Soils and Crops

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

Pasture Makes Cheaper Pork.

There is no use quibbling about the value of pasture in producing pork. Tests by the dozen have shown that it is possible, when pasture is used, to produce pork with one-fourth less grain.

As an actual example, let me tell of two bunches of pigs at the Experiment Station. There were ten pigs in each group. One group was fed grain and tankage in a dry lot, and the other had corn and tankage, but was allowed to run on rape pasture.

The pigs on pasture averaged 65 pounds when the test started, and the pigs without pasture averaged 66 pounds a head. In 84 days the pigs on pasture gained 118.7 pounds a head; pigs without pasture gained only 94.9 pounds a head. Every 100 pounds of gain made by pigs on pasture cost $12.58; gain made by pigs without pasture cost $13.16 for every 100 pounds. That difference of 58 cents a hundred is not to be sneezed at.

It may be that some people do not use pasture in producing pork because they do not know what kind of pasture crops to use. That question is easily settled.

For a permanent pasture, none excels alfalfa. Alfalfa is a feed of high value, and its abundant and persistent growth produces a vast amount of forage. Alfalfa can not be grown equally well in all sections of the country; but where successful stands can be produced, there is no pasture superior to it. Breeding hogs can be maintained through the summer on practically no grain where good alfalfa pasture, plenty of water and shade are available. A combination of corn and alfalfa pasture is likewise successful for growth in young pigs, also for fattening.

Red clover is a close second to alfalfa. This crop is successfully grown throughout the country, and its adaptability for early summer or fall pasture makes it of great use in a forage rotation. Clover should be pastured before it becomes too mature, in order to secure the maximum use of the crop.

Rye is a good crop for early spring forage. From the standpoint of feeding value, rye does not compare favorably with many of the other crops; however, it finds a place in practically every forage rotation due to the fact that it supplies the earliest possible forage in the spring. The crop should be fall sown.

Rape is one of the most desirable pasture crops available for swine. This crop is desirable for a number of reasons; viz: 1. The cost of seed is comparatively small. 2. The crop will stand hard pasturing. 3. The amount of seed required to plant an acre of rape is comparatively small. 4. It will grow until very late in the fall, thus giving it a longer growing season than some of the other crops. It is well to bear in mind, however, that rape will not grow upon barren ground, but that it requires a fairly fertile soil. The crop is quite adaptable. It may be sown several times during the season and thus provides a frequent change of luxurious forage. Rape should be sown at the rate of from eight to ten pounds to the acre when sown alone.

Pigs should be turned on rape when it is eight or ten inches high. This is usually about six weeks after being sown. If they are put in much earlier there is danger of the crop being pastured too closely; if the rape gets much larger before being eaten off, it becomes coarse and woody and is not relished.

A well-drained piece of blue-grass, or June-grass, with a southern slope supplies good early pasture, and also remains green quite late in the fall, but can not be depended upon during the summer. Other crops must be provided, so that a continuous supply will be assured throughout the season.

Oats and field peas are a combination frequently used successfully for hog pasture. This mixture can be sown very early in the spring and furnishes an abundant and luxuriant growth of pasture. The proper rate of seeding for this mixture is one and one-half bushels each of the oats and peas. Seedings may be made from time to time during the growing season. The cost of seeding with this mixture is greater than that of oats and rape, or rape alone, and the amount of forage secured is no greater.

Soybeans are also a desirable forage crop. This crop is suitable both for a forage and for hogging down after the beans have become fully matured. The fact that soybeans do not grow equally well in all sections and that the cost of seed is sometimes high, makes this crop less desirable than some of the others which cost less for seed, and which furnish just as much forage.

Finally, do not neglect to use pasture because you are not sure which crop to grow, but provide some crop rather than to go along producing pork on expensive concentrate feed alone. Provide a succession of crops that will last during the entire season and use the crops known to do best in your locality. Write the experimental farm if in doubt.

Controling the Pea Weevil.

