

same way. By the way, Governor, do you remember riding over the mountains in southern York state on our way to Walton and saw the hundreds of cows that cold, stormy day, with snow deep on the mountain sides, getting their rations of fresh air and exercise?

SUBSTITUTING CHEESE.

To the Editor of the

MONTREAL STAR:

Sir,—While this question is being publicly discussed, will you be kind enough to record the experience of one who believes that the trick is mostly practised by producers, and not by shippers. A certain Ontario man, operating about twenty factories, sold his August, October and September cheese at prices by which he was to receive 1½ cent more for his September make than his August, and 5 of a cent more for his October than his September make. When this man delivered his cheese, what do you suppose were the quantities for each month? I will tell you. August, 2509; September, 3018, and October, 2843 boxes. Now, it is a well-known fact that cheese factories during the month of October shrink to nearly one-half the quantity which they make during the summer months. How then did this man deliver 340 more cheese for the month of October than he did for the month of August? Simply by holding back August cheese and sending them on as September, and then holding back September cheese and shipping them as October's. Now the purchaser or shipper of these goods may or may not have detected that trickery was practised, but at all events the shipper did not profit by it, but the manufacturer could not help knowing that substitution was taking place, and that he was profiting largely by it. The above is one instance capable of proof.

Let me suggest a perfect remedy. Pass a law that every cheesemaker be obliged to brand his cheese immediately on taking it out of the hoop and before placing it on the range, and that any cheesemaker having cheese upon his range unbranded be fined \$50, and make the owner of the factory responsible for all fines, and have inspectors who will have authority to enter any factory, at any time during certain hours, to see that the law is obeyed.

EXPERIENCE.

TWICE FEEDING.

Q.—How many times a day should a cow be fed? Mr. Henry, a noted breeder, says feed but twice. Is he correct?

Mr. Smith.—It is reported that Mr. Rogers, of Binghamton, who keeps a large herd of cows, about 100, says he would not have his cows fed at noon, if any one would give him the food. Rest, with him at noon, he says, is preferable to a feed for his cows; but Mr. Rogers' cows are kept nearly all the time in the stables. It is also reported that Prof. Henry, of Wisconsin, is on record as opposing a noon feeding.

Mr. Woodward.—I talked with Prof. Henry about that, and asked him how he did feed. As answered by him there were but two seasons of feeding the cows—morning and night—but they got each time, three or more rations, so that, practically, they must have been eating pretty nearly all day.

A Farmer.—I believe my cow knows better what she wants than I do,

therefore if she seems hungry and will eat at noon I am going to feed her. (1) But I want to know how long a cow is going to last if fed and pushed as some of these men recommend?

Q.—Do you recommend the turning out of the cows during the day in winter.

Mr. Woodward.—I, for one, don't. My cows and sheep are all in the barns and have been there since early in November. I am not rich enough to furnish feed to warm up my cows out of doors, so I prefer to keep them in the barns where they will be warm and contented. But there are thousands of farmers in this state who still cling to the "exercise" doctrine, and one may look out from the car windows every day, no matter what the weather, and see their poor, half-starved cows, foraging around old straw stacks, picking up stray mouthfuls of frozen grass on the bare spots of the pastures or meadows, or standing on their knees and drinking water through holes in the ice, sometimes nearly half a miles from the barns. Doubtless the prayer of those cows was, if they could pray, like that of the Savior on the cross, "Lord forgive them for they know not what they do."

C. W. JENNINGS.

Bolleville, N. Y.

REPORT OF

MESSRS. G. A. GIGAULT,

Assistant-Commissioner of Agriculture,

AND

J. D. LECLAIR

Superintendent of the Dairy School of St. Hyacinthe,

ON THEIR TRIP TO DENMARK, ENGLAND, IRELAND, BELGIUM AND FRANCE.

TO THE HON. LOUIS BEAUBIEN,
Commissioner of Agriculture
and Colonisation.

Sir,

On the 27th June last, you instructed me to prepare for a trip to Europe, where my mission was to collect information regarding the dairy industry in Denmark, the agricultural methods generally in vogue in the different European countries, and the best means to be adopted for the furtherance of the exportation of our products to the English market.

You associated with me Mr. J. D. Leclair, professor of dairying at the St. Hyacinthe School, in whose company I left Quebec on the 8th July, returning thither on the 15th September last.

Besides Denmark, we visited Belgium, France, Ireland and England; but we remained longer in the first mentioned of these countries, where we were enabled to secure ample information regarding the dairy industry and its products, the breeding and feeding of pigs, and the general agriculture (so flourishing) of that country. In our different excursions through Denmark we were obliged to secure the services of an interpreter.

I send with this letter a joint account of our mission, which you will find below.

I have the honor to be,

Sir,

Your obedient servant,

G. A. GIGAULT,

Assistant-Commissioner.

Quebec, 13th October, 1894.

() Hear, hear!—Ed.

Note.—The first 97 pp. of M. Gigault's report were translated by one who was quite unacquainted with the technical terms used in agriculture. We have done our best to make the work intelligible to our readers.

Ed.

GENERAL SKETCH.

Sir,

The mission confided to us had principally for its object the study of Denmark from the standpoint of agricultural production, on account of the great similarity of climate between that country and the Province of Quebec.

