Farm Crop Queries

Conducted by Professor Henry G. Bell

The object of this department is to place at the service of our farm readers the advice of an acknowledged authority on all subjects pertaining to soils and crops.

Address all questions to Professor Henry G. Bell, in care of The Wilson Publishing Company, Limited, Toronto, and answers will appear in this column in the order in which they are received. When writing kindly mention this paper. As space is limited it is advisable where immediate reply is necessary that a stamped and addressed envelope be enclosed with the question, when the answer will be mailed direct.

Garden Preparation.

Have you prepared your garden soil? If not, immediate action is imperative if you are to get paying results for this year's efforts. Many gardens were dug in the autumn and the soil through exposure to the frosts of winter were broken down into a mellow fine seedbed. This packs most favorably, so that moisture conditions for the growing crops is as it should be. In many other instances, however, the garden has to be dug in the spring and planted within a short time. The big point to keep in mind in this first step in preparation of the garden soil, is that air space in the garden soil is highly desirable, but may be carried to such an extent that it becomes a decided detriment. These results follow the digging or plowing of the garden. Sometimes a considerable amount of leaves or strawy manure is dug in at the time the garden soil is turned. If these are not thoroughly mixed with the six or eight inches of soil that is being turned, there is danger of them forming a loose open mat between the moist soil below and the upper soil wherein the seeds of garden crops are planted. If this occurs, garden crops are actually starved by sufficient water being shut out.

The cure is simple. Carefully rake and work the soil, being sure to stamp it down when the seeds are planted, and follow this stamping by a very shallow raking so as to leave a thin dust mulch on top. This dust mulch will prevent further escape of soil moisture. All garden soils should be dug or plowed now at the very earliest moment. The longer they stand the more waste of soil moisture there will be. Remember that soil moisture is a carrier of plantfood. Without it no plantfood can be taken up by the crop.

The next problem for the gardener is the manure question. Manure is getting scarcer and scarcer and high in price as well as relatively poor in quality. Good live-stock manure is an exceedingly valuable garden fertilizer, but street sweepings which have been exposed to the rain, contain but comparatively little plantfood. Their chief merit is that they return some plant matter which quickly becomes humus and helps the soil on account of it providing a home for the soil bacteria. The humus also gives the soil power to retain moisture and soluble plantfood. Then, in view of the scarcity of manure, the home gardener wants to know how he shall keep up the humus of his soil if he cannot obtain manure.

Our answer is to maintain a compost heap at one end or corner of the garden. Into this heap throw all vegetable leaves, straw, and plant rubbish that may accumulate, covering it lightly with soil so as to prevent the material drying and being blown away. If possible, in the fall get a load or two of sods and turn these grass downward in layers over the compost heap. Sometimes it is good practice to sprinkle the heap so that sufficient water may trickle down through it to prevent burning of the rubbish and at the same time provide moisture enough to encourage bacterial growth. In this spring this compost heap will cut down into rich loamy soil which should be spread over the surface of the garden after the garden soil has been dug. This loamy soil can be worked in at the time the garden is being harrowed and raked. Keeping it as near the surface as possible will insure it rendering a maximum help during the growing season.

Another great help in maintaining the humus of the soil is to follow the early crops with some cover crops such as rye, winter wheat, or a mixture of either of these grains with vetches. Scatter this seed over the surface of the patch where the early potatoes have been dug, early cabbage cut or other early crops taken off. Rake it in and very quickly a green covering of the soil will result. This green covering may make a considerable growth during the summer. Let it stand over winter and turn it under when the garden is dug or plowed in the spring.

