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XX. *Advantageous Method of preparing Red Oxide of Quicksilver.* By J. W. C. FISCHER*.

C. MONS has observed that, in the preparation of the red oxide of quicksilver from nitrate of mercury, the whole of the acid is far from being employed for the complete oxidation of the quicksilver, as during the heating of the nitrate of mercury a considerable quantity of the acid is again obtained. He therefore proposes the employment of a larger quantity of quicksilver than the quantity of nitrous acid destined for the solution is actually able to dissolve, as this excess of quicksilver must also be oxidated by the heating of the salt brought to a state of dryness by the escape of the acid. But as the nitrous acid of the shops does not always possess the same degree of concentration, I gave a recipe in another work† for finding the proper proportion of quicksilver, which is as follows: If the hot prepared dry nitrate of mercury be rubbed up with from one-third to one-half part of metallic quicksilver, and exposed in the usual manner to the fire, a proportion that may be employed under all circumstances will be obtained.

Mr. Schmidt, apothecary of Sonderburg, in consequence of the before-mentioned observation of C. Mons, made several experiments on this subject without the wished-for success, as he always obtained the excess of quicksilver in a metallic form. The results of my present experiments were quite different, and fully answered my expectation.

I dissolved in a common heat four hundred parts of metallic quicksilver in nitrous acid. To obtain a perfectly neutralized solution, the acid was added only in drops till all the quicksilver was dissolved. The solution was evaporated to dryness, in an evaporating dish, and the dry salt was rubbed up with 350 parts of metallic quicksilver. The powder assumed a dark gray colour: but when brought to the consistence of a thick paste by a little water, in order to complete the union of the metallic quicksilver, the colour became grayish white, and, in general, only five minutes were required to make the metallic quicksilver disappear entirely. The humid mass was moderately dried on a common stove, and being put into a retort was exposed to a sudden heat. In three minutes a disengagement of

* Scherer's *Allgemeines Journal der Chemie*, no. 43, 1802.

† *Handbuch der Pharmaceutischen Praxis, mit einer Vorrede von D. S. F. Heimbstadt.* 1801.

oxygen

oxygen gas was observed, and the whitish-gray colour of the whole mass was changed to a blackish red. The operation was then suspended; and, on cooling, the whole mass exhibited throughout that uniform red colour observed in red precipitate, when reduced to a state of the greatest fineness; and it was so much divided that it could be shaken from the retort without breaking it. No traces of metallic quicksilver remained, but a small quantity of acid fluid; which induced me to repeat the experiment with a larger quantity of mercury. I therefore took 400 parts of quicksilver, which were dissolved as before in nitric acid: when the solution was evaporated to dryness, it was mixed with 400 parts more of metallic quicksilver, and the mixture was treated as before. Except the difference in the weight, the results of this operation were not different from the preceding.

This method not only saves one half of the nitric acid, but the retort can be several times used for the same purpose. The tedious process of preparing precipitate is also avoided, as it is soon obtained in the form of a very fine powder. The loss of time and of fire is also much less, as several pounds of white mercurial paste can be converted into red oxide in less than thirty minutes. I subjected to experiment, however, only a few ounces, and the operation was always finished in from three to five minutes in a sudden heat. On this account the present method is highly worthy the attention of chemists and apothecaries.

XXI. A Memoir concerning several indigenous Plants, which may serve as a Substitute for Oak Bark, and for certain foreign Articles in the Tanning of Leather.*

THE object of this memoir is to show how the destruction of trees, and particularly of oak-trees, which are so valuable, may in great part be prevented. A great consumption of them is caused by the tanneries. A discovery has been made last summer, which will contribute to the preservation of the trees, and to the continuation and even to the increase of the tanneries. Eight new sorts of leather have been prepared and tanned without any bark at all, and with materials of which we shall give a detailed account. By using these articles, there is a saving, not only of bark, but likewise of several foreign drugs, which are generally

* From the tenth volume of the *Transactions of the Royal Academy of Berlin*.