We have the honor of presenting you with the report of our trip, which we deem well to preface by a few geographical and statistical notes and some indispensable general remarks.

Denmark is one of the smallest countries of Europe, its area being only 14 784 English miles. It is situated between 53° 10' and 57° 40' north latitude, and 5° and 30° and 13° east longitude. It is in form, a peninsula, touching Prussia at its base and extending in a northerly direction between Sweden and Norway. Numerous islands along its coasts form part of the kingdom.

Its population in 1881 was 1,988,500 souls, and in 1890 2 085,335.

Copenhagen, the capital, is a magnificent city of 400 000 population, situated on the Island of Zealand.

Although further north than our Province, Denmark enjoys a less rigorous climate, on account of its proximity to the sea. On the other hand, the snow falls as abundantly there as here, at times reaching a depth of from six to seven feet.

The surface of the country is slightly undulating, with here and there hillocks of various heights. There are no lofty mountains or large rivers, and water-power is very scarce. To grind the grain, the farmers have recourse to windmills, which are very numerous, and some of which are supplied with steam engines, which are used when the wind goes down.

The soil consists of sand and a pebbly clay. These two substances predominate alternately according to the locality. Sand, mixed with a reddish-yellow clay, is also to be found.

The farm-buildings seem to be almost all of a uniform plan of construction. They are of stone or brick, with tile, slate, and sometimes thatched roofs. In most cases, the farmyard is surrounded by the different buildings, which form, with the family residence, a square or quadrangle open only in one or two places for the admission of vehicles. This mode of construction, with its sombre hues and its shedless roofs, would impart to the country a gloomy aspect, were it not that the eye is recreated by the plantations of trees that crown the summits of many a hillock and by the lines of verdure formed by the trees that border both sides of the roads and intersect the level fields in all directions.

In the month of August, in going over that grain-covered country, we could not at first believe that dairying formed the principal business; but soon large and numerous herds of cattle, tethered while grazing, made us realize the truth. The fact is that in Denmark the agricultural and dairy industries grew up and became developed together. When, in 1864, after a disastrous war, the country found itself burdened with great expenses and with a curtailed revenue, due to the loss of the two provinces, Schleswig and Holstein, it was rightly believed that the joint development of the two industries might save them from ruin.

Enlightened and patriotic men went all over the country spreading agricultural information and assisting in the making of dairy products. The Danes accepted and put into practice the wise advice given, and everything

moved along the highway of progress. The cultivation was done according to intelligent and rational methods; by means of rotations—that is, by alternating the exhausting and ameliorating crops—the land received back in manure what it had given up in crops. The dairy industry, which progressed at the same time, brought considerable revenues from the fabrication of butter, and the cattle increased year after year. Thus it is that, after Ireland, Denmark is the country that feeds the greatest number of cattle per square mile. The law of restitution is so well understood that we can safely say that the Danes have solved, thanks to the transformation of the greater part of their crops into butter and pork, the difficult problem of retaining the fertility of the soil. They hold in hand the three links that constitute the chain of good cultivation—numerous herds, abundant manuring, and profitable crops.

Another thing struck us, which we think it right to mention. Even the most complete theoretical knowledge is not considered alone sufficient. Before taking in hand a large farm, the agricultural students spend at least a year with well known farmers to learn how to manage and direct a farm.

Thirty years ago Denmark produced no butter, or scarcely any, and cattle were raised merely for the purpose of beef; but the high price of butter, and, later on, the immense production in western America of grain and meat, caused the importance of dairying to be felt. By dint of energy, perseverance and above all, of intelligent labor, the Danes succeeded in turning dairying into the most remunerative branch of their agricultural industries. In it, they discovered a lucrative and ever-ready market for their farm produce: grain, roots and fodder. From exporters of beef they became exporters of pork and butter; as much possible they converted their crops into concentrated products, and only exported the surplus; and thus was it that they succeeded in placing their country, in proportion to its size and population, at the head of agricultural countries, in the quantity and quality of its dairy products.

Let us cite a few facts, a few examples, taken from the smaller and middling classes of farms, to illustrate this concise account of agriculture in Denmark.

Mr. O. H. Peterson, of Fredericksund, whose farm consists of only fifty-four acres, has this year seven cows, seven calves and heifers, two horses, four sheep and six pigs, and his pastures and meadows only cover fourteen acres.

Mr. Peter Jenson, of Kallondborg, who has, in all, but six and two-thirds acres, keeps four cows and one horse. Last year he had only three cows, the milk of which brought him in \$159.80. The grain and roots that he raised allowed him, moreover, to fatten pigs, from the sale of which he realized \$81.11.

On a farm of one hundred and seventy-five acres under cultivation, and eleven acres of low-lying meadows, Mr. N. Peterson, of Taastrop, is able to keep forty-three cows, thirteen heifers, one bull, eleven horses, four foals, three pigs and four sheep.

The keeping of so many cattle, considering the extent of land, may be thus explained: 1st, the animals are tethered when grazing, they graze closer, more evenly, destroy no portion of the land by tramping, and find on the cropped parts a second and sometimes a third bite; 2nd, often, in the spring time, as soon as the ground