MM. Fouqué and Michel-Lévy (postea, p. 513) have shown that rocks, having in every essential particular the characters of volcanic lavas, may be artificially produced under ordinary atmospheric pressure by simple dry fusion. There appears to be no doubt that the presence of water lowers the fusion-point of silicates, though what precise influence the dissolved vapors exert upon the ultimate consolidation of molten lava has yet to be ascertained. Difference in the rate of cooling has doubtless been an important, if not the main, factor in determining the various conditions of texture of lava-streams. The crystalline structure may be expected to be most perfect where, as within thick masses of rock, the cooling has been prolonged, and where, consequently, the crystals have had ample time and opportunity for their formation. On the other hand, the glassy structure will naturally be most perfectly shown where the cooling has been most rapid, as in the vitreous crust on the walls of dikes already referred to (pp. 297, 358). Rocks crystallizing in the deeper parts of a volcano usually possess a more coarsely crystalline structure than those which crystallize at or near to the surface (p. 936).

Temperature of Lava.—It would be of the highest interest and importance to know accurately the temperature at which a lava-stream first issues. Measurements not altogether satisfactory have been taken at various distances below the point of emission, where the moving lava could be safely approached. Experiments made at Vesuvius by Scacchi and Sainte-Claire Deville in 1855, by thrusting thin wires of silver, iron, and copper into the lava, indicated a temperature of scarcely 700° C. (1228° Fahr.). Observations of a similar kind, made in 1819, when a silver wire $\frac{1}{80}$th inch in diameter at once melted in the Vesuvian lava of that year,