Soils and Crops

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

Selecting Seed Potatoes.

I find that I get far better results by selecting my seed potatoes from the hills as they are dug. I have never experimented with this on a big scale, for I am not a big potato grower, but it pays me on a small scale, and perhaps would pay even better on a bigger one.

In selecting the big nice tubers from the pile of potatoes in the spring of the year, you do not know that you will get a good yield of big nice potatoes even with a very favorable season. You may be getting diseased tubers from hills infected with scab, dry rot, and the like, even though the individual tubers may not show it to any marked degree. Whenever possible, I like to dig my seed potatoes by hand with an ordinary potato fork. This takes little extra work when only a few bushels of seed are needed, and by turning out each hill to itself I am sure of getting no bad potatoes mixed with the desirable ones as they are crated up.

When I come across a hill of nice, sizable tubers, free from scab and other diseases and with a generous yield, I know I am getting strong, vigorous stock that should produce well the following season. For such a hill could not have been infected with disease, and it is vastly superior for seed to that from a puny neighbor. A good-looking potato may come from a bad hill, but the disease germs will get in their deadly work after storage. By selecting your seed at digging time, you can store these better-producing tubers separately, and thus keep your seed stock in first-class condition.

Good tubers stored in a bin with decaying spuds will become weakened in vitality, and be less able to produce a good crop. I know from experience that it pays to select and store seed tubers separately, especially for late potatoes. I have helped plant fine-appearing spuds from a bin where the potatoes were from one-third to one-half decayed, and I have never known such to make a stand. The heat from the diseased tubers ofttimes destroys the eyes of those remaining. Such tubers may look all right, but they will not sprout and produce.

For best results it will pay you to select your seed potatoes in the fall, and to store them in small well-ventilated compartments; this rule holds good whether you expect to grow potatoes successfully on either a small or a large scale.

Fall Work in the Orchard.

The practice of plant sanitation to prevent parasitic diseases and rotting of farm produce, if heeded in time will save many of the trees and keep vegetables from rotting.

The raspberry patch should be "caned" to remove all dead and badly diseased stalks. This is more or less of a sanitary measure and it gives the sound canes a chance.

In fall pruning of apple orchards the farmer has a chance to rid the trees of cankered limbs. In deciding what cuts are to be made, the vigor and freedom from disease of a limb should be borne in mind.

Any pruning cut exposes the heart wood of the tree and opens the way for heart rot fungi. As soon as the cut surfaces are dry they should be painted with a white lead paste (not zinc white). Common barn paint or ready-mixed house paint has small protecting value for pruned surfaces. The pruning cut should be made flush with the main branch. The healing of wounds comes about from a "callus" growth from the cambium. If stubs are left the projecting parts prevent the healing.

Hold-over cankers of fire blight can be located by the blighted twigs on which the leaves have withered and dried. The canker is at the base of the twig. These should be located and removed. Thorough winter eradication coupled with vigilance in the early part of the growing season will control fire-blight.

Ventilation is necessary in the storage cellar if disastrous rotting of the produce is to be avoided. Vegetable pits should be provided with a straw floor and a straw or crate chimney. Black heart of potatoes and black specking of cabbage are due to lack of oxygen in the storage room.

A cleanup of all trash from the preceding crop should take place promptly in the garden. Many fungi survive the winter in such trash. Sanitation is the gardener's greatest protection.

In the field sanitation is obtained by crop rotation. Those who followed corn with corn, beets with beets, or beans with beans, have this year found that disease has been one important factor in their farming. Aside from its relations to soil fertility, crop rotation is necessary to avoid disease intensification.

Poultry

The demand for the well finished, milk fed, crate fattened, chicken has always been in excess of the supply and where this condition exists, it goes without saying, that the price must be enticing or attractive to the careful and systematic farmer, who prepares his product for market, in the most economical and attractive manner, and who reaps his reward in an enhanced price and a ready demand for what he has to offer.

The marketing of lean scraggy chickens, straight off the range, allows but a small profit, or possibly no profit at all, and is decidedly unsatisfactory to the farmer, the dealer and the consumer.

The consumer is gradually realizing that he is the greatest loser, as the offal and waste from the unfinished chicken, is the same as from the well fattened bird. In the first condition this waste may run to fifty or sixty per cent. of the whole carcass, while in the fattened bird it will not exceed thirty per cent.

