this magma, the excess of silica was merely *separated* as quartz. * These two explanations must not be confounded with each other. The surfusion of Fournet differs essentially from the viscosity of Durocher. "En vertu du premier," says the latter philosopher, "une substance peut conserver sa parfaite liquidité, à une température inférieure à son point de fusion. En vertu du second, des substances diverses, chauffées jusqu'à liquéfaction, puis abannonnées au refroidissement spontanné, dans les mêmes circonstances, mettent des temps fort inégaux à se solidifier, celles qui tendent à crystalliser, deviennent solides les premières; celles qui constituent des masses amorphes restent longtemps dans un état plastique analogue à celui de la poix et intermédiaire entre l'état liquide et l'état solide."† When we take into consideration the common blowpipe reaction, in which silica is often separated from a fused bead as a gelatinous skeleton, it would appear to lend considerable support to Durocher's theory.

I here conclude the explanation which I have attempted of the origin of the Primitive formation. I conceive that only one series of rocks is entitled to this appellation. The term primary has often been applied to quartzites and slates of later age; which rocks have been classified by German geologists under the name of the Primitive Slate formation. It is very evident, however, that there can have been but one primitive formation, and since the slates and quartzites above referred to bear evidence of their having been derived from pre-existing rocks, it would appear incorrect to entitle them primary or primitive. Were it not that geological nomenclature is already sufficiently confused, it would appear much more reasonable to apply the old term of Transition Formation to these rocks; since it is highly probable that during the period in which they were formed, the temperature of the first crust gradually decreased to a temperature at which it was possible for water to exist in large quantity on the earth's surface. We have seen that during the first granitic eruptions, water did not exist on the surface, otherwise rocks of a more or less tufaceous character would have been produced. This conclusion would also seem to be corroborated by the ideas which we must entertain of the high temperature of the newly solidified crust. When the temperature of the latter so far decreased as to admit of the condensation of the water existing in the atmosphere, the rain, which fell upon it, must

* Naumann, Lehrbuch, i., p. 740.

† Bul. de la Soc. Geol. 1849-50, p. 276.