care and attention to essential details it could certainly be done.

CREAM GRADING FROM THE PROPRIETOR'S STANDPOINT.

This subject was dealt with by J. Scott, of Exeter, and it was his opinion that grading and marketing the dairy products on their quality was the only proper way. A premium should be placed on the first class product. Mr. Scott was in favor of cream grading, but believes there are many difficulties to be overcome. If one creamery man grades the cream, the man with a low testing inferior cream immediately sends his cream to the creamery that does not grade. He believes the Government should take over a creamery and experiment to determine to what extent cream grading was practicable.

Mr. Robinson, of Belleville, continuing the discussion, lamented the fact that so little was known of cream grading in Ontario. If an improvement was not forthcoming, the dairymen of the newer Provinces would soon command the trade. If other Provinces can make a success of cream grading, why cannot Ontario? It was thought that where competition was not keen, cream grading could be done with little difficulty. Whatever system was adopted, it must be simple and easily understood by both creamery men and patrons. It was the belief that no rule would be applicable to all parts of the Province. Mr. Robinson considers that cream should be placed in two grades. The first grade taking cream that would make first-class butter, while the second grade would use all cream that would not make a first-class product. For making tests the old test churn should be eliminated, and the Babcock test only used. Further discussion brought out the fact that cream grading was one of the important problems before Ontario dairymen. Mr. Herns believed that if the dealers and creamery men could agree on some system of grading butter, it would aid in starting cream grading.

CHEESE EXPERIMENTS.

Prof. Dean confined his remarks principally to the work which had been done in an endeavor to determine the value of the casein and fat in relation to cheese manufacture. Practicable factory methods of milk and casein determination had been worked out and numerous tests were made, both at the College and different factories throughout the Province. It was found that while there was a slight variation in the per cent. of casein in milk, the average was 2.2. Consequently the method of paying for milk on the basis of the percentage fat plus 2 was as near the actual value of milk for making cheese as could be secured. A summary of the work done in 1915 on this question shows that milk testing an average of 3.35% fat and 2.13% casein produced 89.76 lbs. of cheese per 1,000 lbs. of milk. Milk testing 3.23% fat and 2.06% casein averaged 87.56 lbs. cheese per 1,000 lbs. of milk or a decrease of 2.2 lbs. cheese per 1,000 lbs. milk. This showed that a slight variation in either the fat or casein test made considerable difference in the weight of cheese from a given amount of milk.

Attention was also drawn to the fact that under present abnormal conditions it was of importance to have all material used in the manufacture of cheese "home-made or home-grown," and yet the great dairy industry of Canada was dependent on foreign countries for its supply of rennet. It was considered advisable to encourage the establishing of a home supply if possible.

INVESTIGATIONS WITH HAND SEPARATORS

In view of the fact that many dairymen have more or less difficulty in obtaining a uniform percentage of fat in cream from their separators, the deductions arrived at by Prof. Dean are timely. After trying out about a dozen machines varying in capacity from 350 to 850 lbs. milk per hour, it was found that turning the handle six times above or six below the number indicated on the machine made no difference to its capacity. In relation to the fat in cream, an increased speed of six revolutions above normal increased the percentage fat form 2 to 10%, while decreased speed lessened the percentage of fat from 2 to 8%. Decreasing the flow into the machine, as well as increased temperature, had a tendency to increase the fat content in cream. The percentage fat in the skim milk was not affected by either speed, feed or temperature within certain limits. Regarding the number of pounds of cream from a given quantity of milk, increased speed tends to decrease the number of pounds of cream, and decreasing the speed increases the amount of cream. Decreasing the flow of milk to the bowl lessens the number of pounds of cream, and increased speed tends to increase the amount of skim milk. In regard to the temperature of the cream, the speed of the seperator had little effect. Although the tendency was for high speed to lower the temperature somewhat. To secure a uniform test was a problem. Separating the milk with the same machine at the same speed day after day does not guarantee the same grade of cream, as many things enter in to cause a variation in the test.

LIME FOR ONTARIO SOILS.

Prof. Harcourt reviewed carefully the results of lime investigations, as carried on throughout the Province, pointing out the great need for lime on some soils in order to produce maximum crops. A full treatise on the subject by Prof. Harcourt was published in the January 13th issue of THE FARMER'S ADVOCATE.

DAIRY HERD COMPETITION.

