siderable number of Foraminiferous shells occur in the sand, and no doubt careful examination would reveal the presence of fragments of tubes of *Serpulæ*, corals, calcareous algæ, *Bryozoa*, and *Cirrhipede* shells; but there can be no doubt that by far the greater mass is derived from the shells of Mollusca.* Thus, although the foundations of Bermuda, and its natural breakwaters and protections, without which it would not exist, are formed by corals, the part above water is mostly derived from another source, and even below the water the same is the case for some distance, for the same beds of sandstone were met with in an excavation carried to a depth of 50 feet.

The shells, more or less broken, are thrown up upon the beach, and there pounded by the surf. As the tide recedes, the resulting calcareous sand is rapidly dried by the sun, and the finer particles are borne off inland by the wind, to be heaped up into the dome-shaped dunes. The rain, charged with carbonic acid, percolates through the dunes, and taking lime into solution, re-deposits it as a cement, binding the sand grains together.† Successive showers of rain, occurring at irregular intervals, some charged more, some less highly, with carbonic acid, and forming each a crust on the surface of the dune of varying thickness, produce a series of very thin, hard layers in the mass of sand, alternating with seams of less consolidated and sometimes quite loose sand. Crusts of consolidated sand are to be observed commonly on the surfaces of fresh sand dunes. These layers or strata of the hardened sand follow in form the contour of the dunes, and thus, where these have been perfect domes or mounds, dip outwards in all directions, with curved surfaces from a central vertical axis. Such an arrangement is constantly to be seen where sections of the older rocks are exposed. I saw especially good instances of it in a small island, near Castle Island in Harrington Sound. Where banks or long rounded ridges of sand have been formed, strata following the surfaces of these in inclination are produced.

All kinds of curious irregularities in arrangement are to be found in the bedding of the strata, resulting evidently from the encroachment of one dune upon the edge of another, or the

* It would be of great interest to determine, by careful microscopic examination, what are the relative percentages of the very various calcareous structures composing the calcareous sands of coral islands in different parts of the world. I collected specimens of all the calcareous sands accessible during the voyage of the "Challenger" with that object. They vary very much in composition, some being mainly Foraminiferous.

† The process is described by Jukes in his account of Raines Islet. "Voyage of the 'Fly,'" p. 339, and elsewhere.