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.

W. G.:—What results might I expect from mixing flax with my oat seed when sowing it in the spring? Can I put the flax seed in the drill with the oats or will it have to be sowed broadcast after the oats has been drilled? Also, will it mature with the oats or not? Any advice concerning the benefit of sowing this seed will be gladly received.

Answer:—Speaking generally, mixing flax with oats has not been found to be highly satisfactory. Professor Zavitz found that by mixing oats and barley in proportions of approximately a bushel of each and by adding 28 pounds of flax to the acre he obtained 2511 pounds of grain per acre in comparison of 2509 pounds per acre from the oats and barley without the flax. Flax straw can be fed to cattle without injurious results, but it is not highly nutritious and its use should be delayed until supplies of oat, barley and wheat straw have been exhausted. Flax seed should mature approximately with early oats. In sowing flax the seed is small and comparatively heavy. If sown in a mixture with barley and oats it will tend to run through the seed tubes too quickly. For best results then, the seed will have to be sown separately after the oats have been drilled. As a rule when grown for seed purposes two or three pecks of seed should be used per acre. When grown for fibre it is sown thicker, one and a half to two bushels of seed should be sown to the acre.

J. C.:—I have five acres which have been sod land for twelve to fifteen years. This field has been plowed. Two crops of good corn have been grown, then summer fallowed and sown to wheat. The piece was top-dressed with manure, 200 pounds of phosphate put on per acre with the wheat. A fine piece of wheat was harvested this past summer. I plowed the stubble in the fall. Now, I wish to seed this ground to alfalfa. Will you direct me to the proper manner of seeding? Also had I best test the soil for acid condition? Can I take the frozen lumps by thawing them in the house and get a satisfactory test? In regard to the oats, I am anticipating sowing the Worthy brand of oats as they have been recommended to me. Would you recommend them for my ground which is of the moderate clay loam soil, which is very fertile? Also the proper place to get them. I have a neighbor who has the same which yielded only 30 bushels per acre this past season. Would it be wise to use his seed?

Answer:—In preparing your seed bed for alfalfa I would advise you to test the soil for acidity or sourness. You can do this by digging a hole 4 to 5 inches deep in various parts of the field while the soil is damp. Bury a small piece of blue litmus paper in each hole and leave it there for twenty minutes to half an hour. When you dig it up if the paper has turned pink this indicates sourness of soil. If you find such to be the case, apply at least a ton of ground limestone or half a ton of air-slaked burnt lime to the acre. This could be scattered evenly on the plowed ground or worked into the soil by harrowing, a couple of weeks before you are ready to seed the crop.

When it comes to seeding the alfalfa precede the sowing of it by manuring the land with 4 to 5 tons of well rotted manure to the acre. This should be distributed as evenly as possible and worked into the soil by harrowing and disking. If you do not have a sufficient supply of manure excellent results can be obtained by applying 200 to 300 pounds of fertilizer, carrying from 2 to 4 per cent. ammonia, 6 to 8 per cent. phosphoric acid and 1 per cent. potash. This fertilizer should be distributed much the same as lime and worked into the seed bed in similar way. Do not put it on at the same time as you apply lime, since fresh lime will tend to make some of the plantfood of the fertilizer unavailable. Following the above preparation of soil, drill in the alfalfa seed carefully, with a bushel to a bushel and a half of barley to the acre as nurse crop. Having the barley cut gives the alfalfa good chance to make growth in preparation for the coming winter, unless it has made a very heavy top-growth by autumn do not cut it. The extra protection of a medium heavy top-growth will do a great deal to help it through the first winter.

I do not know the "Worthy" oat, hence cannot pass any intelligent opinion on it. There are so many excellent varieties recommended that I would hesitate to use any but those which have been established as good varieties both through experience at Guelph and tests throughout the province. Professor Zavitz at the 1917 meeting of Experimental Union reported the following varieties as most productive in tests throughout Ontario: O.A.C. No. 72, and O. A. C. No. 3. These are specially selected oats of superior merit developed on the College Experimental ground.

CARE OF HORSES DURING BUSY SEASON

By T. J. Mathews.

