

These tidal currents often have great strength, and are much modified and increased in force at certain places, or diminished in others, by the position of the reef with reference to the land. Sweeping on, they carry off the coral debris from some regions to others distant; and again they bear along and distribute only the shore detritus. It is thus seen that the same region may differ widely in its adjacent parts, and seemingly afford evidence in one place that there is no coral near, and in another no high land, although either is within a few rods, or even close alongside.

The extent of the land in proportion to the reef will have an obvious effect upon the character of the channel or lagoon depositions. When the island stands, like one of Bacon's Isles in the Feejees, as a mere point of rock in a wide sea inclosed by a distant barrier, the streams of the land are small and their detritus quite limited in amount. In such a case, the reef, and the growing patches scattered over the lagoon, are the sources of nearly all the material that is accumulated upon the bottom.

The bottom between the inner reefs within the great Australian barrier, according to Jukes, as brought up by the dredge from depths of fifteen to twenty fathoms, often resembled the unconsolidated mass of a shelly or coralline limestone. At other times it consisted very largely of the small disk-shaped foraminifers called Orbitolites, closely allied in form and nature to the Nummulites of the Tertiary; and they seemed in some places to make up the whole sand of the beaches, both of the coral islets and of the neighbouring Australian shores.

The facts show that the rock formed in such channels may be of all the kinds that occur in reef regions—coral and shell conglomerates, compact impalpable limestones, limestones full of Orbitolites, or containing, as well, remains of other species of the seas, and also rocks made of the clay, mud, sand, or pebbles of the mountains or high lands adjoining.