

# Soils and Crops

By Agronomist

This Department is for the use of our farm readers who want the advice of an expert on any question regarding soil, seed, crops, etc. If your question is of sufficient general interest, it will be answered through this column. If stamped and addressed envelope is enclosed with your letter, a complete answer will be mailed to you. Address Agronomist, care of Wilson Publishing Co., Ltd., 75 Adelaide St. W., Toronto.

## Preparing Garden Soil.

When we come to consider the preparation of garden soil we must take into account a number of factors of importance. The first of these is the character of the soil itself. Is it loose and easily worked? Is it a stiff limestone clay? Is it a sandy loam? Is it stony, gravelly, shaly or slaty?

Another factor is the location of the lot to be worked. If it lies low and is damp and cold it must not be worked until it has been properly drained, although if only a portion of it is soggy that portion can stand until later on, to be then drained, as will be told later, and the warm, dryer portion worked as soon as the season admits.

All fertile soils contain soil bacteria, which are minute plants of a low order which attack the vegetable matter in the soil and decompose it by fermentation, releasing the plant food, especially nitrogen, for the use of the plants. This is known as organic release. There is also a chemical release of plant food in the soil, such as we get when we put on lime, which unlocks the plant food and makes it available for the use of the roots of the plants.

In preparing a garden soil for planting it is necessary to turn it by the spade or shovel, as this aerates it and brings the more or less sour portion of the soil to the top, where it gets light and sunshine; and the top portion which has been sweetened over or less by these factors, is turned under with a dressing of manure or other vegetable matter on which the bacteria can feed to release more plant food.

There are several ways of digging to get good results. One is to take a "width" of the shovel, as deep as it will go, across the bed and then go back and scoop out two or four inches of the subsoil and scatter it over the top of the unworked earth. Another is to trench the bed by the following process:

Beginning at the left-hand end of a bed, throw out a width of two shovels, back to the end of the bed, deep enough to catch an inch or two of the subsoil. Going to the front again, dig up the width of two shovels and throw it to the left into the trench from which the first two shovel widths came.

This should be repeated until the whole bed is dug, when you will have reversed the position of the entire soil-mass and at the same time well aerated the soil and broken it apart as fully as it can be done with an implement used for digging. This is neither as complicated nor as laborious as it would seem, and is considered by English gardeners the perfect method.

## How To Test The Soil

As the intention is to make the soil as fine as possible, not only throughout the entire mass, but on top for seedbed, it should not be dug until it is in the proper condition. This can be tested in this manner:

Take up as much of the soil as can be held in one hand. Close the hand, squeezing the soil into a ball, firmly. Release the grip, and if the soil falls apart or crumbles, it is fit to dig. If it remains in a compact ball it is too moist for good work. If dug in the latter condition, it will be in hard lumps throughout the bed, and it will be difficult to get a fine seedbed on the top. By seedbed in this connection is meant a top portion of two to three inches as fine as coarse sand, into which the seeds are planted.

If the soil be sandy, pebbly, gravelly or shaly, and is in good physical condition it will crumble off the shovel and can be thrown off with a sideways scattering motion. However, with the limestone loams it is best to chop

it as fine with the edge of the shovel as is feasible as each shovelful is dug. An old Swedish gardener claimed that the best method of digging a garden soil was to shovel one trench across the front of a bed and dig the rest toward you with a garden mattock which, in effect, was merely trenching.

If the soil is in the best of physical condition, crumbling freely from the shovel, it may be raked as fast as six feet is dug. But be sure of this, if not, better wait until there has been a rain and then do it after it gets dry enough.

Success with a garden depends very largely upon the manner in which the soil has been put into condition with the rake. Too many persons merely use the rake to chop the top fine, leaving large clods in the interior of the mass, which have been missed with the shovel. This is not good practice.

To get good results with the rake use it as though it were a mattock, chopping along the edge of the dug soil, pulling it toward you enough to get the teeth of the rake down behind that portion, and pull another lot forward after being made fine.

This involves walking on the dug soil, but if it is in proper condition this will not matter, as, after it is all chopped up, you must go over it again anyhow, to smooth and level it, and work it into beds of the required size and shape.

## Large Beds are Best

The practice of working the garden with the rake into many small beds is a wasteful one. Many gardens lose one-fourth of their growing space by this practice, and it is unnecessary. It does not hurt the soil to tread upon it to plant and work it, and you will gain by working it into one large bed and laying out the plantings with the garden line. The effect is much better when the crops come up and there is no loss of space.

