illustrates, expels the carbonic acid in the form of a gas. Under the high temperatures of the earliest periods, therefore, limestone could not exist. It has already been stated that all the carbon, sulphur, and chlorine in existence must, in those periods, have been represented by carbonic (CO^2), sulphuric (SO^3), and chlorhydric (HCl) acids, existing in a volatile state, mingled with the other gaseous constituents of the atmosphere. At the same time, all the silica of the globe, playing the part of an acid, would unite with the fixed elements, producing silicates of complex constitution —just such silicates as we actually find entering into the structure of the oldest portions of the earth's crust. The first rains which descended would be charged with the atmospheric acids just mentioned, which, attacking the solid silicates at a high temperature, would, as the analytical chemist knows, produce reactions resulting in the chlorids of calcium (ClCa), magnesium (ClMg), and sodium (ClNa), mingled with the sulphates of these bases (SO^3KO, SO^3NaO, SO^3CaO, SO^3MgO). The liberated silica (Si^2O^3) would separate, and would be chemically precipitated during the subsequent cooling of the waters, and would thus give rise to the enormous beds of quartz which we actually find among the very oldest strata, but nowhere else.

Among the other silicates originally formed is a family of minerals known as feldspars—very abundant, and containing, besides alumina, large percentages of either potash, soda, lime, or lithia, or two of these alkalies together. The decomposition of these feldspars—especially orthoclase, or potash-feldspar ($Si^2O^3Al^2O^3KO$)—must have taken place on an extensive scale. The result would be a clayey hydrate, called kaolin ($Si^2O^3Al^2O^3$) when pure, which became the basis of many clays and other argillaceous rocks like graphic and roofing slates. The remainder of the orthoclase would be in the form of silicates of potash (Si^2O^3KO) and