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.

Seedbeds—Frequent losses occur from poor preparation of seedbeds for various farm crops. Sometimes the yield is cut down because a comparatively shallow rooted crop is provided with a deep mellow seedbed. Under such conditions there is such a great air space for the tiny roots to cover before they can get to a good supply of moisture that the crop is actually starved in its early days and weeks of growth. On the other hand certain crops which thrive under conditions where they can send their roots deep and wide are provided with shallow firm seedbeds, and consequently their root growth is severely restricted. The proper preparation for the seedbed is of great importance. General experience seems to classify the crops in reference to their seedbeds as follows:

Deeply stirred soil—For corn, alfalfa, clover, potatoes, roots, garden vegetables.

Medium depth seedbed and fairly firm—For wheat, barley, oats, rye, grasses.

Shallow seedbed—For millet, rape, flax, buckwheat.

Use of Lime—The next point of importance under average farming conditions is the reaction of the soil. Sometimes the soil that has been worked for a period of years develops a condition where crops of the legume type such as clover, alfalfa, etc., will not thrive. This soil is commonly called sour. When the soil is tested with an indicator such as litmus paper, it frequently produces a coloration that indicates the presence of acid within it. Now, whatever be the cause of this condition, th eeffect of the condition is almost universally apparent Clovers kill out. Certain other crops that desire sweet soils do not thrive. There is frequently an appearance of moss on the surface of the soil and areas of sheepsorrel or sour grass are seen in the grain fields. The general tendency has been to advise the unrestricted use of lime. Later investigations showed that such advice is hardly in accord with best interests of the growing crops, because while certain types of crops require sweet soil, others do best where the reaction of the soil is neutral, while a third class actually thrive under conditions of slight soil acidity. The crops that belong to these various classes may be listed as follows:

For sweet soil—clover, alfalfa, Kentucky blue grass, timothy.

For neutral soil—corn, orchard grass, meadow fescue, barley, wheat, beans, peas, tomatoes.

For slightly sour soil—potatoes, root crops, soy beans, red top grass, awnless brome, concord grapes, cranberries, raspberries, lima beans, strawberries, oats, millet, buckwheat, hairy vetch, rye.

Now, lime may be obtained in three or four forms. Ground limestone is active in its power to correct soil sourness in as much as the limestone carries a good supply of carbonate of calcium. Where ground limestone is used, at least one-third of it should be finely ground and the remaining two-thirds should be graded, one-half fairly coarse and the other half intermediate. This ground limestone may be applied at the rate of one to two tons to the acre. It is not in any way destructive to crops, hence may be applied at any time of the year. Possibly the best period for application is just when the soil is being prepared in spring. Apply the limestone on the plowed soil and work it in by disking and harrowing. Air-slake burnt lime is purer and is beside quick in its action. When applied to heavy clay soil it not only corrects the sourness of the soil, but gathers together the tiny particles of the soil and makes the crumb of the soil coarser. Therefore, on heavy clay soil it is beneficial to make a half-ton application per acre of air-slaked burnt lime once in 6 or 8 years. Air-slaked burnt lime is applied in very large quantities tends to sterilize the soil. Another form of lime—marl, is valuable in as far as the marl contains a high percentage of carbonate of calcium. It is finely pulverized in its natural state, hence does away with the necessity of grinding. Lime which has been water-slaked is called hydrated lime. It is relatively as valuable as air-slaked burnt lime.

The maintenance of good circulation of air and proper supply of water as well as the right reaction of the soil completes the mechanical conditions of the plant home. It, of course, necessitates a sufficient supply of humus which is really the life-centre of the soil. The next article will deal with the food of the plant.

(To be continued.)

The Food Board Says

Largely as a result of this war Canada will have to pay interest on about $2,000,000,000. Her hope of financial salvation lies in the development of her natural resources. In calling attention to these facts, Chairman H. B. Thomson of the Canada Food Board urges that the greatest possible development of the sugar maple trees of Eastern Canada be undertaken this spring. "Every dollar's worth of Canadian maple sugar and syrup produced is a dollar saved for Canada," said Mr. Thomson.

