Soils and Crops

Address communications to Agronomist, 73 Adelaide St. West, Toronto

THE PREPARATION OF GRAIN FOR SEEDING.

In preparing grain for seeding purposes a good fanning mill is practically necessary. The proper adjusting of this machine to do the work required demands care and good judgment as regards the choice and arrangement of sieves for the kind of grain to be cleaned. The size of sieve will depend on the size of the grains to be cleaned and also on the make of the fanning mill use. However, if any difficulty is experienced in getting the right adjustment, the maker of the mill will help select the right size of sieve, if he is furnished with a one pound sample of the grain in question.

In cleaning grain it is desirable to use a top sieve with perforations just big enough to allow the kernels to pass through. The straw, chaff and other coarse material and seeds not wanted will be carried over the top and delivered separately. The air blast should be heavy enough to blow dirt, light kernels and many of the weed seeds clear of the good grain. The lower sieve should be smaller than the top sieve and allow the weed seeds and broken kernels to pass through. The feed should be heavy enough to keep the top sieve thinly covered. This will tend to carry the rough material over the end. It is usually necessary to pass the seed grain through the mill at least twice before a thoroughly satisfactory sample is obtained. If oats and barley are present in large quantities when cleaning wheat, it will pay to let a fairly heavy flow cover the top sieve, even to the point of allowing some of the wheat to pass over in order to insure the removal of the greatest amount of oats and barley.

When the grain on the home farm is not suitable for seeding, seed should be purchased from a thoroughly reliable source and preferably registered material of a variety proven suitable to the district.

It is not economical to sow poorly graded seed or seed containing weed seeds. Weeds in a crop entail a direct loss as they take up space, moisture and plant food. They also add to the cost of harvesting, threshing and handling.

MILK AND MILK SUBSTITUTES FOR PIGS.

A hog feeding test recently conducted at the Central Experimental Farm, Ottawa, indicates the particular suitability of skim-milk for newly weaned and young pigs. It also indicates that after the hogs have reached 3½ or 4 months of age other feeds than skim-milk are capable of giving greater and more economical gains when such feeds are used to supplement the meal ration.

Three lots of eight hogs each were fed a basic meal ration supplemented with skim-milk, milk powder and Pro-lac meal. The hogs were placed on the experiment shortly after weaning.

The test lasted for 90 days and for the first 60 days Lot 1 was fed meal and skim-milk, Lot 2 meal and milk powder, and Lot 3 meal and Pro-lac. During this period Lot 1 made the greatest gains with the lowest meal consumption and at considerably the lowest cost per pound of gain in live weight. Lot 3 made the lowest daily gains, consumed slightly more meal and cost .25 of a cent more per pound of gain. Lot 2, on milk powder, made the second highest gains but consumed considerably more meal—.22 of a pound more than Lot 1—and cost 1.99 cents more per pound of gain than Lot 1.

For the remaining 30 days the three lots were uniformly divided, one-half of each lot continuing on the former ration while the milk or milk substitutes were withheld from the remainder of the hogs.

The outstanding feature of this part of the test was the good showing made by the hogs receiving Pro-lac meal. This lot made an average daily gain of 1.4 pounds in live weight with a feed cost per pound of gain of 6.16 cents as compared to Lot 1 on meal and skim-milk with an average daily gain of 1.33 pounds and a feed cost per pound of gain of 6.35 cents, while Lot 11 on meal and milk powder made an average daily gain of 1.33 pounds with a feed cost per pound of gain of 9.34 cents. The check lots from which the milk supplements were withheld made a uniform daily gain of one pound in live weight per hog at a cost of 6.45, 7.32 and 7.59 cents per pound respectively.

POULTRY

Should the combs of the flock, or even of the male birds, become frosted the birds should be isolated immediately if the injury is serious, and if possible handfuls of snow held over the comb for ten or fifteen minutes until most of the frost is drawn out. Then it should be anointed with carbolated vaseline frequently until the acute injury has disappeared.

One of the most important means of beating Jack Frost at his own game is to provide the birds during the cold winter months with warm drinking water. This simply means drinking water that is above the freezing point. To-day there are many types of heated vacuum fountains on the market which enable the poultryman to keep fresh warm water before the birds all the time. Allowing a bird to drink ice water or very cold water in the winter not only lowers the production, due to the chilling of the body, but in the case of the male bird it is apt to freeze the wattles. When he is drinking, his wattles are pendent in the water and, if the day is cold, the particles of water that adhere to the wattles will freeze there and it will not be long before serious injury will be done to the bird.

