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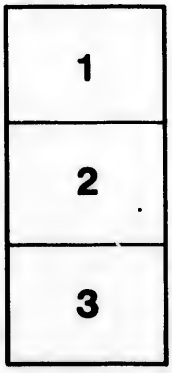

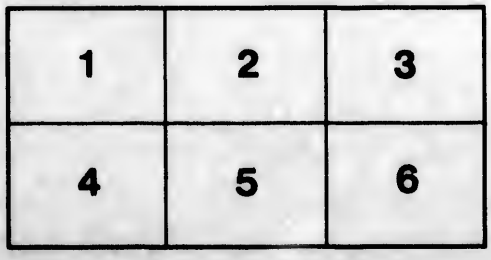

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CENTRAL EXPERIMENTAL FARM.

———:o:———

DEPARTMENT OF AGRICULTURE,

OTTAWA, - - - - - - CANADA.

Evidence on the Establishment of Branch Experimental Dairy Stations, given before the Select Committee of the House of Commons on Agriculture and Colonization.

———:o:———

By JAS. W. ROBERTSON, *Dairy Commissioner.*

THE CHAIRMAN.—Professor Robertson is before us to-day for the purpose of giving information with respect to outside experimental dairy stations. I presume it would be well to allow him to follow the same course as at last meeting, making his statement first, and reserving questions until he is finished.

PROFESSOR ROBERTSON.—MR. CHAIRMAN & GENTLEMEN,—In presenting to the Committee a very brief outline of what has been done in preparation for, and in connection with the establishment of Experimental Dairy Stations, I may say a few words in regard to the need and value for these Stations in the Dominion, in order to show the Committee that the plans which we have adopted are adequate to meet the needs, and just suitable to give assistance in developing this important branch of farming. In nearly all other countries where agriculture has been followed successfully, something in this line of work has been and is being done. Most of you are, I dare say, better acquainted with the conditions of farming in England and Scotland than elsewhere in Europe, and in these countries dairy farming has been made a great success. In one respect, the dairy farming of England has not been profitable in measure with the opportunities of that country. A consider-

able proportion of the English dairy products, during the last six or eight years, has been sold at high prices mainly owing to the prejudices of consumers in favour of home made articles. I will put a statement in here to show you the value of such work as we are undertaking.

I find that nearly one-fifth of the fine Canadian cheese sent to England, is still sold on the counters of English shops as English Cheddar Cheese ; and under that name it brings nearly four cents per pound more than the same or similar cheese when offered for sale in the same shops under the name Canadian cheese. That is after all, a value which is given to the article on account of prejudice and preference on the part of the consumer. I have gone to shops and have found English cheese, and Scotch cheese, and Canadian cheese on the same counter, being sold at prices varying from twenty cents to twelve cents, the Canadian being the lowest. Yet the Canadian cheese in many instances was superior in every sense, in nourishing qualities and flavour, to the twenty-cent-per-pound cheese, which was branded and was "home made." We hope to gain for our own producers, the full value of their cheese and butter, by overcoming the prejudice of the consumers by encouraging the manufacturers of our finest cheese and creamery butter to brand them "Canadian."

Notwithstanding the advantages which that prejudice has given to the English and Scotch dairymen, they have found the need of doing some experimental dairy work ; for after all, no trade can be sustained very long if its profits rest upon such a basis as prejudice. The Imperial Parliament has made a grant during the last few years of £5,000 stg. to promote the work of dairy instruction.

Very few dairy stations are in operation, but all over the south of Scotland and in a few districts in England, the work of travelling instructors has been prosecuted. They have besides, in Scotland, only one Experimental Dairy Station or School, which is bonussed and sustained to some extent by the Government grant. The effect of that work has been this, and I have it from the wholesale merchants in the article there :—That the general quality of dairy products, mainly cheese, through the west of Scotland has been improved to an increased value of twenty-five per cent. within the last three years, and that is nearly all due to the instructions of Canadian instructors who have gone there engaged to do this work.