The Pea weevil causes serious losses to farmers in Canada every year. Some years ago the annual losses decreased, but indications are that this insect is still a dangerous enemy to pea growing. This insect is also giving trouble in the province of British Columbia, and to a slight extent in some other parts of Canada.

The presence of the insect is easily distinguished. The individual peas will show round holes in which the weevil has developed, and from which it has escaped or the beetle might still be confined to its home in the seed. Its presence in such a case is indicated by a round spot on the skin of the pea. If the skin is removed over this mark in the spring of the year the full grown beetle is found. Infested peas sown without treatment are certain to produce a weevilly crop.

The seed may be treated by fumigation, the application of coal oil, and the holding over of seed for a second year. The fumigation is perhaps the most easily practized plan. The substance used is bisulphide of carbon. A convenient method of treating small quantities of seed is to fill an ordinary coal oil barrel with the seed peas. To treat this quantity of seed would require about five ounces of bisulphide of carbon. This liquid, which is obtainable at a drug store may be poured right on the seed or placed in a shallow receptacle resting on the grain. Then close up the barrel as tightly as possible so as to exclude the air. The covers should remain on for a least forty-eight hours. By this time all of the bisulphide of carbon will have vapourized into a gas heavier than air which settles down through the peas killing all of the insects within the barrel.

Large quantities of seed may be fumigated in tight bins or other well constructed chambers using one pound by weight of bisulphide of carbon to every hundred bushels of seed. Exposure for forty-eight hours as in the case of the smaller quantity is necessary for good results. The bisulphide may be placed in shallow dishes at the top of the bin or chamber. In the preparation of a bin for this purpose the cracks should be pasted over with paper. Strips of felt may be fastened along the top edge where the lid fits down.

It should be observed that the vapour of bisulphide of carbon is highly inflammable. Lights of any kind, should therefore not be brought into contact with it.

Coal oil may also be used in destroying the weevils. About half a gallon of coal oil is sufficient to treat about five bushels of peas. The oil should be carefully applied while the seed is being shovelled over. The shovelling should be repeated every day for at least four days, for about two weeks before sowing. It should be seen that every pea is moistened with the coal oil. .

In Crop Protection Leaflet No. 9, issued by the Department of Agriculture at Ottawa, the Dominion Entomologist describes the insect together with its life history.

Certified Farm Seeds.

There are few things more disappointing to a farmer than to find that the seed he has sown has failed to come up or has introduced into his land noxious weed seeds. While one can by a very close examination under a magnifying glass determine in a general way the quality and purity of seed, most farmers are unprepared to perform work of this kind. It is equally possible to ascertain by a germination test the vitality of the seed. The Seed Branch at Ottawa with local offices in Toronto, Winnipeg, and Calgary, makes it a part of its business to perform these tests. As seeding approaches, however, there is little time to wait for reports from such examination. There is still another means of ascertaining the value of at least some of the seed that is on the market. The Seed Branch issues certificates of grading, based on sample, more particularly for grass and clover seeds, but to a limited extent also in seed grains. Any farmer or seed merchant who has seed for sale can draw his own sample, forward it to the district seed laboratory and obtain a certificate. The Seed Branch retains the sample and issues a certificate with a serial number. Seed merchants in some cases take advantage of this offer and are thus able to produce official evidence of the value of the seed offered. It is well, therefore, when purchasing grass or clover seed to ascertain whether or not it has been thus tested, and if so to note the grading on the certificate. The purchaser of the seed may, if he chooses, have the grade confirmed by submitting a sample of the seed delivered to the Seed Branch where it is compared with the original control sample on which the certificate was issued. It is seldom necessary to have such a certificate proved, because there are comparatively few seed merchants who would misrepresent the quality of stock that had been officially tested. A few instances have occurred of unscrupulous dealing by submitting for examination a sample superior to the seed stock, and penalties are provided for misrepresentations of this sort.

TAMING THE LIGHTNING

We all abhor the approaching season of destructive thunder-storms, and it behooves every farmer to prepare for it. We have no hesitation in saying that the Almighty has placed within reach of every man the means of taming the lightning, and has given him the intelligence necessary to make these means available. If he neglects or refuses to employ them he has no right to complain if a bolt destroys his barn, or kills some of his family.

