

his improvements about the year 1760. . . . In 1538 a law was enacted that said: No tenant farmer should have more than 2,000 sheep. Roast beef at Christmas time appears to have been a luxury of modern times—thanks to the turnip, mangel, cake, clover and other winter food; for, formerly, as soon as the pasturing season ended the fat animals were killed and salted to prevent their becoming lean again, the hay being required for cows and young, growing animals. Bullocks and sheep were a long time growing to perfection for the butcher, much as it is now in foreign countries, whose agriculturists, when they visit England, express surprise that our live stock should be so large and so fat at an early age.

Now, cousin Canadians, you are no doubt aware that in point of quality your herds and flocks are almost on the ground of equality with the best the world has ever produced. I have myself seen specimens of both cattle and sheep (Canadian home raised) that would not necessarily concede a single point to the best found in the Old Country; but does not the feeding of roots tend considerably to the production of such marvellous specimens? Do you think the efforts of the Webbs, the Bakewells and Collings would have been crowned with the success that attended them without the aid of roots? Do you think the climate of Lincolnshire could have made such wonderful specimens of the "golden hoof" to be found in that country to-day without the aid of roots and improved modes of feeding? Climate figures, but not to the extent that some may suppose. The climate of Ontario allows of the growth of the animal to weights equal to that of any country, and it lies in the skill of the herdsman and flockmaster in mating and producing type whether she or England shall lead in the production of the best stock. It is not a matter of climate, but skill in mating and feeding, of which the Canadian is pretty near a master. As regards the health of the flock and herd, Canada has a climate equal to if not surpassing that of England. Of course, climatic and geological influence warrants diversified modes of management in the various countries to bring about a successful issue.

Wishing the opinion of a brother Englishman—of no small repute as a breeder and grazier of fine stock—as regarded the great Toronto Exposition of '96, I ventured: "What did you think of the Canadian exhibit of home-bred sheep?" His reply was: "It was a surprise to me. I was not prepared to see such grand specimens bred by what I erroneously thought to be novices. No country can boast of finer specimens, and the wonder is they do not let South America know what they have to sell. Canada will one day prove a great competitor with England in supplying first-class stock to other countries. As far as my personal experience goes, there is no fairer sheep country found than in Canada. Especially does this apply to Ontario. Good sheep are there, and in their company good shepherds, and an abundance of roots."

Richmond Co., Que. SHEPHERD BOY.

#### Governing Sex.

In a letter recently received from our correspondent, Mr. D. P. L. Campbell, of Prescott Co., Ont., it was pointed out that the theories of how to regulate sex in offspring, as set forth by Mr. C. T. Fields Clark, are not of recent origin, as similar views were held and expressed some years ago. Mr. Campbell quotes from an old authority among other theories the following, which agree in the main with those set forth by Mr. Clark: "The development of the fetus in the right horn of the womb will secure a male, and in the left horn a female;" "the male germ is supplied by the right testicle and the female by the left;" "in females that give off a single ovum at a menstruation every alternating ovum that reaches maturity is of the opposite sex to the one immediately preceding it."

In conclusion, the question is raised: If such is the case could not males or females exclusively be secured by removing the right testicle and ovary or the left, according to the sex desired? It is suggested that it would prove an interesting and profitable experiment for some of our experiment stations to take up.

#### No Fear of the Sheep Industry Dying Out in Manitoba.

To the Editor FARMER'S ADVOCATE:

It is somewhat difficult to answer your inquiry as to whether the sheep industry in Manitoba is in as good condition as some years ago. The question falls to be answered by a comparison of the numbers now with the numbers then. It is doubtful if this can be done with any degree of accuracy, as no statistics on the subject were collected by the Agricultural Department during several years. The last bulletin gave the number of sheep as 36,080. Whether this number is greater or less than in previous years we cannot take it as matter for boasting, but must accept the fact that the sheep industry does not occupy that place among the agricultural interests of the Province which might reasonably be expected. Several reasons may be given for this, among which may be mentioned the fall in prices, the necessity of suitable fencing, and the loss from wolves in many districts.

We cannot expect prices to rise to the figures of eight or ten years ago. Unless there is an export market prices will continue low, as the local demand is easily supplied. The market for early lamb has been adversely affected by the sale of

frozen lamb of the previous year as spring lamb. Purchasers in the meat markets should not allow themselves to be imposed upon, as the one article can be easily distinguished from the other.