In the working of the soil there will be considerable thrown into the walks. This should be worked back with the rake and the edges made straight and even. It is best to raise the beds six to eight inches above the walks to insure better drainage.

As stated, a dry soil is a warm one, and for this reason we raise certain crops on rows or hills, as this insures quick drainage and re-warming by the sun. Such plants grow more quickly than if planted on the level, and we use this method for early ones, where quickest growth is necessary.

In view of this, it is well, when preparing the soil, to make the rows or hills while raking the soil. For this purpose go over the properly fined soil with the hoe, scraping the earth into a ridge six to eight inches high. To get it straight run the garden line along the top edge on each side and hoe to it.

As it is a fact that a plant set on the south side of a ridge will mature sooner than one set on top, when feasible, run the rows in a general east-and-west direction. When the ridge is finished, go over the top with the hoe and cut a slice of soil with one motion (to keep it smooth) out of the edge of the south side. On this slanting space the plant will be placed. This is done only for early vegetables grown from transplanted plants.

If potatoes are to be planted in the space to be dug, it will be as well not to go over it with the rake as closely as for the smaller garden crops. Work it into furrows with the rake, using the garden line to get them straight. For potatoes the soil should be loose—a sandy or gravelly one is best. After several workings with the hoe the potatoes will be on ridges, as the soil is worked around them, giving them good drainage and a warm soil—two things they need.

## Family Friction.

A few sarcastic words from the father, a sharp retort from the mother, that was all. But was it all? What about the effect upon Johnnie and Susie, sitting there quietly at their evening lessons? And did neither parent notice that Thomas slipped out of the house at the first intimation that there was to be a quarrel between his father and mother? For quarrel it really was, although brief and clothed in the language of educated, respectable persons; and long after these harsh and unkind words had been spoken the atmosphere of the family living-room remained charged with an emotional disturbance in which no one could concentrate his mind upon his reading or study.

Family friction is always fatal to happiness, and when there are children in the home it is almost sure to work irreparable harm upon their minds and souls.

One of the most powerful causes of the exodus of young people from their homes at an age when they are not fitted to enter upon the work of life is friction in the family. Young people are by nature loyal to their parents, and it is almost never that a young person will give as a reason for his leaving home the fact that his father and mother quarrel or nag at each other or do not agree upon certain points.

Friction in the home creates an intangible, impalpable atmosphere in which the sensitive child chokes and pants for the free air of happiness, or is warped and stunted mentally and morally.

## Afraid.

Little noises do not bite! Darkness will not harm you! See, my arms will hold you tight! When we fear alarms you.

Wise ones say I do you wrong, Facing dangers for you; You will not grow brave and strong With me bending over you.

But the time is all too brief When some pain or other, And each baby fear and grief Drive you to your mother!

—Burgess Johnson.

"Ring out old shapes of foul disease; Ring out the narrowing lust of gold; Ring out the thousand wars of old; Ring in the thousand years of peace."

—Tennyson.

Brass polished with oil and rotten stone will have a deep rich yellow tone.

# Poultry

Every progressive poultryman keeps an account with his hens. It is the only way to tell whether his plant is profitable, says a successful farmer. He knows the individual worth of each hen on the place.

I keep a cash-book, and in it I record the receipts daily, whether for poultry, eggs or manure; the expenses, whether for feed, labor, new stock, etc. Each month I sum up to find whether I have made a profit or operated the plant at a loss. When I use any poultry or eggs on my own table I credit it just the same as if I sold to some one else.

I also keep a ledger, and send out my bills regularly each month, since a part of my trade is with private families who pay monthly. In this same ledger I keep an account of goods received that were not paid for on delivery. My ledger tells me what I owe and what others owe me. Each year I not only know what my plant is worth, but the amount of business I did and the profit I derived from it.

I keep a diary of the daily happenings on the place—the weather, the visitors, the loss in stock, experiments—in fact, everything that is worth noting. This makes a valuable reference book that is worth all the trouble it takes to make it. Traps are used. Every hen on

the farm is known by a number stamped on a leg-band that is fastened about her leg. When the hen is caught in the trap after laying, her number is marked on the egg. At night she is credited on a record sheet which tells the breed of hens in the pen, when they were hatched, the number of the pen, the number of hens in the pen, the number laying that month, the number not laying, and the average number of eggs per hen for the month. It also gives the market price of eggs per dozen, and the total value of eggs for the month. This sheet records the number of days in the year each hen has been at work, the color of her eggs, the dates on which she laid and the total for the month, besides the total to date. I can also tell the day a hen went broody, the day she was set, and the time she was engaged in brooding her chicks. The sheet shows what hens have been sold, what hens have been sick, or died, or were removed from the pen, and the cause.

