

water bath. After a saturated alcoholic solution of dimethylglyoxime is obtained the solution is filtered with suction through a heated funnel. It is usually advisable to place a cloth filter beneath the usual filter paper. In this manner, clogging of the filter is avoided.

The filtrate is transferred to a clean 5-liter flask and cooled rapidly with frequent shaking so as to produce small crystals. This is advisable since dimethylglyoxime is used in alcoholic solution and the large crystals, because of their slow rate of solution, are not desired. The crop of white crystals is filtered off, washed with cold alcohol, and the filtrate transferred to the first flask, which still contains some of the material from the first run. An additional portion of crude dimethylglyoxime is added and the operations repeated.

The alcoholic filtrates are used repeatedly until they become rather brown in color, when they are distilled to recover not only the alcohol but also the colored dimethylglyoxime residues which may be purified by conversion into the sodium salt and reprecipitation with ammonium chloride as already directed above.

In filtering the hot alcohol solutions the vacuum should be so controlled that no large amount of solvent is lost due to volatilization.

Time Required for the Preparation of Dimethylglyoxime.

Following the above directions, two students working 8 hours a day are easily enabled to prepare 1000 g. of recrystallized dimethylglyoxime per day. In actual practice one individual prepares the hydroxylamine solution, and also recrystallizes the final dimethylglyoxime. Two ko. of hydroxylamine sulfate (in solution) are prepared in one day, whereas 1600 g. are actually needed in the preparation.

The other individual prepares the 2400 cc. of amyl nitrite required, from which, with two portions of methylethylketone of 850 cc. each, he prepares the nitroso derivative. The nitrosomethylethylketone thus obtained is run in 4 portions with hydroxylamine sulfate (400 g. for each portion) to the final product—1200 g. of uncrystallized dimethylglyoxime. The yield of recrystallized product is 1000 g. The material is white and crystalline, and melts very sharply at 240° (corr.).

NEW BOOK.

Oude Chemische Werktuigen en Laboratoria Van Zosimus tot Boerhaave. By DR. H. J. BACKER. University of Groningen. 62 pages, 52 illustrations. J. B. Wolters U. M. Groningen and the Hague, 1918.

This attractive pamphlet follows the lines of an address delivered by the author at the opening exercises of the new organic laboratory of the University of Groningen in 1917.

A brief introduction dealing with the available sources of information

is followed by an interesting account of the various forms of apparatus used by the alchemists, these being classified according to the operations for which they were designed and illustrated by well-chosen drawings reproduced from alchemistic books. A second part describes the facilities and arrangements of chemical laboratories during the alchemistic and iatrochemical periods.

The chief charm of the little book is in its illustrations of which there are more than fifty. One of these depicts the various pieces of apparatus selected by Becher for his "portable laboratory" and most of the others are almost equally interesting to a chemist. They would make the work of value even to one who could not read the text, but to the Anglo-Saxon reader who knows a little German the Dutch language presents no very serious obstacle.

F. J. MOORE.