

CHAPTER V.

ON CHANGES OF LEVEL IN THE PACIFIC OCEAN.

I. EVIDENCES OF CHANGE OF LEVEL.

IT has been shown that atolls, and to a large extent other coral reefs, are registers of change of level. From the evidence thus afforded the bottom of a large part of the Pacific Ocean is proved to have undergone great oscillations in recent geological time. In this direction, then, we find the grandest teachings of coral formations. In treating the subject we necessarily bring into connection with it evidences of change of level from other sources. The proofs of change of level here considered are the following:—

A. Evidences of elevation.

1. *The existence on coral or other islands of patches of coral reef, and deposits of shells and sand from the reefs, above the level where they are at present forming.*

The coral reef-rock has been shown occasionally to increase, by growth of coral, to a height of four to six inches above low-tide level when the tide is but three feet, and to twice this height with a tide of six feet. It may therefore be stated as a general fact, that the limit to which coral *may grow* above ordinary low tide, is about one-sixth the height of the tide, though it seldom attains this height. Its existence on an island at a higher level would be proof of an elevation of the land.