

ANDREW CLANCY, WELLINGTON CO., ONT.

1. When taking in milk on the morning in question, I did not depart from my usual precautions of excluding all tainted and impure milk, but I had on this occasion a good flavored milk, and no bad odors developed, as we often have when milk is heated—odors we are quite unable to detect otherwise.

2. Used starter prepared after instructions given by R. W. Stratton, O. A. C., in Bulletin 114.

(a) Pure starter only to be used.

(b) Starter not to be put in milk until ripeness of milk is ascertained.

(c) Add starter in proportion to ripeness of milk.

3. Did not wash curds.

4. Put to press at 84 degrees temperature, and kept in press 46 hours. I never turn cheese in press after bandaging, which I do about an hour after putting curd to press. I do not think it necessary to turn cheese in hoops, as I find no difficulty in pressing the cheese evenly at both ends with gang press.

5. (a) Cheese was cured at about 70 degrees.

(b) I have never used any of the prescribed ventilators. My curing room is of brick, ceiled on the inside with matched lumber, a four-inch air space between. The ceiling above is of matched lumber, which is covered with felt paper and sawdust. Ventilators come through the stone wall below the floor and up into the curing room from each corner. Then, in the ceiling there is a ventilator connected with the outside air at the roof, and arranged so that it may be opened or closed at will. The room is supplied with double doors and windows. The ventilators and shutters are closed during the heat of the day, and opened in the cool of the evening, being open until morning.

(c) Cheese was held in curing room about a month.

(d) Turned on shelves every day, Sunday excepted.

(e) Curing room moist, but I do not know the degree of moisture.

I grind curd early and mature well before salting. I consider that at this point the curd needs skill and watchfulness, since it is a very important period in the making of a fine cheese. I never salt until curd assumes a mellow and velvety feeling. I never use more than $\frac{1}{2}$ lb. of salt to 100 lbs. of milk in summer. After salting curd I let it lie until the rough, hard feeling which salt produces is entirely gone, and the mellow, velvety feeling has returned.

(To be continued in next issue.)

The Lawrence-Kennedy Milking Machine.

In dairy machinery there has perhaps been a greater advance made during the past twenty-five years than in any other branch of the farmer's business. A modern dairy fitted with all the latest appliances must be something of a revelation to the uninitiated. Science has done much to advance modern dairy practice, and whether the aid has been in the mechanical or in the chemical departments of research, it has been welcomed and appreciated to an extent which guarantees to those who can render effective help a substantial recompense for their labors. There is one operation in dairying, however, which, so far as general practice is concerned, still remains open for the inventor, and where the dairy farmers would cordially welcome help. We refer to the need of an efficient substitute for the present scarce and costly labor of hand milking. That the difficulties hitherto preventing the general adoption of mechanical milking will be, if they have not already been, successfully surmounted, we have little doubt—difficulties which are not purely mechanical, but extend to the widely differing conditions of what may be best described as temperament in the individual animals.

It was, therefore, writes a correspondent of the *Agricultural Gazette*, of London, Eng., with considerable interest that we accepted an invitation to view the Lawrence-Kennedy cow milker in practical work at Riding Court, Datchet, where the occupier, Mr. J. Kinross, farms some 1,100 acres, has 150 milch cows, and is the holder of that much-coveted trophy, the Prince Consort's cup, presented by Her late Majesty the Queen. The machine, we were advised, has been in use on the farm for a year, with the view of having it thoroughly tested under ordinary working conditions, so that any defects noted, or improvements required, could be remedied. The apparatus was erected in a shed containing 48 cows, but at first half the number were milked by hand so as to be able to compare the yield and other conditions of the two methods. The result is reported as being altogether satisfactory and decidedly in favor of the machine in economy of labor, cleanliness, keeping qualities of the milk, and without any ill effects on the animals. The machine is operated by suction, which may be obtained by a suction pump operated by an engine, electric motor or water wheel, or, as in this instance, where the vacuum is obtained by an ejector attached to a small boiler, the steam jet producing the vacuum and dispensing with the necessity of an engine. A vacuum-container tank is connected, so as to give more steady working, and a range of iron pipes runs along the shed immediately over the cows, with a short branch, fitted with a vacuum cock, descending between every alternate animal. A rubber tube, slipped onto the iron pipe, connects with the milking apparatus, which may be described as a cone-shaped pail, the lid carrying a double-action pulsator of simple construction, from which branches two rubber tubes, one to each cow, to which are attached four rubber teat-cups. The

speed and strength of each pulsation can be finely regulated by means of a screw, to suit the peculiarities of each cow, and as the pulsations only occur in the teat-cups and in the short rubber tube leading therefrom to the pulsator, the milk is not brought into direct contact with the air. The lid and the pipes are kept in place by the vacuum, no screw or other fitting being required, while the milk, on its way from the teats, can be seen passing through a glass trap, and when the cow is milked clean, the cups remain on the teats until removed by the attendant. The cups are unique in that a thin piece of rubber with a hole in the center is inserted immediately inside the cup, giving a more tenacious hold than in previous patterns, while at the bottom of the cup a smaller detachable rubber cup is inserted, so that the cow is milked wet, as the fluid has to flow over this inner vessel before leaving the large cup, and in practice this has been found of considerable advantage to the success of the operation. In work, the appliance is exceedingly simple. The pail is placed between the cows, the rubber tube slipped onto the iron pipe, the vacuum cock turned on, and the cups held to the teats, to which they at once adhere, and the milking begins.

