Anæsthetics.

No. 1.—CHLOROFORM.

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Of the numerous drugs, medical appliances, etc., with which a hospital nurse comes in contact in her daily work, the ones that interest her the most are nearly always the anæsthetics, though strange to say she knows least about them.

Every trained nurse knows the common anæsthetics by name, can recognise the odour of chloroform or ether, is familiar with the methods of bringing the patient under their influence, and the general effect of each individual anæsthetic, both at the time and afterwards, on the patient.

But as to what they really are her mind is, in most cases, a blank.

Chloroform, the one better known than any of the others, we will speak of first.

Chloroform, C.H.Cl.3.

Chloroform was discovered in 1831, by Leibig, in England, Guthrie in America, and Loubeiran in France, almost simultaneously, Leibig believing it to be a mixture of Chlorine and Carbon, called it Perchloride of Carbon.

In 1836 Dumas discovered its exact composition, and named it Chloroform, because he found that when treated with an Alkali, such as Caustic Potash, Potassium *Chloride* and *Formic* Acid were found.

In 1847 Dr. Simpson, the great obstetric physician (afterwards Sir James Simpson), used it as an anæsthetic. He found it to be most highly successful, and on his recommendation to the medical profession, it soon became in general use for surgical operations.

Between the time Chloroform was discovered and its coming into use, as an anæsthetic, other substances, especially Ether, were employed to render patients unconscious.

Chloroform, C.H.Cl3, Trichloromethyl, is prepared by distilling together Chlorinated Lime, Slacked Lime, Ethylic Alcohol (Spirits of Wine), and water. The distillate is then treated with Sulphuric acid, and Lime. Alcohol is added to preserve it, in the case of Chloroform for use for medicinal purposes.

The first part of the process is, the Alcohol and water are treated together in a still, the chlorinated lime and slacked lime are added. The still is connected with a condenser, around which a stream of cold water flows. As the vapour of Chloroform passes through, it is condensed, and flows into a receiver placed at the end of the condenser.

The crude Chloroform is then shaken up with water, afterwards with Sulphuric, which removes any hydro-carbons, it is then neutralised by being agitated with lime. The water will remove any spirits of wine which may be present, and in its turn will be removed, on the Chloroform being placed in a bottle containing fused Chloride of Calcium, a substance which has such a strong affinity for water, that it will remove it from the Chloroform, and re-hydrate itself.

The Chloroform is then re-distilled, and constitutes pure Chloroform.

But to preserve it the British Pharmacopœia orders one per cent. of Ethylic Alcohol to be added.

The specific gravity of Pure Chloroform is 1.5, the official Chloroform (i.e., as ordered in the British Pharmacopœia) is 1.490 to 1.495, that is to say, the weight of Chloroform is 1.50, compared with the weight of an equal quantity of water. The water being taken as 1.00.

Water 1.00, pure Chloroform 1.5, official Chloroform 1.490.

Chloroform is a colourless liquid with a peculiar characteristic odour, well known to every hospital nurse. It has a sweet taste, and most antiseptic properties; it is much used by dentists to render the cavity of teeth antiseptic, previous to a stopping being put in. It is soluble in water, 1 in 200; it will dissolve in Alcohol or Ether in all proportions, so that the A.C.E. Mixture now so much used as an anæsthetic can be easily prepared.

Besides its great and well known use as the popular anæsthetic of the time, it is also used internally and externally, though the majority of people fancy it is only used for operations, and so many seem to think no operation under an anæsthetic is performed except when Chloroform is used. To the public mind the two words seem to run together. Operation—Chloroform.

Chloroform may be given in doses of 1 to 5 minims. Of all preparations containing it, "Chlorodyne" is the best known. Its dose is 5 to 15 minims. Its full name is "Compound Tincture of Chloroform and Morphine." Then there is Spirits of Chloroform, also known as "Chloric Ether," of which as much as forty minims may be given. Chloroform water, made by dissolving one part of Chloroform in 399 parts of distilled water, may be used in medicine at the discretion of the prescriber.

Chloroform Liniment is largely used either by itself, or as an ingredient in other preparations for external use. Besides its medicinal uses, in organic chemistry, it is frequently employed as a means of separating one substance from another. Some of the drugs in daily use are prepared by its action.

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