As in former years, the herd competition aroused considerable interest, although this year the number of entries was somewhat smaller than last, there being but three competitors in the class for cheese factory patrons and none in the class for patrons of creameries. The results showed that those competing had high-producing herds, which must have been given every attention in order to produce the amount of milk they did. The winning herd averaged 7,175 lbs. of milk per cow from May 1st to October 31st. 1, Jas. Burton & Son, Sparta, Sparta Cheese Factory; 190 acres in farm; 18 Durham and Holstein cows; 129,147 total pounds of milk; 7,175 lbs of milk per cow. 2, J. C. Harkes, Listowel, Molesworth Cheese Factory; 100 acres in farm; 10 Holstein cows (4 R. B. and 6 G.), 70,712 total lbs. milk; 7,071 lbs. of milk per cow. 3, S. H. Coneybeare, Listowel, Elma Cheese Factory; 100 acres in farm; 16 Holstein cows (1 P. B. and 15 G.), 108,901 total pounds of milk; 6,806 lbs. of milk per cow.

WINTER DAIRY EXHIBIT.

The exhibit of cheese and butter was a strong feature of the convention. The uniformity of structure in the cheese was particularly noticeable, and spoke well for the instruction work given in the past. The cheese buyers' cup offered in 1903 to the cheese maker receiving the highest score three times or twice in succession was won permanently this year by J. K. Brown and Sons of Brussels.

The exhibits sold by auction brought good prices, cheese bringing from 17⅝ to 18½ cents per pound, and butter, 31¾ to 33 cents. Stilton cheese sold for 19¾ cents.

The following are the prize winners in the different classes:—

September White Cheese—1, H. Youn, Listowel, 95.82 (won on flavor); 2, P. Callan, Woodstock, 95.82; 3, H. E. Donnelly, Straffordville, 95.66 (won on flavor); 4, C. J. Donnelly, Scottsville, 95.66; 5, F. E. Travis, Eden, 95.65.

September Colored Cheese—1, P. Callan, Woodstock, 96.48; 2, F. E. Travis, Eden, 95.82; 3, H. E. Donnelly, Straffordsville, 95.49; 4, C. J. Donnelly, Scottsville, 95.32; 5, H. Youn, Listowel, 95.16.

October White Cheese—1, J. K. Brown & Son, Brussels, 96.49; 2, P. Callan, Woodstock, 96.16; 3, H. Hastings, Britton, 95.99 (won on flavor); 4, Connolly Bros., Thamesford, 95.99; 5, Wm. Zulauf, Brunner, 95.83.

October Colored Cheese—1, Wm. Zulauf, Brunner, 96.16; 2, C. J. Donnelly, Scottsville, 95.99 (won on flavor); 3, H. Youn, Listowel, 95.99; 4, N. Bell, Ripley, 95.66 (won on flavor); 5, H. Hastings, Britton, 95.66.

Winter 56-lb. Box Creamery Butter—1, W. B. Dinwoodie, Belmont, 95.50; 2, E. M. Johnston, Innerkip, 95.16; 3, D. Doan, Southwold, 94.99; 4, J. Cuthbertson, Stratford, 94.82; 5, J. E. Wilson, Forest, 94.32.

Twenty 1-lb. Creamery Prints—1, J. Cuthbertson, Stratford, 95.66; 2, R. C. Bothwell, Hickson, 95.; 3, Carter Bros., Stratford, 94.42; 4, H. J. Neet, Tavistock, 94.33; 5, J. E. Wilson, Forest, 94.32.

56-lb. Box Creamery Butter—1, Mack Robertson, Belleville, 94.83; 2, H. A. Clark, Warwick, 94.66; 3, J. E. Wilson, Forest, 94.65; 4, W. G. Medd, Winchelsea, 94.48; 5, W. B. Dinwoodie, Belmont, 94.33.

Three September Stilton Cheese (10 lbs.)—1, H. W. Hamilton, Thedford, 96.32; 2, H. Youn, Listowel, 95.99; 3, Garnet Bairn, Lakeside, 95.83.

Two September Flat Cheese—1, F. E. Travis, Eden, 95.66 (won on flavor); 2, H. Hammond, Moorefield, 95.66 (won on flavor); 3, H. E. Donnelly, Straffordsville, 95.66 (won on flavor).

A full house greeted the speakers of the evening, it being the largest crowd in attendance at the convention. In his address of welcome, Mayor Weir, of St. Mary's, spoke optimistically of the future of the dairy industry. It was his opinion that the shortest road to successful dairying was to weed out the "drone" cows. Dr. Creelman was listened to with intense interest as he gave a glowing account of "his trip to the Orient." After eulogizing Canada as an agricultural country he carried the audience with him across the broad Pacific to the overseas Dominions of New Zealand and Australia, which were fast becoming rivals of Ontario as producers of high-grade dairy products. After a brief study of the characteristics of the people and products of the land, a visit was made to China, and from there to Japan, which was a country fast imitating Western methods.

Hold the home markets and reach out for new markets, always keeping in mind the production of a first-class article, was the advice given by W. Bert Roadhouse, Deputy Minister of Agriculture for Ontario, in his address. It was also thought that Ontario dairymen would do well to adopt the grading of cream and butter; then endeavor to produce high-grade products, and that the commencement of this work during the coming season would be a step in the right direction. Local talent added to the enjoyment of the evening's program.

