

ing out the desired law or principle. The depth of a well thus excavated being accurately known, the temperature of the water which rises to the surface of the earth through the Artesian tube ought to indicate, without the possibility of error, the temperature of the point of earth whence it has risen, inasmuch as it has not time to cool to any perceptible extent. That which is obtained from the Artesian well of Grenelle, for instance—1798 feet in depth—has a temperature of $81^{\circ} 7' \text{ F.}$ The mean temperature of Paris being 53° F. , we see that this water extracts from the “bowels of the earth” no less than $28^{\circ} 7' \text{ F.}$ of heat, or about 1° for every 65 feet. The Artesian well of Passy gives a very similar result, $= 82^{\circ} 25' \text{ F.}$ at 1860 feet.

M. Walferdin has introduced into the abductor tube of various Artesian wells certain thermometers so arranged as to resist the pressure of the water, and to give, with much exactness, their true temperature. By means of his *thermomètres à déversement*, Walferdin has ascertained in the Artesian well of the *Ecole Militaire*, at Paris, in that of Saint-André (department of the Eure), and in that of Grenelle, an increase of 1° for every 100 feet. His experiment in the first well was made at a depth of 565 feet, in the second at 825 feet, and in the third at 1300 and 1650 feet.*

We may add that an Artesian well of 725 feet depth having been bored at Pregny, M. de la Rive, of Geneva, was able to introduce thermometers at various depths, obtaining as the result a rate of increase amounting to 1° for 165 feet.

The deepest borings have been executed at Mondorf, in the Grand Duchy of Luxembourg, and at Neusalzwerck, near Minden (Prussia). The former has been carried to a depth of 2380 feet, the latter to a depth of 2270 feet.

By comparing these various results, we arrive at the mean which is now generally accepted, of 1° for every 110 feet in depth; observing, nevertheless, that this will vary a third, and even a half, in some localities.

* [Some experiments recently made at Creuzot, by Walferdin, resulted in a rise of 1° for every 55 feet down to 1800 feet, and of 1° for every 44 feet beyond that depth.]