The improvement is in this direction :—Not that the very best dairies have been enabled to make better quality, but that the poorer dairies have been enabled to make the goods that they turn out, nearly equal to the best. An averaging up of the qualities has been the advantage the country has reaped.

Now, the experimental dairy stations in Canada have just the same object in view,—not so much to help men to make cheese and butter different from, and better than what are now made in the best factories and creameries, as to average up the poor quality until the goods we send abroad are uniformly fine, carrying a good reputation with them and thus fetching a higher price. I need not detain the Committee with a long explanation of what such countries as Denmark, Sweden and Holland have been doing, since it is probably familiar to most of you that they have been spending larger sums of money to promote skilful dairy practice, than in any other branch of effort to improve the condition of agriculture. To such an extent has this work been carried, that in Denmark alone there are something like seventy-five dairy stations which may be used as schools. They are on rather a small scale, but these stations have been the agencies through which Denmark has been enabled to produce the largest quantity, and the finest quality of butter sent by any country to England.

It is the expectation of some of us that through the work of these stations in Canada, we will be able to develop an export trade in butter quite equal to that of Denmark and larger than our own export trade in cheese now. So one main purpose of our experimental dairy station work in Canada, is to develop an export trade in butter of the very best quality to meet the needs of the English market. At the same time we will not forget to bear in mind this, that we should try and get for ourselves the value which our own goods carry in themselves, by having everything sent from Canada branded "Canadian," so that those who produce our goods and sell them under our name may get a higher price for them.

I come now to a specific statement of what we are doing in Canada. Before I make that, however, let me refer to one other aspect of this work. In most countries the work of experimental investigation has been done by scientists pure and simple. Even in agricultural science, the Germans have done more in the way of investigation during the last twenty-five years than we have done,

in prosecuting purely scientific enquiries; but in that respect the German scientists have always been willing to labour for a knowledge of the abstract theory, and little effort has been made to bridge over the gap between the statement of the principle and the application of that principle to farming practices. The work of our experimental farms and dairy stations, is to bridge over the gap and illustrate the application of the best practices to the production of butter, cheese, live-stock and all other farm products.

The original plan for the establishment of experimental dairy stations, embraced the putting of at least one station in each Province of the Dominion. The purpose was to have cheese-making carried on during the summer time so as (1) to illustrate the very best practices of producing the finest quality of goods, (2) to demonstrate the different qualities of cheese that would result from different methods of making, and then (3) to have the same station used for the production of the finest quality of butter throughout the winter season, especially with the object of encouraging the farmers to get an income from their cows the whole year round by making butter and raising stock through the winter, and making cheese from the same cows during the summer. In that connection comes in the value of fodder corn, of which I spoke on the last occasion when I was before the Committee. When cattle are fed all winter on corn ensilage, the flow of milk can be kept up without much shrinkage; while the practice of feeding on hay, roots and meal will tend to dry them up during the winter after milking for a very short period. While that was the original plan which I had the honour to submit to the Minister of Agriculture—a memorandum upon which was included in my last annual report—it was found necessary to modify the application of that plan in some details.

First of all, in the Province of Ontario it was found, if we selected any one particular spot at which to establish an experimental station, that *for the first summer* very few people would derive much benefit from its existence or work. That station would be to a certain extent unknown and really of little value for the immediate needs of the business. To meet that condition of affairs successfully, it was decided to postpone the establishment of a station at any one place, and to have the men,—who would otherwise do this work at stations,—travel all over the provinces and

visit factories in the different districts, inviting the cheese-makers to meet them at these factories. This plan was thought to be better for the first season than that of locating an experimental station in any part of the province. With that object in view I had a circular issued to the factories of the different provinces intimating that one object of these visits was to give instruction in the best methods of testing milk, with the end in view of being able next year to introduce a system by which milk at cheese factories would be paid for, according to its quality and real value. There is a very wide difference in the qualities of milk. Milk varying quite as much as from three per cent. of butter fat to four and a half per cent., has been paid for at precisely the same rate per hundred pounds, regardless of its value for cheese-making, under the system generally followed. We have now in use a milk-testing machine which will speedily and accurately discover the real quality of milk as to its percentage of butter fat, and we hope this year to be able to announce a method by which every factory will be able to pay for its milk according to its quality. That would be one of the most substantial of the aids we could render to the dairy interests of Canada. I find that in many cases, cheese factories are succumbing to the supposition on the part of farmers that they have not got fair-play. If the best farmers in a community believe they do not get full value for the milk they send to the factory, their support is half-hearted.

