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.

WINTER WHEAT POINTERS

Ontario farmers at this time are busy with their preparation of the winter wheat areas. They are taking special care to give the ground the very best preparation, since winter wheat this year means money. Prices are high and there seems every indication that they will remain so. In fact, wheat prices have but a very few times surpassed that obtained at the present time. The United States has just harvested a moderately large crop and the government is calling for an increase of over 30% of the crop produced in 1917. Uncle Sam aims at over a billion bushels of wheat this coming year.

Now, there are ways and means by which the average farmer can increase both his wheat and his net profits. Be sure to see that the seed-bed has very thorough preparation. A rough, lumpy wheat seed-bed leads to uneven planting, since many seeds are buried too deep and others fail to get sufficient covering.

If, after the ground is plowed, it has been carefully disked and harrowed, possibly rolled and harrowed also, the kernels of soil are packed sufficiently so that the moisture supply for the young growing wheat will be sufficient. This moisture supply is all important, because it is the carrier of plantfood.

The plant obtains nearly all of its food through its roots, and this food can be taken up only when it is dissolved in the soil moisture and root juices. If this very simple explanation were fully comprehended by all Ontario wheat growers, it would eliminate a great number of failures.

Winter wheat cannot grow in a pool of water. It has to face the rigors of a rather severe winter, hence bad drainage conditions tend to retard its development and subsequently weak, ill-nourished wheat makes an unsuccessful attempt to face the severity of the Canadian winter. It will be of little avail to seed winter wheat in ground that is poorly drained. Use well-drained ground so that the plant may have suitable growing conditions.

Volumes have been written about best varieties of wheat. The Canadian farmer is fortunate in that he can refer to his provincial or Dominion tests. On both the experimental fields of Ontario Agricultural College and the Dominion experimental farms, leading varieties of wheat are carefully tested year by year. Only those that show superior value are retained. After these have been carefully studied, recommendations are made on the basis of the results obtained. For Ontario the following varieties have been found to give good results: Banatka, American Banner, Imperial Amber, Yarroslaf, Crimean Red. The first variety of wheat is especially good milling wheat, since it is hard and flinty and makes strong flour. Most farmers know that Dawson's Golden Chaff is one of the good varieties. This is a heavy yielder, but produces a rather soft grain.

There is something beside variety, however. All cows are not record-breakers. There are some that give ten, twelve and fifteen thousand pounds of milk in a year, and then again there are some that do not give enough milk to pay their board and are an actual expense to the farmer. To counter-balance this, there are a few that produce extraordinary high milking records, upwards of twenty thousand pounds or over a year. These are very valuable and their calves are eagerly sought as breeding stock.

It is just the same story with wheat. Just because a sample of wheat is of a particular variety is no criterion that it is of first-class quality. You should use a fanning mill to sift out the small and shrivelled grain, because inferior plants take up soil room, absorb moisture, consume plant-food and fail to return the good results obtained from superior seed. If you have time, by all means test the vitality of the seed, that is, count out 100 wheat seeds. Place them between damp blotters, and keep them near the stove. In about four or five days the wheat should have sprouted sufficiently for you to count the number that are going to grow. If you find that the wheat sprouts but 80%, increase your quantity 20%, if you expect to get a normal stand.

Most farmers have wheat drills, but many good farmers have to rely upon sowing the winter wheat on the harrowed ground and then covering it by harrowing and rolling. If such is the case, be sure to take care that the seed is thoroughly covered. There should be very little difficulty this year as to the seed sprouting after it is planted, because the land has been blessed with seasonable showers.

In preparing the seedbed, be very careful to avoid using sprouted seed. In sprouted seed the little germ covering is broken. If seed has been sprouted and the sprout has been broken off, there is little likelihood that it would produce a good healthy plant.

You took good care to feed up the young calf or the young pigs early in the spring, because you determined to have strong, vigorous stock. The same care should be taken in the feeding of the wheat crop if best results are to be obtained.

