

CHAP. IX.

MODERN EFFECTS OF HEAT IN THE GLOBE.

To know the temperature of the interior parts of the globe at the present period, and the effects depending on its condition in this respect, is important, as furnishing one, and that, perhaps, the most instructive, of the elements for computing the changes which have, in earlier times, affected its structure and configuration, and varied its adaptations for organic life. By combining such knowledge of the subterranean parts of the earth as they now are, with inferences concerning more ancient periods, we are to seek the laws of action and variation of terrestrial heat, and, with the help of chemical and mechanical philosophy, to arrive at a general contemplation or "theory" of this part of geological science. Once well established, such a "theory" will be fertile of *deductions* bearing on all the known phenomena of organic and inorganic action: the *recorded facts* of geology form, on the other hand, a parallel series of terms, which involve the same elements: by comparison of these two scales, the progress made in the interpretation of nature will readily appear, and the lines of further research will be clearly indicated.

The phenomena indicative of the presence and degree of heat below the surface of the earth, are either such as mark its ordinary and regular state, as HOT SPRINGS, which, with a few exceptions, are not known to vary in their temperature, and VOLCANOS, which mark, in their epochs of critical action and their periods of repose, the measure of the intermitting agencies connected with their origin, growth, and decay. The conclusions which arise from these cognate phenomena may