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., 73 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, shaley 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 with 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 aerate 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 more 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 unraked 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 shaley, and is in good physical condition it will crumble off the shovel and can be thrown off with a sidewise 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 rewarming 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.

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 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 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 readdressed, was put into her hands, Aunt Clarissa laughed delightedly.

"It's my birthday present from Fidelia Bonney. She always sends one,—she hasn't missed since we were schoolgirls,—and I was just as uneasy as could be when it didn't come. I was afraid that she must be sick, or that Uncle Si had one of his 'dying spells' again."

"Why don't you open it, auntie?" demanded her namesake—who preferred to be called Clarice. "Here are my scissors."

Aunt Clarissa shook her head in good-natured disapproval at her niece.

"You're a hustling daughter of the great metropolis, Clarice," she said good-naturedly, "but I'm Norley born and bred, and I can taste my pleasures without bolting them whole. Just look at that address, please—right in the first place; then crossed out and put wrong, and crossed out twice more, readdressed, and then back to the right one again. Fidelia new where I'd be,—I'd told her, special,—but Joe Lake at the post office thought 'Boston' was a slip for 'Bolton,' and changed it, to be obliging. I'm generally in Bolton with Cousin Anna at this time, as Joe knows very well."

"But surely a post-office official wouldn't—"

"Joe Lake would! He's Joe Lake first, which means everybody's friend in general and Sister Sally's old beau in particular, and he's an official afterwards. He wouldn't meddle with a stranger's address, but I'm 'Clarry' to him still, just as I was when he used to bribe me with peppermints to go and play in the far end of the garden while he called on Sally. That's the Norley way. So the box went to Bolton; and Cousin Anna wasn't sure where I was, so she tried Cousin Ruth, and Cousin Ruth tried Cousin Mary, and Cousin Mary sent to back to Fidelia, and Fidelia sent it on to me. Now, I'll open it—"

"O Aunt Clarissa! Candied mint and rose leaves! Why, that doesn't seem a bit like a—well, a village offering. I never saw them anywhere except in the Christmas parlor of the Women's Exchange and at the very finest grocers' and confectioners' They couldn't possibly keep company with striped peppermint sticks, and chewing gum, and gluey candy lumps on sticks—the kind of things you find in a country store."

"No," said Aunt Clarissa, delicately nibbling a rose leaf, "they couldn't and they didn't. But they're a 'village offering' all the same. There's been mint along Fidelia's brook since before the Indians deeded over th e farm, and cinnamon roses up against the house wall since it was built, and the big pink hundred-leaf growing by the gate. Confectioners and exchanges are well enough, but when I get a present from Norley, child, it's the kind that's never sold and never bought, and never can be. Not at any price."

But that was verging very near sentiment for Miss Clarissa. She changed her tone briskly:

"Try a mint leaf, Clarice. Mint's always such a good, clean taste to finish with."

"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.

The Sunday School

INTERNATIONAL LESSON
JANUARY 27.

Lesson IV.—Jesus Forgiving Sin.—Mark 2. 1-12. Golden Text, Mark 2. 10.

Verse 1. Again into Capernaum—The enthusiasm aroused by the jubilant leper made it necessary for him to change his plans, so he ends his brief circuit among the synagogues of Galilee and comes back—Matthew says from the other side of the lake. Noised that he was in the house—That is, that he had returned home. In all probability in the home of Simon.

2. No room even about the door—A graphic picture of the eagerness of the people—excited, pressing crowds, thronging all available space, as is the case to-day, occasionally in a Palestinian village where the entire populace in harmless curiosity will crush into a house on the advent of strangers. The extraordinary item here was the presence of the great Healer. He spake the word unto them—Was speaking his message of good news, simply and informally.

3. A man sick of the palsy—An episode of intense interest, wonderfully augmenting the excitement. Four neighbors bring their paralyzed friend, but find they cannot even get near the door.

4. They uncovered the roof—Literally, "dug out the roof." One of the finest pictures in all the Gospel narrative. The eager, determined friends, bearing the sick man on his pallet, carry him up the stone steps on the outside of the house, leading to the flat roof, and dig through the sod and dirt and branches covering the roof timbers, while the debris rattled down into the midst of the listening throng below, making a hole big enough to let down the paralytic into the very presence of the Saviour.

5. Jesus seeing their faith—Made evident by their persistence in overcoming every obstacle which stood in the way of getting their friend into his presence. Seen also in their absolute confidence in his ability to heal. The sick man himself was probably unable to express himself, but no doubt there had been aroused in him a great hope as his confident friends literally broke their way to the gracious Healer. Son—A word with a shade of affection, and an encouragement to the sufferer. Sins—Suggesting that his condition was due to some personal wrongdoing. The generic idea of sin in the New Testament is "missing the mark"; from this as a root proceed all manner of specific sins, which as a rule involve both mind and body. Forgiven—Not merely a cure for his physical condition, but a removal of guilt, in accordance with the Jewish idea that restoration and forgiveness went hand in hand.

6. Scribes—The first encounter of Jesus with these influential Jewish teachers, the guardians and interpreters of the law. They were watching everything, saying nothing, but intensely criticising and objecting, "reasoning in their hearts."

7. He blasphemeth—Assumes God's prerogative in pronouncing the forgiveness of sin.

8. Perceiving in his spirit—He perceived this intuitively as he did on other occasions. (John 2. 24, 15.)

9. Which is easier to say—He contrasts two declarations—which is the more difficult claim to make, to heal the paralytic or to forgive his sins. The contrast is not between healing and forgiving, but between saying "be forgiven" or "be healed."

