Farm Crop Queries

Conducted by Professor Henry G. Bell.

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 pretaining 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 mailsd direct.

Question—H. C.—Would it be profitable to put a piece of land into spring wheat this spring, and would it be alright to use artificial fertilizer if no manure is used? What are the best varieties of seed? The soil is gravelly loam?

Answer.—If the price of wheat remains anything near what it is at present, spring wheat should be a very profitable crop in 1917. Prof. Zavitz of Ontario Agricultural College advises using from 1½ bushels of seed per acre. He recommends the Marquis wheat which has done best of its type in tests throughout the various parts of the province. Another good spring wheat is Wild Goose, which produces an exceedingly hard kernel but one not of very high quality. Early Java spring wheat is another variety which is also successfully grown.

I believe it would be advisable to apply at least 250 lbs. of fertilizer per acre in order to insure a good vigorous start of this money-crop. For a gravelly loam, I would apply a fertilizer carrying from 2 to 3% ammonia, at least 8% phosphoric acid and 1 to 2% potash. This can be broadcasted with a lime spreader, but is better applied through the fertilizer dropping attachment of the grain drill.

W. H. H.—The Maples—I have 500 acres pasture land and 700 acres meadow. Am carrying a little over 100 head of beef cattle, 100 hogs and 35 sheep at present. Am anxious to make my land carry more. What can you suggest?

Answer—If water stands on your meadows or pastures late in spring, obviously drainage is necessary. See that surface drains are kept open, and add tile drains as you are able until all the land drains freely. Valuable pasture and meadow grasses and clovers will not thrive in water-logged soil.

If clover is scarce in the sod and sheep sorrel grows freely, it is likely your meadow or pasture land is sour. Apply two to four tons of finely ground limestone per acre, or its equivalent of burnt lime or marl. This can be spread on the land as soon as it is dry enough to drive over it in spring. A broadcast limesower is best to use in spreading the lime.

It may be the plantfood of your grass land is getting scarce or inactive. If so, spread from 5 to 10 loads of manure on your meadow next spring just as grass growth is starting.

Finally, the kinds of grasses growing in your meadow may be naturally low yielders. If so, let your next seeding be of high-grade seed of good varieties. Prof. Zavitz of Ontario Agricultural College, after 10 years' tests, recommends the following mixture.

Grasses.	Lbs. per A.
Orchard	4
Meadow Fescue	4
Tall oats	3
Timothy	2
Meadow Foxtail	2

The average 10-yr. yield was 5.09 tons per acre.

Legumes.	Lbs. per A.
Alfalfa	5
Alsike Clover	2
White Clover	1
Yellow Trefoil	1

Total 24 lbs.

PIGS IN CLOVER.

Three girl pupils who are learning farming under the auspices of the Nottingham Education Committee with some little pigs which are among the animals under their charge.

POTATOES FOR ONTARIO

The Third of a Series of Five Special Articles by Prof. Henry G. Bell.

If Ontario produced in 1917 300 bus. per acre of potatoes on the acreage devoted to potatoes last year, she could provide one pound of potatoes a day for a whole year for a population of 8,250,000 people. Can she do it? I believe she can. Such an accomplishment is but the result of applying methods which have "proven out" no further removed from Ontario than Aroostock Co., Maine. The yield per acre obtained in this county has frequently exceeded 300 bus. for areas not of 5 or 10 acres but on whole farms of 75 to 150 acres.

Ontario for the most part has a good potato soil. The range of temperature and rainfall during the growing season is usually such as favors good yields of potatoes. Labor is very scarce, and potatoes probably require more labor than most farm crops. Nevertheless, if Ontario farmers would individually or co-operatively equip themselves with modern potato machinery, a great deal of hand labor could be avoided, and large areas handled with little more labor than it now takes to work the common 3 to 5 a. potato patches. There are at least five great essentials in growing this crop, each of which must be carefully observed if big yields or first quality are to be harvested:

1st—Potato soil must be fairly open, friable, and must be well drained.

Potatoes will not thrive in water-logged soil. See that the open drains are clear and the tile drains are doing their work. Plant your crop on sod land that was deeply plowed. The tubers swell rapidly in July. They must not be constricted by heavy, closely packed soil. Disk and harrow the seedbed till it is mellow.

