



Domain	Eukaryota
Kingdom	Animalia
Phylum	Cnidaria
Subphylum	Anthozoa (corals), Medusozoa (jellyfish)

CNIDARIANS

# Corals

470 MYA – PRESENT

Corals are marine animals that belong to the phylum Cnidaria, which also includes jellyfish, bluebottles, and anemones. Corals belong to one of three orders: rugosa, tabulata, and scleractinia. Only scleractinia are extant, and form most of the world’s modern coral reefs, including Australia’s Great Barrier Reef. Scleractinians usually live in colonies with thousands of individual polyps together in one head. Polyps are

usually fairly small and have a mouth surrounded by tentacles that have stinging cells (nematocysts) for capturing prey. Tabulata are an extinct group of colonial corals composed of polyps less than a few millimetres across. Rugosa (also called horn corals) are another extinct group, which were either colonial or solitary. Rugosa polyps were comparatively large, up to a few centimetres wide.

## Fossil Record

Tabulate corals, from the order Tabulata, evolved in the early Ordovician and rugose corals evolved in the middle Ordovician. Both went extinct during the Permian–Triassic extinction event 252 million years ago. It was not until the middle Triassic that scleractinia evolved.

All corals produce a skeleton of calcium carbonate.

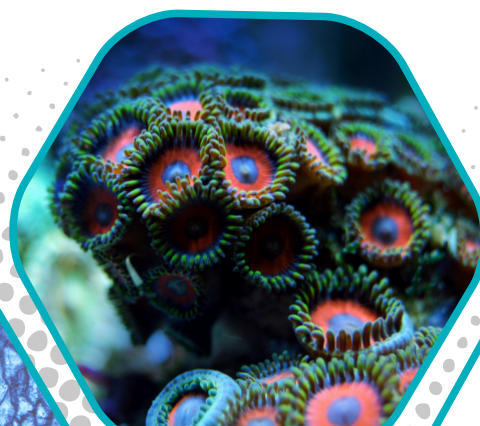
## Habitat and Lifestyle

Extinct rugosa and tabulata corals lived in similar environments to extant scleractinia which have two main lifestyles – building reefs or living alone. Reef building corals live in warm, shallow tropical waters in a symbiotic relationship with zooxanthellae (see Dinoflagellates) that provide energy for the coral from photosynthesis.

Corals that do not build reefs do not contain zooxanthellae, and have a wider geographical range, extending from the tropics to near the poles. These individuals can live at greater depths, often down to several thousand metres.



Colonial rugose coral, *Spongophyllum giganteum*, Devonian (about 390 million years old), New South Wales. Image from Jim Frazier.



Close up of a soft coral colony. Image from marcelokato, Pixabay.

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## DID YOU KNOW

Measurement of the fine growth lines on Devonian rugosa corals has revealed interesting facts about the time it takes the Earth to rotate on its axis. Today the Earth rotates on its axis 365.25 times every year, but that hasn’t always been the case. Measurement of rugose corals growth lines show that a year during the Devonian was about 396 days long.

This means that the rotation of the Earth on its axis has slowed down over the past 400 million years!

