannot be very nutritious because much of their bulk is made up of watery mesoglea (jelly) and their energy content is among the lowest of all animals.

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## SEA FANS (Gorgonians)

### Habitat

Sea fans occur in deeper water growing in caves, on rocky reefs and in crevices where they are protected from the force of waves. They are common around the Cape Peninsula and along the south Coast.



### Description

The branched tree-like, colony has a stiff central rod made up of a flexible material known as ***gorgonia***. They are usually coloured white, pink, orange or red. Tiny cup-like polyps are visible on the branches when they are feeding.

### Feeding

The tentacles catch minute food particles drifting in the water.

### Predators

Free-living anemones.



## HARD CORAL

### Habitat

Hard or stony corals grow best in clear, warm waters and their occurrence is limited to the depth to which light can penetrate the water for the algae that are found associated with the hard coral. Coral growth is seldom found deeper than 60 metres.

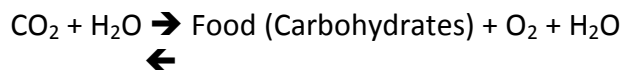
### Description

The polyps of corals produce a limestone skeleton, secreted by the outer layer of the body wall. A few hard corals occur around the Cape for example Noble and Cup coral. Hard corals function as the main builders of coral reefs. As hard corals lay down more of their underlying limestone or calcium carbonate skeleton the reef grows. They are also important in providing both food and shelter to a large number of reef organisms.

### Feeding

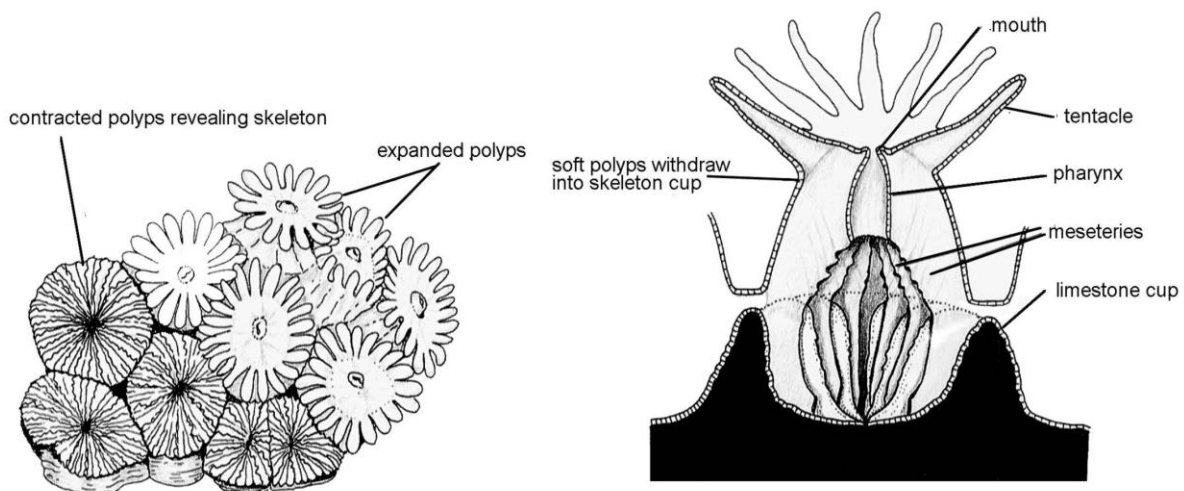
Colonial corals cannot always obtain enough food from the water and in order to survive they have great numbers of microscopic algae (*zooxanthellae*) in their body walls. The algae use *sunlight* to make food for themselves and their hosts by means of photosynthesis. Through digestion, coral polyps release these nutrients to the algae. Coral and algae then apparently cycle these nutrients between them, reducing nutrient loss to the water.

The coral also protects the algae. This relationship is called **mutualism** as both these organisms benefit from this arrangement.



### Predators

Some species of fish such as parrotfish and butterfly fish, as well as some sea snails and sea slugs, feed on corals.



Group of coral polyps some expanded some contracted.

Section of a coral polyp showing internal structure and skeleton.

Living Shores: Figure 198