

water currents, in preventing the growth of coral, but little is due to the freshening influence of the streams of islands.

But while observing that currents have so decided an influence on the condition of harbours, we should remember another prevalent cause already remarked upon, which is perhaps more wide in its effects than those just considered. I refer to the features of the supporting land, or the character of soundings off a coast. We need not repeat here the facts, showing that many of the interruptions of reefs have thus arisen. The wide break off Matavai may be of this kind. The widening of the inner channel at Papieti, forming a space for a harbour, may be another example of it; for the reef here extends to a greater distance from the shores, as if because the waters shallowed outward more gradually off this part of the coast.

The same cause—the depth of soundings, on the principle that corals do not grow where the depth much exceeds a hundred feet—has more or less influence about all reefs in determining their configuration and the outlines of harbours. A remarkable instance of the latter is exemplified in the annexed chart of Whippey harbour, Viti Levu, reduced from the chart of the Wilkes Expedition to the scale of half an inch to the mile.

The existence of harbours should therefore be attributed, to a great extent, to the configuration of the submarine land; while currents give aid in preventing the closing of channels, and keeping open grounds for anchorage. This subject will be further illustrated in the following pages.

The permanency of coral harbours follows directly from the facts above presented. They are secure against any immediate obstruction from reefs. Any growing patches within them may still grow, and the margins of the inclosing reef may gradually extend and contract their limits; yet only at an extremely slow rate. Notwithstanding such changes, the channels will remain open, and large anchorage grounds clear, as long as the currents continue in action. Coral harbours are therefore nearly as secure from any new obstructions as those