The pulsations regulating the collapse and expansion of the cups are close imitations of the calf sucking, and the vacuum pressure is very small. The milking was done quickly and cleanly, and the animals did not exhibit any signs of inconvenience, as in most cases they stood quietly feeding during the operation. The value of the regulation of the pulsations as regards speed and strength to suit the temperament of the various animals was particularly noticeable, and altogether the work was completed in a very satisfactory manner. The vendors—the Dairy Outfit Company, Limited, King's Cross, London—claim that by the use of the machine 48 cows can be milked in an hour, with the help of a man and a boy, and that no more hands would be required for 60 cows. Cleanliness is ensured by the milk being drawn direct into the air-tight pail, while it has been found that the milk will keep longer than where the milking is done by hand. The teats of the cows appeared to be in capital condition, and we were advised that after the first few days the animals take kindly to the machine, while heifers milked for the first time take to it much more readily than to hand milking. The apparatus is easily cleaned by sucking water through the cups, and the rubber is kept sweet, soft and pliable, when not in use, by being immersed in lime water. The cost of the plant is not heavy, and if under varying conditions the work is done as well as when we viewed it—and we see no reason why it should not—then it will soon repay its cost in wages. The Lawrence-Kennedy machine, at any rate, marks a decided advance in meeting the need indicated at the beginning of this article; time alone will tell whether or not it has solved the problem of mechanical milking, but we commend its claims as worthy of the attention of readers.

Secret of Success in Cheesemaking.

To the Editor FARMER'S ADVOCATE:

I wish to say, through your valuable paper, that the two greatest factors in successful cheesemaking in this country, and the maintenance and elevation of the high standard of excellence Canadian cheese now holds, are: 1. The production of a superior quality of milk by the farmers, and much-improved methods of caring for it till delivered in charge of the milk-hauler. 2. A very great improvement in the curing rooms, that this finishing process, which is so all-important to this great industry, may be as properly done as the dairy schools of our Province would have their students do. The most valuable element in cheese is the flavor, and if this is not made by the *feed*, through the *cow*, and then preserved by the *PATRON* in its VERY BEST possible condition, no amount of skill on the part of the maker of cheese can make or recover that fine property, though by the aid of a thoroughly first-class curing room he may improve the quality very materially. On the other hand, all the work may be first-class, and the quality of the article too, when first laid upon the shelf, but the very poor condition of the curing room may, before shipping time, have converted all these into a third-class article, and then the poor cheesemaker is often—too often—required to make this loss good. Should he do it? I will give briefly the method I adopted to improve my room. It was simply a good frame, boarded up and down with matched inch siding, battened, and ceiled up inside with 1-inch matched lumber, but not overhead, except the upstairs floor. I took off all the inside lining, set studding back to outside boards, filled this space (4 inches) up to 6 inches above the floor with sand, put on the old lining and 2-ply paper (best), furred this 2½ inches, filled this space 6 inches deep at bottom with sand, boarded up with half-inch hemlock, then two ply best building paper, followed by 1-inch dressed and matched hemlock. Each run of boards and paper and furring ran over the ceiling as well as sides. I set all the windows in, and put on solid, double-glassed, 4-light sash, with hinges. I also put double-glassed sash on the cellar windows, frosting all the glass. I cannot now give exact cost, but it took about 5,000 feet, face measure, of lumber and \$25 worth of paper. I also put in sub-earth duct about 178 feet long, constructed of four rows of 8-inch field tile at a cost of about \$70, besides the digging, which the patrons did. These are laid about 7 feet deep at one end and 10 feet at the other, through gravel soil. It works all right. Lambton Co., Ont. S. P. BROWN.

Dairy Test at the Pan-American.

REPORT OF THE MODEL DAIRY AT THE PAN-AMERICAN EXPOSITION, GIVING TOTALS OF EACH HERD COMPLETE FROM THE COMMENCEMENT OF THE TEST, MAY 1ST, UP TO AND INCLUDING WEEK ENDING AUG. 13, 1901.

