

At Upolu the white coral sands of the reefs (or in more general terms the reef debris) form the bottom. In some places this coral material had the consistence of mud, and it was seldom observed to be covered with coarse material ; there were some small patches of coral over it, and here and there a growing mass of *Porites*. The fresh waters of the shores do not flow over these wide reefs, as there is no proper inner channel, and there is consequently no shore detritus mingled with the reef debris.

At Tahiti, the sounding lead, where dropped in the channels, usually brought up sand, shells, and fragments of coral. At Tongatabu, the bottom where the *Peacock* anchored was a greyish blue calcareous mud, appearing as plastic as common clay ; it consisted solely of comminuted corals and shells, with colouring matter probably from vegetable and animal decomposition.

But to the west of the larger Feejee islands, in the channels near the land, soundings commonly indicated a bottom of mud made from the material of the rocks of the mountains, and the same was frequently brought up with our dredges. On the north side of Vanua Lebu, a stream had so filled with its detritus the wide channel into which it empties, that for a mile the depth is but two to three fathoms, although elsewhere the depth is mostly from twelve to twenty fathoms ; and at least half a dozen square miles of land had been added to the shores from this source. Though due principally to shore material, the reefs have probably added somewhat to these accumulations ; yet little coral sand could be detected in the mud by the eye, and the proportion is certainly very small. In many places where the ships of the Wilkes Exploring Expedition anchored, having the reef not more than five hundred yards from the ship, the material of the bottom was wholly mud from the land, as much so as if there were no corals or shells within many miles.

When the materials from both sources, the shore and the reef, are mingled, the proportion will necessarily depend on the proximity to the mouths of streams, the breadth of the inner waters or channels, and the direction and force of the currents.