The average prices of sheep products for some years have been \$2 to \$3 for early lamb, 2½ cents to 3½ cents live weight for sheep in the fall, and 8 cents to 10 cents for wool. The price of mutton has been about the same price as good beef, and if it pays the farmer to grow beef it will pay him to raise mutton at the same price. If the enterprising firm who are erecting abattoirs in Winnipeg make the export of chilled mutton to England a feature of their business a steady market at fair prices will probably be furnished for increased numbers of sheep raised in Manitoba and the Northwest Territories.

We do not think there is any fear of the industry dying out. The people on this side of the Atlantic are not great eaters of mutton. There is too little discrimination of the different qualities; wethers, lambs, old ewes and bucks very often being all classed together. Matters, however, are improving somewhat in this respect, and when the public find that they can always get good mutton when they ask for it the taste for it and the demand will steadily increase. The practice of seeding down land to grass, which is becoming a feature in Manitoba farming, will tend to increase the number of sheep. It lengthens the grazing season a month at each end, and a much larger number of stock can be kept per acre. The reduced cost of fencing wire will also help this tendency.

It is hoped that the Legislature will not pass the bill, of which notice has been given, to reduce the wolf bounty. The present bounty of \$2 is fair and reasonable, and is doing much to keep down this pest.

A gratifying feature in the sheep industry is the establishment of so many flocks of pure-bred sheep in the Province, so that no difficulty need be experienced in procuring good rams of all the leading breeds at reasonable prices. WM. WALLACE.

Winnipeg District, East.

## FARM.

### Local Object Lessons in Agriculture Under Government Supervision.

For the information of our readers we give below an outline of a comprehensive plan submitted on Friday, April 22nd, to the Parliamentary Committee on Agriculture, at Ottawa, by Prof. Jas. W. Robertson, Agricultural and Dairy Commissioner, and authorized by Hon. Sydney Fisher, Dominion Minister of Agriculture:

#### "ILLUSTRATION STATIONS" FOR FARMERS.

The most important direct aids to Agriculture, given by the Dominion Government, are:

- (1) The establishment and maintenance of Dominion Dairy Stations, whereby the making of butter in creameries during the winter has been introduced into all parts of Canada, and by means of which co-operative dairying has been established in districts where it was unknown;
- (2) The Cold Storage Service for the carriage of perishable food products;
- (3) The imparting of information on the needs and preferences of markets which can be supplied with Canadian products, and the making of Trial Shipments of the same;
- (4) The maintenance of Experimental Farms;
- (5) Encouragements to Agricultural Societies, chiefly in the Northwest Territories; and,
- (6) Protection of the live-stock interests by Veterinary Service and Quarantine.

During the last ten years, very marked progress has been made in improving the quality of manufactured farm products, such as butter and cheese, and in feeding live stock profitably. There has been much less improvement in the methods of cultivating crops, in the selection and general use of the most productive varieties of cereals, grasses and roots, and in maintaining the fertility of soils.

#### RESEARCH AND ILLUSTRATION.

Every experiment is capable of rendering a two-fold service. It may discover what was before unknown, and it may illustrate and demonstrate the application in a profitable way of principles and methods which are not new. It is seldom advantageous to combine in one experiment the objects of research and illustration. It is always a good plan to concentrate effort and attention on a few things, until some real progress has been made. The hurried multiplication of experiments, without definite comprehensive plans, may cause amazement, but they seldom yield practical service. The history of experiment stations maintained by the Governments in all lands shows a general tendency towards making them, or letting them become, "Show Places," having in consequence a very limited range of usefulness. Too much Barnumism renders no service to science or to farmers.

#### INFORMATION PRESENTED IN A TAKING WAY.

When any principle or method that may be applied to farm management has been discovered as a good one, the information about it should be given in such a way that it will be, as soon as possible, beneficial to those for whom it is intended. There is great danger of valuable information being buried in bulky printed reports beyond the hope of resurrection. For men who are mostly employed in working with material things, such as land, farm tools, animals and products, illustrations should be given (1) where they can see them, (2) in such a way that they can readily understand them, and (3) so that they will be attracted to learn and to put the lessons into practice.

The Dairying Service of the Department has been useful

in that way through the Dairy Illustration Stations. These have been object lessons which the farmers could readily see and copy from.

A similar system suited to illustrate—that is, to make clear—the relative productiveness of different varieties of grains, of roots and of fodder plants, would be readily accepted and acted upon by farmers.