Another of the objects of these visits of our instructors was to give the cheese-makers who would attend, helpful instruction for a whole day in the very latest and best way of making cheese, uniform in quality and fine in finish. Although we had only three men employed in Ontario for part of the season—that was during the latter half of May and June,—we have reached over one hundred and fifty cheese-makers. Thus, in one and a half month's time, we reached over one hundred and fifty cheese-makers for the purpose of showing them this milk-testing method and giving instructions in making cheese. From many of these cheese-makers I have letters saying they have derived very much benefit from these instructions.

On such occasions also, the person who has gone to give instruction in cheese-making, has invited the farmers in the neighbourhood to attend a meeting in the evening, and has

given instruction at such gatherings respecting the whole matter of feeding cattle, handling milk, and carrying on dairying in the most profitable way.

In the Province of Quebec, similar work has been undertaken and a programme of places is being arranged for until August, whereby every county in that large Province has been, or will be visited at two or three central factories at least, to give cheese-makers instruction in the best way of carrying on their work. By way of illustrating the value of this work to the Committee, I may say that it was my good fortune last year to visit the district of Chicoutimi where they have now in operation some thirty odd cheese factories The cheese from that region used to sell for two cents less per pound than the cheese from the Province of Ontario. They have been gradually improving until they now sell at prices much closer to Ontario than that. Many cheese-makers met me there at one factory. One had driven sixty miles to get instruction, and I heard from that cheese-maker, late in the fall, that the cheese from his factory had sold for the average price of Ontario cheese shipped to Montreal. Now, the only thing that this important province needs—I mean important in point of geographical position and also in enterprising population—is just a little instruction. They have the facilities for making cheese as fine as in Ontario ; and if they had proper instruction, it would add nearly one cent per pound to the value of the total products in cheese, of not only one district but of the whole Province of Quebec, and now the Province of Quebec is reported to have five hundred cheese factories and one hundred creameries. The very meagre expense of having one or two instructors on the road, is a bagatelle compared with the immense increase in the value of this product.

In the Maritime Provinces it was intended to have one station in each province, and to have those in operation this year. Down there the question is not so much the best way of making fine cheese and butter, as of inducing farmers to go into that business. Let me state for your information the condition of affairs in Prince Edward Island. In Prince Edward Island the business of manufacturing cheese in factories, was started some ten years ago ; but for some reason the business was not a success, and now there are only two factories in existence and in operation this

year. The farmers with whom I conversed upon this subject, said there was something in their conditions unsuitable to the carrying on of the dairying business; and they brusquely clinched that statement by saying "You see our factories have all gone down." To my mind there is nothing unsuitable in the conditions of Prince Edward Island for the successful prosecution of dairying; and by having one station maintained there for a year or two, I think farmers will be induced to support the station and support more factories of their own, when they have the assurance that there is one place, convenient of access, at which they can always have the opportunity of ascertaining the best method of conducting the business. This is a matter of very great moment--that farmers should be inspired with confidence with respect to making the business a success. It is a matter of making the business successful, by helping the farmers and the cheese-makers with instruction, and by maintaining for a time an experimental station to which they can go for information. The same is true of Nova Scotia and New Brunswick. During the course of my visit there this spring, and my second visit last month, I found this state of affairs:—The supply of fodder was very scant and the farmers were buying large quantities of hay from the Province of Quebec; the cattle were in a very poor condition, the dry season and cold spring having left the grass backward for pasturing On the whole the cattle are this season in just as poor condition as they ever were before, for supporting cheese factories and creameries. That brought me to the conclusion that they needed a good deal of assistance in providing cheaper fodder for their cattle during the winter, so that hereafter they would not come through as badly as they did this spring. Instead of starting experimental dairy stations in each province, we have left two men to travel through those provinces to visit all the cheese factories in each province, and in Nova Scotia there are some twelve new ones being started this summer. After that is done, they will visit sections where no cheese factories exist and give information to the farmers in regard to the erection of buildings and the general conduct of the business. They will also be furnished with a small kit for making butter and at meetings there will be illustrations and demonstrations of making butter in the best way, so that farmers and their wives may get information upon the special points concerning the best way of turning out

