

Agassiz can see no sufficient evidence of any periodic regularity in the advance and retreat of glaciers; the variations of the glaciers represent, in his opinion, the result of two opposing forces—the forward movement of the ice-masses and the solvent action of the atmosphere. The precise dimensions of a glacier are, he writes, essentially correlated with climatic conditions; a change of climate produces a corresponding increase or diminution in the size of a glacier. Agassiz regards the testimony in Switzerland as absolutely convincing, that the Swiss Alps were formerly almost wholly under ice. He contributes a wealth of observations on old moraines, rows of blocks left in Alpine valleys, rock-scratches, scarred limestone wastes, pot-holes (*Gletschermühle*), and the erratics (*Findlinge*) irregularly scattered on the plain. A very valuable account was given by Agassiz of the original home, the course of travel, and the ultimate position assumed by many of the famous “erratic” blocks in Switzerland.

Not the least interesting portion of the work is that in which Agassiz disposes of various erroneous explanations previously given for “erratics” by geologists of authority—the suggestion of De Saussure and Von Buch that the erratics had been transported by river-floods, the explosion theory of Silberschlag and De Luc, the gliding theory of Dolomieu, and the drift theory of Lyell.

After brief reference to the observations of rock-scratches and erratics made by Sir James Hall in Scotland, by Brongniart and by Nils Sefström in Scandinavia, Agassiz proceeds to enunciate his theory of the Ice Age. In conformity with Cuvier's Catastrophal Theory, he supposes that at the close of the accumulation of the geological formations there took place repeated falls of temperature, and that immediately *before* the Alpine upheaval the earth became covered with a thick crust of ice. An enormous ice-sheet extended over the greater part of Europe and across the Mediterranean as far south as the Atlas mountains, over Northern Asia and Northern America; above the ice-sheet only the highest summits emerged.

While the Alps were being upheaved, the icy crust still mantled the rocks, and any fragments dismembered from the solid rock during the movements fell upon the ice and were carried away upon its surface. After the completion of Alpine uprising the climate became milder, and as the ice melted, great