2nd—Potatoes must have an abundance of moisture, especially when the tubers are filling.

"Ah, yes!" you say, "that is just where we cannot control conditions."

Are you sure you cannot control the moisture supply, at least to a considerable extent?

Is your soil deeply fall plowed, so that it can catch and retain the great amount of water that falls upon it in the shape of snow and rain during winter and early spring?

Is your soil well stocked with decaying plant material—stubble, second crop clover, strawy manure—humus? It acts like a sponge, catching and holding the moisture till it is needed.

3rd—Suitable well-bred varieties always outyield mongrel stock. Seed stock, whether early or late, should be pure, otherwise there will be unequal ripening, and frequently a variation in size and quality which greatly discounts the product when it is ready for market.

4th—Potatoes require an abundance of well-balanced plant food. Remember, potatoes have to be fed just like your hogs, or calves, or poultry, if you are to get largest yields of best quality.

Manure is the great farm plant food supply. It will supply much necessary food to potatoes as well as to other farm crops. However, in many of the large potato growing sections, the growers prefer to put the manure on land set apart for other crops such as wheat or meadow, and to give the potatoes their additional food in the form of fertilizers. Stock manure, especially if fresh, forms a splendid lodging place for the spores or tiny seeds of the potato scab diseases. A good fertilizer for potatoes should carry from 2 to 4 per cent. of ammonia. It is the nitrogen which forms 82 per cent. of the ammonia, which greatly aids the rapid and sturdy growth of the potato vine. The potato fertilizer should also supply from 8 to 10 per cent. of available phosphoric acid. It is the phos. acid which causes the plant to ripen and form its tubers. Before the war potato growers were using from 3 to 10 per cent. of potash in their potato plant food. It is this important food which aids the starch to form and fill out the tuber. Under present conditions potato fertilizers had best carry 1 to 3 per cent. of potash.

If you have a quantity of wood ashes you will do exceedingly well to scatter it on your potato seedbed and to work it into the soil. Well-stored wood ashes carries from 2 to 3 per cent. potash.

How much shall you use?

Prof. Zavitz at the recent convention of the Ontario Experimental Union reported that as a result of 95 tests of potato fertilizers throughout the province during the last 5 years, the experimenters obtained an average yield of 122.4 bus. per acre without fertilizers, and 141.3 bus. per acre where 320 lbs. of fertilizer was applied, and 161.9 bus. per acre where 960 lbs. of fertilizer was added.

Dir. Woods of Maine Exp. Sta. began a special fertilizer experiment in 1915 testing low potato fertilizers for Maine potatoes. On one test where potatoes followed sod he applied 1500 lbs. of fertilizer to the acre, and harvested the following:

Per A.	Plot Treatment	Yield Bush. per A.
1500 lbs.	fertilizer supplying nitrogen and available phosphoric acid, but no potash	286
1500 lbs.	fertilizer analysing 5% Ammonia 8% Available Phos. Acid 3% Potash	424

In applying fertilizers, as a rule not more than 400 lbs. should be sown in the potato drill or furrow. Amounts in excess of this should be sown broadcast over the potato seedbed and carefully harrowed or disked into the soil before the potato drills are "struck" or the crop is planted. Of course the potato planter, with fertilizer dropping attachment deposits the fertilizer in the row, to best advantage.

Proper potato fertilization is undoubtedly the secret of big yields. It is the measure that British agriculturists are so strongly advocating at this moment. As long as they were able to obtain available phosphoric acid, potato fertilization was what made it possible for Britain's enemy to produce such quantities of potato food for man and beast.

5th—Control potato disease.

This is the great perquisite that together with the foregoing means largest yields and best quality potatoes. This paper is already long, hence we shall delay discussion of this large subject for a subsequent article.

Remember that well drained land, plentifully supplied with humus, enriched with suitable available fertilizer produces largest crops of best quality potatoes, if good seed is planted and care is taken to control disease and insect pests.

The Dairy

If farmers were determined to raise as much of their feed as possible, perhaps dairying would not look so down in the mouth.