uniformly fine dairy butter. Beside this, these same men will be everywhere talking up the advantage and need of growing fodder corn for cattle feeding. Just a word on that branch of the work. During the course of previous visits in the Maritime Provinces this matter has been mentioned at meetings and elsewhere with the result that in the Island of Prince Edward, two men had built silos and used the ensilage from them last winter. They were gratifying successes in every sense. Up to that time very few men had grown fodder corn in that part of the Dominion. In fact, at several meetings I attended, not more than four or five men who where present, had ever taken notice of the corn plant growing as a field crop. In following out the line of work undertaken by the Experimental Farms for distributing seed grain, I was able to distribute three-pound bags of corn to persons attending the meetings, with full particulars of planting, so that after growing a small area for one year, they would learn how to handle this crop to advantage on a larger scale. After and during my last trip down there, I arranged to give away seven hundred and fifty odd samples of corn. So we have seven hundred and fifty farmers growing corn this year and promising to talk it up and report on it next fall. This I consider important for the reason that while many men will not build silos, they can still save the corn in a very cheap way for fodder purposes. I have been asked to bring this matter before the Committee by one or two members, who thought that the building of silos was impracticable where farmers grew only one or two acres of corn. I have had corn grown in the same way as for silos, in rows planted thin, and then stooked up in the field by the use of a common corn-horse. If the corn be left that way, tied securely at the top by means of a hay rope, straw rope, or binding twine, it will keep with little waste until later in the fall, when it can be taken to the barnyard, where a contrivance can be made almost as serviceable for a small lot of corn as a silo. It is not a new plan for those who live in Western Ontario, but it is new to the people in many other parts of Canada. It consists in taking a number of forked stakes and driving them into the ground. By laying poles in these forks you can make a simple corn trestle. By laying down a few old rails, like the base for a stack, the corn can be placed on end leaning against that trestle to the thickness of two or three feet on both sides. Then ordinary

rails or poles can be placed on the outside of the corn, on both sides, lengthwise, the whole being tied near the top of the corn by hay or straw ropes. Then, if a few boards be put on the top and on both sides—allowing them to overlap—they will shed all the rain. The corn stalks can be fed from the end, with very little more waste than when the crop is put up in a silo, and the outlay required for stooking or stacking it in that way is simply nil. Any man can make a contrivance of that kind in a few hours; I introduced the plan to the people in the Maritime Provinces in a circular which I issued this month. I have found that method to be quite successful in past years, and the only risk incurred is that if one puts straw on the rails for a foundation, it will become a great harbour for mice, but barring that difficulty the corn saves well, and the most of the waste is a little weathering on the outside stalks.

Now, I have referred briefly to what we have done in Ontario, in Quebec and in the Maritime Provinces. It may be in place to say a little with respect to what we propose to do in this province from this time on, and also in the other provinces. In the Province of Ontario, after the beginning of July, it is proposed to have at least two stations or cheese factories where a superintendent will stay and manufacture cheese with the object of discovering the quantity and quality of cheese that will result from different qualities of milk. I understand that none of you are specialists in dairying and will not understand fully these terms unless I make full explanation. We have milk going to factories, containing from 3 to 4½ per cent. of butter fat. One object of the experimental work is this:—We shall have vats so constructed as to have three compartments. In one compartment will be put milk averaging 3 per cent. of butter fat, which we will obtain from the farmers furnishing milk of that quality. In another will be put milk averaging 3½ per cent. of butter fat, and in the third will be put milk averaging 4 per cent. The cheese manufactured from these different lots will be kept separate, and will yield information as to the quantity of cheese resulting from these different qualities of milk; and we shall also discover the effect on the quality. We propose to send these cheese to the foreign market and test the comparative value they have there, and by that means we will complete the plan which I have briefly outlined for making

