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nicate with the Executive of the Central Farmers Institute and the independent grain dealers and Institute and the independent grain dealers and ascertain from them some "further light" as to whether the "so-called delegates represented their own interests" or those of the people who sent them to Ottawa in connection with this measure. On receipt of this information, I feel sure that the Doctor will withdraw the charge he has made against the said delegates and make the amende honourable

In regard to the "glory" referred to by the Doctor, peaking for myself, and I believe also the other lelegates who were with me, we have no particular delegates who were with me, we have no particular use for it. We are neither anxious to acquire it, nor are we in any way envious of those who succeed in accumulating a stock of it. It is very light food at best. We, therefore, modestly, and with a due sense of the grave responsibility of our action, solemnly surrender all claim to glory in connection with our recent trip to the capital. We think this action especially necessary, seeing that in some quarters there doesn't appear to be enough "glory" to "go around." Give us the abolition of the elevator monopoly and we will be quite content to see the "halo" divided equally among all who may feel disposed to make appli W. A. Robinson. cation for the same. Elva, Man.

#### A Suggestion in Building Stone or Cement Silo Walls.

It has been recommended that when building a cement, stone or brick silo, and it is desired to leave an opening from top to bottom, the side in which the opening occurs can be much strengthened by building in three or four bars, made from old wagon tires lying edge up, as was shown in the illustration of Mr. J. Jones' stone silo in June 15th issue of the FARMER'S ADVOCATE.

### From a Scottish Reader.

To the Editor FARMER'S ADVOCATE: SIR,—The time has come round to renew the subscription to the FARMER'S ADVOCATE. It always arrives with the utmost regularity and is now the favorite paper. The local papers are soon thrown aside when the ADVOCATE appears. But if this depression continues much longer I am afraid we shall have to give it up, for our produce is gradually sinking in value. When I commenced with the lease of this farm fifteen years ago, the first cattle I sold, a few months after entry, I resized 20 shilling years hundredweight for them. ceived 80 shillings per hundredweight for them, and to-day I must sell the same quality of beef at and to-day I must sell the same quality of beef at 55 shillings per hundredweight; and always the same rent, with labor and tradesmen's accounts 25 per cent. higher. Do you think I could do better on your side of the water, as the crush here is growing year by year and land always inclining to rise? I enclose the usual subscription fee.

Yours truly, Jo Aberdeenshire, Scotland, May 20th. [Times have greatly improved in Canada in the last two years. Prices for all classes of stock and farm produce have advanced; land, which had been low in price for ten years or more, has slightly advanced, but is yet available at a moderate price either of well improved farms in the older provinces or of unimproved lands in Manitoba and the Northwest. The prospect at present is quite en-

couraging.

## DAIRY.

## English Milking Trial Rules.

At the last meeting of the Council of the British Dairy Farmers' Association the recommendations of the Milking Trials Committee were considered, with the result that the following points to be awarded in the milking trials were adopted:

One point for every ten days since calving, deducting the first forty days with a maximum of fourteen One point for every ten days since calving, deducting the first forty days, with a maximum of fourteen points. One point for every pound of milk, taking the average of two days' yield. Twenty points for every pound of butter-fat produced. Four points for every pound of "solids other than fat." Deductions:—Ten points each time the fat is below 3 per cent the points each time the solids other per cent.; ten points each time the lat is below a per cent.; ten points each time the solids other than fat fall below 8.5. A discussion also took place upon certain standards for different breeds, proposed by the same Committee to be adopted in adjudicating champion milking prizes; but the Council decided not to adopt these standards.

# A Day's Operations at St. Mary's Creamery

In June 15th issue of the FARMER'S ADVOCATE attention was drawn to the fact that in one day, May 31st, the phenomenal quantity of 3 tons 272 pounds of butter was made at St. Mary's Creamery. This occurred on Tuesday. May 31st, and included Saturday night's, Sunday's and Monday morning's milk. Wishing to witness the actual operations of such an enterprise we took occasion on Tuesday, June 21st, to visit the factory. The make has not been so heavy since the commencement of June as at that time, two of the most distant of the seven skimming stations having ceased to operate owing to the warm weather and their nearness to cheese factories. There was manufactured, however, on the day of our visit some 4,500 pounds of butter of Beautiful texture, flavor and uniformity.

