

13 Jan 1917

Soils and Crops

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

With the Ewes and Lambs.

The thought of the prudent shepherd is always toward his ewes; if pregnant, he plans to bring them to a safe and happy lambing. Day by day he cautiously conditions them for the coming of the lambs. For him that period means a supreme success or a miserable failure. The responsibilities rest upon his shoulders; and if he loses a large percentage of the lambs at lambing time it is some fault of his management.

A wise shepherd can feed his ewes liberally without overloading them with too much fat. He can plan to give them opportunity to walk about and exercise every day when the weather is pleasant. He can feed once a day in some distant part of the pasture, or adopt some scheme to overcome the tendency to sluggishness on the part of the ewes.

Feed liberally, but do not overload them with too much fat, means that the young lamb, developing in the body of its mother, should have an abundance of protein, the ingredient of lean flesh, blood, nerve and brain. It should also have lime and phosphorus to make bones. If the ewes have alfalfa or clover hay and roots or ensilage it balances things up nicely. These feeds are rich, both in flesh and bone-making materials. If the alfalfa and clover are cut and put up at the right time and the roots and silage are properly stored and preserved they may be adequate. Even then it is usually wise to feed a little grain feed. A little oats, corn and bran make a safe and economical grain ration. It makes more vigorous lambs and fills the ewes' udder with milk. The ewe that brings forth her lamb without having enough force stored up in her body to fill her udder with milk is not likely to own her offspring. There is something about an udder full of milk that is almost akin to mother love. Animal mother love lies more in the udder than in the heart.

Success lies in never withholding protein and bone-making feeds nor feeding them too much. Feed to have the ewes in good condition at lambing time, but avoid getting them sluggish from over-feeding. To feed them along the middle-ground requires skill and experience, but it is a proposition that must be mastered before one can succeed in bringing a flock of ewes through a safe and happy lambing period.

As lambing time draws near it is wise to separate from the flock the ewes that are near their time. If a number of small pens are available it will be well to give each ewe a separate pen so that she will have a quiet place to lamb. An early lambing, provided one has good conveniences, brings to grass a strong crop of lambs and to market a bunch of heavy-weights. Early lambing is safe and sure if one has proper shelter and gives the ewes and lambs painstaking attention. With a comfortable shed, a straw bed and a little extra care, few lambs will be lost.

Rarely is it necessary to assist the ewe at lambing time, yet it is well to be on hand as there will be times when a little help will mean the saving of a valuable ewe or lamb. If twins come no time should be lost in getting them nursing; for the ewe frequently forgets to find her second lamb, and it becomes hungry and chilled perhaps too late to be revived. Ewes that refuse to own their lambs may often be conquered by tying them in their pens and compelling them to let the lambs nurse. She may vigorously resist at first, but restrained from injuring the lamb, she will in time accept it as her own.

After the lambing period is safely over, feed the ewes a good milk-producing ration. Make creeps so that the lambs can go to troughs in the alleys and eat wheat bran, cracked corn and a little oilmeal. A few oats will help out and be especially valuable if the lambs are to be developed for breeding purposes. Feed both ewes and lambs liberally and judiciously.

Comparative Cost of Stump Blasting in Sandy and Clay Soils.

To those unfamiliar with blasting, a stump is a stump. The ordinary farmer will point to a stump in a field and ask how much it ought to cost to get that stump out. If you ask him, "Is it standing in a dense clay soil or a loose sandy soil?" he will reply in surprise, "What difference does that make?"

It is because of the general ignorance of the beginner as to this feature of blasting that most of those trying to blast for the first time fail to obtain satisfactory results.

However, the kind of soil in which a stump is standing makes all the difference in the world. A stump in sandy soil must be loaded differently and loaded much more heavily than a stump in clay soil. I know for I have been blasting stumps for nearly forty years and have used tons of dynamite on such work.

To give your readers a little information on this subject, I will cite two three blasting jobs that I did in 1917.

On Clarence Brown's farm, the soil

Inventory Your Resources.

It will pay every farmer to make an inventory of the fertility resources of his land at the start of operations rather than waiting for a marked decline in crop yields or a succession of crop failures to force the use of purchased plant foods. When one has practiced a rational system of crop rotation and live stock feeding with a view of maintaining and increasing soil fertility, and finds the land becoming less and less productive, it is evident that something is needed to correct soil conditions or furnish actual plant food for the growing crops.

