

CHAPTER IV

HYDROGEN

History.—Long ago, chemists in their random mixing of various solids and liquids had come across cases where gases were produced, and sometimes they found that these gases could be set on fire. Such a gas was obtained, for instance, when oil of vitriol (sulphuric acid) was poured on to iron—and this gas was called “inflammable air.” Sir Henry Cavendish, an Englishman, made a special study of it in 1766, and later noticed, among other things, that water was produced when it burned. Lavoisier studied this still further and named the gas hydrogen, from two Greek words meaning water generator.

Occurrence.—Hydrogen does not occur free (uncombined) to any important extent in nature, but in combination it forms about one-ninth of water, so there is plenty of it to be had. Further, as we shall see later, it occurs in combination in all acids and in almost all animal and vegetable substances as well as in some other things.

Preparation.—Hydrogen is prepared for experimental purposes either from water or from acids :

From water : by action of metals
 by action of electric current
From acids : by action of metals

To prepare hydrogen from water, which is a compound of hydrogen and oxygen, we may present something to the water that will take away the oxygen and leave the hydrogen