On every farm where horse flesh is the motive power, there is one problem that comes once a year, namely, the preparation of the teams so that they can stand the hard work of spring and summer without a blemish resulting, such that the value of the horse is not greatly decreased and the ease of working it greatly increased. One of the first teams I ever drove had in it an ugly horse and his disposition had been thus re-arranged because somebody had sometime erred in not having him properly hardened when he started in with the spring work. This horse was a big fellow, abundantly able to work, but the moment the least break in the skin came on either one of his shoulders, the only way he could be put into the collar was to buckle it and slip it on over his head. Even at that he would do considerable jolting about when the harness was put on him and of all the unpleasant beasts to work, this horse beat everything I ever tried. He never would take hold until the other horse started the load, and all this might have been averted by a little judicious care in handling. I know this to be a fact because neighbors who knew the conditions said so.

Then there are hundreds of horses that have shoulders that will never be fit to work until there has been an operation performed and part of the scar tissue cut away. Every time a shoulder is sore, in healing up there is bound to be some scar tissue formed and the more the shoulder is affected, the more scar tissue is formed and in the end we have a great ill-shapen portion of flesh and hide that it is practically impossible for the horse to use in handling and a sore shoulder is pretty likely to cause one or the other; a poor hauler or a poor disposition.

This condition can, in most cases, be greatly relieved by hardening a horse into the work. Usually one of the first jobs the team is put at is that of hauling manure and if there is any heavier job than hauling a manure spreader in the early spring, I have it yet to see. The fact that the heavy hauling lasts for only a short while does not particularly alter the question. Blisters may be put on tender hands in ten minutes while if the same work was spread over two hours it would have no affect whatever, so in hardening the horses into work it is better to give them light work for long periods rather than severe work for short periods. Light work stretched over a week or ten days will usually put the teams in good condition for their spring's work. If this does not seem to harden the muscles rapidly enough, the shoulders may be bathed every night in tan bark tea where hemlock bark may be had. Good strong table tea will also do the same thing, or an alum water solution is often of value.

The collar that fits a horse is the most imperative of all. No amount of washing or hardening will make a misfitting collar fit. The collar should be of the right size and adjusted so that the point of draft will be just a little above the shoulder point. Pads on collars usually do but little good. When a rough plow handle blisters our hands we do not usually put on canvas gloves. Rather, we get out the draw shave and some sandpaper and make the handles smoother. In this connection I have used the solid stove blacking to rub onto the wearing surfaces of the collars every morning to make them smoother.

Seldom as it is done, harnesses are made so they can be adjusted to the horse. It is easy to adjust the harness to the horse, but it is much more difficult to adjust the horse to the harness as is so often tried. There is no excuse for the top of the head becoming sore through too tight a bridle. This often leads to poll evil. Neither is there any excuse for the crupper being so tight as to cause the horse to rise up behind in righteous indignation. The hames should also be adjusted so that the part where the hauling is done should be at or a trifle above the shoulder point.

Not only does it conduce to the pleasure of driving a team to have them free from sores and blemishes, but it also keeps them more valuable in case a sale is to be made. If the harness is gone over carefully each spring to make sure that it fits the particular horse on which it will be used all summer, there is but little excuse for sore shoulders and sore necks.

Harden off the shoulders by light work for a time and if this is not sufficient, bathe them once a day with some good muscle toughener. In addition to this, careful driving and close watching will keep the team in A-1 condition, to the mutual profit of everybody concerned.

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.

Mother of Four:—A correspondent sends in the following which may help to solve your problem:

I have taught my four little people to play the simple game of Rooster.

If we can play out of doors, and that is much better for them, we draw a circle about ten feet in diameter. Two Roosters or players step into the ring with folded arms which must be kept folded while they are in the ring. If a child grows excited and unfolds his arms then he is "out." The object of the game is for these Roosters to shove each other out of the ring, hopping only on one foot and not using their arms. I always give a prize. We have a silver cup that belonged to the first baby in the family and we call that the Trophy Cup. If we decide to have a week's Rooster tournament the cup belongs for twenty-four hours to the winner of the last game and he usually uses it to drink out of at meals and taunt the losers!

I have a way of clipping out games which I find described in magazines and now and then when the children begin to get fussy among themselves because they are tired of the old games, I spring a new one on them.

Blind Bell is simple. We all blindfold except one who has a little bell and it is our job to catch her if we can. We do this in our big living room sometimes but have more fun in the barn where there is nothing to break. When we play Blind Bell in the living room the players have to promise to do their part to rearrange the furniture which is pushed out of the way.

Mrs. Brown:—In reply to your query the following scale may somewhat surprise you. It shows that despite Canada's natural advantages of soil, German farmers harvest between one-half and two-thirds more bushels per acre than do the Canadian farmers.

