

forms Calcium Carbonate, common limestone or chalk. If the Carbon Dioxide be driven off from this latter by heat the Calcium Oxide remains as burnt lime ; when water is now added it combines with the Oxide and forms the Alkaline Hydrate. Calcium Oxide united with Phosphoric Oxide forms Calcium Phosphate or Phosphate of Lime. Clay consists essentially of Aluminium Oxide and Silicic Oxide, that is Aluminium Silicate, which, although it corresponds to a salt in composition, is, like many other Silicates, not soluble in water.

The Elements when in union with each other always so exist in definite proportions by weight and volume. They unite (with very few exceptions) in equal volumes compared in the gaseous state. But the volume or atomic proportion, although always constant in weight for the same element, is different in weight for the different elements. One volume or atomic proportion of Hydrogen (which is the lightest element) is reckoned as weighing 1, and a volume or atomic proportion of Oxygen weighs 16, one of N 14, one of Sulphur 32 ; these are the atomic weights of the elements respectively. Each element has a definite atomic weight.

As the atomic proportion or "atom" of an element has a definite weight, so a compound also has its definite or molecular weight. Two atoms or volumes of Hydrogen, weighing 1 each, unite with one atom or volume of Oxygen, weighing 16, to form one molecule of water weighing 18. The molecular weight of a compound is the sum of the atomic weights of its constituents.

In Chemical Notation every element is indicated by a *Symbol*, which consists, in most cases, of the initial letter of the name of the element, as C for Carbon ; where two or more elements have the same initial letter, an additional distinctive letter is added when necessary, as Cl for Chlorine. The symbol stands for