

Hunt, is not here made the basis of a calculation, because we have not the specimen for examination, and it is not certain that the diameter stated by him was not the horizontal diameter.

These estimates from the *Mæandrina clivosa* and *Oculina diffusa* have this great source of uncertainty, that the growth of the groups may not have been begun in the first year of the fourteen. Further, the corals obtained by Major Hunt near Fort Taylor, Key West, may not have been as favourably situated for growth as those of the outer margin of the reef. Again, we have made no allowance for the carbonate of lime that is supplied by the waters by way of cement, supposing that this must come originally, for the most part, from the reef itself. Besides, we have supposed, above, all the coral reef-rock to be solid, free from open spaces; and, further, it is not considered that much of it is a coral conglomerate, in which the fragments have their original porosity.

On the other side, we have not allowed for loss of débris from the reef grounds by transportation into the deep seas adjoining, believing the amount to be very small.

Whatever the uncertainties, it is evident that a reef increases its height or extent with extreme slowness. If the rate of upward progress is one-sixteenth of an inch a year, it would take for the addition of a single foot to its height, one hundred and ninety years, and for *five feet a thousand years*.

It is here to be considered, that the thickness of a growing reef could not exceed twenty fathoms (except by the few feet added through beach and wind-drift accumulations), even if existing for hundreds of thousands of years, unless there were at the same time a slowly progressing subsidence; so that if we know the possible rate of increase in a reef, we cannot infer from it the actual rate for any particular reef; for it may have been very much slower than that. Without a subsidence in progress, the reef would increase only its breadth.

In order to obtain direct observations on the rate of increase of reefs, a slab of rock was planted, by the order of Captain Wilkes, on Point Venus, Tahiti, and by soundings, the depth