The question is asked: "Why should any farmer, or any one else, go to the expense of putting up rods when insurance will protect him from loss by fire from ligthning?" Whoever asks that question seriously does not realize that insurance covers only 80 per cent. of loss of building, and the loss in most cases is total, or 100 per cent. The loss from lightning usually comes when the barn is full of the harvest products; therefore, the loss is greater than at any other time of the year, and when lightning starts a fire it is often communicated to other buildings; this could be prevented by rods.

The secretary of a mutual insurance company having over $4,000,000 in risks says that in seven years they did not have a single loss by lightning on a rodded building. Another company reports that in 600 losses from lightning, not one of the buildings was rodded.

Wire fences that are not grounded cause the death of many animals during thunder-storms. Fences should be grounded by running a number eight or number ten galvanized iron wire from each strand of the fence into the ground. The wire should be twisted two or three times about each strand and should reach to a depth of four or five feet into the ground. If the soil is particularly dry the wire should be sunk much deeper. Field fences should be grounded every twenty rods, and fences about barnyards and feed lots at least every ten rods.

Precaution is cheaper than risk, and money that goes up in smoke is a complete loss.

That metal roofs can be turned to good use in protecting against lightning is evident from the following letter from a manufacturer of metal roofing:

"Recently, a farmer was rather surprised when told that the great expense to which he had gone to equip his steel-roofed barn with lightning-rods was unnecessary, and that proper grounding of the roof itself would have given equally as good protection as the lightning-rods.

"Demonstrations of the lightning-proof qualities of various kinds of roofs were recently made in Baltimore, Md., before a number of members of the National Hardware Association of the United States. These tests will probably be of interest to our readers.

"A miniature wooden barn filledwith hay was placed in front of a machine generating 1,100,000 volts of electricity. The long spark from the machine, corresponding to a brilliant lightning discharge of small proportion, was allowed to play upon the roof with the following results: The lightning struck the galvanized steel roof and the charge was carried off by a grounded lightning cable, without in any way injuring the wooden structure or the hay contained in it. A terne-plate roof gave the same results as the steel roof. The discharge was left on for an indefinite length of time without any harm to the roof, the wooden structure or the contents.

"To obtain protection from lightning with metal roofs, proper grounding of the roof is of the utmost importance. A sufficient number of ground leads must be used, and they must be firmly fastened to the roof, so as to make good contact with the latter. The same precautions must be taken concerning ground plates or pipes, bends in leads, distance of leads from frame walls, etc., that are considered when installing lightning-rods.

"The lightning-proof qualities of metal roofs should receive proper consideration when choosing roof coverings for farm buildings. With about 50 per cent. of all farm fires in Canada due to lightning, the average farmer is vitally interested in lightning protection, and the foregoing facts will be of value to him."

How to Secure a Good Yield of Hay.

While hay yields last summer throughout Eastern Canada were much below the average, rather astonishing results were reached at the Central Experimental Farm, Ottawa, where a five-ton yield was secured on a forty-acre field. The Dominion Field Husbandman gives a description of the methods adopted to bring about such a satisfactory crop. The soil is underdrained and is a kind of sandy loam. A three-year rotation of corn, oats and hay has been followed, the corn land being manured at the rate of eighteen tons per acre. The hay mixture consisted of ten pounds of red clover, two pounds alsike. The major portion of the crop consisted of red clover and alfalfa, but the alsike and timothy were used in case the former crops might winter kill. The crop of five tons per acre was taken from three cuttings: the first cut, consisting mainly of red clover and alfalfa in equal proportions, gave three tons; the second cut, consisting mainly of alfalfa, one ton, and the third cut, consisting exclusively of alfalfa, one ton per acre. Such a result surely emphasizes the value of including alfalfa in the usual hay mixtures in districts where alfalfa will grow. Alfalfa also improves the fertility of the soil. Although the yield last year of five tons per acre was rather out of the ordinary, the yield for the past ten years at the Central Experimental Farm has been good, averaging 3.37 tons per acre per year.