Many farmers are interested in fertilizers this year, but unfortunately not all understand what fertilizers are, or how they should be used. Fertilizers are carriers of plant-food in such form that the plant-food quickly dissolves in the soil moisture and can be used by the crop. Now, some of the elements of the milk which the calf drank went to building its flesh. Other food in the milk went to building the bone of the animal. It is somewhat similar in the food of the plant. So that the farmer may know the relative amount of plant-grower, plant-ripener and plant-strengthener that the fertilizer carries, the Dominion Government in 1909 decreed that this should be stated on the bags in which the fertilizers are sold, and that the analysis should be guaranteed. Now, the farmer reads that the fertilizer contains 2 to 4% nitrogen, we shall say. That means that the mixture contains 40 to 80 lbs. of that kind of plant-food, which causes the wheat plant to grow rapidly. Manure contains to the ton about 15 lbs. of this kind of plant-food. Of course every bit of stock manure should be carefully spread on the ground and worked in, in order to increase the growth of the crops. Fertilizers should be used to supplement the manure, or to make it go two or three times as far.

We said that some of the food in the milk which the calf drank went to building the bone of the animal. Bone is composed of a combination of lime and phosphoric acid. Now, strange to say, it is the phosphorus from this same kind of a compound which is used by the plant to give strength to the growing plant and to hasten its maturity. The per cent. of phosphoric acid (P_2O_5) shown by the analysis on the bag, will tell you how much of this kind of plant-food there is in the mixture.

Under present international conditions, there is a great scarcity of the next plant-food ingredient, potash. Some fertilizers offer one per cent., but many are sold with only the first two ingredients of plant-food in them. Potash causes the formation of starch or the filling of the kernel. It also gives the plant power to resist disease. Speaking generally, wheat soils are fairly well supplied with potash, so the lack of this plant-food for wheat is not seriously noticed, as yet.

Now the plant never uses pure nitrogen, which is a gas, or pure phosphorus or potassium, which are metals. We said a ton of fertilizer carries from 40 to 80 lbs. of nitrogen, from 160 to 200 lbs. of phosphorus and possibly 20 to 40 lbs. of potash. The rest of the ton is made up of the carriers of these various plant-foods.

Fertilizers will not supply humus, as manure does. They induce rapid root growth and consequently add to the humus of the soil, in so far as they produce this result, but they are not essentially a source of humus. They should be used then intelligently, knowing that they are concentrated plant-food.

Fertilizers may be new to some Ontario farmers, but they are not new in their use in wheat-growing sections. England has been using immense quantities of fertilizers for nearly 100 years. So have the eastern provinces of this country and the eastern states of our neighbors to the South. The State of Ohio, which produces large quantities of winter wheat, makes wide use of fertilizers. Prof. Thorne, Director of Ohio Agricultural Experimental Station, has recently pointed out that if the farmers in the county where the experiment station is located followed the fertilizer practices of the station, they would have increased their wheat yields 14 bushels per acre. It is not a question of theory, it is a point already demonstrated. Ohio Experiment Station has increased its wheat yields from 12 to 14 bushels per acre by proper fertilization; Indiana, 11.6 bushels; and Missouri, from 4 to 10 bushels where careful tests have been carried out. If such an increase can be accomplished on the Ontario farms this year, the farmers of the province can take great advantage of the high prices which must prevail this coming year.

Decide to have a poultry house this Winter. Don't let the birds roost in the horse stable for another season.

An electric shock is felt most at the elbow joint; the latter obstructs the current, which leaps from one bone to the other.

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THE CHILDREN'S FOOD

Questions Every Mother Should Ask Herself.

Did each child take about a quart of milk in one form or another ?

Have I taken pains to see that the milk that comes to my house has been handled in a clean way ?

If I was obliged to serve skim-milk for the sake of cleanness or economy, did I supply a little extra fat in some other way ?

Were the fats which I gave the child of the wholesome kind found in milk, cream, butter, and salad oils, or of the unwholesome kind found in doughnuts and other fried foods ?

Did I make good use of all skim-milk by using it in the preparation of cereal mushes, puddings, or otherwise ?

Were all cereal foods thoroughly cooked ?

Was the bread soggy ? If so, was it because the loaves were too large, or because they were not cooked long enough ?

Did I take pains to get a variety of foods from the cereal group by serving a cereal mush once during the day ?

Did I keep in mind that while cereals are good foods in themselves, they do not take the place of meat, milk, eggs, fruit, and vegetables ?

Did I keep in mind that children who do not have plenty of fruit and vegetables need whole wheat bread and whole grains served in other ways ?

Did each child have an egg or an equivalent amount of meat, fish, or poultry ?

Did any child have more than this of flesh foods or eggs ? If so, might the money not have been better spent for fruits or vegetables ?

