

alternate weeks from Edmonton and intermediate stations to and including Calgary, for main and branch line stations west thereof, the West Kootenay and Pacific coast; on alternate weeks from Nanika and intermediate Pembina branch stations to Winnipeg and all points covered by routes Nos. 1 and 5; on alternate weeks from Broadview and intermediate stations to Winnipeg and all points east thereof to and including Port Arthur; on alternate weeks from Alameda and intermediate Souris and Southwestern branch stations to Winnipeg and all points covered by route No. 1, and all points east of Winnipeg route No. 5; on alternate weeks from Emerson and intermediate stations to Winnipeg and all points covered by routes Nos. 1, 2 and 5.

On the Grand Trunk Railway the service will be on alternate weeks from Wharton and Goderich, via Stratford, Guelph and Toronto, to Montreal; and weekly on the other routes, namely, from Sarala, via London, Hamilton and Toronto to Montreal; from Meaford, via Allandale and Toronto, to Montreal; from Orillia, via Belleville, to Montreal; from Chaudiere Junction, to Montreal; from Massena Springs to Montreal; from Coaticook to Montreal. On the Canada Atlantic Railway there will be, if required, a weekly service from Eganville, via Ottawa, to Montreal; on the Quebec and Lake St. John Railway, weekly from Chicoutimi to Quebec; on the Intercolonial Railway, weekly from Rimouski to Quebec and Montreal, and weekly from Moncton, N.B., to St. John, N.B., and Halifax, N.S.; on the Dominion Atlantic Railway, if required, weekly from Yarmouth, N.S., to Halifax, N.S. On Prince Edward Island there will be a cold storage service such as may be required, from Tignish, Souris and Georgetown, to Charlottetown.

THE REFRIGERATOR CARS.

The companies mentioned have agreed to provide refrigerator cars properly insulated for the protection of the perishable freight which they are intended to carry. These cars are cooled by means of a mixture of ice and salt, which is replenished when ever necessary at various points on the route. The cars are painted white for the sake of increased coolness—white radiating the sun's rays better than any other color—and also for the purpose of making them distinctive, and bear in large letters the inscription, "Government Cold Storage Line." The cars are attached to ordinary freight trains, which stop at each station, but as soon as a car is full, or when two or more cars arrive at any junction with enough produce to fill one car, this is made up and rushed through as fast freight in order to save time. Arrived at Montreal, the cars run right down to the wharf alongside the steamship on which the goods are to be shipped. Both the Canadian Pacific Railway and the Grand Trunk Railway have tracks on the wharf running the full length of the harbor, so that there is no cartage along hot, dusty roads. The cars on their arrival at the wharf are re-iced if necessary, and the transfer of their contents to the steamer is made either in the morning or late in the afternoon, so as to avoid the heat of the mid-day sun.

With regard to cold storage warehouses at the ports of shipment, there are such buildings now in existence in Montreal, and a grant has been offered

to those who will provide suitable and necessary cold storage buildings at Quebec, Halifax, St. John and Charlottetown. Assistance has been offered towards providing a cold storage building at Toronto. Though not a shipping port, Toronto is a great railway centre, and instead of running all the cold storage cars, starting from places in western Ontario, through to Montreal, the shipments will be consolidated into carload lots at Toronto. At Revelstoke, B. C., another cold storage building has been provided by the Government and though not a part of the general cold storage scheme, it is none the less important in this way. Throughout the whole mining region south of Revelstoke there is a large demand for butter, eggs, poultry, and meats. Merchants can buy these perishable products at Spokane Falls, Wash., and other places in the United States, and have them delivered within twenty-four hours after they are ordered, while to get them from the Calgary district in the North-West Territories, they had to wait four or five days. With cold storage at Revelstoke, however, car lots can be sent there, and the products distributed to the mining towns in less time than from the United States and at as low rates of freight.

(To be continued.)

Farmers' Clubs.

PORTNEUF.—Dr. Grignon, the well known agricultural lecturer, having completed his tour through the County of Portneuf, sends the following general remarks to the Hon. Commissioner of Agriculture of the Province of Quebec:

I found that great progress had been made in the county of Portneuf particularly as regards:

1. Keeping the cowhouses clean;
2. Proper management of the milk;
3. Winter and summer feeding of stock;
4. A greatly increased acreage of roots grown;
5. The lung is better cared for;
6. Artificial manures more employed, and with better judgment;
7. Drainage better understood and more of it done;
8. Stock greatly improved;
9. Seed-grain better selected;
10. Increased purchases of clover and timothy-seed to the extent of 500 per cent.

In addition to these striking improvements, there still remain many demanding attention, such as:

1. Tobacco growing;
2. Cultivation of fruit-trees;
3. Destruction of weeds;
4. Improvement of meadows and pastures;
5. Growing maize, etc., etc.

The POINTS THAT CHIEFLY ATTRACTED MY ATTENTION AT FIRST: were the great number of manure-sheds and cellars, particularly of the former. There are parishes in which there are hardly ten farmers who do not possess a manure-shed. Many make a bed of rubbish to put their dung on, to save the urine and increase the bulk of the heap, an excellent practice, one that I have recommended and followed for years. Every autumn, I prepare a bed of potato-haulm, four feet thick, for the winter's dung, and if there is not enough of the haulm, I add straw or leaves. In this way, I save all the urine and increase the quantity of manure.

