

By far the larger proportion of the surface rocks of the world have been formed by the agency of water, chiefly as a fluid, but partly as ice. Such rocks are made of *sediments*, and these sediments have been, and still are, chiefly the result of the action of atmospheric agencies, aided by chemical solutions, and of gravitation, aided by moving water. But by what special processes were they formed?

Air and water, but especially the latter, act both chemically and mechanically on the crust of the earth. Many minerals in rocks, such as feldspars, hornblende minerals, mica, &c., are composed of silicates of alumina and soda, potash, lime and magnesia. These are often associated with free silica. This is especially the case with some igneous rocks; and many of the stratified rocks consist in great part of substances of the same nature variously intermixed. Others consist of carbonate and sulphate of lime, &c., more or less pure. Of these, the carbonate of lime rocks, or common limestones, by far predominate; and they are sometimes nearly pure, forming immense areas of country, and sometimes mechanically intermingling, in every percentage, with other substances. All rain as it falls absorbs part of the carbonic acid in the air; and the water percolating through the rocks unites with and carries away in solution portions of the soda, potash, lime, or magnesia that enter into the composition of the minerals in rocks, and this promotes their disintegration. They crumble, and are in a condition to be borne to lower levels, and finally to the sea, by the mechanical agency of running water, or partly in solution.

Frost is also a powerful disintegrator. Water percolates into hollows, joints, and cracks; it freezes and expands, and thus helps to rend and break up the rocky