APPARATUS FOR BUTTER ANALYSIS.

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IN a paper, a translation of which appeared in the *ANALYST* for November and December, 1888, and January and February, 1889, Wollny recommends the use of a 50 per cent. soda solution for saponifying the butter fat in Reichert's process, and the following apparatus has been found useful for storing this solution.

It consists of a bottle holding the solution fitted with an indiarubber cork, through which two tubes pass, one of them, open at both ends, carrying the blowing-ball A, and the other being bent over and terminating in the pipette B. The tube passes down inside the pipette, and terminates at a mark, to which, if the pipette is filled, just over 1 c.c. of soda solution would be discharged. In the upper part of the pipette at tube D, on which is the tap C, is joined at right angles, to the end of which a soda-lime tube is attached (not shown in figure). At the bottom of the pipette a cap (either of glass as in figure, or preferably of indiarubber) is fitted.

The apparatus is used in the following manner: On compressing the ball A, the soda solution is forced up the other tube into the pipette, the air escaping by the tube D (the tap being open). When the pipette is full to the mark, or a little over, the pressure on the ball is released, and the excess of soda solution, together with some air, is sucked back. The tap is now turned off and the cap removed, and the flask or other receptacle placed under the bottom of the pipette; on the tap being turned, the caustic soda solution runs out, and the cap being replaced, the apparatus is ready for use again.

Fig. 1.

Fig. 2.

As long as the level of the caustic soda in the pipette is not allowed to rise as high as the tube D, no particular care need be taken to fill to any place, the excess being invariably sucked back. All the air that enters the apparatus must pass through the soda-lime tube attached to D, and is thus free from carbonic acid. The quantity 1 c.c. has been chosen, as it is sufficient for $2\frac{1}{2}$ grs. of butter-fat, the quantity taken for the Reichert process; should 5 grs. be used, 2 c.c. may, of course, be taken.

Another piece of apparatus which will be found useful is this (Fig. 2), which is used when distilling. It consists of a tube, A 1 c.m. in diameter, and about 4 c.m. long, connected by a bulb, B 2 c.m. in diameter, with a tube C about .6 c.m. in diameter and 15 c.m. long, at angle of about 120° ; this at the end is also bent at 120° . On this tube C is fitted a small condenser D, the water running in at E and out at E. The distilling flask is attached by a cork to A, and the end of C is inserted into a condenser, the water being allowed to run freely through D until the fatty acids are melted. When this is the case, *the water is removed from D* and the distillation proceeded with. The bulb B prevents any spurting that may take place, and the wide tube A allows the condensed liquid to run back into the flask without trouble. If care be taken to remove the water from D, the results are not sensibly different from those obtained with the Wollny apparatus.

(Conclusion of the Society's Proceedings.)