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# A Method for the Microscopic Examination of Butter

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THE microscopic examination of butter is made difficult by the presence of a relatively high percentage of fat which must be removed before the organisms can be stained. Hammer and Nelson (1) have described a method for separating the serum from the fat by centrifuging the butter in a separatory funnel, after which the serum is drawn off, smeared on a slide and stained. Fay (2) has described a method for staining butter in which Mayer's egg-glycerine mixture is placed on the slide. The butter is then mixed with it and the fat dissolved in xylene.

The above methods require either considerable equipment or special reagents; therefore, a need was felt for a rapid method which would eliminate centrifuging or the use of fixatives. It seemed that if a solvent could be found which would remove both the water and the fat from the smears that the preparation of smears would be more rapid. The reagent selected was acetone because it was miscible with both water and fat. The method used is described below.

## METHOD

A small piece of butter is placed on a clean glass slide and is gently melted over a low flame or on a hot plate. A few drops of acetone are placed on the slide and the melted butter and acetone thoroughly mixed by gently moving the slide or by stirring with a sterile needle. When the mixture is complete, the acetone-fat-water mixture is gently poured from the slide. The casein and other milk solids will remain on the slide. A second extraction with acetone removes the remaining fat, after which the smear is allowed to dry. The curd will adhere to the glass and staining may be carried out readily.

The total time required to make a satisfactory smear by this proce-

dure is very short and very little equipment is necessary. The method is intended for the gross microscopic examination of butter rather than for making microscopic counts.

#### LITERATURE CITED

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