be lessened and be regulated according to the percentage of butter-fat which is discovered to be left in the skim milk. That should not exceed one-tenth of one per cent. The Babcock milk tester should be used every day to check the percentage of fat in the skim milk and in the buttermilk. For the testing of the skim milk, the sample should be composed of small quantities taken from the outflow of the separator at different times.

13. The efficiency of the separation of the cream depends largely upon the skill and management of the operator, although there are differences in the capacity and construction of the different centrifugal machines. The thoroughness of the separation of the fat into the cream depends mainly upon (1) the speed at which the separator is run (2) the temperature of the milk, and (3) the quantity of milk run through per hour. The operator should study carefully the instructions which are issued by the manufacturer or agent of the separator which he uses. It is desirable that the separator be run at its maximum speed, and that it be not exceeded. The separator should be set exactly level, and it should be kept so. Where belt machines are used, the belts should not be intensely tight; and in setting up the machines and calculating the speed between the engine and the separator bowl, from 3 to 5 per cent should be allowed for slippage of belts.

14. When the quantity of cream to be separated can be regulated by a set-screw in the bowl, it should be set to allow from 14 to 16 per cent of the quantity of average milk to flow through the cream outlet. A good rule is to take off cream which contains from 20 to 25 per cent of butter-fat, or cream which contains about one pound of butter to from 3½ to 5 pounds of cream. The set screw inside the machines should be loosened occasionally, to prevent it from becoming immovably set.

THE RIPENING OF THE CREAM.

15. The cream from the centrifugal separator should be cooled quickly after it is received from the machine.

16. The cream from the setting method should be kept cold and sweet until the quantity intended for one churning has been gathered.

17. The temperature of the cream, when set to be ripened, may vary from 65 to 80 degrees Fahr. according to the season; the higher temperature is used during the late fall and winter.

18. The temperature at which the cream is set for ripening should be maintained about six hours, during which time it may be stirred occasionally. After that, it should be left undisturbed until ripe for churning. No close cover over the cream vat need be used. A clean canvas cover is sufficient. Care should be taken to purify the canvas or other cover frequently.

19. "Fermentation starter" is the designation applied to the portion of fermented or sour milk, buttermilk or cream, which is added to the cream to ripen it for churning. The ripening of the cream consists of the development of the ferment or ferments which are added to it, or which get into it from the atmosphere, from contact with vessels or utensils, or from other sources.

20. It is quite important that every butter-maker should have on hand a fermentation starter of pure clean flavour, and of a uniform smooth consistency.

21. The following is the way in which a culture of lactic ferment was made at the Central Experimental Farm dairy, from which "fermentation starters" were prepared :—

A quantity of about two quarts of skim milk was heated to 205° Fahr. The temperature was maintained at that point for ten minutes after which, and while exposed to the atmosphere of the butter-making room, it was cooled to 80° Fahr. It was left in a closed glass-stoppered bottle at the ordinary temperature of the dairy-room, from 60° to 70° Fahr. for five days. It was then found to be coagulated and to possess a mild pure lactic-acid flavour, which became more distinct after it had been kept in cold water at a temperature of 40° Fahr. for three days. That was the culture. The flavour of it was such as was characteristic of cream from which fine flavoured butter had always been obtained; and "fermentation starters" for the ripening of cream were prepared from it.