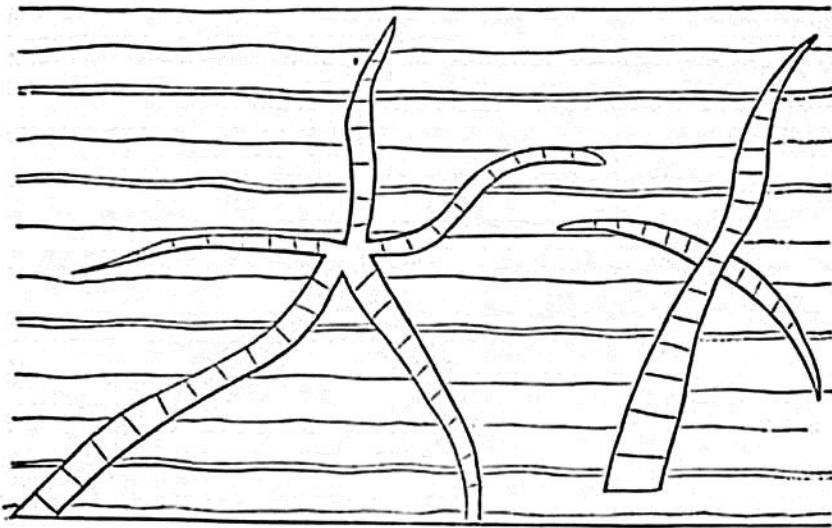


Fig. 663.



Dikes or veins at the Punto del Nasone on Somma. (Necker.)*

1779, who records the following facts: — “The lavas, when they either boiled over the crater, or broke out from the conical parts of the volcano, constantly formed channels as regular as if they had been cut by art down the steep part of the mountain; and, whilst in a state of perfect fusion, continued their course in those channels, which were sometimes full to the brim, and at other times more or less so, according to the quantity of matter in motion.

“These channels, upon examination after an eruption, I have found to be in general from two to five or six feet wide, and seven or eight feet deep. They were often hid from the sight by a quantity of scoriæ that had formed a crust over them; and the lava, having been conveyed in a covered way for some yards, came out fresh again into an open channel. After an eruption, I have walked in some of those subterraneous or covered galleries, which were exceedingly curious, the sides, top, and bottom *being worn perfectly smooth and even* in most parts, by the violence of the currents of the red-hot lavas which they had conveyed for many weeks successively.”†

Now, the walls of a vertical fissure, through which lava has ascended in its way to a volcanic vent, must have been exposed to the same erosion as the sides of the channels before adverted to. The prolonged and uniform friction of the heavy fluid, as it is forced and made to flow upwards, cannot fail to wear and smooth down the surfaces on which it rubs, and the intense heat must melt all such masses as project and obstruct the passage of the incandescent fluid.

The texture of the Vesuvian dikes is different at the edges and in the middle. Towards the centre, observes M. Necker, the rock is larger grained, the component elements being in a far more crystalline state; while at the edge the lava is somewhat vitreous, and always finer grained. A thin parting band, approaching in its character to pitchstone, occasion-

* From a drawing of M. Necker, in *Mém.* above cited.

† *Phil. Trans.* vol. lxx. 1780.