LICEMBER 31, 1908

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THE FARMER'S DEMOCATE.

tanks should be as close to the fort and the pipes insulated, to present condensation day. and waste of steam before it reaches the whey. it live steam is used, pressure as high as practical should be carried, and the steam not given too to give a man a certain quantity of whey, or all much vent into the tanks, or the boiler will be rapidly emptied of water. Heat under steam pressure by keeping the live steam going gradually into the whey as fast as it is generated by the fuel. Beginning with good steam pressure, less water will pass over into the whey. It is not wise to attempt to pasteurize unless it can be done properly. It will be a waste of steam, with the results disappointing. Pasteurization of whey is for the purpose of getting rid of the evils of unclean, sour whey, and not a panacea for the evils of improperly-cared-for milk.

COST OF PASTFURIZING.

"The cost will be according to the condition under which the work has to be done, such as size of boiler, location of tanks, whether the exhaust steam from the engine can be utilized, the system followed, and experience. It will range from 50c. to \$1.00 per ton of cheese. Several tests made this year with live steam direct from the boiler, under good conditions, allowing \$4.00 per ton for coal, place the cost at 64c. per ton of cheese. The patrons get practically all the benefits from pasteurization, and, therefore, each should pay his share of the cost.

SYSTEMS OF HEATING.

"The whey has to be raised from a temperature of 98 degrees to 150 or 155 degrees, or about 52 to 57 degrees. Various systems are satisfactory.

"First.-Turn the live steam from the boiler, under 60 to 80 pounds' pressure, directly into the whey, distributing through a simple system of three-quarter-inch pipes to get an even temperature and most economical use of the steam. This is the most effective system, and does the work satisfactorily, but is, no doubt, the most expensive.

"Second.-Turn the exhaust steam from the engine into the tanks, and add sufficient live steam to raise the whey to the required tempera-This system is less expensive where practure. tical, but perhaps not quite so effective, as it may take longer to heat.

"Third.—Turn the exhaust steam from the engine into the pipe leading from the pump or ejector to the upper tank, placing the connection several feet above the pump, turning a small pipe inside the large pump pipe, a foot or so long, in the direction which the whey is travelling. Add sufficient live steam to get the required temperature. This is still cheaper, but some difficulty may be found in regulating the temperature at

first. "Fourth.-Raise the whey from the lower tank "fourth.-Raise the whey from the lower tank to the upper with an ejector; add sufficient live steam in the upper tank to finish the heating. The ejector, if large enough, will increase the temperature about 20 degrees while the whey is passing through.

"Fifth.-Heat the whey in the lower tank with the exhaust steam from the engine to a temperature of 135 degrees, then raise with an ejector to the upper tanks, when it will be found at about 155 degrees, the ejector having supplied the extra 20 degrees. Whey left in the lower tank should also be heated, at all times.

"Sixth.-Use a special heater, a device consisting of a pipe two feet long, six inches in diameter, capped at both ends, the cap drilled and threaded to allow pump, exhaust steam and Set heater upright. Connect flow connections. Connect whey exhaust steam at the bottom. Whey is pipè at the top; also overflow pipe. heated before it passes out through overflow pipe. If exhaust steam is not sufficient, add some live steam. It may be necessary to disconnect and clean occasionally. This equipment costs about \$6.00, and has been found very economical for pasteurizing skim milk. It should work equally well for whey."

astray. The entry time taken was from about 7 o'clock until 2.2 cach forenoon. Another satisastray. factory plan for keeping the whey tank clean was that might happen to remain in excess of that quantity each day for emptying the tank, and seeing that it was thoroughly cleaned at least four times a week

Many dairymen estimated that whey was worth \$5 to \$10 per cow to them. Others were sure that pasteurizing increased the value by \$3 to \$5 per cow. For best returns, the by-product should be fed to hogs. For small pigs, he recommended 15 to 20 pounds of crushed grain to 100 pounds of whey. For half-grown hogs, the grain could be increased to 25 or 30 pounds, and for larger ones to 35 or even 50 pounds. Oil cake was an excellent food to mix with the grains. His mixture was two of barley, one of oats, one of wheat middlings, and one of oil cake. have cleared \$10 per cow from hog-raising, in conjunction with dairying," said Mr. Shearer. "The ground feed is mixed dry, and then wet with whey before feeding. During the past season, increased prices for grains reduced my profit to about \$8.00 per cow. My returns were lowered by one bad sale of hogs."

Q. If you were feeding skim milk, would you use oil cake ?

A. Yes, but in smaller quantities?

Q. If using peas and middlings, would you use oil cake?

A. Yes, it would make a strong food, but not injurious



Bessie Bates 155373.

Jersey cow, which completed a yearly authenticated test in October last. Record: Milk, 13,888.5 lbs.; butter, 801 lbs. Record for 5 years, commencing when two years old: milk, 46,439 lbs., average 9,285 lbs.; butter, 2,558 lbs., average 511 lbs. per year. Bred and owned by the University of Missouri.

Q. Do you keep your hogs inside? A. My pigs always are let out for a run each day in summer, on grass in the early season, and on rape later. I also throw ashes at the rate of a handful to a half dozen hogs each day.

Splendid Dairy Meeting at Picton.

