

The reader will probably be disposed to ask, What *is* Lava? It is simply a stream or river of molten matter poured forth from a volcanic aperture, either by land or water. It is composed of various materials—all fused together by the vast heat of the internal fires of the earth—which, as they cool, congeal into a solid substance. The surface, cooling and hardening more rapidly than the interior, which often remains in a liquid condition for a considerable time, is usually quite porous and vesicular; from the escape of the pent-up gases. According as the process of congelation is accomplished slowly or quickly, the internal structure of a lava-stream assumes a more or less crystalline character. Caverns are frequently produced in the mass by the escape of the molten matter underneath, leaving the indurated crust standing like the roof of an arch.*

In the common description of volcanic eruptions, allusion is frequently made to “discharges of flame” and “clouds of smoke.” Such expressions, however, are used only in a figurative sense. What is commonly mistaken for flame consists of vapour, or scorixæ, and impalpable dust, illuminated by that vivid light which is emitted from the crater below, where the lava shines with all the splendour of the

* [Although common lava, says the late Professor Forbes, is nearly as liquid as melted iron, when it issues from the orifice of the crater, its fluidity rapidly diminishes, and as it becomes more and more burdened by the consolidated slag through which it has to force its way, its velocity of motion diminishes in an almost inconceivable degree; and at length, when it ceases to present the slightest external trace of fluidity, its movement can only be ascertained by careful and repeated observations, just as in the case of a glacier.—*Philosophical Transactions*, for 1846, p. 148.

Dr. Clarke also observes that “the lava, at a small distance from its source, acquires a darker tint upon its surface, is less easily acted upon, and as the stream widens, the surface, having lost its state of perfect solution, grows harder and harder, and cracks into innumerable fragments of very porous matter, to which they give the name of scorixæ, and the appearance of which has led many to suppose that it proceeded thus from the mountain. There is, however, no truth in this. All lava, at its first exit from its native volcano, flows out in a liquid state, and all equally in fusion. The appearance of the scorixæ is to be attributed only to the action of the external air, and not to any difference in the materials which compose it, since any lava whatever, separated from its channel, and exposed to the action of the external air, immediately cracks, becomes porous, and alters its form. As we proceeded downward, this became more and more evident; and the same lava which at its original source flowed in perfect solution, undivided, and free from incumbrances of any kind, a little further down had its surface loaded with the scorixæ in such a manner that, upon its arrival at the bottom of the mountain, the whole current resembled nothing so much as a heap of unconnected cinders from an iron-foundry.”—OTTER, “Life of Dr. Clarke,” cit. by Lyell.]