would flash into steam and produce the commotion of a volcanic eruption.

This ingenious theory requires the operation of sudden and violent movements, or at least that the heat generated by the crushing should be more than can be immediately conducted away through the crust. Were the crushing slow and equable, the heat developed by it might be so tranquilly dissipated that the temperature of the crust would not be sensibly affected in the process, or not to such an extent as to cause any appreciable molecular rearrangement of the particles of the rocks. But an amount of internal crushing insufficient to generate volcanic action may have been accompanied by such an elevation of temperature as to induce important changes in the structure of rocks, such as are embraced under the term "metamorphic."

There is, indeed, strong evidence that, among the consequences arising from the secular contraction of the globe, masses of sedimentary strata, many thousands of feet in thickness, have been crumpled and crushed, and that the crumpling has often been accompanied by such an amount of heat and evolution of chemical activity as to produce an interchange and rearrangement of the elements of the rocks—this change sometimes advancing perhaps to the point of actual fusion. (See postea, p. 506, and Book IV. Part VIII.) There is reason to believe that some at least of these periods of intense terrestrial disturbance have been followed by periods of prolonged volcanic action in the disturbed areas. Mr. Mallet's theory is thus, to some extent, supported by independent geological testimony. The existence, however, of large reservoirs of fused rock, at a comparatively small depth beneath the surface, may be con-