This convincing economy, and the improved texture and delicate flavor of the meat, of the milk fattened chickens, has created an unlimited demand at home and abroad. It is therefore, well worth while to consider the following simple method of fattening when it is time to market, either large or small quantities of poultry.

Crate Feeding. Crate feeding has proved the most satisfactory method of preparing poultry for market with the exception of broilers, turkeys and waterfowl, which are usually considered to do better in limited pens.

Construction of Crates. The large metal commercial batteries, usually used where great numbers are available, can be purchased, but for home use, crates can be made measuring about 6 feet long, 16 inches wide and 20 inches high, divided by two tight partitions into three compartments, each capable of holding four birds of from 4 to 6 pounds each.

The frame, of 2 inch by 1 inch material, is covered by slats 1 inch wide set 2 inches apart and running lengthwise on three sides and perpendicular on the front, to allow the chickens to feed from a V shaped trough, made from two pieces of 3 inch by ½ inch board, nailed together and set on protruding brackets, so as to leave the bottom of the trough about 4 inches above the bottom of the crate, and the upper edge about 2 inches from the front.

The bottom slats of the crate, should be nailed on the upper part of the frame, to prevent injury to the chickens' feet should the crate be stood upon the ground. The crates should be placed on stands 16 inches from the ground, and some absorbent, such as ashes or sand spread underneath to catch the droppings. The crate should be placed in some rough shelter, preferably, where most of the light can be excluded when the birds are not feeding.

Vermin. Before being placed in the crate, the birds should be well dusted with fine sulphur.

Feeding. They should be starved for 24 hours and then fed only sparingly for the first two days, gradually increasing the quantity, up till the third day, when the troughs should be kept filled until they settle down and refuse to take more.

Feed twice a day, with as long an interval between feeds as possible commensurate with light, and immediately remove or empty troughs after feeding. If possible, darken the crate and leave birds quiet till the next feed.

Ration. A satisfactory ration should be exceptionally palatable and one that will produce the whitest and finest texture of flesh, in the shortest period. For this purpose, finely ground oats, mixed with sour skimmed milk or buttermilk, to the consistancy of thin porridge, so that it will pour into the troughs is best.

If a quicker gain in weight is desired, corn meal or buckwheat flour may be added, but it must be remembered, that the addition of either to save time, is at the expense of "texture" in the finish of the flesh.

The addition of corn to the ration will put on fat, but in some markets a fat chicken will be accepted as equal to the best finished poultry.

The fattening period will vary from 10 days to 3 weeks and the gains will be from 1 lb to 3 lbs. on good robust chickens, that have been carefully fed.

As it is possible to put on a pound of gain to 3 to 4 pounds of grain consumed, plus sour skimmed milk, it is easy to see that the successful fattening of poultry is a profitable undertaking.

Despite the easier feeling in the feed market, every precaution will have to be taken to prevent waste in feeding this winter or a shortage will result.

If you do not think it a privilege to have children and a place for them to play, try living in a large city for a year. As for providing children with the normal food for growth,—eggs, milk, cream, good butter, fresh fruit, vegetables and meat,—it passes the average city dweller's ability. Thousands of people are out of work in Toronto, and the bread lines in other centres are steadily lengthening. To the discerning there is no need of pointing the moral.

THE CHILDREN'S HOUR

Into the lives of two Scotch Boy Scouts there has come Adventure with a capital "A." They have started a voyage of 30,000 miles, through uncharted Antarctic seas, upon a little schooner scarcely bigger than an oyster boat. And, what is as important to them, they are serving Sir Ernest Shackleton, the explorer, as cabin boys.

A few weeks ago it became known that the little Quest was to put into London for her finishing touches before starting on her long voyage of exploration in the South Polar regions. And then Sir Ernest Shackleton casually announced that he would probably need a cabin boy to go along, and that he thought a Boy Scout would fill the bill best.

One thousand Boy Scouts promptly applied for the job. If the others had heard of it in time, they probably also would have begged to be taken along. The spirit that sends the Englishman out to the ends of the earth in his wanderings still is pretty much in evidence, despite what the pessimists say about the decline of the empire. (That is not to mention the spirit which would prompt any normal boy of any Anglo-Saxon country to volunteer for a little jaunt such as the Quest's.)