The churning commenced at five o'clock a.m., when the first of the three large 250-gallon trunk hurns was started, and in ten minutes the second

commenced to turn, followed by a third in the same length of time. The entire operations are managed by Mr. Fred. Dean, who has the cream ripened so uniformly that the butter invariably comes in practically the same length of time each day, about one hour. The temperature at which the cream is churned is governed by the ripeness and thickness of the cream. On the 21st inst. 54 degrees was the temperature of the cream. The churns are stopped three times during the first half-hour and the gas allowed to escape. When the cream breaks about four gallons of water at 50 degrees is added, and the churn is again revolved for two minutes, commenced to turn, followed by a third in the same and the churn is again revolved for two minutes, when the buttermilk is drawn off. To the butter when the buttermilk is drawn off. To the butter is then added a little more water, at 50 degrees, than the quantity of buttermilk drawn off. The churn is revolved about half a minute, when the beautiful yellow granular mass is considered sufficiently washed. It is then allowed to drain for from thirty minutes upwards, according to the time at which the worker can be had access to. (We might mention just here that, owing to extra thickness of cream—35 per cent. fat—and the low temperature of the same, foaming occurred slightly in one of the churns, but a few gallons of water in one of the churns, but a few gallons of water added, at 70 degrees, quickly corrected the trouble.) As soon as the butter of the first churn is sufficiently dripped, salting and working commences. A National butter worker, with a capacity of 300 pounds, is employed. This worker consists of a cylinder having a diameter of about 5½ feet and a width of some 18 inches. The butter is weighed and dumped into the worker, and salted at the rate of about five-eighths of an ounce per pound of butter. The cylinder, having shelves on the inside of the rim, in revolving carries the butter to the top, from where it falls between wooden grooved rollers, which revolve in opposite directions. The of the rim, in revolving carries the butter to the top, from where it falls between wooden grooved rollers, which revolve in opposite directions. The working is continued for about six minutes, in which time the worker makes 24 revolutions. It is stopped for two or three brief periods during this time to drain. After working it is packed into the 56-pound square spruce boxes lined with two thicknesses of heavy, tough parchment paper. The butter is firmly packed into the boxes by square-faced wooden pounders, so as to fill every space and exclude all air. Fifty-seven and one-half pounds are put into each box to insure good weight when opened in the British market. The butter is then usually placed in the cold room, which is kept at a temperature of 38 degrees. At the time of our visit, because of an inability to get sufficient refrigerator cars, the cold room was full and two or three days' make was placed in the storeroom, between the make room and the cold room. A carper week has been shipped so far, but it will require two or three cars to take away all the butter now on hand. The cold room has not sufficient capacity for the accommodation of the creamery, and as an ammonia refrigerating plant is soon to be introduced, the entire refrigerating system is to be overhauled and enlarged.

The butter making, working and packing was all finished up by about 2.30 p. m., and everything all finished up by about 2.30 p. m., and everything

The butter making, working and packing was all finished up by about 2.30 p. m., and everything was cleaned up an hour later. Careful attention is paid to cleanliness in every branch and detail of the work. Cold and hot water, as well as steam, are liberally employed in vats, pipes, churns, floor, etc., and none but pleasant odors are recognized.

Milk and Cream Reception.—Milk-drawers commenced to arrive about 7.30 a. m. from local routes, and by nine o'clock about 18 000 nounds had ar-

menced to arrive about 7.30 a.m. from local routes, and by nine o'clock about 18,000 pounds had arrived. The morning being cool, it was put through the tempering vat and heated up to 72 degrees before being put through the Alpha separators. Three of these are used, each having a capacity for 3,000 pounds per hour. The separating was finished by 9.30, and an hour later the separators were washed up for the day. The skim milk had all by 9.30, and an hour later the separators were washed up for the day. The skim milk had all been elevated and distributed to the various patrons' cans in just proportions, and the cream, to which was added one gallon of buttermilk to four of cream, was in the ripening vats. The buttermilk is used as a starter, and answers well at this season of the year. Were the ripeness somewhat advanced at time of separation, less or perhaps no starter would be used. An experienced perhaps no starter would be used. An experienced man can readily decide correctly. The cream is allowed to ripen till the men return from dinner, when it is cooled down to churning temperature,

where it is held till next morning.

