reduced, if we would deduce the rate of growth of the reef; because a large part of the reef-grounds—that is, of the region of sounding receiving the coral débris—is bare of growing corals. This is the case with much the larger portion of all lagoons and channels among reefs, the bottoms of which, as already explained, are often sandy or muddy, and to a great extent so because too deep for living corals; and it is true even of the coral plantations, these including many and large barren areas. These unproductive portions of reef-grounds constitute ordinarily at least two-thirds of the whole; and making this allowance, the estimate of one-fourth of an inch a year would become one-twelfth of an inch.

Again, shells add considerably to the amount of calcareous material, perhaps one-sixth as much as the corals; but against this we may set off the porosity of the coral.

The rate of growth of the *Mœandrina clivosa*, stated on page 98, would make the rate of increase in the reef very much less rapid. The specimen—the growth of fourteen years—weighs 24 oz. avoirdupois, and has an average diameter of 7 inches. This gives for the amount of calcareous material—the specific gravity being 2·523 (p. 75)—16·45 cubic inches; which is sufficient to raise a surface seven inches in diameter to a height of 0·428 inch; and consequently the average *yearly* increase would be about 1-33d of an inch. Allowing for two-thirds of the reef-ground being unproductive in corals, the rate of increase for the whole would become 1-100th of an nch. But supposing that shells add one-fourth as much as the corals to the reef material, the rate of increase would become about 1-80th of an inch per year.

The specimen of *Oculina diffusa*, referred to on page 98, weighs 44 ounces, which is five-sixths more than that of the Mæandrina, while the average diameter of the clump is the same. The average annual increase would consequently cover a circular area of seven inches diameter 1-18th of an inch deep. And making the same allowances as above, the rate for the year for the whole reef-grounds would be 1-44th of an inch. The specimen of Mæandrina mentioned by Major