HOGS

Corn may be safely relied upon to form the base of the ration for young sows. Because it is such a good hog food, the mistake is often made of relying upon it exclusively. Although one of the most relished grains, corn is not a perfect or complete food in itself and except for a brief period when the hog is in the fattening pen, it should always be fed in combination with foods high in protein that help to round out the ration. Tankage of a high grade is perhaps the most popular supplement, and, although the cost seems high, it need only be fed in small quantities, say half a pound a day to an ordinary brood sow. Tankage not only supplies the necessary protein to balance the corn ration, but is rich in those mineral elements which the hog must have in order to develop properly.

Wintering Bees in a Cellar.

The cellar in which bees are being wintered should be well ventilated but not draughty. The best temperature in the early part of the winter has been found by the Bee Division of the Experimental Farms at Ottawa, to be around 48 degrees Fahrenheit. Towards spring it will be found that the bees become restless in this temperature. A somewhat lower temperature should then be provided. From 42 to 45 degrees has been found satisfactory, with more fresh air. The air in the bee cellar must not be too dry, nor damp enough for moisture to condense on the floors of the hives. The bees should be kept in darkness and be left undisturbed.

A bee cellar to contain many colonies should be furnished with an air shaft to draw off the foul air, the draught being regulated by dampers. Good insulation may be secured by having the cellar wholly underground or in the side of a hill, and the fresh air may be brought in through a six-inch or eight-inch earthenware drain pipe laid under the ground.

The Dominion Apiarist in Bulletin No. 33, New Series, entitled "Bees and How to Keep Them," says that the date on which bees may be taken out of the cellar in spring depends upon the condition of the weather. It is usually about the time when the first willows are in bloom, but it may be advisable to bring them out earlier if they are restless and dying fast. They should be brought out when the weather is mild, but too cool for them to fly at once, preferably late in the afternoon of the day before a good flying day is expected. To select the day the forecaste of the Dominion weather service published in the daily newspaper may be helpful.

An enameled kettle which has been allowed to boil dry should be filled immediately with boiling water. Cold water poured into it, in such a case, would cause the enamel to chip.

How to Cure Pork.

Salt is the most necessary ingredient in the proper curing and preservation of meat. For a good cure, it is absolutely necessary that you use a good salt. By this is meant one that is free from all impurities and adulterations. The extra cost of a pure salt should be disregarded when considering a safe cure for your meat.

DRY CURE FOR PORK.

For 100 pounds of meat use 8 lbs. salt, 2½ lbs. sugar made into syrup, 2 ounces saltpeter, 4 ounces black pepper.

Mix ingredients and divide into three portions. Rub the cooled meat well with one portion and pack in barrel or crock. Let stand three days. Remove and rub with the second portion. After three days have passed, remove and rub with the last portion. Repack in the barrel and let stand in the brine formed for three weeks. Wash meat thoroughly before removing to the smoke house and allow to become dry before smoking.

BRINE CURE (SWEET PICKLE) FOR PORK.

For 100 pounds of pork used: 9 lbs. salt, 2½ lbs. brown sugar, 2 ounces saltpeter, 4 gals. water. Make a brine of the above. Pack the meat in a barrel and be sure that it is covered with this brine. The bacon and smaller pieces will need to be in this brine about four weeks and the hams about six weeks. The larger hams should be placed in the bottom of the barrel that they may cure the better. The whole should be weighted with a heavy weight to keep the meat under the brine at all times.

If the pickle becomes ropy, the meat should be removed and thoroughly washed. After the container is thoroughly scalded, the meat is re-packed and a new brine added. When pickle is complete, remove the meat, wash thoroughly and when dry smoke to a good chestnut color. The sugar may be omitted from this cure if desired.

RENDERING LARD.

The leaf fat renders the best quality of lard, and should never be mixed with the gut fat. The leaf fat may be removed before the carcass is cut up. It is chopped or ground with the rest of the fat trimmings of the meat. One must be careful to pick out all lean parts for they will cling to the side of the kettle, burn and discolor the lard. The chopped or ground fat is placed in a big kettle or roaster with only enough water in the bottom to start the cooking.

It requires some little experience to know when the lard is fully rendered. After the little white blisters turn brown on the cracklings and they float, the lard may be removed from the stove shortly. When the cracklings can be lifted out with a paddle and immediately fry themselves dry, the process is complete.

The lard is then removed from the fire and strained through a cloth into jars or pans. Stirring slowly while the lard is cooling will tend to whiten it. Store in a cool place.

Cost Investigations in Relation to Milk and Butter Fat Production.

