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the labor and time expended in har-vesting ice. The best time to get in ice is now, during crisp cold weather, while the ice is of good quality.

**Creamery Department**

Butter makers are invited to send contributions to the department on questions on matters relating to butter making and to suggest subjects for discussion. Address letters to Creamery Department.

**From Cow to Churn\***

*Prof. H. H. Dean, O.A.C., Guelph*  
 It is very important that we understand the laws and principles of any undertaking in order to insure success. Theoretically the principles of buttermaking from cow to creamery churn are easily understood, practically they are not so easily worked out. To the man who never owned, fed or milked cows, a production of 300 lbs. butter per cow looks as easy as "rolling off a log." To the man who never made butter in a creamery, the manufacture of "concentrated sunshine" in the form of delicious, sweet-flavored bread lubricant is as easy as to say "Jack Robinson." In practice, however, cows have a fashion of disappointing the revolving arm-chair farmer; while many a man in making creamery butter has congratulated himself on his skill and judgment before he got his returns from the commission house, butter buyer or customer.

**SOME OF THE PRINCIPLES**

1. The use of pure-bred dairy sires of butter producing ancestry which have the power to produce an upward variation in their progeny. In a word, use tried mature males in preference to untried immature animals. The practical difficulty to overcome in adopting this plan is to be sure that we are getting such animals and that they are free from disease and viciousness.
2. Rearing all the heifer calves possible so far as stabling, feed and labor will permit; testing the heifers by means of scale and milk-fat test and discarding all those which do not come up to a minimum standard of 250 lbs. butter at the end of their second lactation period.
3. Feeding the cows on milk-producing foods such as grass, clover, corn, mangels, oats, peas, bran, and oil-cake, gluten or cottonseed meal. Feed liberally of roughage and of meals according to milk-fat production—six to eight pounds of meal for each pound of milk-fat. The profitableness or otherwise of a ration can be determined only by experiment. Each feeder ought to be an experimenter with individual cows, as well as with the whole herd.
4. Maintaining the health, vigor and constitution of the cows by sanitary stabling, which means clean, light, well-ventilated buildings, and cows kept clean by the use of comb and brush, or vacuum cleaners; and a reasonable amount of exercise in fresh air and sunshine.
5. Clean milking, with immediate separation of a cream testing 25 to 35 per cent. fat together with cooling of the same to a temperature of 50 degrees Fahrenheit, or lower, and maintaining the cream at this temperature; also the washing of the separator after each time of using. At this point the separate responsibility of the cow-owner and cream-producer usually ceases and the creamery owner along with the cream-hauler or transportation company assume a share of the butter burden, except in cases where the cream producer delivers the cream to the creamery.
6. Given good, sweet or slightly acid

raw material, Canadian buttermakers as a rule, are able to make fine butter, if they have a sanitary building equipped with modern machinery and having an abundant supply of pure cold water. We believe that the system of pasteurization will eventually be quite generally adopted by Ontario buttermakers. Elimination of poor flavors, more uniform salting, and added keeping quality in the butter are points which should receive the careful attention of creamerymen everywhere. Butter scoring not less than 90 to 95 points should be aimed at always and all the time.

**Creamery Instruction in Western Ontario**

*Frank Hens, Chief Dairy Instructor for Western Ontario*

The instructors visited 92 creameries. This is 10 more than last year and is accounted for by taking over five in the North formerly visited by the Eastern Ontario Instructor. Several plants in Toronto now make butter and a couple of cheese factories turned over to butter making, making up the balance.

The quality of Western Ontario butter showed improvement last year. We consider that practically all of this butter made from collected cream, in many cases collected two or three times a week and hauled long distances, we believe that progress is being made. The print trade has increased, with the home consumption in Canada is growing every year. Very little complaint was heard of mould and mottles.

**PATRONS VISITED**

Patrons to the number of 17,971 sent milk and cream to the creameries. This is 666 more than last year. A great improvement in the quality of the cream and consequently the quality of the butter can be brought about if the patrons many of whom up to the present time have not taken proper care of the separators or the cream, can be induced to take more interest in this matter. The instructors were able to visit the farms of 323 patrons, going out on the cream routes with the haulers and using what little time they had to instruct the patrons in the care and handling of separators and the cooling and care of the cream. This is good work and in all cases brings results, but with the large number of creameries and the large territory which the two creamery instructors have to cover, it is difficult for them to accomplish all that could be desired among the patrons. To believe there is room for one more creamery instructor who should devote all his time to the farm side of the work. Were arrangements made whereby such a man could be engaged the result in the improvement of the cream would many times repay the cost.

Six creameries only now use the oil test; four less than last year. We trust the time is not far distant when the use of date oil test will be known only in memory.

**SCALES AND PIPETTE**

Sixty-nine creameries use the pipette in testing cream. Twenty-three creameries use the scales; nine more than last year. Several of these creameries use the scales only when selling cream. Why? There is now placed on the market a 12 bottle cream scale that is free from the objections raised with respect to the balancing of some of the scales formerly sold for weighing cream samples. Any argument therefore against the use of scales cannot now be considered of as much importance as formerly; at least from the standpoint of scale accuracy.

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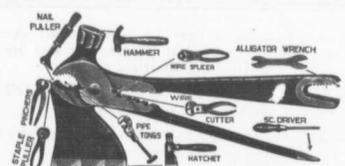
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**CIRCULATION MANAGER**

**PETERBORO, ONT.**

\*Extract from an address before the W. O.D.A. convention at Stratford, last week.