The rock of the submerged coral-heads is but a loose aggregation of corals in the position of growth, except probably in their lower portion, where the open spaces may be filled with sand and fragments and all cemented together.

The deposits of sand or coral mud over the bottom of the seas outside of barrier reefs are sometimes of great extent. These sands are the fine detritus which the return flow of the breaker bears seaward; and, in still deeper water, the deposits should be mainly of the finest calcareous sand or mud—fit material for impalpable compact limestones. The waters outside of the reef, especially when moved by heavy tidal currents or storms, are often milky with the coral sand; and while the coarser sand is dropped near the shores, the finer may be carried for miles and distributed far out to sea. As Major Hunt, in his observations on the Florida Reefs remarks, this "white water" is one of the signs of proximity to a coral reef. After storms, the white coral material subsides and the waters become clear again.

Mr. Jukes, who made special examinations of the Australian reef region, and others in that vicinity, in H.M.S. *Fly*, states that in the deeper waters outside of the great barrier, "and in all the neighbouring East India seas, from Torres Straits, north of Australia, to the Straits of Malacca, wherever the bottom was brought up by the lead, it proved to be a very fine-grained, impalpable, pale olive-green mud, wholly soluble in dilute hydrochloric acid, and therefore essentially carbonate of lime. The substance, when dried, looked much like chalk, excepting in its greener tinge. How far this calcareous matter may be due to foraminifers, rather than corals, is not known."

Since the tidal waves on any coast that is gradually shallowing have a landward propelling power, the coral sands are mostly gathered about the reef, and generally are not to any great extent lost in the depths of the ocean. The great oceanic currents, like that of the Gulf Stream, might bear away the lighter material for long distances, if it swept with full strength over the shore reefs; but it is generally true that such currents are little felt close in shore. Notwithstanding the proximity of