a specific scale of comparative values, whereby milk of 3 per cent. of butter fat and 3½ per cent. and 4 per cent. can be paid for according to its quality. At the same time these stations will be open for the inspection and instruction of any cheese-makers or farmers during the time our superintendents are working there. Then, some time during the autumn it is proposed to select two stations in Ontario where the farmers will agree to furnish a supply of milk through the winter in order to make butter,—the cheese factory being adapted or changed for that use,—for the purpose of demonstrating the advantage of making butter when butter is dear; of making butter uniform in quality and fit for export; of encouraging the raising of calves in connection therewith; of improving the quality of butter by the adoption of co-operative methods; of developing the export trade through shipments of fresh creamery butter, and of combining the manufacture of butter and the raising of stock in the same neighbourhood and on the same farms. We will thus have more stock to export and more cows to milk at home. If we can secure milk from twelve or fifteen patrons for the first year in which the station is established, that will be sufficient. I can name you twenty farmers now who have been making butter during the winter for the last two years and have found it the most profitable practice in their business. I can name you a few men who can tell you that they have made money by winter dairying, and by concentrating a few years' attention on butter-making and stock-raising. But the experience of these men is not available for the instruction of the people at large. If we get farmers to heartily support these stations, we can use their experience over the whole country; and farmers everywhere can draw their own conclusions. At the Experimental Farm adjacent to this city we have no trouble in making winter milk and making it cheaply by using corn ensilage, but if we cited our own experience only, the farmers would at once say:—"Oh, it is a Government institution and you have the Government purse behind you; but we could not make it pay." If we can get 12 or 15 men in the same position as themselves to make a success of co-operative winter dairying, we can spread the information abroad with a better expectation of it being received and acted upon.

Then we propose to do the same thing in the Province of Quebec by having a Station there running through the winter. In con-

nection with the work in Ontario and Quebec; we propose to have a quantity of the goods which are made sent to new foreign markets, so that Canadian goods will be able to appropriate and control those markets for our own people. As one instance of that, although the Government Station had no control of them, I have had cognizance of small shipments of butter to China and Hong Kong. Butter sells out there from fifty to sixty cents per pound, and it has been going all the way from Europe, across our Continent by way of Vancouver to that market. A few experimental shipments from our own Stations, will enable our own people to capture and control those markets. Then, fancy varieties of cheese fetch very high prices in foreign markets. Our people have not been making them. We propose to make these fancy varieties of cheese to see if Canadian varieties will take as well as English fancy varieties have done.

One other matter in the foreign market matter is this:—In the case of the Maritime Provinces I find the people are afraid that as soon as their limited local market is supplied, they can have no outlet for their cheese. The cheese I have seen made in Nova Scotia and Prince Edward Island seem quite as good in quality as that in Ontario, and it would be a judicious plan to send a few hundred boxes from the Maritime Provinces, to give the people there information as to whether their cheese will really fetch as much money as do ours from Ontario in foreign markets; and if they do that, the people will have further confidence to develop this business. At any rate, they will see that the foreign market is at their service, quite as much as for the people of Ontario. A few manufacturers in Nova Scotia especially, have sent cheese to the West Indies during the recent Exhibition there. Some have gone forward since, and reports of the most gratifying nature, with regard to the prices they have sold for and the reception they met with generally, have been returned. That is one new market we might appropriate and control. I think there is nothing more in connection with the work in Ontario, Quebec and the Maritime Provinces, that we have done or have in view to undertake in the near future, that I need to refer to this morning.