This system of bookkeeping plainly tells the number of days in the year each hen has been at work, the value of her product, and what it cost to feed and take care of her. I can readily tell which hens are money-makers, and which are drones. In this way it is possible to pick out the non-productive, thus giving more room to the workers and saving feed.

Produce infertile eggs for food. These will not hatch and keep longer than fertile eggs.

## WHEN MOTHER THREATENED TO WALK

By Catherine Dodge

"John, how far is it to Toronto?" Mrs. Simmons asked as she dropped an armful of wood into the box.

"About 143 miles—why do you want to know?"

"Well, I've always wanted to go there, and I've about decided to do it," John stated. "It was not customary in the Simmons family for his wife to decide things."

Her next question was quite as astonishing. "Do you know how far it is to that wood-pile and back?" This time her husband waited for her to give the answer.

"If you don't know, I'll tell you. It's a little over seventy-five feet, and from the box to the stove and back is twenty feet. If I've made three trips a day to the wood-pile, and ten trips a day to feed the stove, I've walked about 600 miles. In the last twenty years for just that one thing, it won't take me so long to go to Toronto, for I have done a lot of side-stepping all along."

John Simmons considered himself quite a hand at figures, so before attacking the main issue he pulled out a pencil and did a little multiplying.

"You're right, by gum, but I don't see what Toronto's got to do with it."

"It's not so hard to see. Between you and me and the wood box I've done some right smart travelling, but the scenery wasn't so much, and there was a good deal of sameness about the places I arrived at. That's why I've decided to try a new route."

John was puzzled. "I don't know yet just what you're driving at, but if it's the wood box what do you want me to do about it?"

"Well, Jess told me how Bert had fixed theirs. He built a good tight box alongside the stove, and cut a hole through the wall so it can be filled from the outside. If we had one right here it would save walking half way around the house in the first place, and I wouldn't have to go clear across the kitchen every time I wanted a stick of wood."

John heard, but he hadn't quite recovered from the astounding discovery of a few moments since. "Six hundred miles? Well, I never thought about that before. But I reckon we can fix up that wood box somehow. Say, Jack," he turned to a sixteen-year-old boy who had been an interested listener, "what's all your carpenter work up at school good for if you can't help me rig up some sort of a new route?"

John Simmons was proud of his boy. "He's got a pretty good head on him, and he isn't afraid to do more than he's asked," John was thinking, while the more-than-pleased mother was silently making her plans for the little convenience she should have had twenty years before.

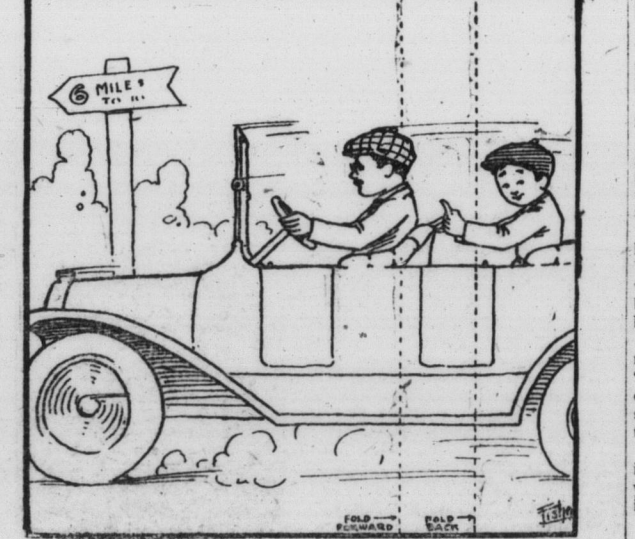
Presently, John picked up his pencil again and did some more figuring. After a few busy moments he looked up at the boy who was mentally measuring off spaces. "Jack, did you know that your mother and I had been married just twenty years come next month?"

The wedding trip we took was across the county, though according to her figures she might have walked around the world several times, so I guess it's about time she got a little lift on the steam-car. I've been thinking we might manage to go to Toronto for a sort of celebration next month and take you along, if your mind's just as soon ride on the cars; I don't exactly hanker to walk, myself."

Speech was always slow with Mrs. Simmons, but her eyes glistened. They had wasted a lot of precious time and strength, to be sure, but her husband's heart had stayed in the same spot all these years, and her boy would know better how to avoid such mistakes. Oh, how hard she would try to help them to get the best that life might hold!