In investigational work with dairy cattle conducted at the Ontario Agricultural College to show the comparative economy of milk production and butter fat production with the different breeds, it was found that the Holsteins produced milk at twenty-three cents less per hundredweight than did the Ayrshires, but in producing a pound of butter fat there was only .03 cent difference. It was found that there was very little difference in the cost of production of Ayrshires and Holsteins, and that on milk production it cost more with Jerseys, but they (the Jerseys) produced butter fat a little cheaper than did the other two breeds.

Helen was visiting in the country for the first time. One day several ducks waddled into the yard to eat the green grass. In great glee Helen ran to her mother, calling: "O mamma, come quick and see; these chickens have rubber feet!"

Home Education

"The Child's First School is the Family"—Froebel."

When Your Child Confides in You

BY EDITH LOCHRIDGE REID

"If I could just be sure that my children tell me everything!" an anxious, devoted mother exclaimed in an earnest tone, when discussing child problems at a little informal gathering of mothers.

"Well, they never will tell you quite all they do or thing or see or hear," added a second mother, somewhat more experienced, "but whether they confide in you more or less will depend entirely on how you receive their confessions."

We all wish to have the unqualified confidence of our boys and girls, and we must be very charitable in our attitude when they offer us the secrets of their hearts. One of the dearest mothers I ever knew had a wonderful way with her boys, and the power of her discipline lay in her own simple words, "I try never to act shocked at what they tell me."

The fact is that not many children do things that their parents did not do when they were children. We may not like to admit it, perhaps, but even so, why should we always imply in our discipline of a child who has done wrong that he is the only one who ever was at fault. This method may work very well when the child is tiny and inexperienced, but it will never hold his confidence when he is older.

A child in the wrong feels like any sinner: he usually wants to repent and make a good resolution. But how can he do so if we are sitting over him weeping and saying, "O, I am so surprised!" and "I never thought my little son would do such a thing?"

We may more truthfully say, "I am just as sorry as you are that this has happened; let's talk a little more about it, and see if we can find a better way to act next time." The child now feels your sympathy as well as your regret, and he will be encouraged to make further confidences just because you have treated him in a man-to-man fashion rather than in a hurt, condescending manner.

The sooner a mother recognizes the fact that her child is heir to all ordinary human frailties, the less disappointment will she meet. This may sound like a paradox, but a wise, experienced mother will admit the truth of it.

Our child will disobey and do wrong things just as we did when we were children. He will tell untruths—not because we have not trained him in honesty and truthfulness from babyhood, but because he is seeking to defend himself from something that he imagines is worse than lying. And right there is the point I wish to stress about inspiring the child to confide in you. He must not feel that your reproach is going to be so severe that he would rather lie than face it. Rather he must go to you with the feeling that he is to receive a fair and respectable hearing from a judge who understands and sympathizes. He must not be consumed by your wrath nor frightened and humiliated by your scorn if he does get up the moral courage which it takes to make confession.

Kindly, sympathetic reproof is always helpful, and constructive suggestions of conduct will not destroy the child's confidence, but I doubt whether acting shocked at a child's misdeeds ever inspired him to act square and play fair. Let's choose a safer way to face his confessions.

Guernseys as Producers.

A noticeable feature of the contents of Report No. 15 of the Record of Performance of pure-bred dairy cows, published by the Dominion Live Stock Branch, is the advance therein recorded of the Guernsey breed. In the previous report only 24 cows figured, but in the present report there are 64, of which number 35 are owned in Nova Scotia, 21 in British Columbia, 2 in Ontario, and 3 each in Saskatchewan and Quebec. A herd of six Guernseys was kept at the Nappan, N.S., Experimental Farm in 1922, and in his report for that year the Superintendent gives a milk record table of the breed which contains some interesting production figures. In the herd referred to the average butter test was 5.67 per cent. with an average of 502.14 pounds of fat. The average cost of feed for 100 pounds of milk was $2.09, and the profit over feed cost was $108.31 per cow. One of the cows, King's Blanche of Hillside, has made two 365-day official records, one of 12,230 pounds milk testing 6.23 per cent., and yielding 752 pounds fat, and the other 11,826 pounds of milk with an average test of 5.93 per cent., yielding 702 pounds of fat. Both records were made in the mature class. A three-year-old has made a record of 7,807 pounds of milk testing 5.35 per cent., and 391 pounds fat. A four-year-old has a record of 8,026 pounds of milk, and average test of 5.18 per cent., and 416 pounds fat. The feed cost of the herd for the year was $1,042.19 and the value of production and progeny $1,076.10.

Cultivation of the Blueberry.