The cream from the skimming stations com-The cream from the skimming stations commences to arrive about one o'clock, and by three it is usually all at the creamery. Starter is added to this cream at the skimming stations as soon as it is separated, and by the time it arrives at St. Mary's it is ready to cool down to churning temperature. The cooling is accomplished by the use of ice and water in the jacket of the ripening vats and by frequent stirrings.

quent stirrings.

The six men employed usually get the cans washed and scalded and everything put in first-class order by six p. m.; but in hot weather the cream frequently requires attention until nine or ten o'clock. The effort is to do everything possible to ensure a first-class, uniform product of butter, and by the hold St. Mary's creament butter No. 228 quent stirrings. and by the hold St. Mary's creamery butter No. 228 has already secured on the British market, it must be concluded that the thorough system employed by the management has shown itself to be the cor-rect one. We could not but conclude, after seeing and tasting the butter as it was being packed ready for consumption, that the general public have a very imperfect impression of what first-class butter is. There is no doubt whatever, if all the butter made on farms were manufactured in well-managed creameries, not only would a more uniform and per-

imperfect skimming and churning would result, and the demand for butter would increase until a good price would be obtained for every pound produced.

The Source of Milk Fat.

The question of the source of milk fat has led to much theorizing and many experiments. The latest bit of reliable information upon the subject is the result of a carefully conducted experiment by Profs. W. H. Jordan and C. G. Jenter, of Geneva (New York) Experiment Station, with a cow fed for two weeks on normal food and then for % days following on a food from which the fat had been extracted as thoroughly as possible by an oil company. The rations were varied at different times so as to furnish different amounts of protein, the decrease in protein being accompanied with an increase in carbohydrates. The results as to the total income and outgo of nitrogen and fat are summarized in the following tables: The question of the source of milk fat has led to

me. Outgo. Total	2,417 0.18,42	Grams. Grams. Grams. Grams. Grams. 4,624.1 2,1918 2,417 6 4,515.7 9,126.0	Nitro- Nitro- Nitro- Nitro- Ouigo of gental gentin gentin nitro- gented, milk, urine, feoce. gen.	Income. Outgo.
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Among the author's conclusions are the follow-

increase of body nitrogen, and was judged to be a much fatter cow at the end; (3) the formation of this quantity of milk fat from the body fat would have caused a marked condition of emaciation, which, because of an increase in the body weight, would have required the improbable increase in the body of 104 lbs, of water and intestinal contents.

"During 59 consecutive days 38.8 lbs. of milk fat was secreted and the urine nitrogen was equivalent to 33.5 lbs. of protein. According to any accepted method of interpretation not over 17 lbs. of fat could have been produced from this amount to metabolized protein.

As to the source of milk fat, the conclusion is reached that in these experiments the milk fat "was produced, in part at least, from carbohydrates, as previous experiments have demonstrated to be the case with body fat."

It is pointed out that, while the German standard calls for 2.5 lbs. of protein per day, an average yield of 30 lbs. of milk would not contain over 1 lb. of protein, leaving 1.5 lbs. of protein unused, so far as known, for necessary constructive purposes. It is shown that—

"(As to the composition of the milk), this bore no definite

poses. It is shown that—

"[As to the composition of the milk], this bore no definite relation to the amount and kind of food.

"Neither a deficiency in the protein of the ration nor a depression of the digestible nutrients to about 5.5 lbs. per day caused the cow to produce poorer milk. The only apparent effect was in changing the quantity of product.

"The changes in the proportion of milk solids were due almost wholly to changes in the percentage of [milk] fat.

Now that we are approaching warm weather, buttermakers should use the utmost care in seeing that their butter is carted to the refrigerators care in the best possible manner to prevent the hot sun from reaching the tubs. Often too, a driver will leave the butter upon some depot platform exposed to the sun perhaps an hour or two, waiting for a train to arrive upon which to load it. Some of the railroads have refrigerators or ice boxes in their depots to be used by shippers of butter, etc., when necessary. This certainly ought to be a great help to creameries not favored with frequent refrigerator car, or when trains are late. But where no such service is furnished the butter should be placed in a cool, shady place until loaded into the cars.—Produce Review. cars.-Produce Review.