The 1,000 applicants were narrowed down to ten by the Boy Scout headquarters at London, and these ten boys were called to London to interview Sir Ernest, in order that he might choose one of them.

The choice narrowed down to two, both of whom seemed equally good. Sir Ernest solved his dilemma by accepting both of them. If there were two prouder boys in the British Isles at the moment when the explorer made known his decision, persons who watched the faces of the two chosen Scouts would like to meet them. Speech was impossible to them; they simply stood and beamed as Sir Ernest, standing before a big chart, outlined to them the route which the Quest would follow.

Both of the Quest's cabin boys are from the north of Scotland. They are:

Patrol Leader N. E. Mooney, aged seventeen, Kirkwall, Orkney.

Patrol Leader J. W. F. Marr, aged eighteen, Aberdeen.

Young Mooney, before he knew he had been chosen, gave the following reasons for wishing to go with the expedition:

The pleasure of serving a British hero, whether in difficult or ordinary tasks, and willingness to undertake and try to perform well whatever he commands.

A Scout's training makes me generally useful.

I have some knowledge of photography, microscopy, electricity and trigonometry.

I was born and bred in a cold and stormy climate, and have never lived out of sight of the sea.

The Orkneys are associated with Arctic explorations and Viking traditions.

Mooney is the slighter and also the more reserved of the two boys. Until he left his native Orkneys for the first time, to come to London, he had never seen a train or a large city.

Marr, of a more conventional Scotch type, with blue eyes and lean jaws, is a student at Aberdeen University. He has played Rugby football and tennis for many years. Two years ago he saved a young girl at Banff from drowning, and immediately afterward made a gallant but ineffectual effort to save another boy and girl who were also in danger. He has won several Scout decorations.

"I was going to be a farmer, like my father, but I don't think I shall now," he said after his choice as one of the Quest's crew had been communicated to him. "I shall go on expeditions with Sir Ernest Shackleton, if he will let me, the next time as well. I have always waited for this."

"I have had to go to the Far North to get boys for the Far South," was Sir Ernest Shackleton's only comment, but it was obvious that he was highly pleased with the result of his appeal.

Wintering Bees.

There are three important points to be observed in keeping bees safely in the winter. One of these is a strong populous colony consisting mainly of young bees; another is an abundant supply of wholesome stores in the combs, and the third is adequate protection from the cold. The late Dominion Apiarist, Mr. F. W. L. Sladen, who recently met his death by drowning, in a bulletin published recently, says that, as the winters are more consistent in Canada, if these points are observed, bees winter better in this country than in England or in the Southern States. When cold weather sets in the bees gather in a cluster, from which warmth emanates to all. Colonies that are not strong in the fall should be put together so that each hive contains enough bees to crowd over at least eight combs of Langstroth size before the weather is cold enough for clustering closely. Clover honey is an excellent winter food and buckwheat honey has been found satisfactory where buckwheat flourishes. Dandelion honey is unwholesome and the honey of the hard maple is not favored. A pure syrup made by stirring two parts of granulated sugar into one of boiling water and allowed to cool if given to the bees about the middle of September or a little later, will afford them time to cap over most of the syrup while the weather is yet warm and to consume sufficient to form an area of empty cells in the lower part of the middle combs for the winter cluster. The syrup should be given in feeders placed in the hives. A ten-pound honey pail with small holes punched in the lid and placed upside down over the combs makes a convenient feeder. Bees can be protected from cold out of doors in cases filled with packing material, or indoors in the cellar, where the temperature should be about 42 degrees and not exceed 50 degrees F. The bulletin contains illustrations of bees wintered at the Ottawa Experimental Farm in four-colony cases besides a deal of essential information that cannot be gathered into a brief space.

Seed Cleaning

Importance. In view of the decreasing prices of farm products generally, it is of increasing importance to the grower that his farm returns be maintained by increased yields per acre. The value per bushel may decrease, but if more bushels are grown to the acre, the total returns from the crop do not decrease in the same proportion, and this points to the necessity, during a period of deflation of prices, of paying particular attention to the quality of the seed sown. In spite of the fact that the use of better seed in increasing yields per acre is self-evident, for a large proportion of the acreage sown to grain crops in the province, seed cleaned with the hand fanning mill only is used. This is largely due to the fact that seed cleaned with suitable seed cleaning machinery is not easily available, and to the fact that heretofore commercial quantities of registered seed have not been produced in the province.