A perusal of last year's report of the Dominion Horticulturist makes it impossible not to conclude that it should be in the hands of every fruit and vegetable grower and every ornamental gardener. It describes tests that have been made, and are being made, with all the principal fruits and vegetables and ornamental shrubs. A page, for instance, is devoted to the culture of the blueberry. In consequence of many inquiries being received by the division regarding the cultivation of that fruit, two members of the staff were told off to make an investigating visit as to the situation in the Lake St. John district of Quebec and the blueberry areas of New Brunswick and Nova Scotia. One conclusion reached is that there is a great opportunity, under cultivation, to increase the production, size and quality of the wild blueberry by eliminating the poorer individuals and propagating those of outstanding merit, as at present there is much variation in size and quality. It was observed that the most recently burnt-over land, providing it had not been burnt during the last two years, produced the best picking. It was also observed that bushes older than three or four years did not produce as large or as much fruit as the younger bushes. This indicated that a system of pruning might prove beneficial where cultural methods can be adopted. Blueberries were found on soils ranging from 50 per cent. sand to 50 per cent. clay, on peaty soils and on sandy soils. Excellent plants, says the report, were also found on soil containing much broken-down limestone.

Ten horseshoes nailed over the stable door will not prevent the bad luck that one shoe badly nailed on a foot will produce.

There is a virtue in the cow; she is full of goodness; the whole landscape looks out of her soft eyes.—John Burroughs.

THE CHILDREN'S HOUR

BRUIN IS TAKEN TO A NEW HOME.

It had been a long walk for Bruin, and he dropped down wearily by the post where the man had tied him. His foot pained him where it had been pinched in the trap. The muzzle hurt his nose and pressed behind his ears.

"If only the man had not come so soon," he thought.

Rolly Rabbit, he felt sure, would have come to help him. But now that the man had led him so far away, Bruin doubted if he would ever see his friend again.

In the power of this man he was helpless to do anything for himself. He felt very lonely and friendless, and wished for someone to talk to who might understand his animal language.

He was not quite sure whether the boy was his friend or not. When the man had been ready to shoot him with his bang, bang gun, the boy had saved him and had always spoken kindly to him. But the boy had helped the man put on the horrid muzzle that now hurt his head and made it impossible for him to get away.

In a few minutes the man and boy came out of the house and led Bruin toward the barn. They put some straw in a little shed and tied Bruin near it. He could go in and out as he wished, but was always dragging the big chain after him. (Boys and girls never have something heavy tied around their neck all day, so don't know how disagreeable this felt to the bear).

As the little boy started to go away, Bruin tried in every way he could to tell him he was thirsty and hungry, but he didn't seem to understand.

"Bears are funny acting animals," thought the boy. But he did not know that by all these actions Bruin was trying to tell him something.

It was nearly dark before he saw the boy again. This time he brought Bruin some food and a small basin of water. He set the food and water just inside of Bruin's little house and ran away as quickly as he could, just as if he were afraid. The water was not half enough to quench Bruin's thirst. He could eat but little of the food, for the horrid muzzle wouldn't allow him to get his mouth wide open far enough.

Late that night Bruin laid down on his straw bed, tired, hungry and thirsty. His foot pained him so he could sleep but little, and he dreamed of horrid bang, bang guns pointing at him, and of big traps ready to catch him if he moved.

Investigations in Connection With Cost of Maintenance of Beef Cattle.

Cost investigations conducted by the Animal Husbandry Department of the Ontario Agricultural College, with beef cattle gave the following interesting figures:

The average cost of feeding breeding beef cows in the College herd was 15.9 cents per day. The cost of labor per cow per day was 7 cents. The value of the manure per cow per day was 5.8 cents, and the cost of bedding per cow per day was 1.9 cents. The total feed and labor cost per cow per year, after deducting the value of manure, was $69.35. The average weight of beef calves born during the year 1922 was 77.33 pounds.

Estimates place the total population of the world at 1,500,000,000.

Short Courses at Ontario Agricultural College

FARM POWER COURSE.

Farm tractors for outdoor work, and gasoline engines and electric motors for inside are very rapidly finding favor on the farms of Ontario. For the large number of tractors introduced during the past few years it has been very difficult to find skilled operators and especially operators with a thorough grasp of the fundamental principles underlying the construction and operation of gasoline engines. Many inquiries are received at the Ontario Agricultural College day by day from those wishing information about motors of various types used for inside work.

To afford an opportunity for instruction along these various lines there is offered a short course in Farm Power at the Ontario Agricultural College, beginning January 22nd and extending over a period of two weeks. Amateurs, being either operators, farmers or farmers' sons are particularly invited. Any man or boy may enter the course providing he arrives at the Mechanic's Building, O.A.C., at 9 a.m. on the 22nd of January.

FARM DAIRY COURSE.