For the Province of Manitoba, the work will be of a somewhat similar nature. In Manitoba there are, although statistics are very incomplete, about twenty cheese factories and creameries. We

propose to have one man within ten days, visiting all the cheese factories in Manitoba, so as to enable the makers up there to adopt the very latest method of making cheese for the local market and for export. We will have some work done in connection with the creameries, and then the same instructors will be available to address meetings of farmers during the summer and autumn on the best methods of carrying on cheese-making and butter-making. All the men we have employed are practical men of many years experience in this work. Some work will be undertaken in the North West Territories. For this year it will take the form of a travelling instructor carrying information to the people; and as soon as the condition up there is suitable, we will have a permanent Station, that is, permanent in one place for two years, from which information can be given out.

For British Columbia the present plan is to hold a series of meetings during the month of August and perhaps in September, for the purpose of giving farmers out there some encouragement in the work of mixed farming. Butter-making out there will pay remarkably well. I found, last year, many farmers selling butter for fifty cents per pound the year round, which is to be regarded as a very good price. In some cases farmers told me, that all their farms and farm buildings had been paid for out of the product of their cows. The object of the work in British Columbia, is to encourage home dairying in the most profitable and successful way. As far as I have seen the Province, and I have not seen very much of it yet, I am convinced that the home or farm system of manufacturing products is the one which will prevail. I think there will be large profits in dairying, and that this work will continue to be satisfactory to the people. For this present summer, I propose to spend nearly a month there myself in forwarding this work. Having to deal with a new and particularly important subject this morning, I have already consumed a good deal of the time of the Committee; but after this matter has been discussed I would crave your permission to bring before you one other matter in connection with the branding of cheese and butter for the foreign market.

By Mr. Trow.

Q.—Do you consider that it would take a long time to remove the English prejudice against Canadian cheese in preference

to their own cheese ? The English, as a rule, are prejudiced more particularly in reference to any articles of consumption from foreign countries, and will give large prices for articles of home production which they relish and consider preferable to foreign products. If you consider our cheese equal to theirs, do you not think that prejudice would soon be removed ?

A.—Our best cheese has been equal to most of theirs for the past five or six years ; nevertheless the prejudice has not given way very much, for this reason :—It pays the English shopkeeper to brand or ticket Canadian cheese as English Cheddar. They can sell those cheese for a higher price, as much as four cents a pound higher, by adopting this practice.

Q.—But is not the English Cheddar cheese and Canadian cheese different in size ? Could not the difference be detected in that way ?

A.—Last year, English merchants found a demand for Canadian cheese to be sold as English so great, that they gave instructions to the makers in Canada to manufacture Canadian cheese the same size as English Cheddars and to ship it in thatway.

Q.—Do you not think the climate of Great Britain has something to do with the superiority of their cheese ?

A.—As far as they are superior, yes. Their summer-made cheese is, as a rule, better than ours, but our September and October cheese is undoubtedly equal to or superior to theirs. In this connection I may state to the Committee the experience we had at the Colonial and Indian Exhibition. I had the very best experts pass their judgment on our Canadian cheese and they said they were the finest cheese they had seen. After that our cheese were taken to the Kilmarnock Exhibition, where over fifteen thousand cheese had been brought together, and the judges, with but one exception, stated they were the finest cheese on the ground.

Mr. McMillan.—My impression is that Professor Robertson is beginning a little at the wrong end. I think he should have been able to tell us the real value of the experiments of butter and cheese at the Experimental Farms before going amongst the farmers.

By Mr. Cochrane.

Q.—Are we to understand that milk from well-fed cows is richer and better than that from cows poorly fed ?

A.—If the cow be well fed, after a long period the milk will be improved in quality.

Q.—What is a long period ?

A.—It would take several years to make much change.

By Mr. Trow.

Q.—What is the probable cost of your dairy experimental work for the season ?

A.—The amount expected to be expended for all purposes, salaries and travelling expenses, is about $1,500 per province.

