

These theoretical quantities do not work well in practice, because of the loss of acid by evaporation during the solution of the metal, and on the subsequent boiling; and again, on account of the unstable nature of the solution of ferrous chloride first formed, which, if it contain not an excess of acid, immediately begins to change, acquiring a skin or pellicle of oxychloride, which is afterwards deposited. If the filtration be long delayed, the strength of the solution would thus be reduced.

The quantity of hydrochloric acid ordered by the Pharmacopœia over that actually required is 1.624 oz. by weight, or nearly $1\frac{1}{2}$ fluid ounces. I have ascertained by repeated experiments that the prescribed amount is judiciously proportioned, and will yield a preparation of a perfectly stable character.

The quantity of nitric acid, as well as the manner of its addition, might be altered with material advantage. In operating upon quantities no larger than that ordered, and by employing large vessels the operation may, possibly, be managed, without loss; but even in that case the proportion of nitric acid cannot be nicely regulated. If the quantity of materials should be large it would be almost impossible to control the action. In operations which I am frequently called upon to conduct, ten pounds of iron are dissolved, and in treating the solution with nitric acid, it requires the most careful addition of this agent, as well as the utmost diligence of the operator, as far as stirring and regulating the heat is concerned, to keep the mixture within the pot; although a vessel capable of holding twice the bulk of the liquid is employed. The sudden and violent disengagement of nitric oxide which marks the final addition of acid, and the completion of this part of the process, is always difficult enough to control, however, little acid be added at a time, and I am convinced that if the officinal process were followed, would be quite unmanageable.

Those who have had much experience with this preparation will, doubtless, have discovered the advantages of adding the acid gradually, and by small portions, using no more than is actually required. In the officinal formula, the excess of nitric acid is considerable. Nine fluid drachms are ordered for two ounces of iron, while only a little over two-thirds of this quantity is necessary. For 2 parts of metal 1.07 parts of acid sp. gr. 1.42 should suffice, and practically, I find that only a slight excess over this is required.

The plan of procedure which I have found most successful is to