

Results from Fertilizers.

The twenty-first annual report of the Dominion Experimental Farms contains valuable data from Dr. Saunders in regard to manures and commercial fertilizers. It is pointed out that the experimental plots at the Central Experimental Farm, at Ottawa, for the testing of different kinds of fertilizers, as applied to wheat, barley, oats, corn and roots, are conducted on lines similar to those which have been in existence for over 65 years at Rothamsted, England. They are reported upon for the 20th consecutive season, and much instructive information may be derived by Canadian farmers from a careful study of the tables. These show, for each of the wheat, barley and oat crops, the yields of grain and straw for the season of 1907, and the average yields for 19 and 20 years of wheat, and for 18 and 19 years of barley and oats, from applications of barnyard manure and of artificial fertilizers. The experiments were made on 19 plots of one-tenth of an acre each, as compared with two plots which have been unmanured from the beginning. The exceptionally unfavorable character of the season of 1907 is reflected in the yields, these being lower than the average on almost every plot. Thus, in the case of wheat, one unmanured plot gave only 5 bushels 40 pounds, as compared with a twenty-year average of 11 bushels 39½ pounds. It is interesting to note, too, that this average yield of wheat on the unmanured plot is nearly 1½ bushels less than that from the unmanured plot at Rothamsted, which is a little over 13 bushels for a period of 65 years. The best results are shown from the use of barnyard manure, the yield from which of wheat, upon the average of 20 years, is practically double that of the unmanured plot. Of the two barnyard-manure plots, the manure is on one plot applied fresh, and on the other in a well-rotted condition. The average yields from the two plots are about the same, the fresh-dung plot showing, however, a slight advantage of about 9 or 10 pounds per acre. But as the quantities applied are of the same weight, and as dung in the process of rotting loses weight to the extent of about 60 per cent., there is, evidently, in the long run, a decided economy in the application of dung in the fresh condition.

A feature of the barley experiments is the evidence adduced in favor of common salt. This, applied annually at the rate of 300 pounds per acre, gave, in 1907, a yield of 32 bushels 44 pounds, the average yield for 19 years being 28 bushels 33 pounds. In the oat plots, it is noticeable that, in 1907, the yield from the rotted-dung plot was 64 bushels 4 pounds, as compared with 51 bushels 6 pounds from the fresh-dung plot; but on the average of 19 years, the fresh-dung plot gave a yield larger than the rotted-dung plot by nearly three bushels. Evidently, the special character of the season of 1907 was more favorable than year to the influence of the rotted dung, as in previous years, the yield from the fresh-dung plot has been the greater.

Homemade Lightning Rods.

In reply to a request from W. A. Bowyer, of Norfolk Co., Ont., we again give directions for the making and erection of twisted-wire lightning-rods. This class of rod has been approved by the Ontario provincial inspector of insurance, and eminent electricians both in Canada and England. For the construction and placing of the twisted-wire rod, the instructions are in substance as follows:

Use soft galvanized number nine wire, nine strands. A wagon wheel answers very well for twisting. Set the wagon in a convenient place, and raise the wheel as if for greasing. Measure out the needed length of wire for cable, as, for an ordinary barn, the full length may as well be made at once. Liberal allowance should be made for grounded ends, as a connection with damp earth at a sufficient number of places is of first importance. If a small well auger can be had, and a hole bored to the depth of seven feet, it will be all right. If not, then a hole four or five feet can be dug, and the end of the rod coiled in a flat spiral. Drive a stake, with a hole bored in it, through which the ends of wires can be passed and bent around. The other ends of wires can be hooked, each one around a spoke of the wheel close to the hub. In measuring the wires, care should be taken to have them of equal length, and an allowance made of one foot in 200 for shrink in twisting. Now, having the nine wires stretched out and fastened securely, before beginning to twist, brace well both wagon and stake, for there will be considerable tension. It is well, also, to throw across under the wires some old rails or boards to keep them out of the mud or grass. Turn the wheel until the cable is sufficiently twisted to hold together, and the job is done. The rod may be stapled closely to building, or a cork may be put under at each staple, if desired. The old plea of the necessity of insulation has been abandoned, although Prof. Reynolds, of the Ontario Agricultural College, considers that it is advisable to place a glass or porcelain insulator between the wire and the building at any approaching bend—for example, where

the wire re-enters toward the building below the eaves, if it happens to be carried down that way. At other points, Prof. Reynolds agrees that insulation is not necessary.

