Henry G. Bell.

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. 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.

Question—C. H. :—I have a piece of red clay land and for years I have tried either corn or oats or something and it always fails to catch, then turn the stock in the remainder of the season. What is the best way to get it seeded? Which kind of clover should I sow? The land is high and dry, and most always is so hard one cannot cultivate it. It has lots of Canadian thistle on it.

Answer:—Evidently you have been unfortunate in working your clay land at the wrong time. Clay must not be worked while it is too wet else it will break down and puddle, preventing circulation of both air and water in the soil. When you can roll a ball of clay in your hand, and on striking it with your finger, it breaks into several parts, the land is ready to plow. If, however, it is sticky like putty, do not work it. If left until it is too dry, it will break into hard clumps like bricks, which means a bad seed-bed. Some farmers, after plowing clay soil, leave the furrows to dry out for a day or two. This is exceedingly bad practice. If the clay soil is in right condition, just enough should be plowed so that it can be disked or harrowed the same day. It will help your soil to apply about 1,000 pounds per acre of air-slaked burnt lime. Scatter this on the soil and harrow it in carefully. The lime will correct the sourness of the soil and will make the texture of the seed-bed better. Any kind of clover should do well on this soil. When you have produced a good seed-bed, I would advise drilling in barley or oats at the rate or about a bushel and a half per acre and at the same time seeding the ground to a mixture of clovers, making sure, however, that you have used good grass and clover seed.

In order to insure a good catch of grass, put on 200 pounds of fertilizer at the time of seeding. It will be well to apply the lime at least two weeks previous to sowing the grain and grass seed. The fertilizer should analyze about 2% ammonia, 8 to 10% phosphoric acid and possibly 1% potash. It is available plantfood and will give strength to the young oats and clover the same as whole milk helps the growing cattle.

Question—J. S.:—We have a nine-acre field that had sod plowed under three years ago; it was cropped twice with corn and once with oats. This spring I put it into ensilage corn, and want to seed it next spring. As this field was never manured much I wondered if there was anything I could sow to get a good catch of clover the last time cultivating, to plow under as green manure this fall. This field is partly low, black soil.

Answer:—I would advise you to apply 200 to 250 pounds of fertilizer analyzing 1 to 2% ammonia and 8 to 10% phosphoric acid. This will materially help your corn and at the same time will supply available plantfood to start off your clover vigorously. If the soil is at all sour;—that is, if you can see moss or sheep sorrel growing in the field—I would advise you to scatter ground limestone over the field at once at the rate of a ton per acre. This should be worked into the soil as you cultivate the corn and will sweeten it so that conditions will be proper for the growth of clover. The ground limestone will not materially help the corn, but will sweeten the soil.

WHEAT AND NEXT YEAR'S FOOD

Careful Directions For the Culture of Winter Wheat—A Very Necessary Crop in View of the Present Food Shortage.

By Henry G. Bell, Agronomist.

With maximum spring wheat yields both in this country and in the United States, the total production for 1917 will total about 1,132,764,000 bushels. Estimating 6½ bushels of wheat per capita for home consumption there is a remainder for shipment abroad from both countries of only about 339,000,000 bushels. The figures for spring wheat of course are entirely problematic. Full reports have not been published as to the probable area seeded to spring wheat in North America and weather conditions in some parts of the continent are none too favorable. There will be a demand for every bushel of wheat that this continent can produce. There is considerable talk of price guarantee at $1.50 a bushel or over. Wheat at a dollar a bushel is profitable; what the farmer gets more than this makes wheat growing all the more profitable.

The time for reseeding winter wheat is but three months distant. Everything possible should be done to insure a good successful seeding next autumn.

High Points of Wheat Culture.

Wheat thrives best when fed "to the limit". The plantfood of good substantial soil should be supplemented. Well rotted manure worked into the seed bed supplies considerable food. Big results are being obtained by drilling in 200 to 300 pounds per acre of fertilizer at the time the wheat is seeded. For an average wheat soil this plantfood should carry from 2 to 3% ammonia, about 8% available phosphoric acid and 1 to 2% potash. The ammonia gives the young plants a quick start. Phosphoric acid assists the root growth of the young crop while the potash gives the plant disease-resistance and general vigor. All three do for the young wheat crop what whole milk does for the young calf.

