

About cavities over the surface, the rock is usually very compact to a depth of half an inch or more, almost horny in texture, owing to the infiltration of lime from the waters often occupying them; but this is an exceptional variety of the rock. A particular description of these bluffs is given in the author's report on the geology of the Hawaiian Islands.

One of the most interesting facts observed in connection with these drift hills, is the absence of shells, and even of fragments of shells or corals sufficiently large to be referred to either of these sources. The material is sand, without organic remains, although situated on shores off which, within a hundred yards, there are shells and corals innumerable. The grinding action of the waves and winds reduces all the coral fragments and shells, by mutual trituration, to a fine beach sand.

Oolitic beds appear to be confined to the superficial formations of a reef, that is, to the beach and wind-drift accumulations. No example has come under the notice of the author of oolite constituting the foundation rock of a reef or island. It is possible that such beds might in some cases be the basement rocks to a considerable depth below; for a reef-island might subside so much more slowly than coral formations grow and accumulate, that a succession of beach-made beds would be produced even to a great thickness. Yet the probability is that the subsidence would sink the surface beneath the water, and put an end to beach and wind-drift work. The beach slope of 6° to 8° is an almost constant mark of beach-made beds.

VIII. THICKNESS OF REEFS.

We have considered in the preceding pages the peculiarities of form and structure characterising the reef formations bordering islands and continents, and their influence upon the inclosed land. Could we raise one of these coral-bound islands from the waves, we should find that the reefs stand upon the submarine slopes, like massy structures of artificial masonry; some forming a broad flat platform or shelf ranging around