If clover and other legume crops fail to make a satisfactory stand the use of lime may prove more profitable than the purchase of commercial fertilizers. On most stock farms, however, the judicious use of certain chemical plant foods along with the supply of farm manure will increase the yield and improve the quality of farm crops. Reports of field tests in different parts of the country indicate that phosphorus is the one elemental needed to increase crop yields on the majority of stock and dairy farms, as well as on farms where no system of animal husbandry has been practiced for years. Results from the use of acid phosphate have been more satisfactory than raw rock phosphate, due undoubtedly to the deficiency of organic matter in the soil.

The advisability of using fertilizers carrying nitrogen and potassium depends largely upon the fertility of the land and the kind of crops one is growing. If the soil is deficient in nitrogen and no manure or cover crops are plowed under the yield of crops is sure to be limited to the amount of that element that becomes available during the growing season of the crops. This holds true with regard to the supply of potassium, although most of our soils contain sufficient quantities of this element to maintain the yield of general farm crops for many years, provided, of course, that the other conditions of the soil are favorable for its becoming available at proper periods during the growing season.

Many farmers who have changed over from crop growing to dairying or stock raising have discovered too late that such a system will not restore fertility and at the same time give a satisfactory profit without the use of commercial plant foods. As a result they have been forced to sacrifice good animals that could easily have been carried some years ago, before the soil had been robbed of its fertility. The use of commercial fertilizers in such quantities as are required to assure profitable crop yields, while the soil is yet in a fair state of productivity, will result in greater benefit to the farmer and those dependent on him for food than if the practice is postponed until the land fails to produce profitable crops of any kind. The fact that farmers were able to maintain and, even, increase the yield of certain crops during the period of the war created an impression in the minds of many economists that such a process could continue indefinitely. Those well posted in the problems of the soil, however, know that the cashing in of soil fertility to meet the demands of stimulated production has left many farms in such condition that profitable agriculture is possible only through the proper use of fertilizers.

The kind and quantity of fertilizers to use are problems that must be worked out by the individual according to his farm and conditions under which he is farming. As a general proposition it will pay to use a rather heavy application of manure and fertilizer on a smaller acreage and grow soil-improving crops on the balance of the tillable land and not attempt to grow large crops on more acres than one can handle to advantage. All kinds of commercial plant foods are expensive, and unless one is ready to meet the other essentials of crop production he is sure to find them unprofitable, both from the standpoint of the year's production of crops and the permanent fertility of the soil.

is a light sandy type. He had twenty-eight pine stumps in one of his fields which he wanted to get rid of. It required 149 pounds of dynamite, 114 feet of fuse and twenty-eight caps to dispose of them. It cost him \$38.77. I used as high as eighteen pounds of dynamite under one stump, twelve under another and from one and a half to ten pounds under the rest.

Just compare the above with the cost of some stump blasting I did for Eugene Allen on whose farm a clay soil predominates. He had eighty-one stumps to be taken out. I did it with fifty-two pounds of dynamite, 150 feet of fuse and eighty-one caps. The work cost him \$14.11. The stumps were elm, oak, maple, ash and basswood. These stumps were about the same average size as the stumps on the Brown farm, yet I was able to get out eighty-one of them for a little more than a third what it cost to blast twenty-eight out of sandy soil.

It is a great mistake to put the large breeds of cattle upon poor, scant pasture as it is to put the small, diminutive breeds upon a rich, luxuriant pasture. The breed should be selected to meet the conditions.

THE MAGNETIZED NEEDLE

What a pleasant man our old pastor was! He could be dignified enough, and was always so in the pulpit, but we were never afraid of him, for we knew that he felt himself to be one of us in his heart.

One evening, after telling the story of how Elisha heeded the iron to swim in the water, he looked round the circle of his young faces and asked, "Do you know anyone besides Elisha who can make iron swim?"

After waiting for a little while without hearing an answer, he said, "I can."

We were ready to believe almost anything good and great of our friend, but that was almost too much for us. He must have seen this in our faces; so, turning to one of the older children, he asked for a glass of water, a wire hairpin and a sewing needle. He bent the hairpin into a double hook like the two fingers of your hand bent forward, and, placing the needle on those hooks, he lowered it gently into the water. As it touched the water along its whole length at the same time the water seemed to sag or bend under it; and as the wire hooks went down into the water the needle was left floating on the surface. We thought it was wonderful to see the needle swimming on the water; turning back and forth and moving this way and that as we blew on it.

After a little while he dipped the hairpin under the needle again and lifted it out of the water. Then, going to the telephone on the wall, he rubbed the needle on the magnet and laid the needle again on the water. But now it seemed like a different needle altogether. No matter how it was laid on the water or how the ends were made to point, they always came to one position, north and south. It was as if some invisible hand were pulling it and bringing it constantly

back to the same position. It pointed always toward the North Star.