Wheat does best on a well-prepared, medium loam soil. The big thing that the crop needs first is moisture. No plantfood can enter the wheat crop unless it is dissolved in the soil water and root juices. Possibly you are planning to summer-fallow land in preparation for wheat. If this is the case, be sure to keep the surface of the summer-fallowed land tilled sufficiently often to kill all the weeds and preserve a surface dust mulch. If you allow the soil to pack and harden, as it does after a heavy rain, enormous quantities of water will escape by evaporation and your soil will be shorter of water when wheat seeding comes than it would have been if it had grown a large crop this summer. The point is—keep the surface of the summer fallowed soil stirred.

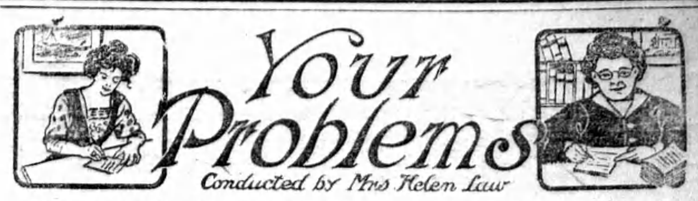
Your winter wheat will probably follow early oats. If such are your plans, be sure to plow the oat stubble as early as possible after the oats are harvested. The growing oats shaded the surface of the soil from direct sunlight and to that extent prevented the escape of soil moisture by evaporation. As soon as the oats crop is harvested this shade is removed and enormous quantities of water escape that should supply the crops that follow. For this reason get plows and disks into the oat field as soon as possible after the oats are cut. If the ground is fairly mellow do not plow too deeply. Three to five inches should be sufficient. As soon as the soil is plowed have it disked and if it has not worked into a smooth seed bed follow the disking with a rolling and then with a light harrowing.

If you have not a sufficient supply of seed write your experiment station at the earliest opportunity and inquire where you can locate the seed you wish. Do not leave this until late in the season, but let your inquiry be in the hands of the experiment station by the time the crop is harvested.

It may be necessary to delay wheat seeding a week or ten days to escape the attack of the first brood of the Hessian Fly. If so, be sure to use at least the maximum amount of fertilizer advised in order to give the young wheat the additional vigor that will enable it to recover from the effects of late planting. In order to combat wheat smut, spread the seed on the barn floor and thoroughly sprinkle it with a solution of one pound of formalin to forty gallons of water. Shovel the grain while it is being sprinkled and when it is completely dampened cover it with a pile of sacks, so as to keep the gas in among the seed as long as possible.

Profits in Wheat Growing.

If wheat maintains anything near present prices, (and there is good reason to believe that it will do so) it is surely going to pay the Canadian farmer to give more attention to this important crop. A bushel and a half of good seed is sufficient for an acre. The preparation of the seed-bed requires the major amount of labor given to this crop. Once the wheat is started it needs no further care until harvest time. Harvesting labor may be short, but remember that the crop which yields the heaviest makes most efficient use of farm labor. Furthermore, remember that the leading experiment stations of North America have demonstrated beyond a doubt the profits of abundantly feeding the young wheat crop with suitable fertilizers.



Mothers and daughters of all ages are cordially invited to write to this department. Initials only will be published with each question and its answer as a means of identification, but full name and address must be given in each letter. Write on one side of paper only. Answers will be mailed direct if stamped and addressed envelope is enclosed.

Address all correspondence for this department to Mrs. Helen Law, 235 Woodbine Ave., Toronto.