If I was unable to get milk, meat, fish, poultry, or eggs, did I serve dried beans, or other legumes thoroughly cooked and carefully seasoned ?

Were vegetables and fruits both on the child's bill of fare once during the day ? If not, was it because we have not taken pains to raise them in our home garden?

Did either the fruit or the vegetable disagree with the child ? If so, ought I to have cooked it more thoroughly, chopped it more finely, or have removed the skins or seeds ?

Was the child given sweets between meals, or anything that tempted him to eat when he was not hungry ?

Was he allowed to eat sweets when he should have been drinking milk or eating cereals, meat, eggs, fruit or vegetables ?

Were the sweets given to the child simple, i. e., unmixed with much fat or with hard substances difficult to chew, and not highly flavored ?

Was the food served in a neat and orderly way and did the child take time to chew his food properly ?

The Sunday School

INTERNATIONAL LESSON SEPTEMBER 30.

Lesson XIV. The Goodness and Severity of God—Review. Golden Text Psa. 103. 8.

1. The God of love. Modern Christianity has been passing through a period in which the love and forgiveness of God have been emphasized. His relations to the individual have been dealt with almost exclusively. His lessons for the nations and for humanity have only recently come again into prominence. With this emphasis on the other half of the law and the gospel there comes a fuller vision of the character and purpose of God. As the old prophets, some of them in exile, saw his character in all its fullness, so we are beginning to get an all-round vision of God as we see him revealed in social progress. We find the God of love is also the God of law. We discover that he deals with sin and evil not by whim and fancy, but by fixed laws. In these laws the operation of divine love is seen seeking to save the individual and the community from the consequences of sin.

2. The God of strength. Law involves retribution. Cause and effect work out irresistibly in the moral universe. They operate constantly in social progress. We discover famine and pestilence to be not the sudden whim of an angry God, but the dire effect of broken law. Nations have refused to work economic righteousness, they have refused to obey the moral laws that are related to health, and hence they pay the cost in suffering. This is the severity of the moral universe, but it is still the strength of love. It is not punitive, but corrective. It is penalty, not merely punishment. This makes it possible for men who learn the consequences of sin to discover and remove its causes. The penalty of social sin is a challenge to the community to discover and remove its roots.

3. To whom vengeance belongeth. There is a constant desire of men to take a situation of wrongdoing into their own hands and to punish the violaters of law. The result is evident in the old penal system, which, seeking to work vengeance, has failed to benefit either the community or the criminal. When men learned that the consequences of sin for the sinner must be left in the hands of God, then they faced their proper task of reclaiming the sinner and preventing the sin. It must be the same in the relations between nations. Criminals and crime must be prevented, but the social consequences inherent in the sin of those who offend against international justice and righteousness will after all be visited most severely upon their own heads. The penalty can be left with God. The prevention lies with man.

The Dairy

Do not feed the dairy herd as a herd, for cows differ in their food requirements just as human beings do. By feeding all cows in the herd alike, some are sure not to get enough for the greatest profit and others will get more than they can use to advantage.

Cows need much water and should be induced to drink two or three times a day if possible. The average milch cow requires nearly ten gallons of water a day and more than two-thirds of that must come as drink and the balance from water in the food. Always provide clean fresh water.

Salt should be supplied at the rate of five to seven ounces a week, given as often as twice during the week. Do not use a common salt box in the yard unless all the cows are absolutely free from disease.

It pays in dollars and cents to give the cow extra care. The cow that is kept comfortable will give the best returns.

It is always desirable to grind all grains for the dairy cow because of the large amount of feed that a cow must digest in order to produce well.

There is no advantage in cooking or steaming feeds for dairy cows. Some unpalatable feeds may be consumed in larger quantities if cooked but cooking does not ordinarily add much to the palatability of grains and may even decrease their digestibility.

It is estimated that eighty per cent. of the Canadian farmers sold their wheat last fall at $1.40 per bushel. Who received the difference between that price and $2.80 per bushel, the price which recently prevailed ?

Hogs

Even though the hog furnishes the most meat for a given amount of feed and will produce it in the quickest time, it is pointed out that this meat should be produced mainly from food wastes and not from good grain that would furnish food directly to man. The great economy in pork production comes from the fact that pigs furnish a food by-product from these wastes and do not need the high-grade feeds that beef cattle must have.