As we watched with great interest our friend said, "You see what a difference it makes on the needle when I touch it to a magnet. Formerly the needle was just common steel; now it has been magnetized, and that gives direction to it. It gives it a fixed place and a definite relationship to all other things. As long as the needle remains magnetized it will keep this position on the water. And if the power that holds it true grows weaker, you need only touch it again to the magnet."

And as the needle lay on the water before us, holding its point firmly to the north, he told us that the Saviour is sometimes called "The Divine Magnet," and that lives that for years may drift hither and thither without a fixed direction may come in touch with this Divine Magnet. And what a wonderful change is made by that touch! No longer do they drift with the wind and the tide. No longer are they drawn aside by every cross current that they meet in life, but they receive a definite direction and a guiding star that brings them safely into the harbor at last. It is the touch of Christ that changes lives. As it touch we are transformed and sent on our way with a definite course and an unswerving aim.

To labor with zest, and to give of your best,
For the sweetness and joy of the giving;
To help folks along, with a hand and a song,
Why, there's the real sunshine of living.

A pure-bred bull will exert a stronger influence upon the progeny when mated with cows of mixed breeding than when he is mated with pure-breds or high-grades.

Sprinkle a little salt into the frying pan before using and the fat will not splash all over the stove.

THE SUNDAY SCHOOL

JANUARY 16TH

Our All for the Kingdom, St. Matt. 19: 16-30. Golden Text—St. Matt. 19: 19.

Time and Place—March, A.D. 29; Perea, on the eastern side of the Jordan, during Jesus' last journey to Jerusalem.

To-day's lesson belongs to the so-called Perea ministry of Jesus. The fullest account of this ministry is given in Luke 9: 51 to 18: 34. Matthew begins ch. 19 of his Gospel with the statement that our Lord departed from Galilee. This was his final departure from that province. He crossed the Jordan, "and in this more remote region where he was less well known, he resumed his work of teaching and healing" (Plummer) meanwhile slowly journeying toward the capital.

I. A Great Question, 16-20.

V. 16. Behold; introducing a striking incident. One Came. Compare Mark 10: 17-22 and Luke 18: 18-23. Luke says that he was a "ruler," commonly taken to mean "a ruler of the synagogue," but Plummer suggests that it may mean simply "a leading man in society," an inference from his great wealth. Mark says that he "came . . . running and kneeling." Good Master; (Rev. Ver. simply "Master") that is, "Teacher," "Rabbi," "Good," however, is found in Mark and Luke. What Good Thing. He thinks that eternal life is the reward for doing some special mysterious good thing. Have. Mark says, "inherit." The Jews commonly spoke of the blessings of the future as an inheritance. Eternal Life; "the life of supreme blessedness, divine in nature as well as endless in time because divine; the favorite expression in the Fourth Gospel for what is usually called the kingdom of God in the Synoptic Gospels, Matthew, Mark and Luke.

V. 17. Why Callest Thou Me Good? This is what Mark and Luke say; the meaning is that Jesus would not accept the title "good" as a mere courtesy. In the strict sense only God is good; man is but becoming good. There may be a suggestion that he who calls Jesus good must consider what that means as to what Jesus is. But Matthew wrote: "Why askest thou me concerning that which is God?" (Rev. Ver.), that is, God is good, and the goodness which he requires is made known in the Commandments, which the inquirer knew. But, answering the question directly. Keep the Commandments; which reveal the character. It is not one good act, but a good character that can win eternal life, and the only good character is one which is like God's character as revealed in the Commandments.

Vs. 18-20. Which; a question of perplexity; the scribes reckoned 613 commandments, and tradition had added still more. Jesus said; quoting the Sixth, Seventh, Eighth, Ninth and Tenth Commandments, and adding Thou Shalt Love Thy Neighbor as Thyself, as the summing up of the second table of the law which has to do with our duty to our fellow men. The Young Man. Only Matthew so describes him. All These Things Have I Kept; an answer given quite honest-

ly. So far as the letter of the Commandments was concerned, the young man was blameless. What Lack I Yet? He knew that he did not enjoy the rest and satisfaction which go with the possession of the highest good, and yet he was not aware of diabolicalness.

