In regard to the structure of the earth I alluded to two views, one of which supposes a liquid globe covered with a thin crust of solidified rock, generally estimated at from twenty to thirty miles in thickness, while the other regards the earth, if not solid to the centre, as having a crust at least several hundred miles in thickness, and of such solidity and rigidity as to be, so far as superficial phenomena are concerned, inert as if in a solid state. To this latter view, I incline, and I cited in support of it the conclusions of Hopkins from the phenomena of precession and nutation, the investigations of Archdeacon Pratt on the crushing effect of immense mountain masses like the Himmalayah, and the deductions of Sir Wm. Thompson from the phenomena of the tides, showing the great rigidity of the earth, as so many concurrent evidences that our planet, if not actually solid to the centre, has a crust far thicker than can be accounted for by the theory of a liquid globe covered only with a crust resulting from superficial cooling. This latter view, which was deduced from the increase of temperature observed in descending into the earth, is in conflict with the various mathematical and physical considerations above noticed, and it becomes necessary to revise the older notions of the conditions of a cooling globe.

The investigations of Charles Deville and of Delesse, as well as the earlier ones of Bischof, show that the density of fused rocks is very much less than that of the crystalline minerals of which they are composed. From this we may naturally conclude that the crystalline compounds which would separate by slow cooling from a bath of molten rock would gravitate toward the centre, as Saemann has already justly observed, (Bull. Soc. Geol. de Fr. Feb. 4. 1861.) In opposition to this view, Mr. Forbes appeals to the results seen in a small scale in the cooling of melted metals, etc.,—where a crust forms over the surface. It must, however, be considered that the conditions presented by a small vessel full of a liquid congealing in an atmosphere greatly below its own temperature, and having a crust growing out from and supported by the sides of the vessel, are widely different from those of a liquid globe slowly cooling beneath a very dense and intensely heated atmosphere. In such a case, with a bath of materials similar to those forming our present rock-crust, the crystalline minerals of which have been shown by Deville to be from $\frac{1}{16}$ to $\frac{1}{7}$ heavier than the liquid mass, these, as they separated, would sink as naturally as the crystals which form at the surface of an evaporating basin of brine. The analogy holds good, since the denser crystals formed