	Germany Bushels per acre	Canada Bushels per acre
Wheat	35.1	21.04
Rye	30.4	19.28
Barley	41.3	29.96
Oats	61.1	38.78
Potatoes ...	235.8	165.88

Farmer's Wife:—The boys of Canada are responding magnificently to the call from the farms. The S.O.S. has not been in vain. They are lining up in all the Provinces and it is expected that the original estimate of 25,000 will be far surpassed. In several towns and cities in Ontario 100 per cent. of the eligible students in the high schools and collegiate institutes are reported as having enrolled. The farmer and his wife need no fear of lacking help so long as all those eager young boys with their vitality and their enthusiasm are on hand.

Patty Spells "Peculiar"

"I have such a peculiar feeling!" sighed Patty in a somewhat peculiar tone.

That was queer, for you see she was tucked snugly in bed, as she always was at night, and had nothing to do but to sleep. If she had been scrambling along the foot rail, or balancing on the bedposts, it would have been different. There cannot be anything peculiar about just being in bed.

The room was very still. Only the Street Lamp peeped in at the window, to see if Patty were not asleep yet. And nothing moved—except—

I thought I heard a sound, didn't you?

Goodness! Something was scrambling along the foot rail, and more Somethings were balancing on the bedposts. Such queer sorts of Somethings! No wonder that Patty felt peculiar!

"What is it?" cried Patty, and pulled up the covers, all ready to hide her head.

The Somethings kept right on scrambling and balancing, and paid no attention to Patty.

"They—they aren't mice?" Patty asked the Street Lamp.

The Street Lamp was much amused. He threw a strong light over the Somethings, so that Patty might see for herself.

"Not mice," said Patty. "But they're so little—and stiff—Why, I do believe they're Letters!"

The Letters stopped scrambling along the foot rail. You see, they had come to the middle of it. And they arranged themselves in a row. That is, seven of them did. Two more were shoving each other and quarreling, so that there was a row with a hole in it. No, it was not a doughnut straightened out, as perhaps you might think, for it looked like this:

P E U L I A R

"What are you?" cried Patty.

"We used to be a word," the seven Letters said sternly. "And now look at us!"

"You look," said Patty, "you look sort of—peculiar."

"Only 'sort of'!" cried the seven Letters indignantly. "And it's all your fault, Miss Patty."

"Mine?" cried Patty.

She saw now that the other two Letters were a C and a Q. Both wanted to get into the space left in the row. And each was trying to keep the other out.

"I wish you wouldn't quarrel," said Patty. "There's plenty of room for both of you."

As she spoke, the two Letters crowded together into the space, just as close as they could stand, so that the row looked like this:

P E CQ U L I A R

"Much you know about it!" shouted the seven Letters. "We're a word of eight Letters, not nine. And we were always happy till to-day."

"What happened to-day?" Patty asked.

"The teacher told you to spell us," said the seven Letters. "And you spelled us wrong."

Patty felt dreadfully ashamed. She turned so red that even the Street Lamp noticed it.

"I didn't do it on purpose," she stammered.

"What's that to us?" said the seven Letters. "You left out C, who's always been in the family. And you let in this fellow Q in his place."

"But isn't that right?" asked Patty.

With that, Q pushed C backward off the foot rail and settled himself in the space. The seven Letters wriggled and twisted to get away from the intruder with the little curly foot, until the row looked like this:

P Q L R
E U I A

The next minute C came climbing back. He caught Q by his beautiful curly foot and pulled him out of the row.

"Oh, I wish you wouldn't quarrel!" said Patty. "Everybody seems to prefer C, so, if Q would stay out, perhaps—"

As she spoke, the seven Letters straightened themselves, with C in the space. And the row looked like this:

P E C U L I A R

"How do we look now?" cried the eight Letters.

"Not any particular way," said Patty. "Just—peculiar."

"Right!" said the eight Letters, with satisfaction.

"But what about me?" cried Q. "Can't I be in Peculiar any more?"

"I'm afraid not," said Patty. "But they'd love to have you in Queer."

"How do they spell it?" asked Q.

"You come first," Patty told him, "with a U and two E's and an R."

Sure enough, more Letters came scrambling up the bedposts. Q ran to join them as they settled upon the foot rail. So now the row looked like this:

P E C U L I A R Q U E E R

"You're different," Patty said thoughtfully. "Yet some way you seem alike."

