

same chain, called Capac Urcu, a short time before the conquest of America by the Spaniards.

It will also be seen in the next chapter that, so late as the year 1822, during a violent earthquake and volcanic eruption in Java, one side of the mountain called Galongoon, which was covered by a dense forest, became an enormous gulf in the form of a semicircle. The new cavity was about midway between the summit and the plain, and surrounded by steep rocks.

Now we might imagine a similar event, or a series of subsidences to have formerly occurred on the eastern side of Etna, although such catastrophes have not been witnessed in modern times, or only on a very trifling scale. A narrow ravine, about a mile long, twenty feet wide, and from twenty to thirty-six in depth, has been formed, within the historical era, on the flanks of the volcano, near the town of Mascalucia; and a small circular tract, called the Cisterna, near the summit, sank down in the year 1792, to the depth of about forty feet, and left on all sides of the chasm a vertical section of the beds, exactly resembling those which are seen in the precipices of the Val del Bove. At some remote periods, therefore, we might suppose more extensive portions of the mountain to have fallen in during great earthquakes.

But we ought not to exclude entirely from our speculations another possible agency, by which the great cavity may in part at least have been excavated, namely, the denuding action of the sea. Whether its waves may once have had access to the great valley before the ancient portion of Etna was upheaved to its present elevation is a question which will naturally present itself to every geologist. Marine shells have been traced to a height of 800 feet above the base of Etna, and would doubtless be seen to ascend much higher, were not the structure of the lower region of the mountain concealed by floods of lava. We cannot ascertain to what extent a change in the relative level of land and sea may have been carried in this spot, but we know that some of the tertiary strata in Sicily of no ancient date reach a height of 3000 feet, and the marine deposits on the flanks of Etna, full of recent species of shells, may ascend to equal or greater heights. The narrow valley of Calanna leading out of the Val del Bove, and that of San Giacomo lower down, have much the appearance of ravines swept out by aqueous action.

*Structure and Origin of the Cone of Etna.* — Our data for framing a correct theory of the manner in which the cone of Etna has acquired its present dimensions and internal structure are very imperfect, because it is on its eastern side only, in the Val del Bove above described, that we see a deep section exposed. Even here we obtain no insight into the interior composition of the mountain beyond a depth of between three and four thousand feet below the base of that highest cone, which has been several times destroyed and renewed. The precipices seen at the head of the Val del Bove, in the escarpment called the Serre del Solfizio, exhibit merely the same series of alternating lavas and breccias which, descending with a general dip