A MODIFICATION OF THE KJELDAHL NITROGEN PROCEDURE.

R. L. FRISBIE, JOLIET TOWNSHIP HIGH SCHOOL,
JOLIET, ILLINOIS.

In the ordinary method of determination of nitrogen by the Kjeldahl method, it has been customary, after completion of the digestion with sulphuric acid, to add a strong solution of sodium hydroxide. Laboratory directions given in the quantitative methods all state that the sodium hydroxide solution should be added in such a way that mixing does not occur until connections are made in the distilling apparatus and then by shaking or rotating the flask.

It has been the experience of the writer, and of others with whom he has talked on the subject, that at this point in the procedure, two objectionable possibilities are presented. It is difficult for the beginner, at least, to cause the two layers in the flask to mix slowly, and if it does take place too rapidly, the violence of the action causes some of the solution to shoot up into the condenser tube, thereby, of course, ruining the results; and even in a few cases the action has been known to have force enough to break the flask, presenting a decided element of personal risk to the worker.

Experiments have been conducted here in the Joliet Junior College laboratory, and we seem to have found a modification of the procedure which eliminates these dangers.

Our method is as follows: after completion of the digestion and subsequent cooling, dilute with 200-250 cc. of water with cooling, quickly introduce into the flask 50-75 grams of sodium hydroxide in the stick form and immediately make connections for distilling.

The sticks of sodium hydroxide quickly and quietly dissolve, and in our experiments the action has never been violent enough to cause more than moderate boiling of the mixture. In addition, this operation may be performed so quickly that very little, if any, ammonia is lost, as shown by results obtained.

We feel that we can recommend this change in the common procedure.