Highest lines and projecting points should be specially guarded, and it is, therefore, well to have rods on all ridgeboards. For the plain barn, with one ridge and two gable ends, the rod may be run the whole length of the ridge, descending and entering the ground at both ends. In the case of a T-shaped barn, or a shed running out from the main building, in addition to the rod with two grounded ends already mentioned, another with end in the ground at the outer end of shed, should be run up the gable end to the ridge, and along the whole length of the ridge, and connected with rod on main building, making three earth terminals, and all ridges protected. Upright points can be added afterwards. They may be five feet high, and not more than twenty feet apart. To make these, lengths of six and a half feet can be cut off, and a sharp bend made a foot and a half from one end, this extra length to be opened out and wrapped around the rod where attached. This makes all solid, and forms good electric connection. At the upper ends of point the wires should be opened out a few inches, and spread apart in all directions. To hold the points upright, get the blacksmith to make for each an iron tripod. Have the rods run in as direct a course as possible; the fewer sharp turns there are, the better.

Effect Noticeable the Second Year.

Editor "The Farmer's Advocate":

I think there should be a man employed in each beat to drag the roads, and the township pay him. My opinion is the drag is all right. I thought our road was better last summer, even from the dragging it got the summer before.

WM. BROWN.

The printing of the plates and the revision of the text for the second edition of "Farm Weeds" is progressing favorably. The new edition will be 7½ by 10½ inches, and will be bound in good strong cloth cover. When ready for distribution, which will probably be about July, it will be sold to farmers and other individuals in Canada through the Superintendent of Stationery, at approximately two-thirds of its actual cost. This publication, prepared by the Dominion Department of Agriculture, is one of the best treatises on weeds in America, if not in the world.

THE DAIRY

Alberta Creamery Convention.

The annual creamery convention in Alberta, held recently at Red Deer, showed an increasing interest in the dairy industry. The delegates from the Government creameries having studied conditions generally, were in position to discuss problems connected with Alberta buttermaking intelligently. For several years the creameries have been operated under Government supervision, the object being to help the dairymen to help themselves. A suggestion that some steps should be taken to relinquish at least a part of that aid was met by strenuous opposition. The proposed changes were postponed one year.

At the convention, in 1908, a resolution was adopted, asking the Provincial Government to give assistance in bringing into the Province pure-bred bulls of dairy breeds. Private requests were also received by the Department. In response to these requests an order-in-council was passed, authorizing the expenditure of \$1,000 in this work. A circular letter was sent to the creamery associations, agricultural societies and farmers' associations, stating what the Government was prepared to do, and in the course of about ten days responses began to come in, and most of them were in the form of complaints. One complaint was, "Why were the dairy Shorthorns not admitted?" Others were that it would place the buyers at the mercy of sellers and breeders in the East, and still others that it would drive the dairy-stock breeders in Alberta out of business. The reason dairy Shorthorns were left out, according to W. F. Stevens, was on account of the expense. They cannot be procured, except in England, and at present, at least, it was not advisable to go to so much expense.

Among the resolutions unanimously adopted were: That the Government be requested to amend the order-in-council applying to the importation of pure-bred dairy stock, by adding thereto Shorthorn cattle of dairy strain, and that the sections of the Dominion now omitted from the order be added to the list of Provinces from which dairy cattle may be imported.