"Animal heat" is a term loosely used, but it means something when it comes to maintaining stock in midwinter. It will never do to let the fire go down, however hard it may be upon the feed bin.

The best way to bring cream to the right temperature for churning in cold weather is to put the pail in a tub of very warm water.

Stir the cream constantly so it will get warm evenly. If it is overheated the butter will be greasy and cheesy.

If cream is held too long it will become bitter and hard to churn.

No herd of cows can do well unless the supply of water is abundant and clean. If the herd can be watered in the stable, and help themselves, so much the better.

Sheep Notes

Certain breeds of sheep are distinctly more fertile than others.

Not a bit of the droppings of a flock should be wasted, and a flock wintered in roomy quarters under cover will give an increased profit.

The litter will absorb all the liquids, and the flock will keep the mass packed down so it will not heat. Sprinkle land-plaster over the pen frequently to keep down any odors.

Keep the pens well littered with clean bright straw, and keep them perfectly level.

Keep the ewes very thrifty by watchful, careful feeding.

Be sure that your ewes do not crowd though narrow doors. Crowding or jamming may kill an unborn lamb, and possibly the ewe.

Hogs

Many losses in pig breeding can be avoided by proper care of the sow during the gestation period.

If a pig has a cough give it some oil-meal in its feed. Oil-meal is laxative and it will often help a slight cold.

Wheat middlings made in a thick slop is one of the best foods for growing pigs. Never feed meal dry to pigs; make a thick slop always.

Don't forget to give the pigs lots of bright clover hay or alfalfa. They will eat it and it is the best thing in the world for them in connection with other feed.

Watch the bowels and if constipated give some succulence; roots are good in such cases.

Don't overfeed the brood sows and get them too fat. A fat sow never has a good litter of pigs. Keep the brood sows active.

Poultry

This is the time of the year that colds are most prevalent. Keep the front of the house open, but see that there are no openings in the back or side walls to cause draughts.

Everybody too busy to give the hens a fresh drink, yet there is no other little chore about the farm more important than watering the chickens.

Fix up a sheltered corner for the early broody. A newspaper in the bottom of the nest helps to keep the eggs warm.

A dry atmosphere is a pretty good insurance against canker and roup. Shun low, damp, foggy places for the poultry business.

Growing birds need mineral matter in their feed a good deal more than do those that have gained their full growth. Old birds are not making bone and muscle as much as they did once. But it stunts chicks and young hens to get short of grit and shells.

The hen never lays an egg until all the ingredients necessary for the complete development of a chick are present. Since the egg contains protein as well as carbohydrates, any amount of carbohydrates fed in the form of grain will not offset the necessity of protein. Milk given to the birds, either as a drink or in the form of wet mash, will double egg yields. Commercial meat scrap is of equal value, and may be substituted when milk cannot be obtained.

Horse Sense

If a horse shows measiness, paws a little, looks around to the flank, has an irregular appetite, with evacuation of small quantities of dry fæces, or little or no motion of the bowels, he is suffering from constipation.

Administer a moderate purgative as 7 drams aloes and 2 drams ginger. Feed on bran only until bowels act freely. Give 2 drams nux vomica 3 times daily, and give rectal injections of warm, soapy water every 5 or 6 hours.

The principal object in grooming a horse should be to stimulate the surface of the body by friction.

If you have a fall colt, get it to eating ground oats in a little manger by itself as soon as possible.

Keep the colts well bedded and clean. A manure-laden colt is a rebuke to its owner.

Never close the stable at night until the mud and ice are all cleaned off the horses' legs.

I am wintering a mare and a three-year-old colt on the stubs left from the sheep and a small grain ration at noon.

A set of chains for use in an unexpected icy time or to get a smooth-shod horse to the shop, is a good investment.

The idle work horses should not be fed so much grain as when at work, but they should have a small ration.

A Counter Move.

A popular trooper in an Australian cavalry contingent owned a large tract of land on which his present colonel had worked for £3 a week before the war. Thet rooper went before his C.O. for a small offence, and the penalty was fixed at a severe reprimand and two days' pay stopped. "I'm sorry," the colonel told his late employer in a friendly way afterwards. "But war is war, you know, and I cannot overlook things." "All right," said the trooper. "I don't think I deserved it, so I have cabled to my foreman to stop the money out of your pay."