It may possibly be that the soil is slightly sour. This would result from a heavy cropping of garden truck or from bad drainage. It is most likely to occur on very heavy clay soils, or on light sandy soils. If it occurs on light sandy soils it is fairly likely to be the result of the lime leaching out of the soil. Of course the cure is to add lime. This can be purchased in several forms, such as ground limestone, marl or air-slaked burnt lime. If purchased in the form of ground limestone it is highly beneficial to the soil and does not tend to burn out the humus of the soil. The same is true of marl. If applied in the form of air-slaked burnt lime, it tends to gather together fine clay soil, improving the texture of the clay garden. Lime can be applied any time in the preparation of the garden soil. Early spring application at the time the soil is being first worked is possibly the most satisfactory time to apply it. Scatter the air-slaked burnt lime, or ground limestone or marl on top of the plowed garden and work it into the soil by harrowing and raking. One hundred pounds of lime will give a beneficial application to a garden 20 x 30 feet.

Now comes the question of how to keep up the plantfood of the soil without manure. This can be done by the proper use of fertilizers. Purchase a good garden fertilizer. One carrying at least 3 to 4 per cent. ammonia, about 6 to 8 per cent. phosphoric acid and 3 to 5 per cent potash. This can be purchased from any of the standard fertilizer manufacturers. For best results you will need about 75 to 100 lbs. for a garden measuring 25 x 40 feet. Best results have been obtained by providing about double the amount necessary for this first application. When the garden is dug or plowed scatter the 75 pounds evenly over the section of approximately 25 x 40 feet that you are working, and rake it thoroughly into the soil. When you are planting the seed crops such as peas, beans, beets, etc., when you open the drills scatter a light dressing of fertilizer into the drill and cover it lightly with soil just before you drop the seed, and proceed as usual. The point is to avoid dropping the seed on top of fertilizers. I have obtained good results by making second and third applications of fertilizer during the growing season. That is, when the beets, carrots, beans, etc., are growing I scatter a light application of fertilizer between the rows just before I cultivate the second, fourth and sixth time. This provides additional available food for the growing crops and greatly hastens their growth.

When setting out cabbage, tomatoes or when planting potatoes, or corn, drop a small handful of fertilizer into the hole that is opened to receive the potato piece or plant. Mix this fertilizer with the soil before the seed piece or plant is set. A side-dressing of these growing crops will help a great deal also.

A similiar treatment of the fertility question for the flower garden will be found to give exceedingly good results. Some gardeners are in the habit of using a considerable amount of nitrate of soda, which is one of the important carriers of nitrogen or ammonia in fertilizers. This is an exceedingly soluble hence rapidly available plantfood. It supplies the kind of plantfood that causes the growth of leaves, and stalk and delays the ripening of the crop, hence the amateur gardener, if he uses nitrate of soda, should be careful not to overdo the dose which he applies to the crop, else he will send the crop all to stalk as in the case of tomatoes too heavily fertilized with nitrogen carriers, and will suffer through the small yield of fruit which results. The prolonging of the growing season also will delay the ripening.

For garden cane-fruit, such as raspberries, gooseberries, and currants, a handful of fertilizer scattered around the roots of the growing bushes will greatly help, up to the time of the setting of the fruit. It will result in a larger setting of fruit and product of better quality. For the garden apple tree, cherry trees, plums, etc., scatter about 5 to 10 lbs. of fertilizer per tree in a circle reaching out from the tree about as far as the branches extend.

The moisture question is one of the all-important problems of the garden. Numerous charming stories of dry-land farmers occasionally lead home gardeners to wonder why in a dry season their gardens will not produce satisfactory results. The reason is that the garden crops are not dry-land crops; garden crops are of such a nature that they require an enormous amount of water in order to meet their daily needs. Some idea of the large quantity of water that is necessary will be gathered from the reports of investigators who say that for every pound of dry matter in garden truck that is harvested, at least 500 lbs. of water is required, during the growing season of the crop. A large amount of this water can be stored up by early proper working of the soil. In hundreds of homes there is equipment for sprinkling the garden. When the garden is thoroughly sprinkled you must remember that beside adding water for the plant you have connected up the water tubes from the surface of the soil down to the area wherein the crops are feeding. This means that as soon as the sun shines, evaporation starts, and not only will some of the water you have added be evaporated, but as a result of connecting up the water tubes there may be actually a loss of the stored up moisture of the soil, unless the foliage of the plant shades the ground from direct sunlight. It is good practice after thoroughly soaking the garden to give the surface of the soil time to dry slightly, then stir it with a light cultivation so as to prevent the loss of moisture. It is by all means best practice to water the garden thoroughly towards sundown, rather than sprinkle it during the sunny part of the day.

