so widely disseminated. Chlorine is found chiefly in the ocean, and in the rock salt dug out of the earth. Fluorine occurs in most of the rocks, though in small proportion. Phosphorus is widely diffused in the rocks and soils, and is abundant in organic remains, in the form of phosphates.

Nearly all the simple substances above mentioned have entered into their present combinations as binary compounds; that is, they were united two and two before forming the present compounds in which they are found. The following constitute nearly all the binary compounds of the accessible parts of the globe: Silica, Alumina, Lime, Magnesia, Potassa, Soda, Oxide of Iron, Oxide of Manganese, Water, and Carbonic Acid.

It is meant only that these binary compounds, and the sixteen simple substances that have been enumerated, constitute the largest part of the known mass of the globe: for many other binary compounds, and probably all the known simple substances, are found in small quantity in the rocks; but not enough to be of importance in a geological point of view.

It has been calculated that oxygen constitutes 50 per cent. of the ponderable matter of the globe, and that its crust contains 45 per cent. of silica, and at least 10 per cent. of alumina. Potassa constitutes nearly 7 per cent. of the unstratified rocks, and enters largely into the composition of some of the stratified class. Soda forms nearly 6 per cent. of some basalts and other less extensive unstratified rocks; and it enters largely into the composition of the ocean. Lime and magnesia are diffused almost universally among the rocks in the form of silicates and carbonates —the carbonate of lime having been estimated to form one-seventh of the crust of the globe; at least three per cent. of all known rocks are some binary combination of iron, such as an oxide, a sulphuret, a carburet, etc.; manganese is widely diffused, but forms less than one per cent. of the mass of rocks.

A few simple minerals constitute the great mass of all known rocks. These are Quartz, Feldspar, Mica, Hornblende, Pyroxene, Calcite, embracing all carbonates of lime, Talc, embracing Chlorite, Steatite, and Serpentine. Oxide of iron is very common as an impurity; but it does not usually show itself till the decomposition of the rock commences.

Quartz, or silica in the pure state, is transparent, and is known as rock crystal. It is the hardest of all the minerals enumerated, easily scratching all of them. Quartz is also known, when mixed