## FUNNY FOLD-UPS

CUT OUT AND FOLD ON DOTTED LINES



When I go motoring with dad, I cannot help but feel How I would leave the miles behind, If I were at the wheel.

## GOOD HEALTH QUESTION BOX

By John B. Huber, M.A., M.D.

Dr. Huber will answer all signed letters pertaining to health. If your question is of general interest it will be answered through these columns; if not, it will be answered personally if stamped, addressed envelope is enclosed. Dr. Huber will not prescribe for individual cases or make diagnosis. Address Dr. John B. Huber, care of Wilson Publishing Co., 75 West Adelaide St., Toronto.

Those who sow courtesy reap friendship.

## Baby's Development III.

Seventh month: Astonishment shown by open mouth and eyes. Recognizes nurse after four weeks' absence. Signs. Imitates movements of head and of pursing lips. Averts head as sign of refusal, as one should say, "Nothing doing." Places himself upright on the lap.

Eighth Month: Is astonished at new sounds and sights; at imitations of cries of animals.

Ninth Month: Stands on feet without support. Shows increasing interest in things in general (in evolutionist parlance) gets in touch with his environment. Strikes hands with joy. Shuts eyes and turns head away at things disagreeable. Feels a dog. Turns over, like one of those bouncing toys, when laid face downward. Turns head to light when asked where the light is. Questions are understood before it can speak. Its voice becomes more modulated, losing however none of its potency.

Tenth Month: Sits up without support in bath and carriage. First attempts at walking in forty-first week. Beckoning imitated. Misses parents in their absence. Will miss a single nappin in a set. Cannot yet repeat a syllable. But exhibits considerable talent as a monologist and imitator, as: maa, pappaa, tattaa, appappaa, baba, tatta, pa, rrrrrrr, rrrrrrr.

Eleventh Month: Screaming is quieted by "sh." Sitting becomes its life habit. Stands without support. Stamps. Correctly repeats syllables. Begins to whisper. Enlarges its vocabulary. Can utter b, p, t, d, m, n, f, l, g, k; vowels a most used, u and o rare, i very rare.

Twelfth Month: Pushes chair. Cannot as yet raise itself or walk without support.

## OPPORTUNITIES

Jessica, pinning on her hat, frowned as she saw in the mirror Peggy picking up things about the room.

"I should think, Peggy, that you would want to be doing something worth while," she said, "instead of spending all your time on odds and ends."

Peggy stopped with a troubled look in her eyes. "I wish I could, I'd love to do so. But somehow, there seem to be so many odds and ends to do."

"There always will be if you put them first," Jessica said in her clear, "sure" voice. "Don't you see, Peggy, that anybody in the world could let her time get filled up by odds and ends? One simply has to make up her mind to put the big things first, that's all; make up her mind and then stick to it."

"I know," Peggy responded. But her voice sounded as if she did not know at all.

"There's that class of Italian girls. You could do beautifully with them. Peggy, if you just would. Don't you see what a chance it is to do something really patriotic—to teach them to be real citizens? Why don't you just say you will? You'll find other things will fall into place if once you resolve that they shall."

"I—I'll think about it," said Peggy uncertainly.

With that Jessica had to content herself as best she could. She was very fond of Peggy, and that was why she controlled her tongue by a splendid effort. Down in the hall she hurried by Olga, the new Swedish maid, Olga's eyes were red, but Jessica was too busy to notice.

It was Peggy who, coming downstairs a quarter of an hour later, did notice.

"Why, Olga," she cried, "what's the matter? Didn't you understand that you could go out for the afternoon?" Olga shook her head. "I tank not like to go. In stores dey laugh. I don't like laugh."

Peggy stood still, thinking it out. "You mean you want to buy something?" she asked. "And you don't like to go to the stores to ask for it?"

"I tank," Olga repeated as her fair face reddened, "I not go."

An hour later, Jessica, trying on gray shoes in Gregory's while at the same time she discussed club finances with her friend, Flo Hastings, looked up at Flo's sudden exclamation.

"Why, Jessica, isn't that your sister helping that Swedish girl buy shoes? You didn't tell me that she was in the work, too. I should think she would be fine! Isn't she making that girl have a good time—just buying shoes?"

"She—why, that's our new Swedish maid," Jessica answered hurriedly. "Peggy isn't doing anything at the club. I couldn't get her to. She says she hasn't the time. What do you think of these shoes, Flo?"

"Lovely," Flo replied, but she spoke in a perfunctory manner. She was watching Peggy and Olga, and thinking one or two new thoughts.

