Chapter 1

The Reef Builders—Hard Corals

What we commonly call corals includes a variety of types of organisms that biologists refer to as coelenterates or cnidarians? One of the main physical characteristics of this group is that they all have a single body cavity and opening, a **coelenteron**, which doubles both for the ingestion of food and for the release of digested wastes. Another characteristic is that corals and other coelenterates have stinging cells, or **nematocysts**, that are normally carried within special cells on the animal's surface.

Animals known commonly as hard or stony corals are primarily responsible for the construction of modern coral reefs in that they initiate reef construction, provide the basic framework of reefs, and shelter for numerous other organisms. The breakdown of their skeletal material after death provides material for redistribution and consolidation into the reef framework. Hard corals are one of lateral branches of coelenterates belonging to the order **Scleractinia**. The reef-building corals are colonies of replicated polyps, each with a structure similar to that of an anemone, but with two important additions; they build a hard skeleton of calcium carbonate and their tissues contain single celled symbiotic plants called **zooxanthellae.**

Reef-building corals are primitive marine animals with a simple body structure. At the top of each individual coral, called a **polyp**, is a crown of **tentacles** (**Figure 1**) arranged in groups of six, which wave in the water and act as a food trap. Tentacles give coral the flower-like appearance which confused naturalists until the eighteenth century and still makes some divers and swimmers believe corals are plants. Only if you see these innocent-looking but deadly carnivores in the act of catching and paralyzing live prey is their animal nature obvious.

Extended polyps have an anemone-like appearance. In the middle of the tentacles is a flat **oral disc** and in its centre of the **mouth** (**Figure 2**), a slit-like aperture which is the animal's only opening to the environment. Beneath it lays a narrow channel, the **stomodeum**, which in turn leads to a single large body cavity, the coelenteron's.