

in closed tubes, and consist chiefly of hydrated oxide of magnesia, with alumina and peroxide of iron in subordinate quantity. Of the more recent veins mentioned by Darwin, some are bordered on both sides by black bands of a hard infusible substance. The powder has a dirty grayish-green color, and effervesces with dilute hydrochloric acid, leaving a brown insoluble residue. In strong hydrochloric acid it dissolves with evolution of chlorine, and the color phenomena of dissolving peroxide of manganese. It was found to consist of phosphate of lime, peroxide of manganese, a little carbonate of lime and magnesia, and traces of copper and iron; like the other rocks, it gives off alkaline water in a closed tube. Mr. Buchanan is inclined to regard all the rocks as referable to the serpentine group. So peculiar, however, is the appearance which it presents, and so completely and uniformly does the phosphatic crust pass into the substance of the stone, that I felt it difficult to dismiss the idea that the whole of the crust of rock now above water might be nothing more than the result of the accumulation, through untold ages, of the insoluble matter of the ejecta of sea-fowl, altered by exposure to the air and sun, and to the action of salt and fresh water, but comparable with the "stalactitic or botryoidal masses of impure phosphate of lime" observed by Mr. Darwin at Ascension. "The basal part of these had an earthy texture, but the extremities were smooth and glossy, and sufficiently hard to scratch common glass. These stalactites appeared to have shrunk, perhaps from the removal of some soluble matter in the act of consolidation, and hence they had an irregular form." The composition of the minerals at St. Paul's Rocks did not seem, however, to be consistent with this mode of production.

On the morning of the 29th we landed a party of explorers and fishermen, and then cast off the hawser and went round the rocks taking soundings and swinging for the errors of the compasses; and in the evening, after picking up our stragglers, we proceeded under all plain sail toward Fernando Noronha.