F. S.:—1. Dingy rubbers can be made to look like new if they are washed with ammonia and water, then covered with a thin coating of shoe blacking and allowed to dry thoroughly before wearing. 2. A silver mesh bag can be cleaned satisfactorily by washing in warm water with pure white soap, using a small toothbrush to clean the links. Rinse and pat dry between cloths. 3. A sprinkling can which leaks slightly should have a cupful of melted paraffin poured into it and shaken around so the bottom will be evenly covered. When the wax hardens the can will be found to hold water without leaking. 4. In conveying food to the mouth it is proper to change the fork from the left to the right hand after cutting the food, although this rule must not be so strictly adhered to as to appear awkward.

Mrs. C. T.:—If your pillow cases have worn in the middle you can use the end as a bureau cover. Cut the seam the depth of your bureau, open the pillow case and you will have a bureau cover ready to hem along back and ends. If your cases are embroidered or hemstitched, so much the better, because this will form the front of your cover.

Inquirer:—1. It is not considered good form to say "Pleased to meet you," or "Glad to know you," when introduced, but rather "I am very glad to meet you, Mrs.—", or some such sentence. Always use the personal pronoun "I". 2. Fig sandwiches are unusual and delicious; also gingerbread sandwiches. For the first use two cupfuls chopped figs, one-half cupful water, one-half cupful sugar, one-half cupful butter, white bread. Put the figs through a food chopper, add the sugar and water and cook until thick. Cool, add the butter and mix well. Spread between thin slices of sandwich bread which has had the crust removed. To make the gingerbread sandwiches, cut thin slices of gingerbread which has been baked a day or two before it is to be used, otherwise it will crumble. Butter each slice and spread with honey. 3. A woman should rise to greet a man if she is the hostess or when a man much older than herself is presented to her, especially if he is distinguished in any way or is a clergyman. Under ordinary circumstances a woman need not rise when a man is introduced to her, but it is gracious and courteous for her to rise to greet an old acquaintance, whether man or woman.

Busy Bee:—1. A Panama hat which has become stained with perspiration can be cleaned in the following way: First immerse the hat in a solution of sodium hypophosphite; follow this with a dip into oxalic acid. The stain should disappear in an hour or two; when it does, rinse the hat in clear water and afterward in a weak gylcerin solution. The hat will be ready for blocking. 2. For an oily skin try boric acid, ½ dram; alcohol, ½ ounce; rose water, 5½ ounces. Mop off the surface night and morning with this wash, then dust with a fine rice powder.

Anxious:—To pasteurize milk heat it to a temperature of 145 degrees Fahrenheit for 20 minutes. It should then be cooled quickly to 45 degrees Fahrenheit and kept at this temperature till used. Pasteurization according to these directions will kill the typhoid and other disease germs in milk. 2. Silver which is to be given as a wedding present to a widow should be marked with the initials of the bride's maiden name.

F. D.:—1. The first airplane actually to leave the ground was made by Sir George Cayley in 1796. 2. The newest submarines are able to immerse in sixty seconds. 3. St. Paul's Cathedral, London, is 364 feet high. 4. The "Old Lady of Threadneedle Street" is the Bank of England, so called from the street in which it is located.

Maid:—At a home wedding the bridal party enter as follows: The officiating clergyman should enter the room first and he is immediately followed by the bridegroom and his best man. When they reach the part of the room where the ceremony is to be performed they turn and face the guests, who stand on either side, leaving a space or aisle for the bridal party to walk along. The two bridesmaids enter side by side or singly, as you prefer, then the bride, who slips her arm through the left arm of her father or the person who is to give her in marriage in his place. When they reach the improvised altar the father steps aside and the bridegroom takes his place.

Poultry

Market Calendar.

The culling of non-layers from the flock should be continued throughout July. The season of high production is over and at the high price of feed, it does not pay to keep hens as boarders throughout the summer.

Sell in July old hens, broilers, green ducks and old ducks.

Heat is the great enemy of eggs, both fertile and infertile. Follow these simple rules, which cost nothing but time and thought, and you will add dollars to the poultry yard returns:

Keep the nests clean; provide one nest for every four hens.

Gather the eggs twice daily.

Keep the eggs in a cool, dry room or cellar.

Market the eggs at least twice a week.

Sell, kill or confine all male birds as soon as the hatching is over.