The day for working apart is passing and the time to edge in is here.

It is unfortunate that men will allow "good enough" to keep them from the best.

Fixing up the Neglected Cemetery

BY A. W. ROE.

Neglected rural cemeteries, which are such eyesores, are becoming less frequent. There are still a few cemeteries which need care, however. Often these conditions are due to lack of knowledge of just how to go about fixing up a neglected cemetery. That is why I tell the method used in fixing up a country cemetery in my home county.

The people who were interested in the work got together and organized an association, known as the Mount Pleasant Cemetery Association. It is and has been the final resting-place of the people through a wide stretch of rural territory; since the association began to make a success of it about twenty years ago, many families, living in a village two miles distant, have sought family plots within its limits.

The writer has a keen recollection of the place twenty years ago. The word that best describes its condition at that time is "wilderness." It was indeed a tangle of young forest growth, clambering grapevines, fierce, scratching blackberry briers and smaller undergrowth. In addition, it was the home of rabbits, snakes, owls, bumblebees, hornets and yellow-jackets. In and among all this wilderness nestled the graves of the country's pioneers. They were gone and, it seemed, forgotten—all but a few, whose relatives still met in the cemetery and "cleaned" off the graves once or twice a year.

There had been a medieval fence about the plot, but it had fallen into decay at most places, except near the gates, which were opened ceremoniously to admit a procession and kept closed at other times, though to keep out what the writer often wondered. Following the custom then prevalent in this section of the country, those families that were financially able usually made provision against neighborhood neglect of a general fence, by enclosing their own family plots with barricades of their own fancy. This gave the yard a still more grotesque and gruesome effect, for the fences were of many and crazy designs. It was indeed a "ghostyard" at night, shunned by young and old alike.

That was the condition of the cemetery when the association began its work some twenty odd years ago. After the association became thoroughly organized with its president, secretary, treasurer, membership committee, entertainment committee, grounds committee, etc., it was a jesting remark in the community that the "graveyard" was the livest spot in it. It was indeed the truth. A Memorial Day service was instituted in the spring and it is still a social feature in the community. It was the custom, before the war curtailed such celebrations, for the ladies to give what was known as a "bird" dinner on Thanksgiving—the men killed the quail, and the ladies cooked them and added other delicacies. While these events were largely social in their outward manifestations, they provided means in a very material way for the achieving of various worth-while things in the cemetery itself. Besides the money thus gathered together, there is a membership fee collected annually, and the association collects some funds from the selling of lots. Years ago it was found that it was necessary to add to the original plot of ground, so two acres were bought for a new addition.

The grounds are now well fenced; they have been cleared of undergrowth, thus routing the bees and the yellow-jackets; the excessive shrubbery has been cleared away, thereby depriving the owls of their shelter; the little private burial grounds with their individual fences have disappeared, although in some instances the procedure of removal almost produced a neighborhood war. All graves have been mounded and turfed, and marked with plain wooden markers and grouped into lots, through which roads and pathways wind, edged with flowering shrubs. A beautiful greensward covers the ground and the mounds in summer, and a few evergreens add a touch of variety in the winter. A shelter of quaint design, constructed for accommodating services held in the cemetery, now raises its cupola-shaped roof in a central part of the grounds. A sexton is employed regularly to mow the grass in summer and to give attention to the graves and the fence.

THE SUNDAY SCHOOL

MAY 7

Isaiah's Ideal for a World at Strife, Isa. 2: 2-4; 11: 1-9. Golden Text—Come ye, and let us walk in the way of the Lord.—Isa. 2: 5.

Lesson Foreword—A specimen of Isaiah's prophetic teaching is given in this lesson. The passages selected form a part of what is known as the Messianic hope. From now on this hope occupies the heart of Israel. Even in the darkest periods of her history Israel believed that God had a great purpose for her in the world and that her ultimate future would be full of glory. There were two main elements in this hope,—the nation wholly redeemed and secure from all its foes and the glorious King, who would rule in that age. In this lesson, Isaiah emphasizes both the City and the King.

