

to the constitution of the beds themselves, for we may deduce many facts as to the condition of the earth at distinct periods, from the nature and condition of the organic remains which are found in the several deposites.

The effect of water in abrading and destroying rocks will be best understood by an examination of the vast deposites of clay, sand, and gravel, found in rivers, seas, and oceans, differing in no respect from the beds of the same nature known to constitute in part the crust of the earth. The aqueous causes which now act upon the surface of the earth differ from those which produced rocks in no other circumstance than in their want of intensity, the greater energy of the destroying agents at former periods depending upon the peculiar physical constitution of the earth.

The relative positions and superficial extent of land and water have been constantly changing; not slowly and imperceptibly, as in the present day, but by the activity of causes the effects of which have been almost instantaneous, upheaving the bed of the ocean and deluging the dry lands. In some instances the cause, and consequently the effect, have been local; but at certain periods there was probably a universal convulsive movement of the entire crust of the earth, when element warring with element involved all nature in one general ruin. The distorted and shattered condition of some series of rocks assures us of the truth of this statement; the hardest minerals have been melted by the intensity of the heat, while the vapours which have been generated have torn asunder the mightiest masses, and afforded an exit to the melted rocks.

It must never be forgotten that the ultimate object of geology is to gain some information concerning the formation of the earth, the causes employed, the circumstances under which these causes acted, and the physical condition of districts at each successive period of its existence. To gain this knowledge we trace the superposition of rocks, the disturbances they have suffered, and the organic remains they contain. The facts which geologists have discovered are, therefore, only the rudiments of their science, the principles to which the process of induction must be applied.

TEMPERATURE OF THE INTERIOR OF THE EARTH.

There are many circumstances which induce us to believe