With poultry costs so high, why not keep an accurate account of the receipts and expenditures? A simple way to keep track of the grain used is to build a supply bin in the poultry house. The grain can be easily weighed and the amount recorded each time the bin is filled. A tabulated sheet tacked upon the side of the bin may also be used for recording the egg yield and receipts.

The poultry house should be placed away from other farm buildings where the drainage is good. Dampness is very dangerous and the floor of the poultry house must be higher than the outside soil. A house should never be less than fourteen feet deep and four square feet of floor space should be allowed to each bird. When a cement floor is used in the house it should be made in creases to prevent the hens from slipping. Don't build the houses too high or it will be difficult to keep the birds warm. By using one-fourth inch mesh wire on the windows the wire will break the wind and keep out sparrows.

Little pigs that are given plenty of exercise will not overeat. Feed all they will eat up clean of a well-balanced growing ration; if they will eat what is put before them they are not being overfed.

Hogs

Put a pair of old cultivator wheels on the front end of the hog chute and it can be moved from one pen to another in half the time and with less work.

Poisoning rats in the hog lots is rather risky business. Pork is too high to be killed in that way.

It is well to be alarmed over the certainty of a decrease per capita in the number of cattle, hogs and sheep. Meat, milk, butterfat and wool constitute a great reserve force in our preparedness campaign.

Less crossing of breeds is responsible for fewer spotted swine than were common several years ago. One breed to a farm and one standard—the best—are pushing the swine industry ahead.

Horse Sense

Azoturia is caused by high feeding during a few days' rest. After going a variable distance, the horse shows pain and lameness, sweats, falls or lies down, may or may not be able to rise, urine becomes thick and very dark in color.

Prevention consists in giving daily exercise or materially reducing grain ration. To cure, give puragtive, make comfortable, give 2 drams iodide of potassium 3 times daily. Draw urine off with catheter.

The draft horse is the safest proposition for the average farmer.

Keep on good terms with your horse; he will feed better and develop a better character. Let him increase the number of his human friends as rapidly as possible and attach himself to them so that he will leave his animal associates to go to them.

A little care and quiet rest may save a horse's life and also a veterinarian's bill.

One can learn that a horse is sick as easily as he can that a human being is out of temper.

Many horses are timid by inheritance. It is not a fault, but a misfortune and should not be cured by whipping but by good treatment. The trouble lies not in his will, but in his over-delicate nerves. You will lose time by becoming angry with him. Suppress your angry tones and cruel strokes.

External and internal parasites, such as lice and worms, may cause the loss of 25 to 50 per cent. of feed and horsepower. Rid the animals and stables of these pests. A few cheap window and door screens will do much to give comfort to the horses, not only in the keeping out of flies but also in the providing of good stable ventilation during the summer months.

Drying Fruits and Vegetables

Man's primitive effort to avail himself of nature's gift in conserving and storing of foods for winter use was by sun-drying. In many parts of Europe this method alone is used in caring for the abundant harvests. To successfully dry fruits and vegetables a drier is essential. A small one may be constructed at home. This will enable the housewife to bring it indoors in case of sudden storm.

By the drying process the housekeeper can take care of all surplus foods for which she cannot find cans or jars. Small quantities can be dried daily, these may be ground with meal or flour and made into palatable bread. entailing little work.

Peas, beans and corn may be dried, and, if the necessity should arise,

How To Dry Peas.

