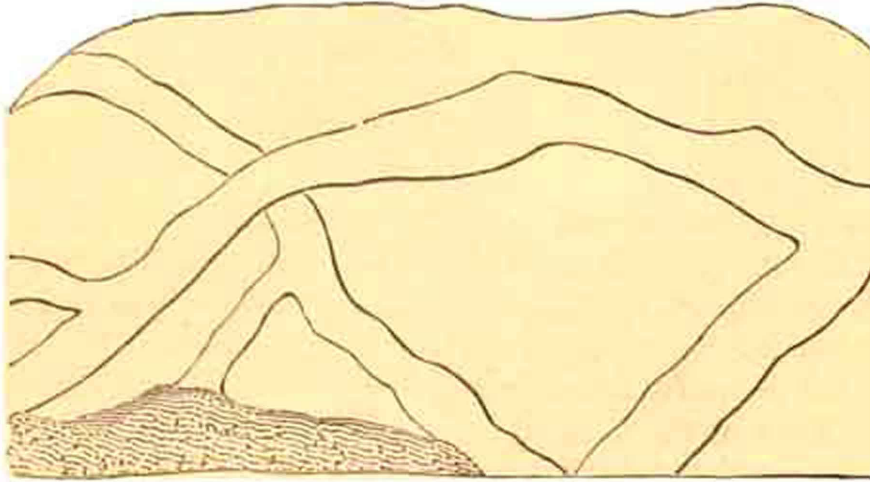


which the rocks in this zone of Etna are exposed. The dikes are, for the most part, vertical, but sometimes they run in a tortuous course through the tuffs and breccias, as represented in fig. 35. In the escarpment of Somma, where similar walls of lava cut through alternating beds of sand and scoriæ, a coating of coal-black rock, approaching in its nature and appearance to pitchstone, is seen at the contact of the dike with the intersected beds. I did not observe such parting layers at the junction of the Etnean dikes which I examined, but they may perhaps be discoverable.

Fig. 35.



Tortuous veins of lava, at Punto di Giumento, Etna.

The geographical position of these dikes is most interesting, as they are very numerous near the head of the Val del Bove, where the cones of 1811 and 1819 were thrown up, as also in that zone of the mountain where lateral eruptions are frequent; whereas, in the Valley of Calanna, which is below that parallel, and in a region where lateral eruptions are extremely rare, scarcely any dikes are seen, and none whatever still lower in the valley of St. Giacomo. This is precisely what we might have expected, if we consider the vertical fissures now filled with rock to have been the feeders of lateral cones, or, in other words, the channels which gave passage to the lava-currents and scoriæ that have issued from vents in the forest zone. In other parts of Etna there may be numerous dikes at as low a level as the Valley of Calanna, because the line of lateral eruptions is not everywhere at the same height above the sea; but in the section above alluded to, there appeared to me an obvious connection between the frequency of dikes and of lateral eruptions.

Some fissures may have been filled from above, but I did not see any which, by terminating downwards, gave proof of such an origin. Almost all the isolated masses in the Val del Bove, such as Capra, Musara, and others, are traversed by dikes, and may, perhaps, have partly owed their preservation to that circumstance, if at least the action of occasional floods has been one of the destroying causes in the Val del Bove; for there is nothing which affords so much protection to a mass of strata against the undermining action of running water as a perpendicular dike of hard rock.