THERAPEUTICS.

IRON AND HEMATICS.

The desire to "purify the blood," to "build up the blood," to "increase the haemoglobin" and so on has prevailed for many generations among both the laity, who believe in "brimstone and molasses," or "rusty nails in vinegar" as regular springtime medication, and the regular physician who prescribes potassium iodide for the spirochaete and hematics for all forms of anemia. Like most public beliefs that have been widely accepted and long maintained, this faith is founded upon a dim conception of important truths. Hematics are agents that exert an influence upon the condition of the blood. Closely allied to these, and in some instances identical with them, are tonics, agents that tend to increase the general organ over which they also are supposed to exert an influence.

FERRUM (IRON).

Iron and its preparations stands at the head of hematic drugs. It is an indispensable element in the composition of the red blood corpuscles, where it is supposed to act as an oxygen carrier, conveying that vital element to the various tissues and returning to the lungs laden with carbonic acid gas resulting from necessary disintegration of tissues in performing their physiological functions. It follows that whenever the erythrocytes are far below the standard in numbers the work of the system is performed with difficulty "because the laborers are few."

Experience has shown many generations of physicians that the proper administration of some preparation of iron is the most useful therapeutic procedure at their command. The high estimate placed upon iron is shown by the large number of official and unofficial preparations of it available for prescription, the entire number being over fifty. Of these no less than twenty are in general use, either by themselves or in combination with other drugs.

It should be remembered that no fluid preparation of iron should be prescribed in the same mixture with tannin, or any vegetable substance containing tannin, on account of the repulsive looking black compound resulting, to say nothing of its taste. In fact, iron and tannin mixed form good black ink. The solid forms of iron used in medicine will be first considered.

FERRUM REDACTUM.

Reduced iron, iron by hydrogen and Quenne's iron are the names for this preparation. It is found in the shops in a fine, gray-black powder, without taste or odor, and insoluble in water or alcohol. When taken in small doses, 2 grains after each meal (0.12 gm.) it causes no symptoms of immediate results, but after a few days of such treatment; that is, if the subject is a suitable one for its use, the patient begins to have a better appetite and feel more inclined to moderate exercise.

The lips, which were pale, and the mucous membranes of the mouth, regain their pink color. The bowels are sometimes more and sometimes less regular than before, but the stools have assumed a greenish-black color caused by the excretion of unabsorbed iron combined with tannin and sulphides. In a word, the whole system seems to have received a tonic impulse. No direct effect upon the pulse is evident, but the respiratory powers are increased, or, as some patients express it, "their wind is better."

Reduced iron is supposed to be changed in the stomach into chloride before absorption, and this is probably true of all the solid forms usually prescribed. Nevertheless, experience teaches that there is much difference in the efficiency of the various irons. Some practitioners prefer to give minute doses at intervals of one hour, and in this way claim to use less iron with greater effect than in any other. For such uses the dose of reduced iron

is 1-8 grain (0.008 gm.). This preparation is one of the bland, or unirritating irons. Others which are likewise free from irritating qualities are the Pyrophosphate of Iron, dose grains 2 to 5 (0.12-0.3 gm.); Ferri Citras, same dose; Ferri Hypophosphis, slightly soluble in water, dose the same; Ferri Lactas, dose 1 to 3 grains (0.6-0.19 gm.); all the carbonates, dose 2 to 5 grains (0.12-0.32 gm.), and most of the so-called organic compounds of iron.

The iron salts of the mineral acids are generally styptic and irritating in character. Ferri Pyrophosphas and Ferri et Potassii Tartaras are probably the least irritating and most assimilable of the milder salts, being readily soluble in water and easily disguised in taste by a little syrupus Limonis, or other flavoring. The Ferri Albuminas, or albuminate of iron, containing 5 per cent of metallic iron, is unirritating and readily absorbed. One of the most elegant of the official preparations is: Elixir Ferri, quinae and Strychninae Phosphatis, containing one grain (0.06 gm.) of phosphate of iron, 1-2 grain (0.03 gm.) of quinine and 1-64 grain of strychnine phosphate (0.001 gm.) to the tablespoonful 4.0 c.c. Many of the highly advertised iron tonics are merely equivalents of this useful elixir. Not one of them is superior to it in elegance or efficiency.

Many preparations of iron derived from the blood of animals are offered to the profession as superior to those of chemical origin, but investigation has not yet determined their true value, many investigators considering them inferior to some of the older and less pretentious preparations.

Externally and locally iron is used as a hemostatic. For this purpose the subsulphate or its solution, is the most useful, though the chloride and nitrate are also available. These salts form with the blood a hard, insoluble clot, which is disagreeable and liable to infection. They should only be used in emer-

gencies where ligation or pressure are not immediately available.

A dilution of the tincture of the chloride, one part to seven of water, has been used as an astringent spray in chronic pharyngitis.

In most forms of anemia iron is of great benefit, but in pernicious anemia, unless the cause be found and remedied, it is useless.

In chlorosis Bland's pills, each containing one grain of carbonate of iron (0.06 gm.) are found most effectual, from 2 to 4 being taken three times a day. In the anemia of Bright's disease the Liquor Ferri et Ammonii Acetatis, solution of iron and acetate of ammonia, is by far the most useful form of hematic to administer. The average dose is 2 fluid drachms (8.0 c.c.), well diluted, four times a day.

Syrupus Ferri Iodidi, syrup of iodide of iron, has been found useful in anemia of scrofula and syphilis, and in removing a tendency to boils. It is a mild preparation and properly diluted is suitable for children. When their cuts and sores are slow to heal, or there is a tendency to spreading in any skin lesion, 3 drops (0.19 c.c.) in teaspoonful of sweetened water can be given with advantage every four hours to children between two and eight years old. As an alterative tonic to adults it can be given combined with iodide of potash, ten drops to ten grains (0.64 c.c. and gm.), in a dessertspoonful of water after each meal.

In recurrent chills a tonic of the tincture of the chloride, three parts, and solution of potassium arsenite (Fowler's solution), one part, is of great advantage, taken in doses of 15 drops (1.0 c.c.), well diluted, three or four times a day. Saturation by the arsenic should be avoided. The tincture of ferric chloride has also been thought useful in diphtheria and erysipelas, the dose being from 3 to 15 drops, well diluted, according to age. The addition of small doses of some preparation of mercury certainly seems to increase the efficiency of an iron tonic. The following prescription

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