lava must necessarily be a very slow process. Lord Kelvin has even proposed to estimate the age of subterranean masses of intrusive lava from their excess of temperature above the normal amount for their isogeotherms (lines of equal earth-temperature), some probable initial temperature and rate of cooling being assumed. On the other hand, the spread of a thick mass of snow and ice over any considerable area of the earth's surface, and its continuance there for several thousand years, would so depress the isogeotherms that, for many centuries afterward, there would be a fall of temperature for a certain distance downward. At the present day, in at least the more northerly parts of the northern hemisphere, there are such evidences of a former more rigorous climate, as in the well-sinking at Yakutsk just referred to.[36] Lord Kelvin (Sir W. Thomson)[37] has calculated that any considerable area of the earth's surface covered for several thousand years by snow or ice, and retaining, after the disappearance of that frozen covering, an average surface temperature of 13° C., "would during 900 years show a decreasing temperature for some depth down from the surface, and 3600 years after the clearing away of the ice would still show residual effect of the ancient cold, in a half rate of augmentation of temperature downward in the upper strata, gradually increasing to the whole normal rate, which would be sensibly reached at a depth of 600 metres."

Beneath the limit to which the influence of the changes of the seasons extends, observations all over the globe, and

[36] Professor Prestwich (Inaugural Lecture, 1875, p. 45) has suggested that to the more rapid refrigeration of the earth's surface during this cold period, and to the consequent depression of the subterranean isothermal lines, the alleged present comparative quietude of the volcanic forces is to be attributed, the internal heat not having yet recovered its dominion in the outer crust.

[37] Brit. Assoc. Reports, 1876, Sections, p. 3.