

It has been supposed by some that the oxide may prove preventive of the action of the arsenic mechanically, as charcoal has been found to do, by enveloping the poison and protecting the stomach from its contact; and the large quantity in which the oxide requires to be employed, naturally favours such a supposition. It has been found, however, that the hydrated oxide can remove arsenic from solution; and, of course, it follows that it acts by uniting *chemically* with the poison. Mr. Brett did not succeed in removing the *whole* of the arsenic from its solution when he used eight or ten grains of oxide to one of arsenious acid; but Dr. Mackenzie withdrew it completely by using twelve grains of the oxide to one of arsenic.

The following experiments will exhibit the result of parallel trials.

1st. One grain of arsenious acid dissolved in water; when cold, was agitated for a few minutes with a portion of the freshly precipitated and moist sesquioxide, equal to four grains of the dry oxide. It was found that this step had failed to withdraw a considerable portion of the arsenic from solution. But the latter (excepting the small quantity used in testing for the arsenic), being allowed to remain upon the oxide for eighteen hours, was found to have lost that part of the poison which had not been precipitated by the first stage of the experiment. The latter step of the experiment was repeated several times, but the arsenic was not always removed by leaving the solution eighteen hours in contact with the oxide. It also appeared (as in Mr. Brett's experiments) that the compound of the oxide with the arsenic, when washed free of *adhering* arsenic by cold water, readily yielded *combined* arsenic to *boiling water poured upon it*. Water at 98 degrees did not separate the combined arsenic, unless permitted to remain a considerable time upon the ferro-arsenical compound.

Experiment 2. One grain of arsenic dissolved in water was, when the fluid had cooled, agitated with a quantity of the moist oxide, containing twelve grains of the dry oxide; in this instance it was found that the arsenic had been almost completely precipitated. The same results occurred at a temperature of 98 degrees. The ferro-arsenical compound, when washed with boiling water, yielded up little or none of its arsenic.

Experiment 3, showed that it required five times the quantity of the dry oxide to produce the same effects.

Experiment 4. Half a grain of arsenite of potassa was agitated with a portion of the moist oxide equal to eight grains of the dry, and it was found that a portion of the arsenite had been decomposed.

It thus appears that oxide of iron is capable of throwing down an insoluble compound from the solution of arsenite of potassa. It should be remembered, however, that when arsenite of potassa and persulphate of iron are mixed, an arsenite of iron is formed of very different qualities,—of a yellow colour, soluble in acids and ammonia,—and yielding a portion of its arsenic to boiling water, passing at the same time to a brick colour.

The presence of ammonia seems to modify the action of arsenious acid on iron, for if the yellow arsenite of iron be dissolved in an acid and precipitated by potass, it appears, as before, yellow; but if ammonia be the precipitant, the substance thrown down is of a dirty brown colour; besides the hydrated oxide always retains a portion of the ammonia used in forming it.

Experiment 5. This experiment proved that it required twice the necessary quantity of hydrated oxide from ammonia to remove the arsenic, when the oxide used was thrown down by potassa.

Experiments 6, 7, 8, 9, 10, 11, and 12, were performed with the view of ascertaining more precisely in what quantity the oxide should be employed to remove the arsenic completely. For this purpose two solutions were prepared, one of arsenite of potassa, and the other of persulphate of iron, of such strength that an equal bulk of each should contain respectively arsenious acid and sesquioxide of iron in atomic proportions. The solution of iron was pur-

posely made with an excess of acid, in order to redissolve the yellow arsenite of iron formed by the mixture of the solutions. The superabundant acid was then saturated by ammonia in excess; by which means it was intended to separate the oxide of iron in determinate proportion, and ascertain in what ratio it required to be employed completely to remove the arsenic. It resulted from these experiments that when the oxide of iron and arsenious acid unite atom to atom, an arsenite of iron is formed, soluble in ammonia, and readily decomposed by boiling water; and that the solubility in ammonia is increased when the arsenic is in the ratio of two parts to one of iron. When the oxide of iron is to the arsenic as three or four to one, the compound is partially soluble in ammonia, and still readily decomposed by boiling water; but when the iron is eight, ten, or twelve to one of arsenic, not only is all the arsenic removed, and the precipitate insoluble in ammonia, but the iron retains the arsenic in such force that it is hardly possible to separate it by the affusion of boiling water.—*Condensed from the Edinburgh Medical and Surgical Journal*, July, 1840.

[The memoir of Dr. MacLagan is as useful as it is clever, determining several points which have a practical bearing on the therapeutics of poisoning, or the method of analyzing for arsenic; the author has ascertained the properties of the compounds formed by iron with arsenic—has indicated the dose more precisely than could be done previously—has shown the oxide should be prepared with ammonia—and has proved that the precipitate formed by a full measure of the oxide, with difficulty yields its arsenic to boiling water. The latter fact goes far to establish the superiority of Orfila's method of analysis in poisoning by arsenic, when the sesquioxide has been used as an antidote. Dr. MacLagan seems not to have been aware that Devergie long ago had directed the oxide to be prepared from ammonia, and used immediately, or kept in *closely stoppered bottles under water*. We are glad to have an opportunity of directing attention to this mode of preserving it always ready for use, for in few chemists' shops can the sesquioxide be procured thus preserved in an efficacious state; a circumstance to be regretted, seeing that its *early administration* is necessary to save life.—Eds.]

TANNIN AS A REMEDY FOR PROFUSE PERSPIRATION.

THIS affection has been treated by sugar of lead, but in some cases this remedy has produced serious inconvenience, which is not likely to occur with tannin now recommended by Dr. Charvet. The dose is from $\frac{1}{4}$ of a grain to one grain in the twenty-four hours. It is generally given in the evening, with or without opium. The first case in which Dr. C. employed it was in a case of phthisical marasmus, in which the night sweats proved the most harassing part of the symptoms. A very small quantity was administered the first night, with evident relief. The dose was gradually increased to one grain; then to one and a third.—*Bull. Ther.*

TO SUBSCRIBERS.

Many of our friends in the country having intimated an intention of waiting until all our arrangements had been completed, we beg to inform them that we have decided upon the series of lectures, &c., which are to appear in our forthcoming numbers. Gentlemen residing in the country, who are desirous of taking the Journal, may, therefore, forward their names to the Publishers without further hesitation.

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