

rather to Theoretical Geology; but I may here notice M. Poissons' opinion. He does not assent to the conclusion of Fourier, that since the temperature increases in descending, there must be some primitive central heat. On the contrary, he considers that such an increase may arise from this;—that the earth, at some former period, passed (by the motion of the solar system in the universe,) through a portion of space which was warmer than the space in which it now revolves (by reason, it may be, of the heat of other stars to which it was then nearer). He supposes that, since such a period, the surface has cooled down by the influence of the surrounding circumstances; while the interior, for a certain unknown depth, retains the trace of the former elevation of temperature. But this assumption is not likely to expel the belief in the terrestrial origin of the subterraneous heat. For the supposition of such an inequality in the temperature of the different regions in which the solar system is placed at different times, is altogether arbitrary; and, if pushed to the amount to which it must be carried, in order to account for the phenomenon, is highly improbable.<sup>a</sup> The doctrine of central heat, on the other hand, (which need not be conceived as implying the *universal* fluidity of the mass,) is not only naturally suggested by the subterraneous increase of temperatures, but explains the spheroidal figure of the earth; and falls in with almost any theory which can be devised, of volcanoes, earthquakes, and great geological changes.

*Sect. 5.—Problems respecting Elevations and Crystalline Forces.*

OTHER problems respecting the forces by which great masses of the earth's crust have been displaced, have also been solved by various mathematicians. It has been maintained by Von Buch that there occur, in various places, *craters of elevation*; that is, mountain-masses resembling the craters of volcanoes, but really produced by an expansive force from below, bursting an aperture through horizontal strata,

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<sup>a</sup> For this hypothesis would make it necessary to suppose that the earth has, at some former period, derived from some other star or stars more heat than she now derives from the sun. But this would imply, as highly probable, that at some period some other star or stars must have produced also a *mechanical* effect upon the solar system, greater than the effect of the sun. Now such a past operation of forces, fitted to obliterate all order and symmetry, is quite inconsistent with the simple, regular, and symmetrical relation which the whole solar system, as far as Uranus, bears to the present central body.