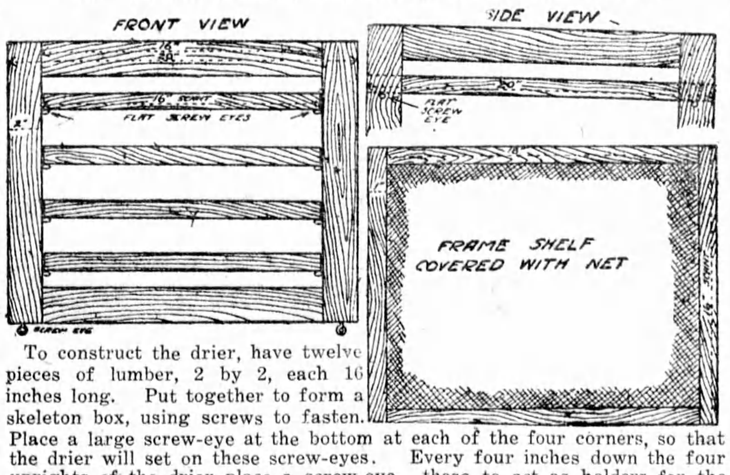
Shell peas, spread on tray of the drier, place in the sun or a place where a strong current of air will strike the drier. At first have a single layer of peas. After the drying has commenced several trays may be thrown together. Peas should be dried until, when one is dropped upon a plate or table, it gives off a hollow sound. This usually will be accomplished in three to five days. It is possible to dry vegetables and fruits and even beef in this way.

After the peas are thoroughly dried they must be cared for in a manner that will insure their keeping qualities.

It is necessary to make bags of cheesecloth. Place the dried peas in these bags, wrap in newspaper, then again in a piece of cheesecloth. Now give the bag a coat of whitewash, taking care to apply it thoroughly about the string-end of the bag. Hang by string from ceiling in dry, cool storeroom or cellar, or they may be packed in an old washboiler. Clean old pillow slips or other pieces of muslin may be used in place of the cheesecloth. A good size to make bags is 8 by 12 inches.

Beans may be dried by the same method.

HOW TO CONSTRUCT VEGETABLE AND FRUIT DRIER



To construct the drier, have twelve pieces of lumber, 2 by 2, each 16 inches long. Put together to form a skeleton box, using screws to fasten. Place a large screw-eye at the bottom at each of the four corners, so that the drier will set on these screw-eyes. Every four inches down the four uprights of the drier place a screw-eye, these to act as holders for the shelves, which will be placed upon them. Make skeleton shelves from 1 by 1 lumber. Each shelf will take two pieces 16 inches long and two pieces 18 inches long. Cover with screen wire and paint with white enamel to prevent rusting. These trays will slide into the skeleton frame. The whole thing may be covered with a clean piece of cheesecloth while the fruit is drying, so that dust cannot come in contact with the drying foods.

Bedtime Stories

A Woodland Quarrel.

Reddy Squirrel was having an afternoon nap in his cosy home, deep in the heart of an old chestnut tree. Mrs. Squirrel was out for a little airing, and had left Reddy to mind the babies while she was gone. The little fellows were sleeping so quietly that there seemed no good reason why Reddy should not have a nap, too. His sleep had been badly broken of late by one of the babies that was having trouble with its teeth. So he curled up in a fat red ball and in seven winks was sound asleep.

Rat-tat-tat-tr-r-r-r-rt!

That was the noise that made Reddy Squirrel wake up with a sudden start. He raised his head and listened hard. What could it have been? A moment later he heard it again.

Rat-tat-tat-tr-r-r-r-rt!

Then Reddy Squirrel knew very well what the noise was. He had heard it many times in the forest. It was Downy Woodpecker drilling a hole in the bark of the old chestnut. Reddy Squirrel was very cross when he jumped out of bed and ran to the door of his house.

"Go away from here!" he chattered, as he pushed his head outside. "What do you mean by such noises on the trunk of my tree?"

Rat-tat-tat-tr-r-r-r-rt! answered Downy Woodpecker, as he pushed his long, barber tongue into a hole in the bark and pulled out a choice morsel.

"Go away, I say!" chattered Reddy Squirrel, louder than before. "You will wake up the babies!"

"You seem to be the only one to wake up so far!" retorted Downy Woodpecker, and his tones were just as unfriendly as those of Reddy Squirrel. "And don't bother me, for I'm busy getting dinner."

"Well, aren't there trees enough for you without trying to knock mine to pieces?" asked Reddy Squirrel.

"This is not your tree," replied Downy Woodpecker. "One of my cousins used to have a home here long before you came along. Moreover, you come to my tree for nuts when you feel like it, and only the other day you frightened my family almost out of their wits when you were climbing round there."