## A Present From Norley.

As a package, rather dingy and battered at the corners and several times readressed, was put into her hands, Aunt Clarissa laughed delightedly.

When you cut up fresh pork, recently slaughtered, the knife soon gets dull and does not take hold. Tack a strip of good quality emery-cloth on the board or table and frequently and quickly draw your knife over it.

Parker House rolls can be made with a little cornmeal in them.

Those who feed corn to cattle should bear in mind that 40 per cent. of the food value is in the stalks and leaves. A silo enables one to get 100 per cent. value from the corn crop.

# The Dairy

Unless cattlemen awake to the serious loss occasioned by contagious abortion, the loss due to this disease will soon surpass that due to tuberculosis. The disease is spreading rapidly. The loss already amounts to millions of dollars annually and, while not entirely preventable, can be reduced.

This contagious disease, which causes cows to drop their calves before the normal expiration of pregnancy, is caused by a germ which may be harbored in the infected animal for periods varying in length from several weeks to a year or more. The germs may be found in the milk of a cow several years after abortion ceases.

Infection of an animal or herd may occur in various ways. An infected cow or heifer, or bull bred to aborting animals, may be placed in a healthy herd. Since the germs may be contained in milk, infection may come from using unpasteurized milk from a creamery to which milk is sent from an infected herd. A heifer calf fed on infected milk may carry the germs in her body until her first pregnancy, when they become virulent and cause abortion. Infection may come from the hands of a milker who has milked an infected cow. It is thought that healthy cows may become infected by lying in bedding contaminated with germs from the genital discharges from other cows. Brushes and combs may spread the disease from one animal to another.

Symptoms of this disease are premature dropping of the calf, retention of the afterbirth, difficulty in breeding, and sterility. A serious form of garget or caked udder sometimes follows abortion. White scours and calf pneumonia may be caused by the abortion germs.

Control measures are largely preventive. The spread of the disease can be checked by guarding against the use of infected milk for calves, infected bulls and infection on milkers' hands. Aborted calves and afterbirths, together with the infected bedding, must be burned or deeply buried. Diseased animals are best isolated from the herd. Stalls must be disinfected with sheep dip or other good disinfectant. The rear parts of the cows should be washed every day while discharges occur and, after drying, a solution of compound cresol, seven tablespoonfuls per gallon of water, sponged on the hair and skin. An internal disinfectant is made by dissolving several ounces of permanganate of potash in a quart of water. After vigorously shaking and allowing the crystals to settle, take four teaspoonfuls of the solution and place in a gallon of warm water. This solution is also used for disinfecting the bull's sheath.

## THE DOOR CALLED JOHN.

Amusing Story of a Long-Deferred Proposal of Marriage.

In a small town, of which about half the population were Friends, two brothers, John and Joseph, shared a farm that adjoined the property of Sarah, a spinster in early middle life. Both brothers in their youth had been obvious suitors for Sarah's hand; but they were slow and diffident, and neither ever reached the point of proposing. Then an enterprising and audacious young woman, who belonged to "the world's people," somehow extracted a proposal from Joseph—or dispensed with one—and married him.

After several years of matrimony she died, leaving him with two little girls. As soon as propriety permitted he took himself to his spinster neighbor's and, according to local tradition, spoke thus:

"It is borne in upon me, Sarah, that thee would make an excellent wife."

"I have no leading to contradict thee, Joseph," replied the lady demurely.

"Also, Sarah, I believe thee competent to be an admirable mother."

"Thy judgment is to be respected, Joseph."

"Thy housekeeping is well estimated, Sarah. The women say there is no better housekeeper in the place."

"I am assured thee would not listen to light gossip, Joseph."

"Then, Sarah, will thee marry me?"

"Nay, Joseph, I am not moved to consent. But—these may repeat thy kind words about me to thy brother John if thee thinks best."

"So that thee will enter the family, Sarah, and care for the household, I care not by which door thee comes in. I have no further inclination toward the married state for foolish reasons!"

"Whether my reasons are foolish or no, Joseph, I will only come if I am bidden by the door called John."

It was by the door called John that she was soon welcomed to rule gently and to order wisely a double family.

## A Conservation Family.

Jack Spratley Sweet always ate meat Three times a day, or four; His wife liked it as well as Jack. That was before the war.

But now their son's "somewhere in France," They're glad to "do their bit." They live on wheatless, meatless meals, And they are proud of it.

Those who feed corn to cattle should bear in mind that 40 per cent. of the food value is in the stalks and leaves. A silo enables one to get 100 per cent. value from the corn crop.