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—V. B.:—Will you please give me a little advice about hog pasture? I had a hog lot which I manured and intend to summer fallow. It was clover last year. I have a grass pasture for the hogs now. What is the best to sow on this lot? Can I sow grass seed and have a grass pasture next year, and what kind?

Answer:—I would advise you to plow the lot in question, and carefully disk and harrow it. Then sow a mixture of grass seed somewhat as follows:

10 lbs. common red clover
8 lbs. timothy
2 lbs. alsike

Total 20 lbs. per acre.

This should be distributed evenly and harrowed in thoroughly. If the ground is rather open in texture, I would advise you to roll it and then follow with a light harrowing. In order to insure a good catch of grass, would recommend that you add 200 pounds per acre of a fertilizer carrying 2 to 3% ammonia, 8 to 10% phosphoric acid and possibly 1% potash. Distribute this evenly just after the ground is plowed, so that the disking and harrowing will work it into the soil before the grass seed is sown.

Question — E. B. :— How should orchard grass be sown and how cultivated? I have twice sown orchard grass with barley without success. What caused the failure? When is the best time to sow orchard grass, in September, or October or the Spring? How much should be sown to the acre?

Answer:—If the orchard grass seed is of first quality, from 18 to 20 pounds per acre is sufficient. Otherwise, increase the quantity up to 30 pounds per acre. Probably your difficulty in seeding orchard grass with barley is that you have used too much barley and smothered out the grass. Do not use over a bushel of barley per acre when growing this crop as a nurse crop. Furthermore, orchard grass is rather slow becoming established. The first year it looks very weak. The second year root stalk have developed and a vigorous stand is present. It does not reach maximum growth until the third year. The best time to seed orchard grass in Ontario is in the Spring at the time the usual clover and grass mixtures are sown.

Question—A. W. B.:—I am very much troubled with chess or cheat in my crops. Will you kindly let me know the cause and how to get rid of it?

Answer:—Chess or cheat is one of the brome-grasses which seeds about the time the wheat ripens. The seeds are usually scattered by the cutting of the wheat. In preparing seed wheat it is difficult to separate them from the good wheat by fanning. Hence, they are spread from year to year at the time the wheat is sown. It is a comparatively easy matter to get rid of the pest by planting your crops in a rotation where wheat does not follow wheat for two or three years. Clean cultivation and planting of good clean seed will quickly rid you of the pest.

Question—R. S.:—What is the best time to make a meadow, in the Fall or in the Spring? How much seed is required for an acre?

Answer:—As a rule, in Ontario best meadows are established in spring. Fall plow the land and leave it in rough furrow until spring. As soon as it is dry enough to work in spring, disk and harrow it to a smooth seedbed, then sow a grass and clover mixture, using either wheat, barley or oats as a nurse crop. Best results are obtained from using wheat or barley as nurse crops, since these grains ripen early and are soon removed from the ground. Do not seed the nurse crop too heavily. A bushel and a peck is usually sufficient to the acre when using as a nurse crop. For a grass mixture the following is common in Ontario:

10 lbs. common red clover
4 lbs. alsike
6 lbs. timothy

20 lbs. per acre.

Make sure of the quality of the seed by testing a couple of hundred seeds between blotters. Dampen the blotters and place them on a plate, putting the quantity of seed you are testing between them. Keep the blotters damp but not soaked, and if testing during the winter keep the test in a warm part of the house. In a week or ten days the seed will have sprouted and you can estimate the percent. of good vigorous seed. This insures the using of seed that will grow. It does not matter how well you prepare your ground, if you do not sow good vigorous seed results will not be most satisfactory.

In order to insure a good catch I would advise drilling in at seeding time about 200 pounds of fertilizer analyzing 1 to 2% ammonia and 10 to 12% available phosphoric acid at the time that you are sowing the grain and grass in spring. This available plantfood gives to the grass and clover what whole milk gives to the young growing calf. It is rich in available plantfood which will greatly assist in insuring a good catch of both clover and timothy. It will also help the grain crop.

