

taking three degrees as the inclination, it gives 260 for the thickness at the outer margin. The results are sufficiently accurate to satisfy us of the great thickness of many barrier reefs.

These calculations, however, are liable to error from many sources. Very different results might generally be obtained from different sides of the same island; and the same group often contains islands without reefs, and others with reefs one or even several miles from the shores. But since we may show that the absence of a reef, or its limited extent, may be traced to some causes restricting or modifying its formation, it is obvious that the error would probably be on the side of too low an estimate.

Adjacent to the larger islands, such as those of Vanua Levu, and Australia, the error might be of the opposite kind; for the slopes of the land are of a more complex or irregular character than on the smaller islands. In the latter, they may be shown to belong generally to a single elevation of igneous origin, or, at the most, to two or three combined; while, in the former, they may pertain to different ranges of hills or mountains. For correct results in any instance, the land and its declivities should be carefully studied beforehand, and the system in its inclinations determined by observation. With regard to Tahiti and Upolu, information bearing upon this point was obtained, and the above conclusions may be received with much confidence. Many of the Feejee reefs, on the same principle, cannot be less than 2,000 feet in thickness.

IX. A GOOD WORD FOR CORAL REEFS.

All coral-bound coasts, and especially those of islands in mid ocean, derive great benefit from their reefs. The wide coral banks and the inclosed channels greatly enlarge the limits tributary to the lands they incircle. Besides being barriers against the ocean, they are dikes to detain the detritus of the hills. They stop the waters of the streams, and cause it to drop the