II. A Great Demand, 21-26.

Vs. 21, 22. Jesus Said; accepting the young man's own estimate of his past life. Mark says (Mark 10: 21), "Jesus beholding him, loved him," a penetrating look, like that cast upon Peter (Luke 22: 61), seeing enough to have good and lovable in the young man's character to make him long to have him for a disciple. If Thou Wilt; a test to discover whether, along with a sense of want, there is a readiness to choose the highest things. Be Perfect; reach the goal of the true life and the rest which it brings. Sell . . . and Give. This would prove whether or not he cared supremely for the true life. Jesus is not here laying down a universal rule, but dealing with a special case. Treasure in Heaven; the eternal life for which he was seeking. Come and Follow Me; an invitation to join the inner circle of Jesus' disciples. Went Away Sorrowful; turned away from "the high that proved too high, the heroic for earth too hard."

Vs. 23, 24. Then Said Jesus; disappointed, sad and pitiful as He saw the rich man departing. He draws from this incident a lesson on the perils of riches. Again I say; repeating his thought in reply to the surprised, perhaps incredulous looks of the Twelve. Camel . . . Needle; a proverbial way of describing the impossible, still current in the East.

Vs. 25, 26. Disciples . . . Exceedingly Amazed. Perhaps the disciples held the Old Testament belief that riches were a proof of God's favor. At any rate they saw nearly all men either enjoying wealth or striving after it. If wealth, therefore, shut people out of the kingdom, who could enter it? Jesus Beheld Them; another penetrating look. He sees that His words have been misunderstood. With God . . . Possible. Jesus means, not that it is impossible for a rich man to be saved, but only that it is the tendency of wealth to hinder the divine life.

III. A Great Compensation, 27-30.

V. 27. Peter . . . Said; the spokesman as usual giving voice to the thought in the minds of all the Twelve. We Have Forsaken All, etc.; doing what the rich man had refused to do. What Shall We Have? as a reward for following Jesus.

Vs. 28-30. Verily; an emphatic word. Reward is certain. In the Re-generation; the new heaven and the new earth, which the Messiah would bring. Sit Upon Twelve Thrones. "The disciples had shared the privations of the Messiah, and they would share the glories of his kingdom. Every One; not only the Twelve, but every follower of Jesus. Forsaken . . . For My . . . Sake; because of loyalty to Christ. Shall Receive an Hundred Fold . . . Inherit Everlasting Life; the true riches, which will abundantly repay the giving up of earthly wealth. First . . . Last . . . Last . . . First; a rebuke to the self-compacency of Peter. Sacrifice, he is reminded, is excellent, but along with it must go humility. Pride spoils everything.

The Growing Child

Helping the School Teacher

Nothing is so discouraging to a school teacher as the indifference and apathy with which many parents regard school work. Many of the strong, enthusiastic young teachers strive term after term to overcome this inertia by regularly holding parents' meetings, and this method is sometimes very successful. But have you ever attended these meetings? If so, you will have noticed that usually only a few parents attend at all regularly; many do not come at all. Under these circumstances, are you still one of those who complain about what is done and not done in your school?

Get out of the rut and show that you are really interested in your school. Visit the teacher in her classroom at intervals. Find out what her difficulties are and then see if you cannot help her. In most instances you will be agreeably surprised to find that the teacher is far better posted on matters of health and sanitation relating to school children than you supposed. But she needs help and community support in order to put these modern ideas into practice.

Have you ever heard of the tooth-brush drill? In many of the schools throughout the country teachers now instruct their classes just how the teeth should be brushed. But how much good is such instruction if parents do not make sure that it is not regularly carried out in the home? Has your youngster a tooth brush and a supply of tooth powder or tooth paste? Do you make sure that he cleans his teeth thoroughly before going to bed and starting for school?

And what has your youngster learned about dirty hands? Does he try to sneak to the dinner table without washing his hands and face spick and span? Does he understand how readily dirty hands carry disease germs into the mouth?

You can tell that the health teaching is effective by observing to what extent it changed the boy's habits for the better. However, the health-teaching in school may be really very good, but like many other careless youngsters, your child may promptly forget to apply the teachings outside of school. If that is the case, it probably indicates that you have failed to familiarize yourself with the work of the school. By all means do so at once, and make your child observe health requirements at home also.

Malnutrition Should Be Treated.

Malnutrition is a condition of under-nourishment commonly measured by underweight. It is seen in boys and girls at any period after infancy or in childhood.

It is an important condition very often neglected, and when neglected may lead to serious consequences. It may lay in the foundation for poor physical development or ill health in adult life or may lead to some serious disease like tuberculosis.

How to Recognize Malnutrition.

Children suffering from malnutrition are not only much below normal weight for height, but they gain much more slowly than they should. At the ages of six to ten years, when a healthy child gains two to five pounds a year, they may gain only one or two pounds, or even none at all; from twelve to sixteen years, when healthy children should gain from six to fourteen pounds a year, they may gain only two or three pounds.