Those who have made a business of maple sugar and maple syrup say that only 52 per cent. of the trees in the average sugar bush under operation are tapped and that without additional equipment save extra pails, it would be possible to increase the production greatly if those already accustomed to tapping some of their trees would tap more. In addition to this possibility for expansion is the opportunity presented by many farms which have sugar maple groves which are not tapped at all, or if a few trees are tapped, the small quantity of sugar and syrup produced suffices only for the use of the family on the farm.

A Montreal dealer recently sent out a questionnaire to a large number of maple sugar producers asking questions as to the amount produced, number of trees and total receipts in money. The answers varied very considerably, but one man, with 75 acres of bush, realized $1,500 last year for about three weeks' work.

The average healthy maple tree was supposed to produce 60 cents worth of sap in the season at prices pertaining before the war. It should be twice that much now. It will do no harm for farmers to experiment this season and see how many trees they could tap, for sugar and syrup will pay.

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(1) Potatoes or other hoed crop, (2) Grain and (3) Hay. "The average profit for the three years from the plots receiving both manure and fertilizers of over $50 per acre, and from fertilizers alone slightly over $15 per acre."

"These calculations are based on the normal pre-war prices of all the commodities. Under present conditions of the market, notwithstanding the increased cost of fertilizers, the profits would appear greater."

"At all the stations, the combination of manure and fertilizers ranked highly, and took highest place in the averages." Dominion Experimental Farms Report 1918.

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Watch Your Seed This Spring.

No other truck or garden crop have I found to depend for its success more on first class seed than onions. Good seed is, of course, the foundation of success with all seeded crops, but when one is growing onions almost exclusively for his money crop, good seed is a vital requirement.

In the first place, the onion seed must be grown the year before it is used. It is a gamble to use two-year-old seed. Some of it will grow, but we can't depend on getting a satisfactory stand. After two years the chances are slim of getting enough plants from even a double amount of seed to pay for the cultivation of the crop.

Powdered borax added to the water when washing white flannels keeps them soft and like new.

WHY SOME CHILDREN ARE DELICATE

By Helen Johnson Keyes.

Though we may not realize it, much of our ill-health is due to stomach trouble. In fact, prominent physicians have told me that it is unusual to find either children or grown-ups with good digestions.

This affliction, which may last a lifetime, often begins in the second year of babyhood. By putting into our child's poor little stomach foods which it is not yet strong enough to take care of, we upset its machinery forever, perhaps.

Feeding during the second year should be as careful as that of the nursing or bottle-fed infant. Children of this age should not sit at the table with the rest of the family, where there is constant temptation to give them unsuitable food. They should have their own simple meals at their own hours.

If this is done, mothers need not fear teething or that dreaded "second summer." I wish that you would believe me when I tell you that no sickness is caused by the coming of the teeth. They are cut at an age when most babies are being badly fed, and so we have thought that the teeth cause the illness.

As a matter of fact, it is the food which causes the illness. Mothers neglect fretfulness and fever in a teething baby, saying: "Oh, it is only a tooth." And because they do not seek a remedy for the condition it often grows worse and worse, until, sometimes, the precious baby dies.

If your baby vomits and has diarrhea, it is because there is undigested material in his body which is producing poisons through his digestive tract. The first thing for you to do is to give him a dose of castor oil, or, if he is in distress and needs immediate relief, an injection of a tablespoonful of olive oil, followed by a pint of warm soapsuds. Stop feeding him for half a day. Then try a little barley water—about one quarter of the amount which he is in the habit of receiving of milk, if he is an infant, and about two ounces if he is over a year old. If he keeps this on his stomach, repeat the dose in a couple of hours. If he is much better by this time, add a fourth of whole milk. Work up very, very slowly to the amount of food he was taking before his illness. Do not be afraid of starving him. If he is suffering from very bad indigestion, he can go safely for twenty-four hours without anything.

You will see the common sense of this if you remember that food cannot nourish the body unless the stomach and intestines act upon it as they do when they are in good condition. Therefore, when we put food into a stomach which is too sick to take care of it, not one particle of nourishment is received by the body from that food. On the contrary, it lies, an undigested mass, in the digestive organs, producing poisons. If he is weak and needs nourishment, your task is to get his stomach into a condition to extract nourishment, and that can be done only by giving it a complete rest for a few hours and getting rid of all that is in it and the bowels.