BREED.	Milk.	Amt. of Butter	Value at 25c.	Cost of Feed.	Profit.
	lbs.	lbs.	per lb.		
Guernseys.....	17755.7	916.99	\$229.23	\$81.91	\$147.36
Jerseys.....	17082.9	883.51	220.87	79.74	141.13
Ayrshires.....	21106.0	889.33	222.32	81.93	140.39
Holsteins.....	24099.1	887.45	221.85	91.61	130.24
Red Polls.....	18661.7	841.05	211.01	82.61	128.40
Brown Swiss.....	20040.1	826.87	206.70	89.60	117.10
Shorthorns.....	20342.9	811.43	202.55	93.89	108.66
French-Canadian.....	16961.4	714.11	178.52	69.71	108.82
Polled Jerseys.....	13027.5	691.72	172.92	64.18	108.74
Dutch Belted.....	15252.9	587.35	147.58	76.72	70.86

REPORT OF THE MODEL DAIRY AT THE PAN-AMERICAN EXPOSITION FOR THE WEEK ENDING AUGUST 13, 1901.

BREED.	Milk.	Amt. of Butter	Value at 25c.	Cost of Feed.	Profit.
	lbs.	lbs.	per lb.		
Jerseys.					
Gipsy.....	202.9	10.74	\$ 2.68	\$1.00	\$1.68
Primrose.....	171.7	12.33	3.13	.91	2.22
Queen May.....	203.7	11.62	2.90	.85	2.10
Rexina.....	209.0	10.81	2.70	.81	1.89
Mossy.....	211.5	10.94	2.73	.87	1.86
Total.....	1001.8	56.64	14.14	4.44	9.75

Guernseys.					
Vega.....	173.5	9.38	2.34	.90	1.44
Cassiopeia.....	224.0	11.06	2.76	1.06	1.70
Mary Marshall.....	202.2	13.55	3.39	1.05	2.34
Madora Fern.....	172.7	9.11	2.28	.92	1.36
Procris.....	224.7	11.76	2.94	1.06	1.88
Total.....	997.1	54.89	13.71	4.99	9.72

Ayrshires.					
Kirsty Wallace.....	239.9	10.73	2.68	.88	1.80
Lady Flora.....	229.0	9.42	2.35	.84	1.51
Alice 2nd.....	217.4	10.99	2.75	.88	1.87
Betsy 1st.....	213.8	10.32	2.58	.88	1.70
Pearl of Woodside.....	230.2	10.29	2.57	.88	1.69
Total.....	1160.3	51.74	12.93	4.36	8.57

Holsteins.					
Meg.....	188.7	8.98	2.25	1.16	1.15
Tidy.....	290.7	11.45	2.86	1.25	1.61
Inka Mercedes.....	307.8	11.22	2.80	1.24	1.56
Hulda.....	300.7	11.67	2.92	1.25	1.67
Beauty.....	297.9	11.91	2.98	1.22	1.76
Total.....	1385.8	55.23	13.81	6.12	7.75

French-Canadians.					
Liena Flory.....	209.4	10.34	2.58	.78	1.80
Rouen.....	187.9	10.16	2.54	.78	1.76
Denise.....	207.7	9.65	2.41	.78	1.63
Luna.....	176.9	7.90	1.97	.75	1.22
La Bouchette.....	142.0	6.18	1.54	.46	1.08
Total.....	923.9	44.23	11.04	3.55	7.49

Shorthorns.					
Princess of Thule.....	207.6	9.89	2.47	1.24	1.23
Daisy D.....	204.4	9.01	2.25	1.23	1.02
Miss Molly.....	272.6	11.86	2.96	1.24	1.72
Queen Bess.....	238.5	10.21	2.56	1.24	1.32
Rose 3rd.....	247.6	9.75	2.44	1.24	1.20
Total.....	1170.7	50.75	12.68	6.19	6.49

Butter Tests and Milking Trials at Tring Show.

The annual one-day show at Tring, on the estate of Lord Rothschild, is regarded as one of the most interesting events of the sort in England. The show was held this year on August 8th, the entries numbering 551. Judged by inspection, Jolly Brown, the first-prize Jersey cow at the Royal Show at Cardiff, had to take fourth place at Tring.

The following are the results of the butter test and milking trials, only Jerseys and Shorthorns competing:

BUTTER TEST.					
Cows of any breed or cross, not exceeding 900 lbs. live weight.					
	Days in Milk.	Yield, lb. oz.	Butter, lb. oz.		
1st prize, Tuddie's Queen (Jersey).....	67	47 1	2 11½		
2nd prize, Gloaming 4th (Jersey).....	130	34 1	2 2		
3rd prize, Primrose Day (Jersey).....	67	49 11	2 7½		

Cows of any breed or cross, exceeding 900 lbs. live weight or over.					
1st prize, Lady (cross bred).....	59	58 10	3 6		
2nd prize, Lady of the Sunny Isles (Jersey).....	125	45 6	2 5½		
3rd prize, Trefoil (Shorthorn).....	79	72 10	2 9½		

MILKING TRIALS.					
Cows of any breed or cross, exceeding 900 lbs. live weight.					
	Days in milk.	Yield of milk, lb. oz.	Points.		
1st prize, Trefoil (Shorthorn).....	79	72 10	76.52		
2nd prize, Lady (cross bred).....	59	58 10	60.52		
3rd prize, Model Mary (Shorthorn).....	81	59 6	59.37		