ful whether the necessary separations of the products could be profitably made.

Another method which has suggested itself, as a result of the writers' investigations, is treatment of the ground orthoclase with a certain proportion of hydrofluoric acid, taking advantage of the reactions given on pages 790–1, but without the subsequent electrolysis. By filtering cold on a cloth filter, nearly all of the potash present is held in the residue in the form of a double fluoride with alumina. By subsequent heating with ground limestone or lime, the potash is readily made soluble, and, if it is desired, can be leached out. Unfortunately, the excess of lime present makes it impossible to recover the hydrofluoric acid.

It would seem probable that some one of these methods which have been described or suggested, could be developed under favorable circumstances into a successful commercial process. The above data are presented in the hope that it will stimulate experimentation on a larger scale than is possible in a chemical laboratory and result in a successful solution of an important industrial problem.

The results given in this paper may be summarized as follows:

(1) Fine grinding of feldspars renders the potash partly available under the action of water. The addition of certain substances, such as ammonium salts, lime and gypsum, increases this effect.

(2) It is possible to completely extract potash by an electrolytic method either with or without the addition of hydrofluoric acid, but it is probable that this method could not be used commercially on account of its cost.

(3) The effect of fineness of grinding has been studied and data given showing the relation of surface area to rate of decomposition.

(4) It is shown that there are numerous fusion methods which could be used successfully if the cost were not too high. The attack on the silicates by means of potash or its compounds yields some interesting reaction products which might possibly be made use of.

(5) The attack with hydrofluoric acid is suggested as a possible method that deserves further study.

[CONTRIBUTION FROM THE BUREAU OF CHEMISTRY, U. S. DEPARTMENT OF AGRICULTURE.]

FLASK FOR FAT DETERMINATION.

W. L. DUBOIS.

Received February 21, 1908.

The Knorr apparatus for the extraction of fat employs a flask which is fragile, very difficult to clean and expensive to replace. A number of attempts have been made to supplant these flasks with simpler ones

more easily cleaned, and the breakage of which would not be such an important matter.

The first flask designed to meet this requirement is that described by Wheeler and Hartwell.[1] In this apparatus the designers have used a straight-necked flask holding about 100 cc., fitted with a rubber cup channeled so as to receive the condenser. Some workers, however, have found this device somewhat unsatisfactory, owing to the short life of the rubber cups and some danger attending their use. The modification of this idea, shown in Fig. 1, was designed by Mr. F. W. Robison, of the Michigan Dairy and Food Department. As is indicated in Fig. 2, the seal consists of a maple cup made to fit over an ordinary rubber stopper through which the neck of the flask is passed. The seal is made by mercury in a manner similar to the device employed by Wheeler and Hartwell. This form of apparatus is now used in one of the laboratories of the Department of Agriculture and is considered a great improvement over the Knorr flask.

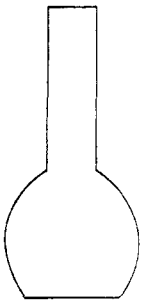

Fig. 1.

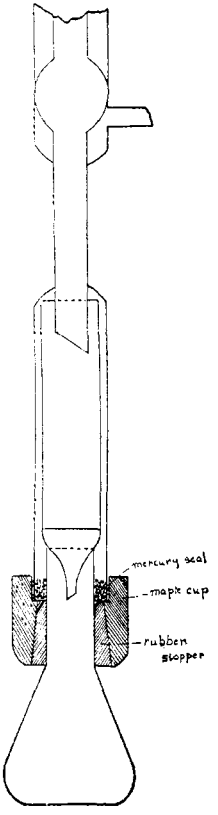

Fig. 2.

The flask designed by the writer and shown with connections, in Fig. 2, is a modification of the above. Being of the Erlenmeyer type, cleaning is more easily accomplished, while at the same time all the good features of the above-described flasks are retained. The one used in this laboratory holds about 100 cc. and weighs approximately 30 grams, this tare affording considerable strength while not affecting the accuracy in weighing. In practical use the flask is proving about all that could be desired in regard to safety and ease of manipulation, facility in cleaning and small expense for replacement.

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A PROPOSED METHOD FOR THE ROUTINE VALUATION OF DIASTASE PREPARATIONS.

BY WILLIAM A. JOHNSON.

Received February 21, 1908.

In view of the rapidly increasing number of starch-digesting products on the market, and the exaggerated claims which are made for some of

[1] THIS JOURNAL, 23, 338.