The quality and quantity of crops which could be obtained on the same land, in the same season, from different methods of tillage, might be illustrated in such a way as to quickly cause nearly all the farmers who saw them to put the best methods into practice on their own farms.

#### LOCAL ORGANIZATIONS TO CO-OPERATE.

To accomplish that I would recommend that some local organization of farmers, such as a Farmers' Institute, an Agricultural Society or Farmers' Club, should provide an "Illustration Field" or "Illustration Station" to be used in the way and for the purposes indicated. In any county where one of these organizations was not disposed to do so, I would propose that the County Council, or the Township or Parish Council, should be assisted to provide a small "Illustration Station." No property need be purchased, and there would not be any necessity for engaging a local superintendent on salary. From ten to twenty acres of suitable soil should be arranged for. It should be fairly uniform in character, situated near a market town, beside a public road, and where practicable, close to a schoolhouse.

The Farmers' Institute or other local organization might arrange with the farmer occupying the land to conduct the "Illustration Work" according to directions which would be furnished from the Dominion Department of Agriculture. The "Illustration Field" for a county need not be permanently in one locality. The illustrations might be given in one place for a year or two and then in some other locality after they had served their purpose in the first place.

#### THE GOVERNMENT SHOULD PROVIDE THE PLAN AND THE SEED.

The Dominion Department of Agriculture should provide the plan in general and in detail. For each locality it should aim at the accomplishment of something definite in introducing varieties of seeds, methods of cultivation and improvement in the fertility of soils. The work to be carried on at each "Illustration Station" or "Field" should be directly adapted to furnish information to the farmers on what would be useful to them in their district at once.

The plan should be simple and clear in order to make it as effective as possible in affecting the practice and products of the neighborhood. For instance, one-fourth of an acre each of four different varieties of oats might be grown side by side. The rule should be to grow not more than four varieties of any one kind of grain. One-eighth of an acre might be grown of each of four different varieties of carrots and of four different varieties of potatoes.

For illustration of different methods of culture one-quarter of an acre of some suitable variety of Indian corn for fodder might be sown broadcast; one quarter of an acre in rows two feet apart, with the seeding quite thick in each row; another fourth of an acre with the corn in rows three feet apart, and cultivated according to the best known methods; and a fourth one-quarter of an acre with the corn three feet apart, but left uncultivated. Such an illustration of methods of corn growing would result in a general adoption by the farmers of the best methods. Similar illustrations should be given of methods of cultivating other crops.

The Dominion Department of Agriculture should provide the seeds and compensate the occupier of the land, who would be Superintendent of the Illustrations, for the expense incurred in the extra labor of sowing and cultivating the comparatively small plots.

I estimate that the expense to the Government for the seeds and such compensation for labor would amount to from \$50 to \$100 per "Illustration Field," according to the size and work.

This would be a means of obtaining a large measure of volunteer service from a great number of leading farmers in spreading information in a thoroughly practical way throughout the localities in which they lived.

#### TRAVELLING INSPECTORS AND LECTURERS.

A practical farmer with a good knowledge of business methods, and ability to express himself clearly in writing and in public speaking, should be secured as travelling inspector and lecturer for each group of twenty or twenty-five "Illustration Stations." The information which they would gather at these Stations during the summer would furnish most useful material for meetings of farmers held to discuss agriculture during the winter months.

I estimate that if one hundred "Illustration Stations" were in existence in Canada at suitable centers, each would be visited during the year by from 500 to 1,000 farmers, who would examine the work carefully for the purpose of learning all that could be transferred into the management of their own farms.

#### THE KLONDYKE WOULD NOT BE IN IT.

I think by that means the quantity of crops could be increased at least twenty five per cent. from the same acreage, without extra expenses, within ten years. That would mean an annual increase of wealth for all time afterwards; and the educational value of the "Illustration Stations" to the farmers themselves and their families would go on growing in a manner that cannot be estimated in dollars and cents. The annual value of the crops from the farms in Canada is estimated variously at from 220 to 270 millions of dollars. In a few years the increased value of the farm crops traceable to these "Illustration Stations" would amount to so many millions a year that even the Klondyke would not be in it, by comparison, as a means of enriching the people of Canada.

#### ESTIMATE OF COSTS.

I estimate that the expenditure to be made by the Dominion Government for giving effect to this scheme would amount to from \$100 to \$200 for each station, including the illustration and the travelling inspectors and