

apparent by a review of their characters. The description will be found to be a simple recapitulation of a former paragraph.

The reef of the coral atoll, as it lies at the surface still uncovered with vegetation, is a platform of coral rock, usually two to four hundred yards wide, and situated so low as to be swept by the waves at high tide. The outer edge, directly exposed to the surf, is generally broken into points and jagged indentations, along which the waters of the resurging wave drive with great force. Though in the midst of the breakers, the edge stands a few inches, and sometimes a foot, above other parts of the platform; the incrusting Nullipores cover it with varied tints, and afford protection from the abrading action of the waves. There are usually three to five fathoms water near the margin; and below, over the bottom, which gradually deepens outward, beds of corals are growing profusely among extensive patches of coral sand and fragments. Generally the barren areas much exceed those flourishing with zoophytes, and not unfrequently the clusters are scattered like tufts of vegetation in a sandy plain. The growing corals extend up the sloping edge of the reef, nearly to low-tide level. For ten to twenty yards from the margin, the reef is usually very cavernous or pierced with holes or sinuous recesses, a hiding-place for crabs and shrimps, or a retreat for the Echini, asterias, sea-anemones and mullusks; and over this portion of the platform, the gigantic *Tridacna*, some times over two feet long and 500 pounds in weight, is often found lying more than half buried in the solid rock, with barely room to gape a little its ponderous shell, and expose to the waters a gorgeously coloured mantle. Further in are occasional pools and basins, alive with all that lives in these strange coral seas.

The reef-rock, when broken, shows commonly its detritus origin. Parts are of compact homogeneous texture, a solid white limestone, without a piece of coral distinguishable, and rarely an imbedded shell. But generally the rock is a breccia or conglomerate, made up of corals cemented into a compact mass, and the fragments of which it consists are sometimes many cubic feet in size.