

mineral ingredients of natural waters. It supplies the varied tribes of mollusks, corals, and many other invertebrates with mineral substance for the secretion of their tests and skeletons. Such too has been its office from remote geological periods, as is shown by the vast masses of organically-formed limestone, which enter so conspicuously into the structure of the continents. In combination with sulphuric acid, calcium forms important beds of gypsum and anhydrite.

Magnesium, Potassium, and Sodium play a less conspicuous but still essential part in the composition of the earth's crust. Magnesium, in combination with silica, forms a class of silicates of prime importance in the composition of volcanic and metamorphic rocks. As a carbonate, it unites with calcium-carbonate to form the widely diffused rock, dolomite. In union with chlorine, it takes a prominent place among the salts of sea-water. Potassium or Sodium, combined with silica, is present in small quantity in most silicates. In union with chlorine, as common salt, sodium is the most important mineral ingredient of sea-water, and can be detected in minute quantities in air, rain, and in terrestrial waters. In the old chemical formulæ hitherto employed in mineralogy the metals of the alkalies and alkaline earths are represented as oxides. Thus lime (calcium-monoxide), soda (sodium-monoxide), potash (potassium-monoxide), magnesia (magnesium-oxide), are denoted as in union with carbonic acid, sulphuric acid, silica, etc., forming carbonates, sulphates, silicates of lime, soda, etc.

Iron and Manganese are the two most common heavy metals, occurring both in the form of ores, and as constituents of rocks. Iron is the great pigment of nature. Its peroxide or sesquioxide, now known as ferric oxide, forms