

CHEMICAL LAWS.

1. A **Chemical species** includes all portions of the same kind of homogeneous substance. Pure salt, sugar, water, gold, iron, and oxygen are examples of chemical species. When a substance crystallises, the crystals are the *individuals* of the species. Chemical species are either *elements* or *compounds*. When substances undergo such a change that they disappear and become other species of substance, a *chemical change*, or *chemical action*, has taken place. Chemical changes are of several kinds:—

(1) **COMBINATION**.—Two or more substances (chemical species) combine to form one.

(2) **SIMPLE DECOMPOSITION**.—One substance (species) gives rise to two or more different substances (species).

(3) **DOUBLE DECOMPOSITION or METATHESIS**.—Two substances exchange one or more of their elements, so as to form two new substances.

(4) **REPLACEMENT or SUBSTITUTION**.—One species replaces one or more constituents of another. This replacement may be accompanied by the union of another portion of the replacing species with the replaced, as when chlorine replaces hydrogen in hydrocarbons. It not only takes the place of the hydrogen, but also forms a compound, hydrochloric acid, with the replaced hydrogen. This kind of change has been called *metalepsis*.

(5) **ISOMERIC CHANGE***.—One species becomes changed

* *isos*, equal : *meros*, part.