

opening as it were its mouth, vomited, with a loud noise, flames, pumice stones, and ashes."*

So late as the year 1846 a fourth manuscript (written immediately after the eruption) was discovered and published in Germany. It was written in 1538 by Francesco del Nero†, who mentions the drying up of the bed of the sea near Puzzuoli, which enabled the inhabitants of the town to carry off loads of fish. About eight o'clock in the morning of the 29th September, the earth sunk down about 14 feet in that place where the volcanic orifice now appears, and there issued forth a small stream of water, at first cold, and afterwards tepid. At noon, on the same day, the earth began to swell up in the same spot where it had sunk down 14 feet, so as to form a hill. About this time fire issued forth, and gave rise to the great gulf, "with such a force, noise, and shining light, that I, who was standing in my garden, was seized with terror. Forty minutes afterwards, although unwell, I got upon a neighbouring height, from which I saw all that took place, and by my troth it was a splendid fire, that threw up for a long time much earth and many stones, which fell back again all round the gulf, in a semicircle of from one to three bowshots in diameter, and, filling up part of the sea, formed a hill nearly of the height of Monte Morello. Masses of earth and stones, as large as an ox, were shot up from the fiery gulf into the air, to a height which I estimate at a mile and a half. When they descended, some were dry, others in a soft muddy state." He concludes by alluding again to the sinking of the ground, and the elevation of it which followed, and says that to him it was inconceivable how such a mass of stones and ashes could have been poured forth from the gulf. He also refers to the account which Porzio was to draw up for the Viceroy.

On comparing these four accounts, recorded by eye-witnesses, there appears to be no real discrepancy between them. It seems clear that the ground first sunk down 14 feet on the site of the future volcano, and after having subsided it was again propelled upwards by the lava mingled with steam and gases, which were about to burst forth. Jets of red-hot lava, fragments of fractured rock, and occasionally mud composed of a mixture of pumice, tuff, and sea-water, were hurled into the air. Some of the blocks of stone were very large, leading us to infer that the ground which sank and rose again was much shattered and torn to pieces by the elastic vapours. The whole hill was not formed at once, but by an intermittent action extending over a week or more. It seems that the chasm opened between Tripergola and the baths in its suburbs, and that the ejected materials fell

* "*Magnus terræ tractus, qui inter radices montis, quem Barbarum incolæ appellant, et mare juxta Avernum jacet, sese erigere videbatur, et montis subitò nascentis figuram imitari. Eo ipso die horâ noctis II., iste terræ cumulus, aperto veluti ore, magno cum fremitu, magnos ignes evomuit; pumicesque, et lapides, cineresque.*" — Porzio, *Opera Omnia,*

Medica, Phil., et Mathemat., in unum collecta, 1736, cited by Dufrénoy, Mém. pour servir à une Description Géologique de la France, tom. iv. p. 274.

† See *Neues Jahr Buch* for 1846, and a translation in the *Quarterly Journ. of the Geol. Soc.* for 1847, vol. iii. p. 20. *Memoirs.*