The bottom of these large lagoons is very nearly uniform, varying but little except from the occasional abrupt shallowings produced by growing patches of reef. Soundings bring up sand, pebbles, shells, and coral mud; and the last mentioned material appears to be quite common, even in lagoons of considerable size. It has the same character as above described. The bluish clay-like mud of the harbour of Tongatabu may be classed with these deposits. Darwin describes this mud as occurring at the Maldives, and at Keeling's Island (op. cit. p. 26); Kotzebue mentions it as common at the Marshall atolls, and Lieutenant Nelson observed it at the Bermudas. It appears, therefore, that the finer coral material of the shores prevails throughout the depths of the lagoon. The growing reefs within the lagoons are in the condition of the *inner* reefs about high islands. The corals grow but little disturbed by the waves, and the reef-rock often contains them in the position of growth. At Taputeouea (Kingsmill's or Gilbert's Group), reefs very similar to those of the Feejees occur; they contain similar large Astræas ten to twelve feet in diameter, which once were growing where they stand, but are now a part of the solid lifeless rock.

Beach formations of coral sand-rock are common on the coral islands, and they present the same features in every respect as those described. They were observed among the Paumotus, on Raraka, Honden, Kawehe, and other islands. The stratified character is always distinct, and the layers slope toward the water at the usual small angle, amounting to 5—7 degrees bordering the lagoon, and 6—8 degrees on the seashore side of the land. Agassiz gives the same angle for the seaward slope of similar deposits at Key West. The rock is largely a fine oölite. They often occupy a breadth of thirty to fifty yards, appearing like a series of outcrops; yet they are frequently covered by the sands of the steep part of the beach. It is probable that they generally underlie the loose surface material of the land. The rock is a fine or coarse sand-rock, or an oölite, or a coral pudding-stone, and consists of beach materials. Occasionally it is quite compact, and resembles common lime-