Two Circumstances. First—Assistance is given by the Ontario Department of Agriculture toward the establishment of seed cleaning centres. This assistance takes the form of loans to co-operative associations which undertake to install and operate suitable seed cleaning machinery and if necessary market the cleaned seed. To any co-operative association or co-operative company, the Government loans up to fifty per cent. of the value of the property upon which the loan is based, but no loan to any one association to exceed $3,000. The loan is without interest for two years and at six per cent. thereafter. It is repayable one-half in five years, and one-half in a further period of five years with the privilege of repaying at any time. This loan is also available toward the establishment of potato warehouses and potato grading and marketing associations.

Second—Some fifty or more agricultural societies in the province are, for the first time this year, holding a combined Feld Crop and Threshed Grain Competition. In each of these competitions, fifteen contestants are growing a total of 75 acres of grain crops, and all competitors with but one kind of grain of Registered Seed. Fifty societies with 75 acres each total 3,750 acres for the province. If the yields from this acreage pass the field and bin inspection for Registered Seed, there will be available for the first time, Registered Seed in commercial quantities.

But—It is important that this Registered Seed should be properly cleaned before sale; only large plump seed, as well as pure seed, should be included in registered stock. The hand fanning mill is not suitable for the purpose. The agricultural societies conducting these competitions should, therefore, inquire as to the necessary steps to be taken to properly care for and market the seed produced in these competitions, so that the benefits of such competitions be not curtailed.

Organization. The agricultural society, instead of handling the proposition itself, might properly encourage the competitors to organize an association of their own for cleaning and marketing their Registered Seed. Where the local elevator is owned by a farmers' co-operative association, or where there is a co-operative association in existence, the seed cleaning and marketing might advantageously be added to such business. The Department will assist in forming such organizations.

Costs. If seed cleaning machinery only is needed the cost is nominal. A power cleaner can be purchased for about $500 and upwards. A small gasoline engine will run the machine. Added to this is the cost of purchasing or renting a small building, and, of course, engaging a competent operator. If a more ambitious plan is decided upon the Department is prepared to furnish outlines of plans of building suitable for elevating and binning, and for cleanng and handling grain and grass seeds. The costs of such plants, of course, vary with the size of the plant and the local conditions.

Demonstrated. The beneficial results from the installation of a power cleaner have already been demonstrated. At Cottam, in Essex County, such a plant is in operation in connection with a farmer-owned elevator, and the members state that the purchase of the cleaning machine has proven to be the best and wisest act in connection with their business. At Lynden, a private individual purchased a cleaner, and this spring cleaned the grain for seeding 75 farms in the district. At other points in the province power cleaners have been installed or are being installed and in all instances the increased yield per acre alone, from the use of better seed, has justified the small expenditure of money.

Need. Five and a quarter million acres in Ontario are sown to grain every year. Registered Seed on these five and a quarter million acres would materially increase the wealth of the individual farmers and of the province. The opportunity afforded to the agricultural societies and to seed producing districts should not be neglected until the seed is ready to harvest, but preparations should be made now to handle and market to the best advantage.

The Co-operation and Markets Branch of the Department of Agriculture, Parliament Buildings, Toronto, will be glad to give assistance to any society or district in establishing seed cleaning plants.

FIND OUT ABOUT THIS. IT IS IMPORTANT.

THE SUNDAY SCHOOL

OCTOBER 23.

Paul's Last Journey to Jerusalem. Acts 21: 1-17. Golden Text—Gal. 6: 9 (Rev. Ver.)

Time and Place—56 A.D.; from Miletus to Jerusalem.

