

going on in the interior of the globe. We shall hereafter have occasion to demonstrate that dislocations of the strata, with elevations of the bottom of the ocean, and eruptions of melted mineral matter, have taken place from the earliest geological periods within the scope of our inquiries.

62. EXPANSION OF ROCKS BY HEAT.—The expansive power of caloric, even in ordinary circumstances, is very considerable, as is shown by the instrument called a *pyrometer*, which illustrates a fact continually presented to our notice, namely, the expansion of a bar of metal by heat, and its contraction, by cooling, into its original dimensions. The expansion of solid bodies by heat, when effected on a large scale, gives rise to many interesting phenomena. The careful experiments made by Colonel Totten, on the expansion of granite, marble, and other rocks, by variations of temperature, have shown that the mere expansion, or contraction, of extensive beds of these materials, will account for the elevation and subsidence of considerable tracts of country, and explain many analogous phenomena.\*

63. TEMPLE OF JUPITER SERAPIS.—One of the most interesting examples of local elevation and subsidence, apparently resulting from this cause, is that afforded by the celebrated remains of the temple of Jupiter Serapis, at Puzzuoli; and which Mr. Lyell, by selecting as the subject of the frontis-

\* American Journal of Science, vol. xxii.