The importance and value of a knowledge of modern dairy farm practice will be demonstrated during the Farm Dairy Course—January 21st to February 2nd—at the Dairy Department of the Ontario Agricultural College. The work covered will include lectures on the care and handling of dairy cattle, the production and care of milk, veterinary science, crops for the dairy farm, systems of ventilation in dairy barns and the care and use of milking machines, along with practical work in hand separators, butter-making, soft and fancy cheese making and milk testing. No young dairy farmer can afford to be without a course of this kind. If students are unable to remain the full period of two weeks, they may stay one week or less.

FRUIT AND VEGETABLE GROWING.

The culture of tree and small fruits for both amateur and commercial growers in all parts of the Province will be covered in the short course on Fruit and Vegetable Growing given by the Department of Horticulture, Ontario Agricultural College, January 21st to February 2nd. The course will be as practical as possible. The best methods used in vegetable growing will also be given in detail. The practical work of fruit growing will consist of budding, grafting, pruning, planting, packing and marketing the fruit and market packages; in vegetables, seedage, cuttage, picking out, potting, transplanting, marketing and market packages.

A Fight for Life and Cash

The folly of keeping considerable sums of money in the house is again shown in the case of Mr. Clayton Phelps, a well-to-do farmer who has long considered his money safe in his own keeping.

Doubtless some watchful and dishonest individual discovered that he paid his bills by cash instead of by cheque through a regular banking institution; and as Mr. Phelps' home is situated on one side by itself, as he is somewhat deaf and lives alone with his sister, it all looked like an easy place to rob.

But the two robbers had reckoned without their host for they did not know what a game fighter the farmer would prove to be, nor how his sister would outwit them by slipping out of the front door and summoning help.

Nevertheless, Mr. Phelps had to do battle with his assailants for nearly an hour. He defended himself with an axe. He was shot in the forehead and fortunately the bullet was about a quarter of an inch too high to prove fatal. The men escaped and have not been apprehended at this writing.

As soon as his condition permitted Mr. Phelps sorted over his cash which amounted, it is said, to several thousand dollars, even the silver which he had in the house, and his bonds, and placed them in a bank for safe-keeping.

Sooner or later those who keep valuables in the house are sure to come to grief. Theft or fire are liable to menace at any time. Mr. Phelps had a house safe, but in the hands of a skilled burglar this is not much protection.

The attempted robbery at the Phelps' homestead took place at about 8.30 in the evening, as the robbers did not even seem to think it necessary to wait until the family had retired.

To have one's possessions cared for in the safest possible way is surely good judgment and the small expense entailed is more than offset by the peace of mind gained. Physical danger for the owner of valuable property and other members of the family as well, attend keeping such possessions in the house.

Banks with their vaults as impregnable as they can be made, with their burglar alarms, with their night watchman, with police surveillance, and fire-proof construction—are the proper storehouses for valuable belongings.—H. G. W.

The Powdered Milk Industry

By B. A. Gould, President, Canadian Milk Products, Limited

The first commercial manufacture of milk powder in Canada was at Brownsville, Ontario, in the spring of 1904. The process used was the hot roller process, which is now becoming somewhat obsolete. The product was entirely unknown and lacked some of the valuable qualities of modern process powders, such as complete solubility, etc. The growth of the use of milk powder in Canada was therefore very gradual, and a small production was all that could be successfully marketed.

The first modern spray-process powder was also made at Brownsville in 1909, when the original plant was remodelled for this purpose. The advantages of the powder produced by this process were such that its use has grown rapidly. To-day there are ten producing plants in Canada making powdered milk of various kinds. The greater part is skimmed milk powder; but there are also considerable amounts of whole milk powder and of cream powder manufactured, as well as special kinds of powder, such as modified milk powder, protein milk powder, and ice cream powder. It is estimated that, during the current year, more than one hundred million pounds of Canadian milk will be marketed in the form of powder.

The future of the industry in Canada is very bright, but only those manufacturers who have up-to-date methods and assured capital, as well as good selling organizations, are likely to succeed. A great deal of work must still be done to get the milk produced on the farms of the quality necessary to yield a first-class product. It is not enough to have modern sanitary equipment at the manufacturing plants, but the equipment and methods of the producing farms must also be up-to-date or the product will not be of the highest quality. Much harm has been done to the industry by the marketing of inferior powdered milk, and it is only by expensive experience that buyers have learned that milk powders of the same chemical analysis may nevertheless vary greatly in value.

This industry will become one of rapidly growing value to Canada if the manufacturers are able to keep the quality of their product second to none. The home market is capable of further development, and foreign markets are open for the right kind of powder.