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A special dairy meeting under the auspices of the Cheese Board was held in the Opera House, Picton, Ont., on Wednesday afternoon, December 16th. T. G. Wright, President of the Board, in taking the chair, announced the receipt of a telegram from J. A. Ruddick, Dairy Commis-sioner, expressing his regret at having to return home owing to illness. T. E. Whattam, District Instructor, gave a brief address, summarizing his work for the season. In addition to the factories work for the season. In addition to the factories under his charge in Prince Edward County, he has 13 in Northumberland and 2 in Hastings, making 36 in all to be visited. Only 5 cases of adulterated milk were found in over 3,500 tests. Mr. Whattam considers the fines are not heavy enough. He urged patrons to take immediate measures for increasing the production of milk per cow, stating that 24,000 cows in his district had given an average yield of only 2,900 lbs. milk in six Provision should be made for a dry months. season by the use of soiling crops. The quality of the cheese made was satisfactory, but in many cases the quality of the milk was not what it might be. One patron's carelessness may easily might be. bring a serious loss to all in the factory. Some factories still have poor whey vats, and the pasteurization of the whey was strongly recommended.

STIRRING ADDRESS ON COW-TESTING.

C. F. Whitley, of the Dairy Division, was next called upon, and made a strong plea for the extension of the work of cow-testing associations. The idea did not originate in Canada; for 10 or

12 years similar testing associations had been in existence in the northern countries of Europe. The experience of one man in Sweden was quoted, who, by systematic weeding out through the use of the scales and Babcock, had now a magnificent herd of 70 cows, with an average of 12,000 lbs. milk each. Farmers in Prince Edward County have just as good brains as the average Swede, and should not be content to lag behind in The this movement. "average" cow is not good enough for the business dairyman to-day. He has no time or feed to waste with only the medium animal. Cowmedium animal. testing associations have proved themselves excellent time - saving and labor-saving institutions. If one cow can do the work and make as much net profit as two or three poor cows, why not keep the good one? Mr. Whitley made a force-

ful appeal to farmers to take up this sure method of detecting the unprofitable cows in the herd. He stated that an extra \$150,000 could easily be secured in the county from the same number of cows if they were just a trifle better in their average yield. Better care of cows means extra cash. Cows out on pasture (?) in the middle of December, as seen from the car windows, are not likely to be producing much milk. There is infinitely more satisfaction in handling the superior cow, and she can be discovered most quickly by this co-operative work of weighing and Only pure-bred sires of good dairy famtesting. ily should be used, and the logical outcome of this weighing would be the formation of co-operative breeding associations to ensure the use of the best It was shown that members are put to sires. only a trifling expense of two or three dollars for scales and sample bottles, while the time employed is only about ten minutes per cow per This is quickly repaid in the increased month. value of the herd, and in the definite knowledge obtained as to the individuality of each cow. Mr. Whitley stated that this work saves men from the mortification of ignorantly disposing of their best cows, instancing the case of a man actually giving away for nothing a cow that now has a record of over 13,000 lbs. milk. Two charts were exhibited, one showing that on many farms are some cows that give five times as much profit as other cows in the same herd; while the other chart showed the enormous difference that exists in total production of milk in different sections of Ontario. For instance, where 37 cows at one factory gave a total yield of only 162,000 lbs. milk in six months, at another factory the same number of cows actually gave an extra flow of 60,000 lbs. milk more. Mr. Whitley emphasized the point that this work often meant as much as \$300 extra income to a farmer inside three years.

VALUE OF PASTEURIZED WHEY.

The interest taken in this new work was evidenced by the discussion that followed.

"As to the feeding value of pasteurized whey," said W. C. Shearer, of Bright, many men who have had experience with sour whey, and with that which had been pasteurized, and every one of them pronounces in favor of the latter. Little pigs do almost as well as on skim milk, if some chop and a little oil cake are used. Many raise their calves on it, and I have known some to win prizes at the fair with calves fed on whey, whole oats and a little bran. This cannot be done with sour whey.

Pasteurizing was said to have overcome great difficulty in cheese districts. Some had experienced trouble in distributing the whey. The owner of cows was inclined to take too much, while, if the hired man did the hauling, he was satisfied with less than his share. In his factory satisfaction had been found in paying a man 50 cents a day to attend to the whey distribution. Each man might not get his desserts each day but the average for the season was Lin

Q. What would be the cost of raising pigs to six weeks old ?

A. This is a difficult question. It averages about \$1.00 to \$1.10. That raises the point of weaning. They should not be weaned at six weeks. I prefer to let them run with the sow weeks. until eight or ten weeks old, if they wish. By that time the youngsters usually become ashamed of themselves. In starting young pigs, I always It is also use a larger proportion of middlings. important that no rash changes in food be made. During the winter months, I find ashes, salt and sulphur to be an excellent mixture for pigs.

Prompt Results.

Editor "The Farmer's Advocate ":

We wish to compliment you on the splendid Christmas Number of "The Farmer's Advocate," which we have perused with much pleasure and interest.

As a result of our advertisement, which appeared in half-page space, we have had more inquiries from farmers in Ontario than we ever received in the same time before; we even received inquiries before our copy of the Christmas Number reached us. As most of our correspondents mentioned "The Farmer's Advocate," we easily traced the inquiries to their source.

With best wishes for the coming festive season and for your continued prosperity during the New Year.

DOMINION OFFICES OF THE POTASH SYNDICATE.