STRAW AS FODDER.

In effect, a recent bulletin of the United States Department of Agriculture asks why the American farmer cannot put straw to the same use as it is put by the European farmer. In Europe the farmer knows as well as the American farmer that straw is not liked by stock, but instead of burning it, or otherwise wasting it, the European farmer chops it up, mixes it with beets, mangels, silage, or other feeds, and makes it so palatable that it can be fed to good advantage.

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, 75 Castle Frank Road, Toronto.

Business Girl:—1. It is impossible to mix business with pleasure successfully. All day in an office and all evening at the social game burns the candle at both ends, and spells disaster. An occasional dissipation is stimulating to all of us, and the temporary loss of sleep it entails can be made up; it is the canstant drain that tells. 2. If a girl who is entertaining another girl at her home receives an invitation to a party, she may with perfect propriety ask the hostess for permission to bring her guest.

Violet:—1. A cup of hot water or cocoa taken before retiring will sooth the nerves, and induce sleep. 2. For a sallow skin, eliminate sweets, pastries, rich gravies, fried foods, fat meats, and use fruits and green vegetables as much as possible. Drink two glasses of water (hot) on rising, two more about 11 o'clock, two in the early evening and two before retiring.

Mrs. L. H.:—1. Probably lack of flavor in the meat is due to the manner of cooking. Have the oven very hot at first, then the meat will be seared on the outside, and this will keep the juices in. After twenty minutes the temperature of the oven can be considerably lowered. Steaks and chops should be put into very hot pans, and turned quickly, then temperature lowered. Meat should be seasoned just before it has finished cooking. 2. Scrambled eggs become watery when they are allowed to cook too long.

Teacher:—The "Teutonic" territory occupied by the Allies is about 748,860 square miles, including captured colonies. The "Allied" territory occupied by the Central Powers is about 125,000 square miles.

Mrs. B. K.:—An emery wheel on a sewing machine is most useful for sharpening knives and lead pencils. Get a roll of half-inch adhesive tape from the drug store, cut off a strip just long enough to reach around the small wheel of the machine and press it firmly to the metal. Next, cut a strip of fine emery cloth the same length and width and glue to the tape, then wind the wheel all around with a strip of tape or muslin to hold in place until the glue is dry, which will take a day or so, when it may be removed. When worn out another strip of emery cloth can be glued over the first. When using the emery wheel adjust as for filling a bobbin.

Miss G. L. B.:—The colors for spring are pretty, navy blue, and all shades of grey, a new green called spruce green, and Copenhagen blue. Wool and silk embroidery in bright lines of gold yellow, chinese blue, Persian pink, and jade green are used on hats and dresses. Pockets are large and appear in pairs, one at either side of the skirt or coat. Pleats and tucks are in favor. Skirts no longer flare but take an inward curve around the ankles.

THE SUNDAY SCHOOL

INTERNATIONAL LESSON FEBRUARY 25.

Lesson VIII. Jesus At The Pool Of Bethesda—John 5. 1-15. Golden Text—John 5. 15.

Verse 1. A feast—Some good authorities have the feast; that is, Tabernacles, clearly, in any case, the Evangelist sees no significance in the particular feast, which belongs to the old order (hence of the Jews). It gave Jesus an opportunity of meeting great crowds in the temper of worship.

2. By the sheep pool, the [pool] which—So read, without altering the pronunciation of the Greek text. Hebrew—That is, Aramaic, as often. Bethesda—There is considerable variation among the authorities. Porches—Covered shelters to keep the sun off.

3. The interesting gloss at the end of this verse seems to have arisen early and in Palestine. It is drawn from local folklore, and its omission by the oldest copies rids us of a great difficulty: the Evangelist no longer guarantees an absolutely nonmoral miracle! "Each man for himself" was the motto of the crowd, and the best legs carried off the prize. No doubt there were geniune mind cures there as at other holy wells: superstition as well as faith can influence the body—witness "Christian" "Science" today!