That this convention request the Minister of Agriculture to take up with the Executive Council and secure the passage of an Act to regulate all creameries and cheese factories, such Act to cover the issuing of proper statements showing the relative proportions of butter and butterfat each month, and the basis of payment of the

quirement of full weight, and the proper amount of moisture and other foreign matter in butter and cheese, and also that the Act be made so that the Government will have full power to inspect creameries and cheese factories, not only in the matter of manufacturing, but also in all matters of sanitation. Further, that the books of all creameries and factories shall be open to inspection of patrons at any time.

That the Government be requested to take steps to pass legislation, either by order-in-council or by Act, whereby no person or company can erect a creamery or cheese factory in the Province without first securing a permit authorizing the erection, the applicant to file plans of the proposed creamery or factory, and the area from which the support will be drawn, the plan of permit to be prepared, and full authority for issuing same to be granted by a special council, appointed as follows: One member to be nominated by the Government, and one by each of the organized associations now existent in the Province, and the associations interested in this industry; also, that all creameries and cheese factories be licensed, and that the licenses be renewed yearly.

Cost of Pasteurizing Whey.

Editor "The Farmer's Advocate":

I notice several inquiries about the cost of putting in the necessary apparatus in cheese factories for pasteurizing whey. Some replies seem to place the cost higher than is necessary. The whey tank should be as close to the factory as possible, and have a capacity large enough for the whey from most of the day's make. Then you require a steam pipe, connecting boiler and tank, about an inch and a quarter in diameter, carried down to the middle of the tank, and piping on the bottom of the tank running out four ways, with elbows on the end, and a reducer in the elbow. The elbows all should point in the same direction. When the steam is turned on, the steam coming out of the pipes, and all being turned the same direction, causes the whey to go whirling round in the tank, thus keeping it in motion.

The cost of putting in the piping should not exceed about ten dollars. The amount the cheese-maker should charge for the heating of whey can quite easily be settled by each factory for itself, by weighing the coal or measuring the wood, making an actual test for one day or two days. A test of two days, made in the Elma cheese factory last fall, showed the cost to be about 65 cents per ton of cheese. Of course, some factories might buy their fuel cheaper than others.

My opinion about pasteurizing of whey is that it is the best improvement that has been introduced into Western Ontario cheese factories for some time. In fact, I do not know any suggestion that would do as much good, if carried out, as that every factory in Ontario should adopt and at once put in the necessary apparatus to pasteurize their whey.

THOS. DICKSON.

Perth Co., Ont.

[Note.—In many factories, three-quarter-inch piping to the whey tank is considered sufficient. Also, a row of holes pointing towards the side of the tank, are drilled in one side of each of the four arms, so that the steam is more evenly distributed throughout the whey. According to Frank Hems, Chief Dairy Instructor in Western Ontario, the Atwood factory, with which Mr. Dickson is connected, has been most successful in pasteurizing whey.—Editor.]

Most Delicate Food the Most Carelessly Handled.

I ask you, said W. K. McNaught, M. P. P., in moving the appointment of a royal commission to inquire into the conditions of the milk supply, would we, nay, would the milk producer himself, or any other person, tolerate for a moment that any other food should be placed on the table prepared in the same filthy way as our milk supply is often produced and handled? Imagine a man who has been cleaning horses in the stable, and doing dirty work, coming in and mixing up our pastry and bread without washing his hands! No person would tolerate that for a moment, and yet bread is baked in a highly-heated oven, and the danger is not as one to one thousand as compared with milk which is usually consumed in a raw state.

For eight years, experiments have been in progress, in different countries, to find the best natural dressing for meadow lands. A summary of the work so far conducted, writes our English correspondent, gives the following mixtures as giving the heaviest yields and greatest profits: 1 cwt. nitrate of soda, 2 cwt. superphosphate, 2 cwt. kainit per acre. Ten tons of farmyard manure per acre, costing 1s. per ton, gave a good yield, but in these experiments appear to have resulted in a loss.