Q.—For one station ?

A.—For one station in each province. The extra station in Ontario can be carried on out of what is saved from the other provinces this year, where conditions do not yet exist, requiring so large an expenditure.

By Mr. Cochrane.

Q.—I think there is trouble in store for people who do not pay attention to feeding. We learn that dissatisfaction exists among farmers who feed their cows well because they think they do not get a fair price for their milk. If improved feed can only improve the quality of the milk in several years, I think the opinion should be set aside that a man is entitled to more money for his milk if he feeds well ?

A.—If a man has an improved herd of cattle, in several years time the milk is worth more per hundred pounds, but he commences to gain from his extra feeding at thevery outset, by obtaining a greater quantity of milk.

By Mr. Trow.

Q.—I have always understood that both quantity and quality depended very materially on good feeding ?

A.—That is true. When we speak of the quality being improved there is not only embraced in it the constituents as to the solids of the milk, but the flavour, &c., which give it an extra value. The flavour comes direct from the feed, but the per centage of the several constituents of the milk depends on the constitution and temperament of the animal, which cannot be changed in one or two months. Milk is an elaboration in the cow's system. You can change the quality of the milk materially only by modifying the cow's system, and continued good feeding will have a good deal to do with that.

By Mr. McGregor.

Q.—What soils do you prefer for pasture?

A.—Any fairly dry soil. The grass growing on marshy land is the poorest.

By Mr. Cochrane.

Q.—Do you find in your experiments, that there is any dissatisfaction in regard to the prices paid for milk?

A.—Some of the factories have suffered to the extent that they have been closed because the farmers in the vicinity stated that they were not getting fair play.

By Mr. McMillan.

Q.—The Professor says that a change in feed will not show any difference for a few months, but if you take a cow and feed her well for three years, will she not give richer milk?

A.—Yes, slightly richer and of greater quantity. And in reply to the previous question of Mr. McMillan: Since I am in a measure responsible for recommending the establishment of these Experimental Dairy Stations, I would like to say that the work, in my judgment, has commenced at the right end. The Experimental Farm is the place where the farmers can learn the cheapest way of producing milk. But if we have a factory there, and make the cheese from our own herd, our conditions would be altogether different from what they would be, were the milk obtained from fifty different patrons, as will be likely the case in time at the different stations. Here in Ottawa we cannot get the milk. The city demand for table use is too great. We find it necessary therefore, to go away where the conditions exist, similar to those which the cheese and butter makers of the country have to encounter, and for this reason we must have the factories apart from the Experimental Farm. We have the two aspects of the value of this service. The Experimental Farms furnish information as to the cheapest and best methods of production of milk, etc., while the Experimental Dairy Stations will afford assistance for prosecuting the manufacture of the same in the best way.

By the Chairman.

Q.—Is the testing machine, an expensive one or difficult to work?

A.—For $14 you can get one of four bottle size, and any-

one of ordinary ability can learn to use it by a few hours practice.

By Mr. Trow.

Q.—Do you think that the sub-division of the proceeds from the cheese according to the quality of the milk would give dissatisfaction to the patrons of the factory ?

A.—I do not think so. The decision in regard to the adoption of that plan would rest with the majority of the patrons. And I do not think that farmers will continue to be satisfied with any system which does not provide for taking account of both the quantity and quality of milk. If milk containing 3 per cent. of fat be worth 60, 3½ per cent. worth 70, 4 per cent. worth 80, then the proceeds from the sales of the cheese may be distributed according to the application of thatscale. At the annual meeting of the patrons who support the factories, you will find an anxiety expressed to have a valuation and division made according to quality, and the farmers at the annual meetings may say "we will have the proceeds of our milk divided in this way." That would be different from any attempt at regulating the division and distribution of proceeds by outside interference.

By Mr. Dawson.

Q.—How do you propose to provide for the brand numbers of the different factories ?

