

being determined, as has been shown, by wave action (page 197). They resemble, in fact, other saxicavous mollusks, several species of which are found in the same seas, some buried in the solid masses of dead coral lying on the reef. The bed they excavate for themselves is usually so complete that only an inch or two in breadth of their ponderous shells are exposed to view. Without some means like this of securing their habitations these mollusks would be destroyed by the waves; a tuft of byssus, however strong, which answers for some small bivalves, would be an imperfect security against the force of the sea for shells weighing one to five hundred pounds.

#### IV. ORIGIN OF THE BARRIER CONDITION OF REEFS, AND OF THE ATOLL FORMS OF CORAL ISLANDS.

##### I. OLD VIEWS.

In the review of causes modifying the forms of reefs, no reason is assigned for the most peculiar, we may say the most surprising, of all their features—that they so frequently take a belt-like form, and inclose a wide lagoon; or, in other cases, range along at a distance of some miles, it may be, from the land they protect, with a deep sea separating them from the shores.

This peculiar character of the coral island was naturally the wonder of early voyagers, and the source of many speculations. The instinct of the polyp was made by some the subject of special admiration; for the “helpless animalcules” were supposed to have selected the very form best calculated to withstand the violence of the waves, and apparently with direct reference to the mighty forces which were to attack the rising battlements. They had thrown up a breastwork as a shelter to an extensive working ground under its lee, “where,” as Flinders observes, “their infant colonies might be safely sent forth.”