

1832, when they ran in all directions from the centre of the volcano. It has been justly remarked by M. Elie de Beaumont, that such star-shaped fractures may indicate a slight upheaval of the whole of Etna. They may be the signs of the stretching of the mass, which may thus be raised gradually by a force from below.*

The lava current of 1669, before alluded to, soon reached in its course a minor cone called Mompiliere, at the base of which it entered a subterranean grotto, communicating with a suite of those caverns which are so common in the lavas of Etna. Here it appears to have melted down some of the vaulted foundations of the hill, so that the whole of that cone became slightly depressed and traversed by numerous open fissures.

Part of Catania destroyed.—The lava, after overflowing fourteen towns and villages, some having a population of between three and four thousand inhabitants, arrived at length at the walls of Catania. These had been purposely raised to protect the city; but the burning flood accumulated till it rose to the top of the rampart, which was sixty feet in height, and then it fell in a fiery cascade and overwhelmed part of the city. The wall, however, was not thrown down, but was discovered long afterwards, by excavations made in the rock by the Prince of Biscari; so that the traveller may now see the solid lava curling over the top of the rampart as if still in the very act of falling.

This great current performed the first thirteen miles of its course in twenty days, or at the rate of 162 feet per hour, but required twenty-three days for the last two miles, giving a velocity of only twenty-two feet per hour; and we learn from Dolomieu that the stream moved during part of its course at the rate of 1500 feet an hour, and in others took several days to cover a few yards.† When it entered the sea it was still six hundred yards broad, and forty feet deep. It covered some territories in the environs of Catania, which had never before been visited by the lavas of Etna. While moving on, its surface was in general a mass of solid rock; and its mode of advancing, as is usual with lava streams, was by the occasional fissuring of the solid walls. A gentleman of Catania, named Pappalardo, desiring to secure the city from the approach of the threatening torrent, went out with a party of fifty men whom he had dressed in skins to protect them from the heat, and armed with iron crow's and hooks. They broke open one of the solid walls which flanked the current near Belpasso, and immediately forth issued a rivulet of melted matter which took the direction of Paternò; but the inhabitants of that town, being alarmed for their safety, took up arms and put a stop to farther operations.‡

As another illustration of the solidity of the walls of an advancing lava stream, I may mention an adventure related by Recuperò, who, in 1766, had ascended a small hill formed of ancient volcanic matter,

* *Mém. pour servir, &c.*, tom. iv. 1846, p. 155., on Velocity of Lava. p. 116.

† Ferrara, *Descriz. dell' Etna*, p. 108.

‡ See Prof. J. D. Forbes, *Phil. Trans.*,