Why Malnutrition Develops.

Children get into a condition of malnutrition because their growth is not watched. To grow in height and gain regularly in weight is just as much a sign of health in a boy or girl of eight or ten as in a baby. Mothers have learned to weigh their babies; they must also learn that it is just as important to weigh their older boys and girls. When children do not grow or gain regularly in weight something is wrong. If these boys and girls are weighed regularly every month this condition of malnutrition would be discovered early and not allowed to go on to serious consequences.

Unless the condition is recognized early and measures taken to correct it, the effects of malnutrition in childhood may last to adult life. It may show itself as prolonged ill health and feeble resistance to disease; the individual may grow up undersized and underweight instead of a strong, healthy well-developed man or woman.

What To Do.

In order to recognize malnutrition before serious consequences have fol-

lowed, the most important thing is, watch the child's weight. In the case of older children this can best be done in school and in child health centres where monthly weights of all children should be taken and recorded, and special attention should be given to those who do not make a normal gain by the parents, teacher, or school nurse or doctor if there is one. It is essential that every child of the school age should receive a full medical examination once a year.

A child who is suffering from malnutrition—that is, one who is much below normal weight or one who is steadily losing weight—should at once be taken to a physician and examined to see if any disease is developing. In the case of children residing in areas in which malaria or hook-worm prevail the physician should search for the presence of the parasites of these and similar diseases. The child's whole daily life should be carefully gone into to see which of the rules of health he is violating and whether this pertains to his food, his habits of eating, his hours of play, of home and school work, or of sleep.

Malnutrition is cured by correcting injurious habits or removing the causes already mentioned upon which it depends. Often it is a matter of enforcing discipline in the home.

Some Hints on Feeding Children.

In dealing with malnutrition the following suggestions regarding children's diet may be helpful:

During infancy the diet should consist wholly of milk, and since no perfect substitute for mother's milk is known, mothers should always nurse their babies at the breast, unless otherwise advised by a competent physician.

At six months the baby begins to be able to digest starch; therefore, at this time small amounts of barley or oatmeal water may be given with the milk. It is also well to give a teaspoonful of orange juice twice a day. When the teeth begin to appear, a cracker or a piece of sweetbark may be allowed. In addition to this a little cereal jelly without sugar may be given once a day, preferably in the morning.

About the fifteenth or sixteenth month small amounts of baked potato, apple sauce, and the pulp of thoroughly cooked prunes may be added to baby's diet.

When the child is two and one-half or three years of age the mother may begin to give one or two teaspoonfuls of scraped meat, or an egg. In general, meat should be given very sparingly to small children during the hot weather, and an egg should not be given oftener than once or twice a week to a child three to six years old.

Sugar, other than that obtained naturally in foods, is not necessary for a young child's diet. Simple desserts, such as custards, apple sauce and prune pulp may be given as early as the twentieth month and in amounts suited to the age.

As the child grows older it may gradually partake of the same meals as the parents, care being taken to see that the diet is mixed and varied, and that it supplies all the elements necessary to ensure growth. Milk should be given at each meal.

Infants should be given cool (not cold) boiled water several times during the day and older children should be encouraged to drink a glass of water on rising and an abundance of water throughout the day. School children should not be allowed to go to school without breakfast.

A number of children, because of capricious appetite, refuse to partake of food best suited to their growth and development. This may be overcome, not by insisting on the child partaking of a dish after he has once refused it, but by preparing it in a different way for another meal and placing it without remark on his plate. It must be remembered that a growing child needs milk, plenty of water, bread and butter at every meal, other vegetables besides potatoes, particularly green vegetables and fruits, both cooked and fresh, in season.

Finally a child should be taught ways to wash his hands before sitting at the table or touching food.

Children should not be allowed to drink tea or coffee.

It is most important to establish regular hours of feeding and not to permit the children to spoil their appetites by feeding on candy between meals.

Poultry

Pure-bred poultry have a practical value aside from their pleasing appearance and the chances of selling hatching eggs and breeding stock. The broilers from such a flock are more uniform in weight and appearance than a mixed crate of birds of several types. The eggs will be more uniform and bring a better price on the best city markets. It will be easier to improve the egg production by the use of males from bred-to-lay hens.

Money can be saved in feeding poultry through the owning of the useful feed grinders which are now sold. This year the corn crop is generally good and corn meal for a mash can be produced at home. A bone-grinder in the course of a year will turn out quite a few pounds of poultry feed from the

bones that might be wasted. At slaughtering time there is often a large stock of bones which can be used to stimulate egg production.

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