A.—In reply to that question I may say that I would propose to have a provision that every factory should have a registered number. Every representative should register his factory in the office of the Dairy Commissioner and receive a registered number for use in that factory only. Then there would be permission given for that factory to use the words "Canadian Full Cream Cheese" on the cheese and on the box with the brand and the number of his factory. In that way the English people would get familiarized with the good quality of our cheese under our own Canadian name. The intrinsic value of the best cheese would give an additional value to the brand and registered number on the same ; and in the future, factories knowing that they might obtain a cent or a half a cent per pound more for their cheese would be stirred up in a healthy effort to excel because of the extra price which could be realized. There would be some dissatisfaction also and trouble at first, but the end would be to the advantage of the farmers and manufacturers.

By Mr. CHAIRMAN.

Q.—Would you have the name and number branded on ?

A.—I would have a stencil brand—the figures and letters cut out, and then the same put on with a brush.

By Mr. DAWSON.

Q.—Would the general public recognize it then as a brand of Canadian Cheese ?

A.—I think they would. I would suggest that the words to be used should be "Canadian Full Cream Cheese" in letters an inch long, and after a little while the name would become recognized and familiar. We have had in the past, some trouble with some inferior made cheese of the Western States,—made from milk after the cream has been removed and foreign fat substituted. These have been bought by Canadian merchants, stored in bond in Ingersoll, Stratford, Montreal, and afterwards have been shipped on Bills of Lading dated from a Canadian place. Hence they did pass on the British side ostensibly as genuine Canadian cheese.

By Mr. BAIN.

Q.—How do they get over customs regulations ?

A.—Thecheese were stored in bond. As soon as the practice was discovered last year, the Minister of Customs issued instructions that no cheese in bond should be exported from a Canadian warehouse, that did not carry on it the brand "Product of the United States," or the brand of the country where produced. That stopped the practice to a large extent, but at the same time it would be better to have our cheese branded, "Canadian Full Cream Cheese," so that we may get the credit for the quality of our own products. If the product of say factory No. 500 is remarkably fine, and begins to sell well, the retailer will ask the wholesale merchant for that brand, and it will be therefore necessary for the wholesale merchant to meet that demand. That will induce discriminating competition. It is one object of our experimental stations to get men to know our different qualities and brands of cheese and get in this way better prices.

By Mr. COCHRANE.

Q.—What is your experience as to the relative value for feeding purposes of corn cured dry in the shock and cured as ensilage ?

A.—Only a few tests have been made and I would not speak

hastily of what has been our observation. When corn is stored in a loft and protected from the weather it is almost as good as from the silo. The silo is economical because in it you can store a large quantity in a small space, but when the corn is saved in a loft and protected from the weather it is equal in value.

By Mr. McMillan.

Q.—Will the cattle eat it as cleanly ?

A.—Yes, except the butts of the stalks, if it be fed without previous cutting.

By the Chairman.

Q.—Will feeding on dry corn make the cows give as much milk as feeding them on ensilage ?

A.—Not quite. The succulent condition of the ensilage helps to maintain the milk yield with little shrinkage.

By Mr. Cochrane.

Q. Is it practicable to save fodder corn by putting it in alternate layers with straw ?

A —I have never found it successful if the layers of corn were more than four inches thick; if more than four inches there is enough moisture to make them mould.

By the Chairman.

Q. A suggestion was made by the Dairymen's Association last year about sending butter in different packages to foreign markets. Did you make any inquiry respecting the advisability of adopting that proposal and shipping butter abroad ?

A.—This conclusion was arrived at, that, instead of buying butter from outside factories, we would use part of the product of the Experimental Dairy Stations, put it up in different packages, send them abroad, and thus get all the information we want with respect to the size andstyle of packages which will be most suitable for the English market.

Q. Did you make any arrangements for shipping butter, as suggested it should be done at short intervals, in order to establish markets for Canadian butter when of good quality and not too old ?

A.—Nothing has been done, except that it is planned to ship part of the products of these Stations, weekly or fortnightly, as the circumstances then existing may favour.