mountain, through which the fiery stream discharges itself over the surrounding country. In such circumstances the lava cools somewhat rapidly; it becomes hard and presents a scoriaceous crust on the surface, while the vapour escapes in jets of steam through the interstices. But under this superficial crust the lava retains its fluid state, cooling slowly in the interior of the mass, while the thickening stream moves sluggishly along, impeded in its progress by the fragments of rock which this burning river drives before it.

The rate at which a current of lava moves along depends upon its mass, upon its degree of fluidity, and upon the inclination of the ground. It has been stated that certain streams of lava have traversed more than 3,000 yards in an hour; but the rate at which they travel is usually much less, a man on foot being often able to outstrip them. These streams, also, vary greatly in dimensions. The most considerable stream of lava from Etna had, in some parts, a thickness of nearly 120 feet, with a breadth of a geographical mile and a half. The largest lava-stream which has been recorded issued from the Skaptár Jokul, in Iceland, in 1783. It formed two currents, whose extremities were twenty leagues apart, and which from time to time presented a breadth of from seven to fifteen miles and a thickness of 650 feet.

A peculiar effect, and which only simulates volcanic activity, is observable in localities where *mud volcanoes* exist. Volcanoes of this class are for the most part conical hills of low elevation, with a hollow or depression at the centre, from which they discharge the mud which is forced upwards by gas and steam. The temperature of the ejected matter is only slightly elevated. The mud, generally of a greyish colour, with the odour of petroleum, is subject to the same alternating movements which have been already ascribed to the fluid lava of volcanoes, properly so called. The gases which force out this liquid mud, mixed with salts, gypsum, naphtha, sulphur, sometimes even of ammonia, are usually carburetted hydrogen and carbonic acid. Everything leads to the conclusion that these compounds proceed, at least in great part, from the reaction produced between the various elements of the subsoil under the influence of infiltrating water between bituminous marls, complex carbonates, and probably carbonic acid, derived from acidulated springs. M. Fournet saw in Languedoc, near Roujan, traces of some of these formations; and not far from that neighbourhood is the bituminous spring of Gabian.

Mud volcanoes, or *salses*, exist in rather numerous localities. Several are found in the neighbourhood of Modena. There are