Wastes on farms and in the towns make good hog feed; by-products from canneries, bakeries, fisheries, packing plants and the like can be utilized as hog feed and to better economic advantage than in any other way. Dairy wastes are particularly valuable as hog feed and promote rapid growth with a good money return for every gallon fed.

The farm orchard furnishes large quantities of wind-fallen or defective fruit, which is relished by hogs, and is beneficial if fed in small quantities frequently, and not all at one feed. Garden wastes, tops of vegetables, culls of all sorts, even weeds, are readily eaten, and such as may not be eaten will be worked over, going into the bedding and adding to the manure.

Kitchen wastes are an excellent source of food for hogs, but should be kept at a minimum, because practically all food prepared for man's use should be eaten by him.

Franklin observed that "he who leaves the table with an appetite is sure to return with one." Here is a point for food conservers.

Your Problems

Conducted by Mrs Helen Law

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, 233 Woodbine Ave., Toronto.

Mother:—Here is a sample day's diet for a three-year-old child. Breakfast, scraped fresh apple or orange juice, strained oatmeal and top milk, milk to drink. Morning lunch, milk, biscuit. Dinner, poached egg, tender vegetable put through sieve, stale bread and butter, corn starch pudding, milk to drink. Supper, rice and top milk, seedless jam sandwiches, milk to drink.

School Girl:—Try the following games at the party for your school friends:—

Hands and feet guessing—To play this game divide the party into two bands. One is sent out of the room, the other stays in it. Place a screen (one of the folding kind) in front of an open door. The members of the band that has been sent out of the room then walk past the open door behind the screen holding up one of their hands as they pass. The members of the band left in the room must then guess whose hand it is. For every hand guessed correctly a point is scored for the band. After all of one side has shown a hand it is the turn of the other side to go out and do the same. The side scoring the most points in the end wins.

If the feet are to be guessed instead of the hands, the screen should be raised a foot or so from the floor so that the shoes may be seen underneath and the rest of the body hidden.

Obstacle Race—There is plenty of laughter in this game. Those who do not know it are sent out of the room and let in one by one. The boy or girl who is called in is shown two or three small objects, such as a footstool, a vase, milk bottle, etc., that have been placed in a line on the floor. The order is, "walk blindfolded past these objects without touching them." The player is accordingly blindfolded, but before the hazardous trip is begun all the obstacles are removed. The boy or girl will pick steps very carefully, trying to sidestep what is really not there at all. At the end of the game, when all the players who have been tricked except the last one whose turn it then is are present, there a very great deal of merriment.

Word game—Choose sides and appoint a scorer and a timekeeper. A player from A's party is sent out of the room while B's party picks out a letter. The A player is then called in and the timekeeper says "Go." The letter is told and then he must say as fast as he can as many words beginning with that letter as he can think of on the spur of the moment. At the end of a minute the timekeeper stops him and his score is counted. One of B's side then goes out and does the same thing. So on the game goes until all players alternately have had a turn. The scores of each side are then counted, the one with the greatest number of words winning. Z and X may not be chosen.

Mrs. S. D.:—Lunch-box bills of fare are very important, and you are a wise mother to pay special attention to them. Pennies spent in the candy store at noon can undo all the good of the nourishment taken under watchful eyes in the morning and at night, and a nice lunch is the very best rival of a penny candy store. Here are some bills of fare that can be made up from dinner left-overs:

Crisp rolls hollowed out and filled with chopped meat or fish; season with a little salad dressing; a peach and an apple.

Cold slices of meat loaf, soda crackers, buttered; stewed fruit put in a little jar with screw-on top, and a piece of ginger-bread.

Baked-beans sandwiches, orange and a couple of pieces of candy.

Hard boiled eggs, rye bread and fruit.

Minced-beef sandwiches, apple sauce (in jars) and cake.

Honey and nut bran muffins are a valuable addition to the lunch box. Here is the receipe: ½ cup honey, 1 cup flour, from ¼ to ½ teaspoon soda, ¼ teaspoon salt, 2 cups bran, 1 tablespoon melted butter, 1½ cups milk, ¾ cup finely chopped English walnuts. Sift together the flour, soda and salt, and mix them with the bran. Add the other ingredients and bake for 25 or 30 minutes in a hot oven in gem tins. This will make about 20 muffins.