So they scolded and argued, but they got nowhere at all. And meanwhile the baby squirrels woke up and cried, and Downy Woodpecker made no further progress toward getting his dinner. It was Reddy Squirrel who finally put an end to the quarrel.

"I'll tell you what I'll do," he said at last. "If you will not come to my tree to drill for your dinner, I will not go to your tree for nuts or to harm your family. In that way things will be much more pleasant all round."

"Agreed!" said Downy Woodpecker. "That is a sensible arrangement. Why not go further than that? Why not get all the squirrels and woodpeckers in the forest to live up to the same arrangement? There are trees enough for all of us."

"Very well," agreed Reddy Squirrel. "I will see all my cousins at once, and you must explain the plan to all the woodpeckers. My, it will be fine to sleep in peace hereafter!"

That is the way the quarrel between the squirrels and the woodpeckers, a quarrel of very long standing, came to an end in the big forest. If you ever hear a squirrel and a woodpecker scolding away at each other you may know that one of them has broken the agreement, and that the council of the wood folk will punish him for it.

The Sunday School

INTERNATIONAL LESSON
JULY 1.

Lesson I. Isaiah's Call To Heroic Service—Isaiah 6. Golden Text—Isa. 6. 8.

Verse 1. Uzziah—One of the most successful kings of Judah, reigned about B. C. 789-740. The vision might be regarded as an answer to the anxious questionings: With the old king gone, what will become of the people? Answer: Jehovah is still King. Saw—In a vision or trance. The important thing is the reality of the spiritual experience, not the manner in which it came.

2. Seraphim—Mentioned only here in the Old Testament as supernatural beings. Their function in the vision is purely symbolical: they are attendants at Jehovah's court. The same Hebrew word is applied to destructive serpents in Num. 21. 6 and to the image made by Moses on that occasion. Since the latter seems to have had a prominent place in the temple at this time (2 Kings 18. 4), it may have furnished the basis for these symbolical figures.

3. Holy—The repetition is for the sake of emphasis. The Hebrew word means originally "separate." When applied by the prophets to the deity, it means (1) deity is separate or distinct from his creation; (2) he is separated from all that is limited, in a physical as well as moral sense; (3) it includes the entire essential nature of God, especially in its moral aspects; practically equivalent to "God head." Glory—The divine holiness reveals itself in his gorious manifestations, which may be seen everywhere in nature, history, etc.

5. Woe—The enlargement of the conception of Jehovah was followed immediately by a keener appreciation of his own shortcomings and the shortcomings of his people; hence the cry. The rest of the verse gives the reasons for his fears. Unclean lips—Isaiah's consciousness of danger springs from his consciousness of sin. Seen the King—The sight of God brings death (Exod. 19. 21; 30. 20; etc.).

8-10. —The purification has fitted the prophet for intercourse with Jehovah; now he hears the divine voice for the first time. Go—not one of the prophets is forced into his office, but there must be a call and commission. Hear—In order to understand verses 9 and 10, the reader must try to appreciate the mental attitude and reasoning of the ancient Hebrews. They did not consider secondary causes or inevitable natural or spiritual laws. Every extraordinary event was explained as due to direct divine interference. The stubbornness of the people was so monstrous that it became explicable to the prophet only on the assumption that Jehovah had ordained it.

11-13. How long—The divine holiness cannot permit the hardening to continue forever; but when will the end come? The answer is disappointing. There is nothing in sight but exile and desolation. Only a prophet sure of his call would stick to his post under such circumstances. Holy seed—The remnant that escapes, though small, will become the nucleus of the new Israel.

To sum up, the truths impressed upon Isaiah during this spiritual crisis were: (1) The holiness and supremacy of Jehovah; (2) his own uncleanness, cleansing, and call; (3) the corruption and stubbornness of his people; (4) the certainty of judgment; (5) the preservation of a remnant; and (6) the conviction that this remnant is to be the seed of a new Israel.