5. Symbolic interpreters make much of the thirty-eight: like the Israelites of old, he had lived thirty-eight years in the desert before he came into his promised land! Unless we are out for discrediting the narrative, it is better to recognize a little touch of detail such as as an eye-witness loves.

6. The Lord's question seems strangely superfluous! But he asked Bartimæus one much like it. By such simple questions he drew out the man's state of mind: the very expression of the need was a preparation for meeting it.

7. Troubled—The Evangelist does not stop to explain the allusion, which does not concern him. It may have been an intermittent spring; or possibly (as Dr. Dendel Harris suggests) the world-wide notion of getting "the luck of the water" on New Year's Day. (See Expositor, December, 1906.)

8. Compare Mark 2. 11. The pallet (margin) might have been a mere mat, but the word itself (one from the vulgar tongue) rather suggests a light frame, such as we see in India.

10. People who could solemnly discuss whether a man with a wooden leg might carry that burden on the Sabbath—such was the national lack of humor!—fastened on this breach of their law. Jesus could have told the man to fetch his property next day! But he regularly set himself to discredit a law which made the Sabbath a weariness instead of a delight.

11. One who could do such a deed must have God's authority to regulate the Sabbath. It is the same attitude as that of the blind man in John 9. 33.

14. In the temple—"Returning to give glory to God." This is a key to verse 15, where the man thinks he silences objectors by mentioning the name of him who had mediated God's gift. Sin no more—Not that sin had directly caused his trouble (John 9. 3). But sin would bring, here and hereafter, a worse thing than even all years of helplessness.

Fibre From a Flower.

Fibre useful in textiles and cordage has been extracted from the water hyacinth of Indo-China by a Frenchman.

The Bedtime Story

THE HAPPY CHICK.

Blim, blim, blim!

"Oh, Mother, dear! I hear some one knocking outside the coop. I must run out and see who it is." Charlie Chick started from under his mother's wing with a rush.

"Wait, wait! Take it calmly. Let me look out and see who it is. You must not be too hasty, especially when you are young," said Mrs. Plymouth Rock, coddling Charlie under her wing as she peeked out of the coop.

"Ah! I told you so. It is Rover, the big dog, gnawing at a bone back of our home. You must beware of dogs and cats," Mrs. Plymouth Rock settled herself once more and Charlie closed his eyes for a nap. When he woke up he stretched his wing over his little leg and yawned. Then he asked:

"Mother, why does a dog have horns?"

"Horns? Horns? I did not know that a dog had horns—do you mean ears?" asked Charlie's mother, laughing.

"Yes; that must be it. But why haven't I horns or ears that stick out?"

"You do not need them, my dear. Mother Nature does not want us to be burdened with things which are of no use to us. A dog needs his ears to hear with. They are placed where they will catch all the sounds that come to him. He must hear the rustle of the grass which tells him that a rabbit is near." Mrs. Plymouth Rock looked lovingly at her son and cuddled him once more under her wing.

All was quiet for a time and then Charlie Chick poked his head out from under his mother's wing and said, "How may we know our enemies, mother, dear?"

"My child, you ask a lot of questions for a tiny chick; still, you will never learn if you do not ask. Beware of things which have four legs. Beware of birds that fly in the air, lest you chance to fall into the claws of a hawk. Keep your ears open, even if they do not stick out like a dog's, for the shrill cry of the hawk will warn you when you are in danger."

"Thank you," replied Charlie Chick, as he sauntered forth into the lot.

By and by he saw something moving toward him. Remembering what his mother had said, he looked and saw that the object had two legs. Sure enough! It was Buddie from the big house coming to feed the chickens.

Such a scampering in the hen yard! Charlie was soon surrounded by a lot of other chickens, all bent on having their share of corn. When he and his mother had eaten their fill, they both went back to the coop and Charlie said:

"I saw Buddie coming and I knew that he was a friend because he had two legs; but, mother, dear, he did not have ears like Rover."

"No," said Mrs. Plymouth Rock, softly, "but we must not try to tell our friends by their ears or eyes, but by the kindness which they show toward us." After saying this Charlie's mother peeked under her wing and found that he was fast asleep.

"How happy is childhood!" she said to herself. "That is the way it should be."