

Preface

A coral reef is an underwater ecosystem characterized by reef-building corals. Reefs are formed of colonies of coral polyps held together by calcium carbonate. Most coral reefs are built from stony corals, whose polyps cluster in groups.

Coral belongs to the class Anthozoa in the animal phylum Cnidaria, which includes sea anemones and jellyfish. Unlike sea anemones, corals secrete hard carbonate exoskeletons that support and protect the coral. Most reefs grow best in warm, shallow, clear, sunny, and agitated water. Coral reefs first appeared 485 million years ago, at the dawn of the Early Ordovician, displacing the microbial and sponge reefs of the Cambrian.

Sometimes called rainforests of the sea, shallow coral reefs form some of Earth's most diverse ecosystems. They occupy less than 0.1% of the world's ocean area, about half the area of France. Yet, they provide a home for at least 25% of all marine species, including fish, mollusks, worms, crustaceans, echinoderms, sponges, tunicates and other cnidarians. Coral reefs flourish in ocean waters that provide few nutrients. They are most commonly found at shallow depths in tropical waters, but deep water and cold water coral reefs exist on smaller scales in other areas.ⁱ

In the present book, twelve typical literatures about coral reef published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on coral reef. We hope this book can demonstrate advances in coral reef as well as give references to the researchers, students and other related people.

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ⁱ https://en.wikipedia.org/wiki/Coral_reef