The structure is microgranitoid; rarely the sections of olivine or enstatite assume dimensions large enough to produce a microporphyritic structure, which passes into a banded structure, the minerals constituting this rock never have crystallographic contours, but are elliptical or irregular. This feature and the banded structure give rise to a sort of lenticular arrangement, which resembles the so-called gneissic structure peculiar to some schists. Without entering on a detailed description of the individual minerals that constitute the rock, it may be stated that the microscopic examination of the specimens shows that the rock mass is almost entirely composed of granular olivine, thus confirming the deductions drawn from the chemical analysis.[1] After the olivine the most frequent ingredient is chromite; the sections of this mineral are generally transparent yellow or chestnut-brown and isotropic. Among the minerals playing a secondary part in the composition are hornblende and a rhombic pyroxene. The hornblendic mineral must be referred to the variety actinolite, of which it seems to possess the most characteristic properties; the rhombic pyroxene, on the other hand, must be classed as enstatite. These ellipsoidal sections of enstatite are polysynthetic, and composed of lamellæ of a rhombic pyroxene, between which are intercalated other lamellæ of a clinorhombic pyroxene.

"Certain features of the olivine, and more especially those shown in the enstatite sections, deserve attention. In some microscopic preparations of the rocks, with banded structure, the larger sections of olivine and enstatite are placed with their vertical axes in a line with the direction of the bands. At first sight it looks as if this disposition had been brought about by the motion of a plastic mass. In one case, where the fragments were in the direction of the band, a crystal has undergone a remarkable process of folding or curling back upon itself by fracture and displacement, it seems to have been partially softened, and looks as if a current had drawn it along and bent it into the shape of a U. The lamellæ composing the crystal are fractured at the summit of the arch of the curve, and the space between the fractures is filled up with the ground mass of the rock. Sections presenting the same appearance may, however, be found abundantly in the family of the schists. Among the analogies of microscopic structure between the schists and the peridote of St. Paul's Rocks may be enumerated the ellipsoidal form of the crystals, their entwinement by the bands in the fundamental mass, the disruption of the larger individuals, as well as their curvature and folding.

"Some of the specimens are highly altered. Along the capillary fissures cohesion diminishes, and serpentinous matter with magnetic iron is deposited in them, the rock being traversed at the same time by black, opaque, and slightly lustrous veins. These altered specimens are often composed of fragments of serpentine cemented together by phosphate of lime, which also often coats the external part of the rock, and to this circumstance these altered portions owe a particular stalactitic appearance. The white enamel that gives the south rock the dazzling appearance described by Darwin, was removed and subjected to a quantitative analysis. The quantity analysed (0·0175 gramme) was so minute, that the only certain results obtained were phosphoric acid, 33·61 per cent., and lime 50·51 per cent.; iron, magnesia, and sulphuric acid were also present. The composition is, therefore, essentially a tribasic calcic phosphate, with sulphate of lime, and perhaps also carbonate of lime, magnesia, and iron. Darwin and Mr. Buchanan regard this white coating as due to the accumulation of excrement of sea birds, the insoluble residue of which has been exposed during very long periods of time to the action of the sun's rays and of the waves of the ocean. This explanation seems the true one, and is

[1] For the mineralogical description of the Rocks, see Narr. Chall. Exp., vol. ii., App. B.

[2] *Ibid.*, fig. 2 of the plate.