OFFICERS FOR 1916.

The election of officers resulted as follows:—President, Jas. Bristow, St. Thomas; First Vice-Pres., R. W. Stratton, Guelph; Second Vice- Pres., W A Bothwell, Hickson; Third Vice-Pres, J. N. Paget, Canboro; Sec.-Treas., Frank Herns, London. Other members of the Board of Directors are: T. Ballantyne, Stratford; J. H. Scott, Exeter; Jas. Donaldson, Atwood; J. MacHoover, Burgessville; Geo. E. Booth, Ingersoll, and Robt. Snell, Norwich.

Could Not Do Without It.

Editor "The Farmer's Advocate":

I am a little backward in sending renewal, but I could not get along without your paper. Always glad when Friday comes to read it. I have built a hen-house from it, something like you have at the Weldwood farm, 20 by 24 feet square, and I like it well.

Que. THO. H. TAYLOR.

Individual Cow Records.

On practically every farm a few milk cows are kept, ranging from two or three on one hundred acres in some sections, to ten, fifteen or even twenty-five in a dairy section. These cows are milked morning and night by different members of the family, and the milk disposed of. In less than one per cent. is the individuality of the cows known. But, a set of spring scales, and one-half minute of time per cow night and morning will tell exactly what each cow is doing per day, month or year. The main reason given for not keeping dairy records is, "it's too much brother." This seems a lame excuse when one considers the many advantages.

One minute per cow per day, or ten minutes for an average herd! A set of spring scales costing anywhere from twenty-five cents to five dollars, according to the kind, and a sheet of paper, without cost, is all the equipment necessary to keep track of the yield of milk. If it is desired to test the milk, one can have it done at their District Representative's Office free of charge, or purchase a four-bottle tester and do the testing themselves.

What is the advantage of this work? It teaches one to know the cows, and instead of telling the visiting neighbor that "Rose" or "Dot" is a pretty good cow, or their mother was a heavy milker, one can say exactly the number of pounds of milk that "Rose" gave during a certain year, or her highest daily record. If one has tested the milk it is known definitely whether it is high or low in butter-fat. When a record is kept, the boy, if not the father, takes a pride in showing the good cows to the neighbors and telling all about them. But, the "boarder cow" is kept in the background or is soon disposed of. From outward appearance a cow may look equal to the one standing beside her; both eat about the same amount of feed, but the scales may show a difference of five pounds of milk per day, a quantity hardly noticeable in the pail, yet at the present prices paid for milk it would amount to about fifteen dollars for the year, a difference of profit or loss.

Dairymen, who are keeping individual records, have stated that the first year of weighing the milk, showed that cows they thought their best were actually the poorest milkers. In some cases a few of the cows were kept at a loss, and a higher profit was made with less work from half the herd.

"Like tends to produce like," then, individual records should be kept in order to know the heifer calves to keep for breeding purposes. In case of a sale, it will mean many dollars more, if the owner has the individual records to show the purchaser. A male animal of the dairy breeds will not find ready sale unless the records show his dam and grandam to be high producers and high testers.

Keeping individual records is business. It interests the whole family; helps the boys to take a pride in the herd; allows the dairyman to know his cows and weed out the unprofitable individuals; indicates if the cow is off her feed or if it would pay to feed a little heavier on concentrates. Once records are kept, they will always be kept. If other men find the time spent on keeping records returns a large dividend, it will do the same for you. Why not start this winter and know your cows?

Believes in Fresh Air for Cows.

Editor "The Farmer's Advocate":

I have often been helped by the experiences given through the columns of your paper by other farmers, and as I noticed in the December 16 issue, you hinted in the Editorial Department that it would probably be helpful to others if some would give their opinions concerning the exercising of cattle during the winter months; I decided to send, in a few words, my experience.

I have been in dairy work for thirty years, and have managed herds of ninety cows down to smaller herds. I have, at the present, about fifty head in my care. The question, should cows be exercised in winter, can be answered very sensibly under different opinions, but as each individual can only express his own, it is with an unprejudiced mind that I make my statement. That fresh air is essential to good health no one would deny, but circumstances sometimes alter cases. So much difference exists in stable accommodation, and as some are without water, and cattle have to be driven to the creek or well to drink, this necessity gives daily exercise, but is it not sometimes, especially on stormy days, a very drastic method, to say nothing of the danger to the cows after twenty-four hours in, often times, a very hot, stuffy stable, which naturally means that they are just famishing with thirst, and take in so much water that it endangers their lives? I have known cases where cows have died in this way. Again, it may be, that the yard in no wise gives sufficient shelter from the bleak winds. If so there is a possibility of heavy milkers getting swollen quarters, leading to inflammation and sometimes loss. It is not unreasonable to believe it possible for a