Another Theory Exploded.

Formerly it was the belief that children must have contagious diseases—measles, mumps, whooping cough, chicken pox, and so forth. Parents actually exposed their boys and girls to these maladies in order to "get through with them." We have learned, however, that a great many more deaths result than we supposed, and, moreover, that many, many children who recover are left delicate.

Eye weakness, deafness, consumption, and nervous conditions, such as St. Vitus' dance, frequently follow these diseases of childhood. No precaution should be regarded as too much trouble to take, and if there are neighbors who consider you unfriendly because you do not allow visitors in the sick room or because you keep your family away from their sick members—why, you will just have to bear it for the sake of protecting our boys and girls. They are even more important than our neighbor's feelings.

If you feel that your daughter does not "eat enough to keep a bird alive," find out what she is devouring between meals. Little lunches taken after an insufficient breakfast spoil the appetite for dinner, and leave the stomach with an empty feeling which drives the bird-like appetite to the pantry in the middle of the afternoon, so that it is not ready for food again at supper time.

There are two bad things about this between-meal eating: One is that the kind of food eaten in this way is not nourishing, but consists of sweets, which are very distressing to an empty stomach. The second is that they keep the stomach constantly at work, whereas it must have a complete rest between its labors if it is to remain in good working condition.

Limit your daughter's eating to her regular meals until she eats enough at them. If you balance her food properly she will not feel a craving for sweets in between. Every housekeeper should learn what dishes to set before the family at one time, so that the balance will be correct and satisfying between proteins, starches, fats, and mineral salts (ash). These facts are brought into our homes by women's magazines and by government bulletins. The best cure for a craving for food between meals is well-balanced rations at meals. If, despite a hearty appetite three times a day, growing boys and girls want extra food, let it be taken at regular hours, and let the cake or cooky be accompanied by a glass of milk.

How About Air and Exercise?

It is natural to growing youth to eat, and if the desire for food is really not active, something is wrong. Having satisfied yourself that sweets are not being consumed between meals, consider whether your children are getting fresh air and exercise enough.

The air which our lungs breathe back into the room where we are has lost most of its oxygen, and oxygen is what our blood must receive from our breathing organs in order to keep our bodies healthy.

A window should always be open at night in a bedroom—it should be open at top and bottom in order to let the breathed-up air, which rises to the top, pass out and the new air come in below. In the mild weather it is best to sleep out of doors, if one can. During the day, occupied rooms should be aired from an open window several times. Air which is full of oxygen heats more rapidly than air from which the oxygen has been exhausted, so the temporary chill will soon pass.

And what about play? Young people must play to be well. Best of all are the rough-and-tumble sports in the open. Perhaps you feel that, because there is so much exercise in farm work, exercise in play is not necessary. Have you heard the story of the little girl who walked two miles to school every day and two miles home again, and who begged for a school playground where she could exercise?

The teacher said: "Why, surely, Lucy, you have exercise enough walking to and from school so far!"

"Oh," explained Lucy, "I want the playground so as to get rested for the walk home."

Lucy hit upon a big truth: We need fun in order to get rested for work.

And as for work: I think we can make that a great deal less dull than it usually is for our young people by putting into it the new interest of trying to perform it in some better way. It is the dull grind of doing the same thing over and over without any change which wears us out and makes us feel "delicate."

Almost every task in the home is capable of being executed more easily and in a more effective fashion than we have been doing it. Suggest to the delicate daughter that she invent a more convenient arrangement for the kitchen furniture, in order to save time and strength in the preparation of meals. Suggest to your son that he could save half an hour every day by "routing" his work more carefully. Such inventions give the worker an interest in what he has to do, which keeps away "that tired feeling."

If we feed our youngsters properly, protect them against illness, fill their lungs with fresh air, their hearts with fun, and their work with interest, there will be few delicate ones among them.

Upon receipt of a self-addressed stamped envelope sent to Mrs. Keyes, in care of Wilson Publishing Co., 73 Adelaide St. W., Toronto, suggestions will be mailed regarding feeding after the first year, and the first symptoms of the contagious diseases of children.

