collected in the first, along with some water, about five cc. of clear liquid, which was strongly alkaline, had a pungent fishy odor, combined with hydrochloric acid, and otherwise manifested the general properties of the amines. An attempt was made to further purify it by freeing it from the water, but the amount was too small to bring to a definite boiling-point. The remaining liquid was neutralized with hydrochloric acid, and slowly evaporated down, whereupon a few crystals, slightly colored and deliquescent, were obtained. The quantity was too small to admit of an elementary analysis, so it was not possible to say whether the product was a single amine or a mixture of amines. The filter cake, the refuse from the clarification of cane juice, gave the same odor and alkaline vapor upon heating. It was my aim to subject several pounds of the filter cake to the same treatment in order to fully clear up the question, if possible, but the amount of other work required of me prevented. The clearing up of the matter is of the greatest scientific and practical interest to the sugar industry, as it will doubtless throw light upon the nature both of the amido and albuminous bodies of the cane juice. I write the account of the work with the hope that some chemist may be induced to continue the work, as the writer will discontinue sugar work.

[CONTRIBUTED FROM THE LABORATORY OF THE LOUISIANA EXPERIMENT STATION AND SUGAR SCHOOL.]

A SIMPLE AND CONVENIENT EXTRACTION APPARATUS FOR FOOD-STUFF ANALYSIS.

BY J. L. BEESON.

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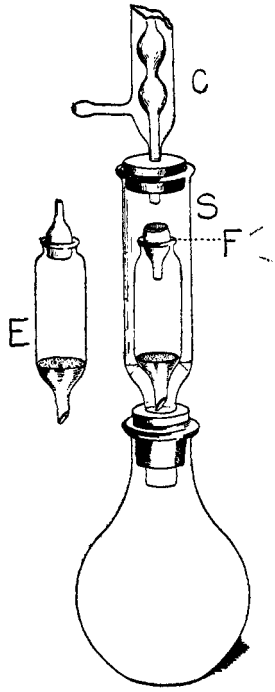
THE apparatus shown in the accompanying illustration I have adapted from the Johnston extractor, for the general use of the average student in the laboratory aiming at simplicity, greater compactness, convenience, rapidity of operation, and accuracy. The extraction tube *E*, which is rather short, is provided as usual with a perforated platinum disk fused into the bottom, and in addition with a specially devised funnel stopper of ground glass, by means of which the weighed sample can be rapidly

and effectively dried to constant weight in a current of dry hydrogen or other inactive gas for the estimation of the moisture, and at the same time preparing the sample for extraction. Rubber caps are placed over the two ends of the tube during the cooling and weighing. For the extraction of the sample, the tube *E* is placed in a Stutzer tube *S* as shown in the figure, which is connected as usual with an ether flask below, and by means of either a cork or mercury joint with a short bulb condenser above. The funnel stopper, placed as shown, directs the returning drops of the liquid upon the center of the sample, and especially it prevents the loss of the sample by spattering. This is a source of objection to all forms of open extractors. Owing to the very small percentage of fats or ether extracts in most food stuffs a small loss of the sample from this cause makes a very large analytical error in the work, whether estimated from loss of the sample or gain in weight of the ether flask. During two years use in this laboratory we have obtained with the apparatus very concordant results between duplicate analyses, and would commend it for the use of students especially. By means of a seven mm. glass tube, six tubes and samples are dried in a current of hydrogen at a time in a water-oven. The whole apparatus may be had of Max Kaehler and Martini, Berlin.



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This work is a compilation of material intended to cover the chief branches of chemical industry. The first volume deals in