

The great Australian barrier forms a broken line, twelve hundred and fifty miles in length, lying off the coast from the Northern Cape to the tropical circle.

The seas outside of the lines of coral reef are often unfathomable within a short distance of the line of breakers.

In the further description of reef-grounds, or reef-formations, there are several distinct subjects for consideration, as is obvious from the preceding remarks. These are—

1. *Outer reefs*, or reefs formed from the growth of corals exposed to the open seas. Of this character are all proper barrier reefs, and such fringing reefs as are unprotected by a barrier.

2. *Inner reefs*, or reefs formed in quiet water between a barrier and the shores of an island.

3. *Channels*, or seas within barriers, which may receive detritus either from the reefs, or from the shores, or from both of these sources combined.

4. *Beaches and beach formations*, produced by coral accumulations on the shores through the action of the sea and winds.

The outer and inner reefs, channels, and beaches, act each their part in producing the coral formations in progress about islands.

## II. OUTER REEFS.

The barrier and other outer reefs are always submerged at high tide, except where elevated at surface by accumulations of beach sands. The level is generally that of about one-third tide. The coral rock is built up by the agencies at work to this level, and hence the existence of the broad platform-like top of the barrier. The surface is however not even, for there are many pools of water over it, even at the lowest tides, especially toward its outer limits, where corals of various kinds are growing luxuriantly, with fit associates of shells, star-fishes, echini, holothurians with their large flower-bearing heads, sponges, corallines and sea-weeds, making scenes of rare beauty. The growing corals are, however, most abundant