Poultry

Every once in a while we have an incubator hatch come off in which there are several chicks with their toes crooked or turned under. By catching them in time we find it can be very easily cured.

We take a piece of cardboard cut to the shape of a chicken's foot, with a small piece to go up the leg. We rub the chick's foot with vaseline, and wrap each toe and leg in cotton wool, then sew the toes straight out to the cardboard with some soft yarn, taking care not to prick the toes, and tie the leg piece round the leg. This keeps it firm. We let the splint remain on for forty-eight to sixty hours, and when it is taken off the toes are usually found to be quite straight.

We find it best to put the splint on as soon as possible after the chicken is hatched, as it keeps quieter then and its toes are more supple. However, we doctored one that was three days old, and now we cannot tell you which was the crippled chick among the flock.

His Half.

"Mamma," shouted little Lennie from the nursery, "Johnnie wants half the bed."

"Well," asked the mother, "isn't he entitled to half of it?"

"Yes," replied Lennie, "but he wants his half in the middle."

A Soft Answer.

Dear old lady—So you're on a minesweeper, are you? And where do you sweep mines?

Cautious tar—Oh, just round the tops of 'em, lady, where the dust settles.

Bedtime Stories

Father Time's Nursery.

Up in the high nurseries of Father and Mother Time all the little day children were playing together. They hadn't any name, for not until the big sun knocks at the door and calls for them do they receive them. One at a time they slip through the gateway that leads down to the earth; then away they are hurried to the Land of Yesterdays, and yesterdays are all grown-ups and can never return to the beautiful dream palace in the sky.

But the nursery is always full, for the baby hours grow into days as fast as the days grow into yesterdays. Well, as I have said, all the days were playing together and wondering when they should be called and what the world would be like.

"I hope I shall be a happy day on earth!" said one.

"I had rather be a grand and famous day. Mother"—the little day ran up to Mother Time and pulled at her skirt—"shall I be a famous day, do you think?"

Mother Time shook her head. "I cannot tell. Run off and play with your brothers and sisters, for who knows when you will be called, and then you can never come back to us." The little day hung his head, but was soon whispering to another day.

"Just the same, I shall be famous and not have to live forever in the dusty old past. I shall have a vacation every year from the Kingdom of Yesterday, and the world will remember me long after you are forgotten!"

"Will you tell me all about it when we are together in the past?" the little day who had wished to be a happy one asked anxiously.

"I won't have much time to associate with just common, everyday days. We famous days will all be together, you know. But maybe I'll tell you!" the pompous little fellow remarked as he went. But the other day ran after him.

"How do you know you will be a great day?" she asked curiously. Just then there was a knock on the door, and all the little days sprang expectantly to their feet.

It was a big purple cloud.

"Sun's not going to get up to-day! Sent me to fetch one of you. Here, you with the black hair!" He pointed to the little day who was sure he was going to be famous.

"Come along. We're late already!" The day drew back.

"What, me? I don't want to be a rainy day; a horrid old rainy day!" He ran to Mother Time, but she sorrowfully pushed him forward, and the dark cloud, grumbling some more about being late, gathered him in its arms and whirled away.

"Don't cry," implored the little sister day to whom he had been talking. "Rainy days are very useful and I'll be down with you soon!"

The little day who thought he was going to be famous heard, but he was too mortified and disappointed to answer.

"No one will be glad to see me!" he mourned as the cloud set him rudely on a mountain top and disappeared. And I am sorry to say no one was. Little boys and girls looked crossly out of the window and pouted:

"What a horrid rainy day. Oh, dear!"

And worse than that, not a single famous thing happened, and when the messengers of the night came to bear him away to the Land of Yesterdays he was so forlorn that they tried to cheer him up.

"There are hundreds and hundreds of days just like you, and they're an awfully jolly set. Besides, you never can tell, perhaps some one born during your stay will turn out to be a great man. Then you'll be famous after all. Cheer up!"

The little rainy day had never thought of that, and would you believe it, my dears, he spends all his time hunting up the records of babies born during his stay, and he is watching them closely, I want to tell you, for he is determined to be famous yet. And maybe he will! But what about the other little day?

Old Father Time heard her say, "I hope I shall be a happy day on earth." And he smiled a wonderful smile, and on a bright morning in November sent the sun to fetch her. And what day do you suppose it was? Peace Day, November 11, when half the world laid down its arms!

