

Within this depression there are other ridges, parallel to the outer one, and old beach-lines and water-marks, the remaining traces of the waters of the lagoon, marking its gradual decrease and final disappearance.

This flat depressed surface in the centre of the island is about seven or eight feet above the level of the sea. It bears but little vegetation, consisting of long, coarse grass, *Mesembryanthemum* and *Portulacca*, and that is near the outer edges of the island, where the surface is formed of coral sand mixed with more or less guano. In the central and lower parts the surface is composed of sulphate of lime (gypsum), and it is on this foundation that the principal deposit of guano rests.

In examining the foundation of the guano deposit on Baker's or Howland's Island, by sinking a shaft vertically, the hard conglomerate reef-rock is found directly underlying the guano. Resting on this foundation the guano has undergone only such changes as the climate has produced. On Jarvis's Island, however, after sinking through the guano, one first meets with a stratum of sulphate of lime (sometimes compact and crystalline, sometimes soft and amorphous), frequently two feet thick, beneath which are successive strata of coral sand and shells, deposited one above the other in the gradual process by which the lagoon was filled up. These horizontal strata were penetrated to a depth of about twenty feet. They were composed chiefly of fine and coarse sand with an occasional stratum of coral fragments and shells.

Of the origin of this sulphate of lime there can hardly be any doubt. As the lagoon was nearly filled up, while, by the gradual elevation of the island, the communication between the outer ocean and the inner lake was constantly becoming less easy, large quantities of sea-water must have been evaporated in the basin. By this means deposits would be formed containing common salt, gypsum, and other salts found in the waters of the ocean. From these the more soluble parts would gradually be washed out again by the occasional rains, leaving the less soluble sulphate of lime as we find it here.

Some additional light is thrown on this matter by the