"How peculiar!" said the eight Letters.

"How queer!" said the five Letters.

"Don't mix us up again," said all the Letters together. "Now mind, Patty!"

"I shall mind my C's and Q's," said Patty.

A Knitting Song.

Over and under, up and through,
Stitch upon stick in the lengthening rows,
Yarn of khaki or yarn of blue,
Day after day the knitting grows.

Who is the one shall wear my work?
Lad of Canada, lad of France?
Pray he be young with eyes of blue
And the eagle's look in his steady glance,
Into the stitches I will weave
Prayers of a woman's tenderness,
Whispers of hope and high desire,
Holy thoughts that shall guard and bless,
Till they shall fold him and shield him from harms
Like the loving clasp of a mother's arms.

Over and under, hopes and fears,
We weave our hearts with the yarn of gray.
Love and sacrifice, triumph and tears,
Row upon row the livelong day.

Who is the one shall wear my work?
Soldier of England or Italy's strand?
Pray he be steady and strong of soul,
Lost in the mists of no man's land.
Pray he be gentle with maidens all
For the sake of her who is knitting here.

Kill as he must, but not in hate,
Battling with wrong till the right appear.
Stitches of mine, weave holy charms
To guard his body and soul from harms!

—Grace Atherton Dennen.

INTERNATIONAL LESSON
APRIL 21.

Lesson III. Jesus Transfigured—Mark 9. 2-10. Golden Text, Mark 9. 7.

Verse 2. After six days—Luke says "about eight days after." Peter, and James, and John—The same inner circle of friends who accompanied him into the death chamber in the house of Jairus, and who at the last went with him into Gethsemane. The deepest secrets of his person and his work he will share with them. A high mountain—Some have said the Mount of Olives, others have concluded that Mount Tabor in Galilee is the place. The best scholars now conclude in favor of Mount Hermon, which rises nine thousand feet, a few hours from Caesarea Philippi. Transfigured—Luke tells us that the change came over him when he was praying. It is described in Matthew and Mark as a transformation. Luke says the fashion of his countenance was altered. All of which tells that upon his face was an unusual "glory", an indication of supreme exaltation of spirit.

3. His garments became glistering—"Dazzling" says Luke. Exceeding white—"As snow" says the King James Version. Nothing can exceed the dazzling brilliancy of the snow on Hermon in the sunlight.

4. There appeared unto them Elijah with Moses—Representing the prophets and the law. The two earlier dispensations bearing witness to the Messiah. Talking with Jesus—Luke states that they talked with him "of his decease which he was about to accomplish at Jerusalem." Jesus had only recently begun to speak about his sufferings and death.

5. Peter answereth—Always the first to speak, Peter proposes that they remain, just when Moses and Elijah are withdrawing. Rabbi, it is good for us to be here—Peter uses the Aramaic word for teacher. He is filled with a sense of the exaltation of the moment and is willing to abide there. Three tabernacles—Booths made by the intertwining of branches, such as the natives of Caesarea Philippi or Banias construct to-day on the tops of their flat-roofed houses, in the warmest weather.

6. He knew not what to answer—Here was something entirely outside of his experience. He was dazed with the unusual glory and mystery.

7. There came a cloud—Even while he was speaking (Matthew) the cloud overshadowed them all. "They feared as they entered the cloud" (Luke). We recall that the cloud in the Old Testament appears in connection with special manifestations of God, as in the Wilderness (Exod. 16. 10; 19. 9, 16; 24. 15) and at the dedication of the temple (1 Kings 8. 10). A voice out of the cloud—At the baptism of Jesus there was heard also a voice. All three of the synoptists report the same, with the "hear ye him." As much as to say, ye have heard Moses and the prophets, their dispensations have passed, now has come the new dispensation, that of the Christ, who is the inaugurator of the new era of the kingdom of God. According to Matthew, when they heard the voice the three disciples fell on their faces through fear, and Jesus touched them them and said, "Arise, and be not afraid."

8. Suddenly looking round about, they saw no one any more save Jesus only—The manifestation vanished as suddenly as it had appeared and now they were alone, as before, with Jesus.

Attempts have been made to explain away this account as a fraud, as an imaginative version of merely natural phenomena, as a myth, but here we have the united testimony of three accounts, each of which has its own marks of independence, and one of them is the recollection of an eye-witness (Peter).

Blessings.