I. War No More, ch. 2: 2-4.

V. 2. **In the last days.** This phrase does not mean, as with us, the end of the world, but rather the close of the period which lies within the scope of the prophet's view. It is a frequent phrase in the Old Testament, Gen. 49: 1; Hosea 3: 5; Jeremiah, 23: 20, etc. **The mountain of the Lord's house.** Jerusalem with its temple stood on Mount Zion, but it was overtopped by higher mountains in Palestine. Isaiah looked for a time when the world would be so refashioned, whether physically or metaphorically, that Jerusalem would stand high above all the other eminences of the world. Jerusalem is to be elevated to world-wide prominence and influence.

V. 3. **Let us go up, etc.** Jerusalem had been the religious centre of Israel, to which the tribes went up to offer sacrifices and to celebrate their religious feasts. (See Ps. 122: 4.) But Isaiah foresaw the time when all the nations of the world would turn to Jerusalem for their spiritual instruction and inspiration. The Gentiles will yet recognize that Israel possesses the only true religion and they will come up to Jerusalem to learn it. **His ways;** not God's ways with men in providence but God's ideal of the human conduct. **Out of Zion will go forth the law.** "The Law" here means practically the whole religion of Jehovah as revealed to Israel. The inhabitants of Jerusalem will become the world's teachers in the moral requirements which God has laid down for men.

V. 4. **He shall judge, etc.** "If all the nations practice the moral requirements of the religion of Jehovah they will naturally refer their disputes to Him, He alone being God and King" (Gray). **They shall beat, etc.** Since all disputes are to be settled by God and not by the arbitrament of war, there will be no further need of the weapons of war. **Swords;** were straight and short weapons, from two and a half to three feet in length, having apparently a double edge and tapering to a sharp point. They were generally of iron or bronze and were worn in a sheath suspended from the girdle. **Plowshares;** a pointed metal sheath capable of turning the soil to a depth of about five or six inches. It was attached through a hole in it to the wooden plow and the whole plow was so light that a man could carry it on his shoulder. **Spears;** consisted generally of a long wooden staff with a sharp metal head. **Pruninghooks;** presumably these were shaped like our sickle and were used for cutting the grapes off the vines and for trimming the vines and trees. **Neither shall they learn, etc.** Isaiah's prediction of a universal peace is most unusual when we consider the age in which it was made. Then the normal condition among the nations was war and not peace.

II. The True King, 11: 1-5.

V. 1. **A rod out of the stem of Jesse.** The house of David, the son of Jesse, is compared to a tree which has been cut down: only a stump remains, but thos stump, declares the prophet, will send forth a fresh shoot. It is evident that this prophecy was made at a time when the Davidic dynasty was not as glorious as it once was. Nevertheless in Messianic times it will be restored to more than its former grandeur. The ideal king is to be of the house of David. (See 2 Sam. 7: 14-27.)

V. 2. In other passages,—ch. 7: 14, 9: 6, 7—Isaiah describes the ideal king. Here he describes his equipment for office. **The Spirit of the Lord.** God's Spirit is conceived as the projection of his power into human life. It seizes certain men such as warriors, craftsmen, prophets and kings, and enables them to do superhuman or at least unusual deeds. Here the effect of the Spirit on the king is, in general, enlightenment and insight. **Wisdom and understanding;** a sharp and mature mind for discerning between right and wrong. **Counsel and might;** the ability to execute the right when it is perceived. **The Spirit of knowledge and . . fear of the Lord;** "careful for the will of God and a true worshiper of Jehovah" (Gray). The coming king will be a man whose character is so rooted in piety that he will be a wise, strong ruler.

V. 3. The king's endowment of God's Spirit enables him to give strong and true government. Under him civic virtues abound and crime and violence are abolished. **He shall not judge,** etc. "He will be able, like God, to probe things to the bottom, not being misled by deceitful appearances or lying words, but reading men's hearts" (Gray).

