

consist merely of ejected matter, but of a solid rock of trachyte upheaved.* Another extraordinary eruption happened in the spring of the year 1814, in the sea near Unalashka, in the same archipelago. A new isle was then produced of considerable size, and with a peak three thousand feet high, which remained standing for a year afterwards, though with somewhat diminished height.

Although it is not improbable that earthquakes accompanying these tremendous eruptions may have heaved up part of the bed of the sea, yet the circumstance of the islands not having disappeared like Sabrina (see p. 416.) may have arisen from the emission of lava. If Jorullo, for example, in 1759, had risen from a shallow sea to the height of 1600 feet, instead of attaining that elevation above the Mexican plateau, the massive current of basaltic lava which poured out from its crater would have enabled it to withstand, for a long period, the action of a turbulent sea.

Reflections on the earthquakes of the nineteenth century.— We are now about to pass on to the events of the eighteenth century; but before we leave the consideration of those already enumerated, let us pause for a moment, and reflect how many remarkable facts of geological interest are afforded by the earthquakes above described, though they constitute but a small part of the convulsions even of the last forty years. New rocks have risen from the waters; new hot springs have burst out, and the temperature of another has been raised; the coast of Chili has been thrice permanently elevated; a considerable tract in the delta of the Indus has sunk down, and some of its shallow channels have become navigable; an adjoining part of the same district, upwards of fifty miles in length and sixteen in breadth, has been raised about ten feet above its former level; part of the great plain of the Mississippi, for a distance of 80 miles in length by 30 in breadth, has sunk down several feet; the town of Tomboro has been submerged, and twelve thousand of the inhabitants of Sumbawa have been destroyed. Yet, with a knowledge of these terrific catastrophes, witnessed during so brief a period by the present generation, will the geologist declare with perfect composure that the earth has at length settled into a state of repose? Will he continue to assert that the changes of relative level of land and sea, so common in former ages of the world, have now ceased? If, in the face of so many striking facts, he persists in maintaining this favourite dogma, it is in vain to hope that, by accumulating the proofs of similar convulsions during a series of antecedent ages, we shall shake his tenacity of purpose:—

Si fractus illabatur orbis
Impavidum ferient ruinae.

EARTHQUAKES OF THE EIGHTEENTH CENTURY.

Quito, 1797.— On the morning of February 4th, 1797, the volcano of Tunguragua in Quito, and the surrounding district, for forty

* Neue Allgem. Geogr. Ephemer. bd. iii. s. 348.