e present sixty-four nts, or, as netals are ures, one e convertn-metallic , are likeseveral e gascous solid or by heat, l by presor solids. ements be represent

wo condicombined. eous Elenically, in ner to one retains its on. It is nemically. ed form a d certain no longer counteract ompound ot possess ilso a gas. lved, and wo gases, That es. Oxide of ing or of supporting combustion, but can unite with other oxides to form new and more complex compounds. Sodium is a soft shining metal, Chlorine a suffocating gas. When they combine the resulting compound is common salt.

All the Elements have Names by which they are distinguished, and the compounds formed by their union have likewise names expressive of their composition. Sodium and Chlorine, when they combine, form, as we have seen, common salt, the chemical name for which is Sodium Chloride, that is a compound of Sodium and Chlorine. Carbon (the most familiar form of which is charcoal) combines with Oxygen in two proportions, and the two resulting compounds are called repectively Carbon Monoxide, and Carbon Dioxide, to indicate that in the first there is one atom of Oxygen, and in the second two; this latter substance was first known as fixed air, and is still often called Carbonic Acid Gas, a name given to it before our present system of chemical nomenclature was made as perfect as it now is. A compound of Oxygen and one other Element is called an Oxide, of Chlorine and one other Element a Chloride, of Sulphur and another Element a Sulphide, of Iodine and another Element an Iodide, and so in other cases.

When the Oxide of a Non-metallic Element unites with water it forms an acid, that is a compound which has a sour taste and reddens litmus. When the Oxide of a metal combines with water on the other hand it forms an alkali, turning the red litmus blue.

When two such compounds, an alkali and acid, are brought together, their oxides unite, and a more complex compound is formed, which is neither acid nor alkaline, but neutral; it is usually soluble and crystallizable, and is called *A Salt*. Many of the compounds contained in the soil, in manures, and in food, are salts, or are built up in the same way. Land Plaster is Oxide of Calcium (Lime) combined with Sulphuric