denuding agencies. Back of Sangana, the unbroken declivities as well as the scoria in the region evince a comparatively recent action of the Sangana crater. Farther west, near Fasetoötai, the high unbroken cone of Tafua carries us on to a still more recent period; and here, as we believe, the fires of Upolu finally disappeared. This is the westernmost of the large craters.

We have met with few facts that indicate, even approximately, the period when the volcanic action ceased. I have observed no instances of lava overlying coral, or covering deposits of coral sand such as now form the beaches. Along the shores westward of Apia, the slopes of the island pass beneath the surface of the sea, and continue uninterrupted for five or six miles, inclining even more gradually under water than above; for at this distance the depth is but seventy or eighty yards. From this depth, it drops off at a steep angle: within four hundred yards of a thirty-five fathom cast, our lead descended to two hundred and twenty-eight fathoms, and struck on a bottom of black sand; four hundred yards farther out, we found no bottom with four hundred fathoms of line. The coral reef of these shores is a mile and a half wide to the line of breakers. The continuity of these slopes, and their length, seem to afford satisfactory evidence, that they belong to one and the same process of formation.

There is evidence, however, that the coral was growing on some parts of the island before the fires ceased. This is abundantly shown in the tufa craters of the islets east of Upolu, and at Tapanga Point. But the dilapidated condition of these craters proves that they were long exposed to the action of the sea, before the reefs were completed that now protect two of them from farther degradation. The removal of the tufa deposits of Tapanga Point, is additional evidence that the reefs now half a mile wide at this place, were but just begun, and insufficient to protect it from an encroaching sea, when the hill was formed. The point is cut through by a channel twelve feet wide nearly to the water level; and the amount of tufa removed just south of the point, was fully equal to the present extent of the point, and probably much larger.

In view of these facts we conclude, that although the period of latest activity was subsequent to the introduction of coral to the shores of the island, yet it was before the reefs had become much extended. Possibly the coral grew only in detached spots, as is now the case around Hawaii.

The period of *earliest eruption* is still more uncertain. The cha-