has been borne out by a great number of measurements, made in many of the mines of France, in the tin mines of Cornwall, in the mines of the Erzgeberge, of the Ural, of Scotland, and, above all, in the soundings effected in the Artesian wells of Grenelle and Passy, near Paris, of St. André de Iregny, and at a great number of other points.

The greatest depth to which miners have hitherto penetrated is about 973 yards, which has been reached in a boring executed in Monderf, in the Grand Duchy of Luxembourg. At Neusalzwerk, near Minden, in Prussia, another boring has been carried to the depth of 760 yards. In the coal-mines of Monkwearmouth the pits have been sunk 525 yards, and at Dukinfield 717 yards. The mean of the thermometic observations made, at all these points, leads to the conclusion that the temperature increases about one degree Fahrenheit for every sixty feet (English) of descent after the first hundred.

In admitting that this law of temperature exists for all depths of the earth's crust, we arrive at the conclusion that, at a depth of from twenty-five to thirty-five miles—which is only about five times the height of the highest mountains—the most refractory matter would be in a state of fusion. According to M. Mitscherlich, the flame of hydrogen, burning in free air, acquires a temperature of 1,560° Centigrade. In this flame platinum would be in a state of fusion. Granite melts at a lower temperature than soft iron, that is at about 1,300°; while silver melts at 1,023°. In imagining an increase of temperature equal to one degree for every hundred feet of descent, the temperature at twenty-five miles will be 1,420° C. or 2,925° F.; thirty miles below the surface there will be a probable temperature of 1,584° C. or 3,630° F.; it follows, if these arguments be admitted, and the calculation correct, that the thickness of the solid crust of the globe does not much exceed thirty miles.

This result, which gives to the terrestrial crust a thickness equal to $\frac{1}{190}$ of the earth's diameter, has nothing, it is true, of absolute certainty.

Prof. W. Hopkins, F.R.S., an eminent mathematician, has much insisted upon the fact, that the conductibility of granite rocks, for heat, is much greater than that of sedimentary rocks; and he argues that in the lower stratum of the earth the temperature increases much more slowly than it does nearer the surface. This consideration has led Mr. Hopkins to estimate the probable thickness of the earth's solid crust at a minimum of 200 miles.

In support of this estimate Mr. Hopkins puts forward another argument, based upon the precession of the equinoxes. We know that the terrestrial axis, instead of always preserving the same direction