

B. Sc First year (Honours)

Paper-1

Dr.Mirza Imteyaz Baig

Coral and Coral reefs

Coral organisms, called polyps, can live on their own, but are primarily associated with the spectacularly diverse limestone communities, or reefs, they construct.

Coral polyps are tiny, soft-bodied organisms related to sea anemones and jellyfish. At their base is a hard, protective limestone skeleton called a calicle, which forms the structure of coral reefs. Reefs begin when a polyp attaches itself to a rock on the sea floor, then divides, or buds, into thousands of clones. The polyp calicles connect to one another, creating a colony that acts as a single organism. As colonies grow over hundreds and thousands of years, they join with other colonies and become reefs. Some of the coral reefs on the planet today began growing over 50 million years ago.

In tropical seas, many types of coral animals and marine organisms such as coral polyps, calcareous algae, shell-forming creatures and lime-secreting plants live in large colonies. Though they are very tiny creatures, their ability to secrete calcium carbonate within their tiny cells has given rise to a particular type of marine landform. The land forms are popularly known as coral reefs. Coral reefs have numerous species of many forms, colours, and shapes.

Under favourable conditions, the colony of corals grows in profusion just below the water level. Among the numerous organism that forms the part of the coral habitat, the polyps are the abundant species. Each polyp resides in a tiny cup of coral made of calcium carbonate and when a polyp dies the cup cement together to form the reef structure.

There are also non-reef building species such as the 'precious corals' of the Pacific Ocean and the 'red coral' of the Mediterranean Sea which may survive in the colder and even the deeper waters. As a rule, they thrive well only in the warmer tropical seas.

There are two major types of corals: hard corals and soft corals, such as sea fans and gorgonians. Only hard corals build reefs. While the majority of coral reefs are found in tropical and sub-tropical waters, there are also deep water corals in colder regions. According to the United Nations Environment Programme, there are more cold-water

coral reefs worldwide than tropical reefs. The largest cold-water coral reef is the Rost Reef off Norway.

Types of Coral Reefs:

The three main types of coral reefs include,

- **Fringing Reefs:** Fringing reefs are found along the coastline of the islands and continents. They are the most common type of reef structure found in the ocean. Sometimes they are separated by a shallow lagoon. Fringing reefs develop on the wave cut platforms along the continents and Islands. Their outer edge grows rapidly due to the availability of oxygenated water and food supply by constant wave currents.
- **Barrier Reefs:** A barrier reef is separated from the coast by a much wider and deeper channel or lagoon. The reef is partially submerged. Where it lies above the water level. The barrier reefs have narrow gaps at several places to allow the water from the enclosed lagoon to return to the open ocean. Such gaps are very useful for shipping and provide the only entrances for ships to enter or leave the lagoon. The best-known barrier reef is the Great Barrier Reef off the coast of Queensland, Australia. It is 1200 miles (around 2000 km) long, separated from the coast by a channel 100 miles (160 km) wide in places and over 200 feet (60 m) deep.

Atolls: Atolls are similar to barrier reefs except that they are circular, enclosing a shallow lagoon without any land in the centre. The encircling ring is usually broken in a few places to allow the free flow of water. Some of the large atolls include Sudadiva in the Maldives, Bangaram atoll in Lakshadweep.

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