V. 4. **With righteousness shall he judge,** etc. Eastern courts of justice are notoriously corrupt. Bribes are accepted from the rich, and the poor are generally pushed to the wall with no redress. **Rod of his mouth, and with the breath of his lips;** both mean "his speech." The king will merely utter his voice and evil-doers will be quelled.

V. 5. **The Girdle;** is a sash or belt, used to gather up and tie the loose-flowing garments when work is to be undertaken. The figure here suggests that the love of righteousness and faithfulness will prompt and uphold the king in all his undertakings.

III. Universal Peace, 6-9.

Isaiah sees the security and peace of man in Messianic times extended to the brute creation; nature as well as man will be redeemed. G. A. Smith says: "We who live in the countries from which wild beasts have been exterminated cannot understand the insecurity and terror that they cause in regions where they abound."

Application.

The late Henry Richard, Secretary of the Peace Society, said, "Give me the money which has been spent in war and I will purchase every foot of land on the globe. I will clothe every man, woman and child, in attire of which kings and queens would be proud; I will build a schoolhouse on every hillside and in every valley over the whole earth. . . . I will crown every hill with a place of worship consecrated to the promulgation of the gospel of peace. I will support in every pulpit an able teacher of righteousness."

If ever a man could exult in a great victory we should have thought that man would have been the Duke of Wellington after the Battle of Waterloo. Yet this is what Wellington wrote the morning after his greatest victory: "My heart is broken by the terrible loss I have sustained in my old friends and companions, and my poor soldiers. Believe me, nothing except a battle lost can be half so melancholy as a battle won."

Many of the shells used on the battlefields of South Africa were later taken to England and made into church bells. The instruments of destruction were converted into instruments of construction. The promise of to-day's lesson is not that men shall allow their swords to rust and their spears to become useless, but that they shall convert them into serviceable things. The day will come when the passion and enthusiasm now shown in war, will be turned to the upbuilding of righteous causes, and the fulfilment of lofty ideals.

Getting Rid of Sewage on the Farm.

The safe disposal of farm sewage is a vital necessity. It promotes health, not only on the farm, but often in places where products from the farm are used.

The sceptic tank should be from fifty to one hundred feet or more from the dwelling. If practicable, locate the tank so that the prevailing winds will blow any odors away from the home. The distribution plot where the sewage is finally returned to the soil should be located down hill from the home water supply, and at least three hundred feet away. Lay all sewers in straight lins and below the frost point and see that they are thoroughly ventilated and the joints made water-tight and protected against the entrance of roots. Before putting in a sewage system consult your county representative or write to the Department of Physics, Ontario Agricultural College.

Farm Records Burned.

Jim's barn burned down the other night, and he was almost suffocated trying to pull the barn door off the hinges. After he came to, one of the neighbors asked him, "Jim, why were you so crazy trying to save that old barn door?" "Well," said Jim faintly, "all my figures for the last five years was right on the inside of that door."

It is a mystery why the farmer will carefully select pure-bred sires for his herd but will sow any kind of seed when the planting season arrives.

A Call to Veterinarians.

There is perhaps no profession in Canada that offers better opportunity for remuneration and advancement than that of the veterinarian. To-day this pursuit is recognized by the universities as worthy of a degree, just as is that of medicine. It is not only in private practice that opportunity occurs to veterinary practitioners, but in rendering service to the country by appointment under municipal, provincial, or Federal governments. As an instance of this, attention of practising veterinarians is called to the opportunity now being offered, by the Veterinary Director General at Ottawa, to qualify for employment in connection with the recently adopted Accredited Herd System. Before being enrolled for such work, applicants will be required to pass the Civil Service examination for the position of veterinary inspector and to take a course in practical testing methods with one of the inspectors of the branch. During the course the candidate will be paid, as if already employed, at the rate of ten dollars a day with expenses. Examinations are to be held simultaneously in all the provinces on April 27th, full particulars of which can be had at any post office. It will be observed that the nearness of the date set for the examination necessitates the earliest possible action by likely candidates.

The lime-spreader is the soil's sugar bowl.

Had Adam kept books and records his gardening might not have proved so perplexing to him.