In order to HAVE GOOD DUNG, MUST WE HAVE DUNG PITS, OR SHEDS, OR WILL AN EXTERNAL MANURE ANSWER?

This is a question I am often asked. I am not afraid to answer, at once, that, with deference to the opinion of the patrons of dung-pits, good dung can be made without sheds or pits, provided it is used when fresh, i. e., in spring, and ploughed in.

For a man who can afford it, a 12-foot deep dung pit, with pigs constantly routing the dung about, is all very well; but this costs money. And if a lecturer lays it down as an invariable rule that good dung cannot be made without dung-pits, how many farmers there are who, not being able to afford such an outlay, will not take the trouble to employ the ordinary means of improving their manure, simply because they are under the impression, from the lecturer's instruction, that good dung cannot be turned out without a pit.

Besides, I have, in support of my argument, my own experience, and the practice that now obtains in Denmark, where the farmer is satisfied with ploughing all his dung on a space 25 or 30 feet in front of the cowhouse, etc.; all the urine that exudes from the litter is led thither by under-ground drains. Five years ago I had a box-pit with a shed over it. As the arrangement of my buildings did not admit of my sending hogs thither to work the dung over, I was obliged to send my man, twice a week, to turn it and water it to prevent it from getting fire-fanged. The following year, finding that my man neglected the job, particularly the watering, I took away the shed, trusting to the rain and snow for sufficient moisture, but I still retained the box-pit; it measures 28 by 21 feet. The dung is capital. It is true, I have no liquid manure tank, but I shall make one next year, not so much because I lose much urine, but for the sake of having some with which to water my meadows. The best means I have found to save the urine is to litter the cattle with sawdust. This I have done for twelve years, and I find it answer. With sawdust, I can purify a cowhouse in five minutes, and I do not lose a drop of urine. Had I no sawdust, I should use dried bog-earth, and falling that, a handful of plaster behind each cow in the place where the defections fall. Two or three times a week I level my mixture, never leaving it in the form of a cone, but keeping it as flat as a table. And, I say again, my manure is capital; MM. Buchanan and Casgrain, judges of the "Agricultural Merit Competition," gave me full marks for it.

2. THAT WHICH STRUCK ME MOST WAS, to find that in some parishes, for instance, St-Augustin, Pointe-aux-Trembles, les Beureuils, Cap Santé, etc., the farmers were draining their land in an economical manner, i. e., using stones and wood, which costs them nothing (1).

3. THAT WHICH STRUCK ME MOST was to find so many boilers in the cowhouses. In almost every set of farm-buildings hot water is used to scald chaff, husks, and meal. The cows, as a rule, are well fed, but, unfortunately, they do not get salt regularly,

(1). The extra amount of earth to be moved in the wide drains, when wood or stone is used, makes it much more expensive work than pipe-drains, to say nothing of the relative durability of the drains. See articles on this subject in the Journal for May, June, and July. —Ed.

and the use of the curry-comb and brush is neglected. (1) All the cow-houses are white-washed outside, which gives them a bright look, but, to my great surprise, I found that too many of them were not so treated inside.

Manures.

NOTES ON FARMING.

(Continued.)

KEEPING THE SOIL COVERED.—Land is not cleaned and tilled with the object of being left bare. Let, therefore, the stubble cleaning and autumn tillage be done early enough to admit of a catch-crop, (2) not a regular winter crop being sown. The Rothamsted experiments have clearly demonstrated the desirableness of this course.

When there is no vegetation, or even when there is vegetation, during excessive drainage, nitric acid is lost in large quantity through the drains. The remedy for this is to sow the newly cleaned stubbles with winter rye. The catch-crop will pay well for growing, and the land will be clean after its removal in spring.

ARTIFICIAL MANURES.—Farm-yard manure is a "general" manure: whereas all artificial manures are more or less "special" manures some of the most successful of them being deficient in a great many of the most important elements of plant growth. In addition to the special food-supply yielded by them, they are, as a rule, more active and give quicker returns than farm-yard manures; so that however rich the latter may be in the constituents of crops, it is impossible in the present condition of agriculture, to do without large supplies of artificial manures.

The late Mr. Pusey experimented with a view to discovering the extent to which farm-yard manure could be profitably used. One acre of land, without manure, yielded 15½ tons of mangels; a second acre, with 13 tons of farm-yard manure, yielded 27½ tons of mangels; a third acre, with 26 tons of farm-yard manure, yielded 28½ tons of mangels; and a fourth acre with 13 tons of farm-yard manure and 3 cwt. of guano yielded 36 tons of mangels. So that while 13 tons of farm-yard manure gave an increase of 12 tons in the crop, 26 tons of farm-yard manure gave an increase of 13 tons in the 13 tons of farm-yard manure and 3 cwt. of guano gave an increase in the crop of 20½ tons per acre. (The guano of those days contained 17 p. c. of ammonia! Ed.)

The artificial manure in this case is shown to have acted as a powerful and economical supplement to farm-yard manure when the latter was in moderate quantity. But there are many cases in which artificial manures must be solely relied on. Where land is very steep and hilly and outlying, it is often cheaper to purchase light and portable manures; and to supplement their use in such cases, not with the dung-cart but by feeding sheep on the field on the roots or other green crop grown on the land. (Excellent! This is what we have

(1). Brush, and wisp of straw, all right; but the curry-comb is a horror.—Ed.

(2) Very good in England, but, except fall wheat and rye, what crop have we here that will stand—20c F.?—Ed.