Remember that success in the home garden is attained by making plants comfortable, giving them a suitable home and supplying them with an abundance of well-balanced plantfood. Necessarily disease and insects effect garden crops, but with these and their control we will deal at a later date.

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INTERNATIONAL LESSON MAY 18.

Lesson VII. The Grace of God—Gen. 6:8; Ex. 34: 6, 7; 2 Cor. 12:9; Eph. 2:4-10; Titus 2:11-14.

Golden Text, Acts 15:11.

Eph. 2: 4-10. The Riches of His Grace. "But God, who is rich in mercy." Paul reminds the Christians of Ephesus of the spiritual death from which they have been saved by the gospel of the Lord Jesus Christ. They had been "dead in trespasses and sins," the higher nature stricken into insensibility, the instincts of truth and honor and kindness destroyed, flesh and its lusts triumphant. They had "walked according to the course of this world," forgetting or not knowing their kinship to a higher order, their true citizenship, which was in heaven. The "spirit of disobedience" had governed them, not the Spirit of God, and they had become "children of wrath," subject to the displeasure of God. The picture drawn is, in its essential features, that of the sinner in every age, and it is as true as it is unlovely. The case would have been hopeless indeed but for the mercy of God.

Because He is rich in mercy, and "for his great love wherewith he loved us," God, the apostle says, "hath quickened us together with Christ." He has raised us from the death of sin to the new life of faith and of righteousness, and this not because of our merit or of our deserving, but of His own free grace. It is as though, figuratively speaking, we had died with Christ and been raised up again with Him. The new life is the Christlike life. It is following the example of Christ. It is taking Him as our Leader and consecrating ourselves in sworn allegiance to Him. And it is more than following, and more than serving: it is also sitting together with Him "in Heavenly places."

For the man who is thus transformed and renewed in heart and mind is no longer occupied solely with getting along in the world and enjoying its pleasures. He is seeking first "the kingdom of God and his righteousness." He is setting his mind on the higher things of truth and cleanness of soul and the will of God and service to his fellow men, and in all this he finds the joy and strength and clearness of vision of the heavenly places.

"In the ages to come." God has done great things for us, but there are still better things to come. For He has raised us into this new life with Christ for this very purpose, "to display throughout ages to come his surpassing wealth of grace and goodness toward us in Christ Jesus." We are saved by grace, and we are saved in hope, and it is indeed a very splendid and glorious hope we have in our relationship to God through Jesus Christ. We shall be like Christ. The glory of His virtue shall be ours. In knowledge, in character, in praise of all goodness, and in achievement, we shall advance with Him through the ages.

"By grace . . . through faith." By the loving favor and goodness of God who receives us in spite of our sins when we come to Him, and through Christ our Redeemer in whom we trust, we are saved. Faith in Christ means trusting and following Him. It is therefore coming by the aid of His Spirit into a right attitude and relationship to God. Faith is enlistment. It is hearing and responding to the call. It is above all trusting and obeying God, and here Jesus Christ Himself is our great example of faith. True faith becomes thus the starting-point of the Christian life, and all good works follow as its fruits, or rather as the fruits of the Spirit which God gives in response to our faith.

Moffatt translates vs. 9, 10, "It is not your doing but God's gift, not the outcome of what you have done—lest anyone should pride himself on that; God has made us what we are, creating us in Christ Jesus for the good deeds which are prepared beforehand by God as our sphere of action."