Well-blest is he who counts among his store
Health, and the comfort of a steadfast friend,
A cheerful home, a heart of deep content,
A sunny garden spot to dig and tend.
More blest is he who adds to these the joy
Of work that leads him to his Heart's Desire,
A little child to prattle at his gate,
A dear gray head to crown his evening fire.

The simplest way to prevent the accumulation of dirt is to make it easier to be clean than to be dirty.

To get the maximum number of eggs the hens are capable of laying, not only requires good judgment, but careful observation of the results of feeding. The flock must be studied and the feeds varied. Variety in the laying rations will invariably bring out better results than any single ration fed constantly. Even a hen that is not laying requires a certain amount of food to maintain her physical condition properly. The laying hen must have this much and more too, if she is to produce an abundance of eggs. Her appetite should be keen and eating encouraged. Rations that whet her appetite induce her to get into the scratching litter earlier in the morning and rustle for feed until late in the evening with the result that she feed which she utilizes in the produc-consumes an increased qutntity of tion of eggs. This can best be accomplished by giving her such a mixture of feeds as will keep her digestive tract in good order and appeal to her appetite.

The element of green feed in the hen's ration should never be left out. This can be provided in numerous ways. Roots, ensilage, sprouted oats, cabbage, vegetable scraps, alfalfa and clover leaves all supply a valuable element that aids efficient digestion. Some whole grain should be fed in the litter, as well as ground grain in the mash. Each supply needed food nutrients required in the production of eggs. Unlimited quantities of sour milk should always be available for the poultry, but if sour milk is not to be had, then commercial beef scrap may be substituted. However, just because the hens have access to sour milk, is no good reason for depriving them of adequate fresh water drinking facilities. Her drinking trough should be kept clean, and in freezing winter weather the chill should be taken off the water. Icy water furnished laying hens in the winter time not only chills their bodies and wastes their energy in providing sufficient body warmth to overcome such loss, but discourages the consumption of adequate quantities of water to supply the body needs. The supply of grit and oyster shell should always be kept replenished.

Efficient feeding not only means ample feeding, but the supplying of the various nutritive elements in the ration to bring out the maximum egg producing results. To skimp in the rations, brings a loss in the production of eggs. The laying hen must not only have the nutritive elements required to keep her body in first-class physical trim, but she requires a competent surplus for the purpose of producing eggs. Good feeding, keen observation and the exercise of competent judgment solves the egg-laying problem and unlocks the secret of success.

Every farmer and breeder should keep a record of the date on which each sow was bred to boar and make a correct calculation that sixteen weeks from the day a litter of pigs may be expected. At least a week or ten days before the day when the pigs are expected the sow should be supplied with a pen by herself that is not very large, but is warm and free from cold draughts of air. The reason we say beforehand is because it will take at least a week for the sow to become wonted to her new quarters and feel at home, a matter of considerable importance, as the home-like feeling will prevent restlessness, which is a dangerous difficulty at this critical time.

Be sure and attend to giving the sow the proper feed to put her system in the right condition. Do not feed her heavily, but give just what may be termed a moderate amount of feed made up of a variety of food materials. The feed should not be entirely of heavy feed, like corn, but should contain some light feed like wheat bran and middlings, which will put the bowels in a laxative condition. A small amount of vegetables like mangel beets or small potatoes, say two or three pounds each day, will be of great benefit in several ways. It will cool the system and encourage the secretion of milk at the right time.

The bedding should not be too plentiful or coarse, as little pigs soon after they arrive are liable to get entangled with coarse litter and get discouraged about getting to the udder. If the bedding is abundant the pigs often work under it and get laid on.

While the sow should have a moderate amount of feed before farrowing, all feeds should be kept away from her at this time. Remember that she is sick and her system is not in condition to digest food. Do not feed her any heavy feeds at this time and do not feed lightly for at least twelve hours after farrowing. After her sickness has disappeared a little sloppy drink can be given. When she gets up and manifests a desire for food begin by giving a small quantity of light feed, largely sloppy feed, and increase gradually as she seems to desire. Do not atempt to get her on to full feed under a week's time. Bad results are sure to follow if heavy feeds are given soon after the arrival of the pigs. If the sow is not seemingly injured by heavy feeds at this time the pigs will be. I have known cases where sows were fed a full meal of heavy feeds, of their dying inside of twelve hours. It is sure to produce a fevered condition if it does not kill them, and the pigs partake of the same and do not thrive for some time. It is not safe to take any chances in this respect.