Connecting Links—After Paul had labored at Ephesus for a period of three years, (see Lesson 2, Oct. 19; Acts 19: 8-20) he determined to revisit Macedonia and Achaia, ch. 19: 21. Having sent Timothy and Erastus into Macedonia (ch. 19: 22) to prepare for his coming, he planned to remain in Ephesus for some time longer. His stay, however, was brought to a sudden end by the riot instigated by Demetrius, of which an account is given in ch. 19: 23-40. Having escaped from the danger that threatened his life, he proceeded to carry out his plan of going to Macedonia and thence to Greece or Achaia, ch. 20: 1, 3. After a three-months' stay in Greece (ch. 20: 3), he was about to sail for Syria, when a plot of the Jews obliged him to change his plan and return to Macedonia. From Philippi, he went to Troas, there joining the company who were to sail with him to Jerusalem, ch. 20: 4-6. After the incident relating to Eutychus (ch. 20: 7-12) Paul's companions set sail for Assos, where he joined them, having gone from Troas to Assos on foot, ch. 20: 13-16. The farewell interview with the elders of the church at Ephesus, for whom Paul had sent to meet him at Miletus is recorded in ch. 20: 17-38.

I. The Voyage, 1-9.

Vs. 1, 2. **Gotten from them** (see ch. 20: 36-38); "torn from their embrace," says one interpreter; a painful and difficult separation. **Launched;** set sail. **A straight course.** Luke "has the true Greek feeling for the sea" and generally "records the incidents from harbor to harbor" (Ramsay). **Coos;** an island southwest of the district of Coria in Asia Minor. **Rhodes;** a great island due south of Coria. **Patara;** a seaport rather to the southwest of Lucia. **A ship crossing over** (Rev. Ver.); a larger merchantman, which, instead of hugging the coast, as the voyagers had hitherto been doing in their smaller vessel, was going to stand straight across the open sea. **Unto Phenicia;** the strip of coast north of Palestine.

V. 3. **Discovered;** sighted, a sailor's word, literally, "having made to rise up out of the sea." Luke is careful to give the exact details of the trip. **Cyprus;** the island formerly visited by Paul and Barnabas, ch. 13: 4. **Unto Syria** (Rev. Ver.). So the Roman province was named which included Phenicia. **At Tyre . . to unlade.** Tyre was one of the chief ports of Phoenicia, and a very ancient city.

V. 4. **Having found the disciples** (Rev. Ver.); looked them up: they would be a small company in a large city. **Tarried . . . seven days.** The ship must have been a large one to require this time for unloading and the taking in of fresh cargo. **Said . . through the Spirit.** See also ch. 20: 22, 23. **Should not set foot in** (Rev. Ver.). The spirit showed these disciples the sufferings that awaited Paul in Jerusalem. Their love moved them to hold him back; his sense of duty bade him go forward. (Compare ch. 20: 22, 23.)

V. 5. **Accomplished those days;** the seven days of v. 4. **We departed, etc.** Paul refuses to yield to the persuasions of the Tyrian disciples, because he hears the call of duty. **Brought us on our way;** reluctant to part from the apostle, and grieved because he was going to face certain danger.

V. 6. **Kneeling . . on the beach** (Rev. Ver.). A level sandy beach (such as the Greek word describes) extends for a considerable distance on both sides of the site of ancient Tyre. **Prayed;** those who were to remain and those who were to go, commending one another to the loving care and protection of the God who would be with them all. The farewell is in many ways like the scene at Miletus, but without the same intimacy. The acquaintance here had been short. "The scenes are familiar, and yet how different. Such touches of diversity and resemblance could be given only by an eye-witness." **We went on board the ship** (Rev. Ver.). "The" shows that it was the same ship in which they had come from Tyre.

Vs. 7-9. **Ptolemais;** thirty miles south of Tyre, a day's sail. It was the Accho of Judg. 1: 31, and is not Acre. **Saluted the brethren; greeted** and held converse with the Christian society which, as Ptolemais was on the great highway by the coast, had been founded by the disciples dispersed from Jerusalem after the death of Stephen, ch. 11: 9. **Unto Caesarea;** thirty or forty miles further on. Paul's present visit was the third he had paid to this city (see chs. 9: 30; 18: 22). **Philip the evangelist.** "Evangelists were an order or body of men in the early church, after apostles, and before pastors and teachers (see Ephes. 4 :11). They corresponded to our foreign missionaries." This was Philip the deacon (chs. 6: 5; 8: 5, 26); to be distinguished from Philip the apostle, John 1: 43, etc. He must have been a man of some wealth to be able to entertain so large a party. **Four daughters . . did prophesy;** that is, they belonged to a class in the early church who edified the church "by preaching under the direct influence of inspiration, interpreting the mind of God, revealing the secrets of their hearer's inner life and converting unbelievers.