Bedtime Stories

MENDING MELISSA'S DRESS

Elizabeth sat on a hassock mending Melissa's dress. Melissa was her oldest and largest doll, and Elizabeth did not know how she had managed to tear her new summer dress. Still, it did not matter much how it happened, after all. The only thing to do was to mend the dress, and since Melissa was not able to mend it herself Elizabeth was trying hard to do it for her. Besides, it was Elizabeth's birthday, and she was going to have a party in the afternoon. Of course Elizabeth not allow Melissa to wear a torn dress to the party.

It was a beautiful summer morning, and it was the hardest thing in the world to stay in the house on such a morning, let alone mending a dress that should not have been torn. Just outside the window there was a robin singing in a maple tree.

"Oh, come out! Oh, come out! Oh, come out!" the robin was singing, almost as plainly as a person could speak the words.

"I can't stand it much longer!" sighed Elizabeth. "But I just must mend this dress so that Melissa can go to the party. O dear! It's such a job!"

Then, just as she was putting some more thread in her needle, Teaser came bounding in through the door.

"Don't you dare to bother me, Teaser!" said Elizabeth. "I'm as busy as I can be!"

But Teaser was not to be put off in that way. He jumped round the room in little, short leaps, stopped in front of Elizabeth long enough to bark sharply, and then bounded to the door and back again.

"Yes, yes, Teaser," said Elizabeth, "I know that it is a beautiful day, and I want to go out and play with you, but this dress simply must be mended."

Teaser barked again. No doubt he knew very well what she said, but he had no idea of giving up so easily. Suddenly he seized Melissa's dress in his teeth and pulled it.

"Stop, Teaser!" cried Elizabeth. "Stop, I say, or you will tear it worse!"

But Teaser did not stop. He only pulled the harder. Suddenly, with an extra tug, he pulled the dress from Elizabeth's hands and dashed through the door, with the dress flying behind him. Elizabeth leaped from her hassock and ran after him.

"Come back! Come back!" she cried. "Come back here this instant, Teaser!"

Teaser looked over his shoulder and tried to bark, but, with the dress in his mouth, he did not succeed very well. Out of the yard he ran and down the road, with Elizabeth, now on the verge of tears, calling to him in vain as she pursued him.

Not far from the house Teaser suddenly stopped in the middle of the highway. He dropped Melissa's dress and began to sniff at a parcel that looked as if it had just fallen from a passing wagon. At first Elizabeth was so eager to pick up Melissa's dress, now more soiled and torn than ever, that she did not see the parcel; but Teaser barked again and danced round her in such a way that she had to notice it. She picked it up and ran with it back to the house.

"See, mother!" she cried. "See what Teaser found in the road, where he had dragged Melissa's dress—the horrid thing!"

The parcel bore no address. It was a long box, wrapped in plain brown paper. What could it be ? Who could have lost it ?

Melissa's mother decided to open it. Perhaps there would be a name or an address inside. And when they took off the wrapping paper and removed the cover, what do you suppose they found ? A beautiful doll, about the size of Melissa, dressed in the loveliest clothes !

"Oh! Oh!" was all that Elizabeth could gasp; and Teaser, who was much excited over the box and its wrappings, barked two or three times as loudly as he could.

Just then Elizabeth's father came in.

"Would you like that doll ?" he asked.

"Like it!" cried Elizabeth. "Of course I would like it, but of course I can't have it! Some little girl has lost it—or some little girl's father was taking it home to her."

Then Elizabeth's father laughed, and took her on one knee and the wonderful doll on the other knee.

"Well," he said, still laughing, "that new doll has come to your birthday party. I was bringing her home from the village, and the parcel fell from the wagon just before I got here. Teaser saw it fall, but it was too large for him to carry, and he made you go and get it before I could go for it myself."

"Oh, then she's mine, after all!" said Elizabeth, and she seized the beautiful new doll from her perch on her father's other knee and hugged him and the doll at the same time. "And Teaser knew it all the time and was trying to tell me!"

A little later, when Elizabeth looked deeper into the box that the doll had come in, she found there several extra dresses. One of them she promptly gave to Melissa to take the place of the soiled and torn dress that was now fit only to be thrown away. And what a merry birthday party they had that afternoon, and Teaser enjoyed it quite as much as Melissa and the new doll enjoyed it !

Cut out and burn the old blackberry and raspberry canes as soon as they've fruited.