Titus 2: 11-14. The Grace That Brings Salvation. Here Paul is speaking of the conduct and character of true servants of God, true followers of the Lord Jesus Christ. He is counselling temperance, seriousness, steadfastness, love of home, chastity, self-control, sound speech, fidelity even in places of humble service. For, he says, God's grace that brings salvation "hath appeared to all men, teaching us that, denying ungodliness and worldly lusts, we should live soberly, righteously and godly in this present world." And so grace saves and grace teaches. We are happy indeed if we learn its lessons. And while we learn we cherish the "blessed hope" of the manifestation of God and of Christ to the whole world. That is the hope of the Gospel, a hope that will surely be fulfilled through the extension of the Gospel to all lands.

The grace of our Lord Jesus Christ is well described in verse 14. He "gave Himself for us" to redeem our iniquity and "purify unto himself a peculiar people" (or, as Moffatt renders, "a clean people") "zealous of good works."

House for One Hundred and Fifty Hens.

It is generally considered that a hen needs about four square feet of floor space. A house twenty feet deep and thirty feet long will give the birds a range of six hundred square feet and such a house has a capacity of one hundred and fifty birds. The open-front house seems to give satisfaction under varied climatic conditions. Many breeders report its use in cold climates without frosted combs or diminished egg production.

The lower front section of the house is eight feet deep and the higher rear section is twelve feet deep. The front section is four and a half feet high in front and five and a half feet at the rear. The lower front section is only covered with quarter-inch mesh wire cloth to keep in the birds, keep out sparrows and help to break the wind. As the house is twenty feet deep, the wind does not strike the rear where the birds are roosting.

A house of this kind can have a cement floor, double board floor or sand floor. Some houses are built on a cement foundation to keep out rats, but the floor is of sand. A floor of garden loam is not satisfactory as much of the dirt will soon turn to dust when the birds are scratching and the house and air become very unclean. The cement floor covered with a couple of inches of sand seems to be the most satisfactory.

Some breeders find the shed-roof poultry houses easy to build as well as somewhat cheaper than the semi-monitor. A shed-roof house twenty by thirty will house one hundred and fifty birds. A height of eight feet in front and four and a half feet in the rear will be satisfactory.

When Saving Becomes a Loss

Many farmers throughout the country are not erecting necessary buildings because price of lumber and shingles has advanced.

In every section of the country in late fall and early winter implements are left in the field where they were last used. This refers to plows, harrows, seeders, binders, mowers and other agricultural implements. They lie in the field exposed to wind, rain and snow and remain exposed to these conditions until they are again required for use. The hardwood used in the manufacture of wooden parts soon shows the result of this mistreatment, as also the iron parts in a lesser degree, and in a few years these implements are eligible candidates for the junk pile.

Comes a time these implements must be replaced, and the price of one new binder would cover the cost of a building large enough to protect and prolong the life of all necessary working equipment for the farm. Doing without that shed looks like saving money, but it certainly does not save implements. Implements cost good money. Implements and tools destroyed through lack of care is equivalent to destroying money. Commence to save or save more. Build a shed for the implements. Do not make it necessary to have the junk man call on you too frequently. It does not pay.

There is no question in the minds of our up-to-date feeders that the skimmilk fed warm from the separator, is of more value as a feed for young animals than the milk that is returned from the creamery where it is separated. This point alone would commend the use of a hand separator on many farms where the growing of young calves and pigs is considered a valuable appendage to the dairy.

It is not the gross income but the net profits that measure the success of the dairy business.

A person who wears good clothes has more confidence in himself or herself. For the same reason a little girl, who begins lessons on a cheap, second-hand piano because her parents think anything is good enough to practice on, is likely to make nothing but a cheap second-hand progress.

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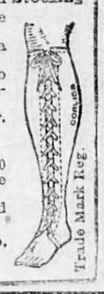

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