The Sunday School

INTERNATIONAL LESSON
MARCH 2.

Lesson IX. The Report of the Spies. —Num. 13: 1 to 14: 38. Golden Text, I John 5:4.

13. The Two Reports. "Send thou men." The people were now encamped in the wilderness of Paran (12: 16), at a place called "Kadesh" (see v. 26), on the extreme southern boundary of Palestine. The spies went northward to Hebron and continued, according to v. 21, until they had traversed the whole great tableland of western Palestine as far as the deep valley between Mounts Hermon and Lebanon, through which a road ran to the city of Hamath on the Orontes river. The entire journey and return would cover three hundred miles and more, but might have been completed in forty days (v. 25). It is possible, of course, that they may have divided into several parties, and so may have made a more extensive exploration.

Joshua has already been mentioned in Exod. 17 as commander of Israel's fighting men, in 24: 13 as Moses' minister, or servant, and in 33: 11 also as dwelling in, and apparently having the care of the Tent or Tabernacle, which afterwards became the charge of the Levites.

"The south" (v. 17), is in Hebrew called the "Negeb," and so on some of our maps. It is the barren region in the extreme south of western Palestine, between Hebron and Kadesh. The "wilderness of Zin" (v. 21) is, according to 20: 1, near Kadesh, or is a name for the region in which Kadesh lies. Its exact location and boundaries are unknown. "Rehob" is probably identical with Beth-rehob (Jud. 18:28), on the slopes of Hermon, near the sources of the river Jordan. The "entering in of Hamath" was probably the deep valley between Hermon and Lebanon in the north of Palestine, through which there was a road leading to Hamath, a hundred miles farther north. "Hebron" in the south, was the first important Palestine city to which they came in their journey. Where the "valley of Eshcol" was is not known. "The children of Anak" or, in Hebrew phrase, "the long-necked people, were a people unusually tall, so that in later tradition they were regarded as giants, and so called "Nephilim," for which compare Gen. 6: 4. The shorter Hebrews felt themselves "as grasshoppers" in their sight.

The reports brought by the spies to Moses were not consistent. They carried a great cluster of grapes and said that the land "floweth with milk and honey." But others said that it "is a land that eateth up the inhabitants thereof," that is, does not produce enough food to sustain life. All agreed, however, that the people were strong and the cities "fenced and very great." But Caleb said, "Let us go up at once and possess it; for we are well able."

14: 1-38. Faith and Fear. "The people wept." They were sorely disappointed. The voices of fear were more potent than those of faith. And so, disappointed and afraid, the people murmured against their leaders, blaming them for that which was the fruit of their own weakness and cowardice. "Were it not better for us," they said, "to return to Egypt?"

So it has been in every great forward movement in the world's history. There are many who begin but have not faith or courage to persevere to the end. They are daunted by difficulties. They magnify the difficulties in their way. Better the bondage of Egypt, they say, than the struggle for freedom. They are conquered by fear. In splendid contrast and in rebuke rings out the protest of Caleb, "Let us go up. . . . for we are well able." In 13: 30 Caleb alone is mentioned as standing for the bolder course, but here, in v. 6, Joshua is with him. In distress at the conduct of their fellow spies and at the rebellious cowardliness of the people, they "rent their clothes." "The land," they said, "is an exceeding good land." "If the Lord delight in us, then He will bring us into this land." "The Lord is with us." This is the language of faith, faith that is invincible, faith that overcomes obstacles, faith that is not easily daunted, that perseveres to the end, that achieves and that wins victories.

It was remembered of Caleb, in his history of Israel, and to his everlasting renown, that he "wholly followed the Lord." See v. 24, Deut. 1: 36 Josh. 14: 6-9. Read the whole story in Deut. 1: 22-45, and the story told of Caleb and Joshua forty years later.

Couldn't Do Both.

The young thing wafted into the photographer's, and was taken up to the studio.

"I want my photo taken," she simpered. "You'll make me pretty, won't you?"

The photographer grunted.

"You'll see that it's a good likeness, won't you?" urged the girl.

"Well, madam," said the man, "it's for you to decide which it shall be."

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