

These explanations are at hand, and accord so exactly with facts ascertained, that the existence of inner passages becomes a necessary feature of such islands. It has been shown that the ocean acts an important part in reef making;—that the outer reefs, exposed to its action and to its pure waters, grow more rapidly than those within, which are under the influence of marine and fresh-water currents and transported detritus. It is obvious, therefore, that the former may retain themselves at the surface, when through a too rapid subsidence the inner patches would disappear. Moreover, after the barrier is once begun it has growing corals on both its inner and outer margins, while a fringing reef grows only on one margin. Again, the detritus of the outer reefs is, to a great extent, thrown back upon itself by the sea without and the currents within, while the inner reefs contribute a large proportion of their material to the wide channels between them. These channels, it is true, are filled in part from the outer reefs, but proportionally less from them than from the inner. The extent of reef-grounds within a barrier, raised by accumulations at the same time with the reefs, is often fifty times greater than the area of the barrier itself. Owing to these causes the rate of growth of the barrier may be at least twice more rapid than that of the inner reefs. If the barrier increases one foot in height in a century, the inner reef, according to this supposition, would increase but half a foot; and any rate of subsidence between the two mentioned would sink the inner reefs more rapidly than they could grow, and cause them to disappear. There is therefore not only no objection to the theory from the existence of wide channels and open seas; on the contrary, their non-existence is incompatible with the mode of action going on. They afford the strongest support to the theory.

A wide, flat reef, continuous over extensive reef-grounds, could be formed only upon a nearly level bank, where there were consequently no hills to pour in detritus and otherwise retard growth over the interior portions; and even then it would be liable to be cut up by the action of currents, destroying growing corals over its interior parts.