II. The Warning, 10-14.

Vs. 10, 11. **Tarried . . many days.** Ramsay, in his reckoning of the time occupied in the journey from Miletus to Jerusalem, counts the period spent at Caesarea as ten days, just before Pentecost. **From Judaea;** that is, from Jerusalem, or its neighborhood. **A . . prophet . . Agabus.** See ch. 11: 28. **Took Paul's girdle;** the band, sometimes of leather, but mostly of silk, cotton or wool, by which the loose, flowing Oriental robes were drawn together at the waist. It might be from three to ten inches broad and several yards long. **Bound his own hands and feet.** Such symbolic acts were often employed by prophets in the Old Testament, 1 Kings 22: 11; Isa. 20: 2; Jer. 13: 1. **Thus saith the Holy Ghost;** who gave to the prophets their revelations, 2 Pet. 1: 21.

Vs. 12-14. **We;** those of Paul's company. **They;** the disciples belonging to Caesarea. **What do ye?** (Rev. Ver.) "Why do you unnerve and unman me?" **I am ready, etc.** "To him who is prepared," says Bengel, "the burden is light." **Would not;** because duty kept calling him, and he dared not disobey the inner voice. He was ready to die for the Lord's sake. **The will of the Lord.** In Paul's decision they saw the divine purpose, which they could not oppose.

III. The Arrival, 15-17.

Vs. 15-17. **We took up our carriages;** Rev. Ver., "baggage." The distance between Caesarea and Jerusalem was about sixty miles, and Ramsay says that the journey was taken on horseback. The usual belief is, that the trip was made on foot. **Mnason of Cyprus, an early** (Rev. Ver.) **disciple;** perhaps, one of the converts of the day of Pentecost. He had met Paul's company at Caesarea, and invited them to his home, now in Jerusalem. **Brethren received us gladly;** hastening to Mnason's house with affectionate greetings.

Application.

Don't be a discourager. Friends as well as foes threatened to relax the resolution of St. Paul. Well-meant pessimistic talk still does the cause of God a deal of harm. The folk of the churches may be divided into two classes,—the hearteners and the heart-melters. The hearteners are always ready to believe that hard things can be done. The heart-melters always say that the task is too great and cannot be achieved. When the Forward Movement Fund was launched, many had misgivings and expressed them. But the stalwarts said: "For the name of the Lord Jesus we are ready." During the South African war this telegram came from Ladysmith, "A civilian has been sentenced by court-martial to a year's imprisonment for causing despondency." That man struck no blow for the enemy. He was not intentionally disloyal; but wherever he went his mouth dripped discouragement. He was breaking down the morale of the men. He was doing harm and the courtmartial did perfectly right. Happy is that church whose pessimists are dummies!

A Handy Root Cellar You Can Easily Build.

Oftentimes in regions where cellars are impossible to locate under the house, the upground cellar is resorted to for the storage of fruit and vegetables. These cellars or storage houses may be built in the form of a refrigerator, using wood construction or combinations of materials.

The cheapest material, as well as the most satisfactory, seems to be the type constructed of some class of masonry, either stone, concrete, or tile, or combinations of these materials. The structure is then banked up on the ends and sides, or even the roof, with earth, since a layer of earth is a cheap means of maintaining an even temperature.

The essentials of a good storage cellar are drainage, ventilation, insulation, and a proper amount of moisture. A cellar I saw the other day is constructed of native field stone built up in arch form and covered with earth. The entrance doorway is toward the north, and forms a vestibule or air lock. Ventilating flues are of brick construction. As the cellar is carried down a few steps below the surrounding grade, a drain is provided to carry off seepage water that might find its way in during wet seasons. The earth floor holds moisture, and insures the vegetables against shriveling.

The bin floors are raised a few inches off the dirt floor, and the bin walls are also independent of the side walls. This secures better ventilation for the stored products, and is an additional precaution against frost.

Hollow tile and concrete storage cellars have been built with success. These materials may be handled easier than stone, and may be used in a greater variety of construction work than stone, owing to their adaptability of steel reinforcement.