10. That ye may know—He now gives a practical test as to whether he has this authority or not. The forgiveness is shown by the cure, just as the sin had manifested itself in the disease. The Son of man—This is Jesus' favorite title for himself in the first three Gospels. In Mark it occurs fourteen times. Son of man was a Messianic title, as is seen in Dan. 7. 13-27, but Jesus' use of it identifies him with humanity as a whole. He is thus our elder brother, as shown by his title and his life. Authority on earth—Exercised by God in heaven, but also by the Son of man on earth. He does not disclaim divine authority.

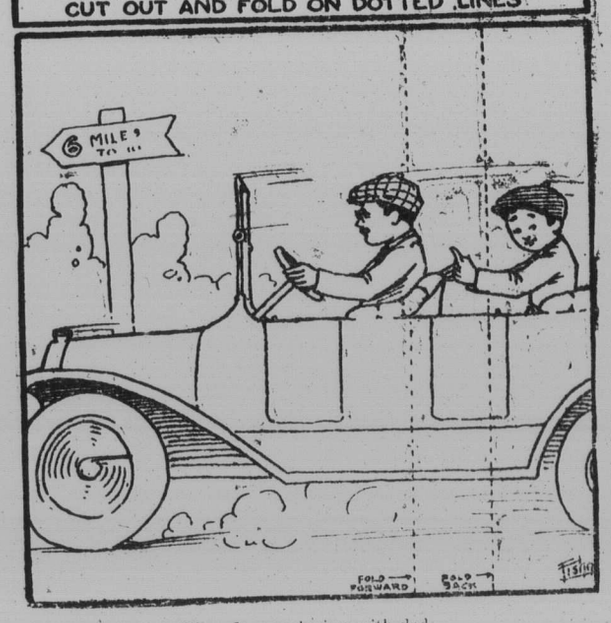
11. Take up thy bed—The mat or pallet, which could be easily rolled up, and in doing which he would display his restored powers. Some of the old illustrators represent the paralytic as shouldering a four-post bedstead.

12. Straightway—The man is whole and every mark of disease has vanished, which is evident to every one. Were all amazed—The cure was open to every eye, and the event justified the assurance that the Son of man had the authority. Glorified God—The murmuring and disgruntled scribes are silent, for nothing can be said against the marvelous restoration of the sick man. They recognized in it the hand of God.

When you cut up fresh pork, recently slaughered, 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.

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., 73 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 or (in evolutionist parlance) gets in touch with his environment. Strikes hands with joy. Shuts eyes and turns head away at things disagreeable. Fears 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 ninepin in a set. Cannot yet repeat a syllable. But exhibits considerable talent as a momologist and imitator, as: maa, pappa, tatta, appapa, baba, tataa, pa, rrrrrrr, rrrrrraa.

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 help. Obeys the command, "Give the hand."

QUESTIONS AND ANSWERS.

Temper Mark.

My baby girl of 4½ months has a mark between the eyes, shaped somewhat like a V. Sometimes you can see it real plain; and then again it is quite dim. Is this a birth mark or a temper mark? Do you think she will outgrow it? It shows more when she cries or frets. Only for that she is a dandy baby. Can a baby that has had whooping cough for 3 months give it?

Answer—Such marks, if they are birth marks, are very apt to disappear in time. If temper marks and in girl babies, they are not so very sure to outgrow them. Depends on how Mamma brings 'em up. It is possible for such a baby to give whooping cough to others.

Chilblains.

As long as I can remember I have had chilbrains. As early as September my feet begin to itch and continues throughout the winter.

Answer—Mailing you the information.

Underweight.

Please advise me what to make my husband gain in weight.

Answer—Very willingly. Please send me only your initials and address. Send stamped self-directed envelope and I will send information by return mail.

Eczema of Ears.

I am troubled with catarrhal deafness. Also itching of both ears which are very sore from stratching and rubbing. Is there any relief for same?

Answer—Send stamped and self-directed envelope and information will at once be mailed to you.

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 "
France,"
They're glad to "do their bit,"
They live on wheatless, meatless
meals,
And they are proud of it.

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

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

WHEN MOTHER THREATENED TO W

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 stared. 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 sidestepping 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 an inside-outside self-starter the corner there for your ma?"

"Sure, pa, one of those Institute ladies from the College came to school the other day, and she told about that and a lot of other things she said we boys might do. I wonder how many miles ma has walked for that egg-beater?" She had just gone the length of the long kitchen.

"If she had a shelf over the table, and a strip under it to hang up the things she uses all the time, it would save some of those trips she has been talking about," Jack went on. "She hasn't a place to put things on near the sink and the stove, either. I guess there's a good deal to this having things handy to where you want to use them. I'll tell you, pa, tomorrow's a holiday, and if ma'll sort of plan out the things she needs around the sink, and what she uses at the table, and those she has to have about the stove, we'll just see if we can't go Bert Evan's wood box one better—and I don't know any reason why I can't keep it filled. Say, any cookies in that jar?"

John Simmons was proud of his "He's got a pretty good head and he isn't afraid to do more he's asked," John was thinking, while the more-than-pleased mother was silently making her plans for the little conveniences 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'd been married just twenty years come next month? The only 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-cars. I've been thinking we might manage to go to Toronto for a sort of celebration next month and take you along,—if your ma'd 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!