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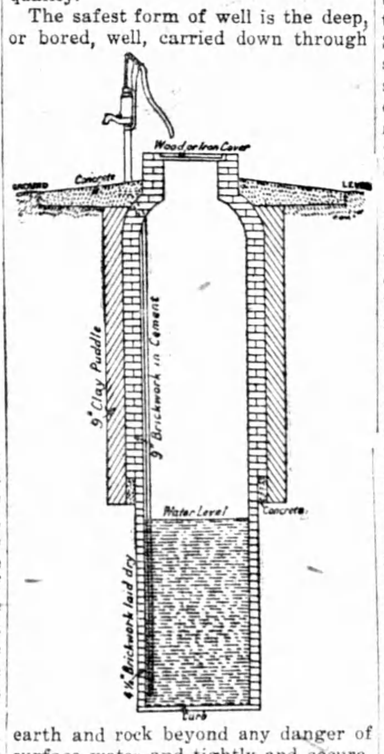
WELLS AND THEIR CONSTRUCTION

Special Care Should be Exercised to Ensure a Pure and Abundant Supply of Water For Home Use.

Apart from municipal water works, our water supply is secured almost entirely from wells. Especially is this true on the farms and in the smaller villages. It is of primary importance that the well be properly constructed, that it be situated far from any source of possible pollution, and that the water be of satisfactory quality.

The safest form of well is the deep, or bored, well, carried down through



earth and rock beyond any danger of surface water and tightly and securely lined with piping. The piping is carried up to a tight-joint with a pump or other elevating means at the top. Around this well, a concrete platform should be laid of at least eight feet diameter, sloping away from the well, to prevent surplus water, or water from melting snow, working down alongside the pipe.

The shallow, or dug, well is much more common. This type is usually the most carelessly constructed and the source of much danger to health. Such a well, however, may be constructed in a manner as to be safe, in so far as the collecting and containing of the water supply is concerned. It must be understood that no well can possibly be satisfactory if the source of the water supply is polluted.

The illustration herewith shows a well which is as safe as possible. For the upper nine feet the well is watertight, the sloping platform diverts the surplus water from the well, and the top of the wall is carried above the level and provided with an absolutely tight cover.

The pump has been placed on the concrete platform, on the ground level, the pipe is embedded in the concrete and carried to the bottom of the well where the water is coldest. There is considerable advantage in not having the pump at the top of the well. Surplus water is continually spilled, and, as more or less mud, barnyard manure, etc., is carried on the boots of those using the well, this water becomes polluted and seeps through the cover.

In many summer resorts, defective wells are the cause of much sickness, and many cases of typhoid among urban residents have been traced to this source. Too much care cannot be exercised in seeing that drinking water—one of the essentials of life—is thoroughly protected.

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.

Mrs. E. C.:—1. To preserve strawberries in the sunshine, place in a preserving kettle in layers as many pounds of sugar as of sound ripe berries, which have been hulled and washed, and when the juice is drawn out a little set it over the fire to cook; let cook twenty minutes after boiling begins. Turn the berries into earthen or agate plates, cover each with a pane of glass to fit tightly over the top and place in the sun. Let stand two days, stirring two or three times each day. At the end of this time place in sterilized jars, seal and store them without reheating. 2. To give the hair a dry shampoo take one cupful of cornmeal, warm it in the oven, add one-quarter cupful salt to it, mix well, then holding the head over a cloth or newspaper rub the meal into the scalp. Brush thoroughly.

Peggy:—1. Red Cross Societies are an outgrowth of the convention of Geneva, Switzerland, held in 1864. 2. Yes, the South Pole was discovered by Roald Amundsen, the Norwegian explorer, who reached it on December 16, 1911. Robert Falcon Scott, the English naval officer and explorer, reached the South Pole on January 18, 1912, only to find the Norwegian flag and records left by Amundsen. Scott perished on the return trip.

Mrs. S. T.:—1. Aphids or plant lice and black fly are the insects injuring your currants and gooseberries. They usually attack the new leaves and tips. Frequent spraying with some of the tobacco preparations or whale oil soap has a good effect. If the fruit is not more than half formed put in the soap or tobacco solution one tablespoonful of arsenate of lead paste or one-half tablespoonful of arsenate of lead powder or one teaspoonful of paris green to a gallon of the spray. If the fruit is well formed this is too poisonous to use and as a substitute you can use hellebore, one ounce to a gallon of water. Hellebore is a mild poison and must be bought fresh each time, as it loses its virtue on opening. In all these mix the poison in a very little water, smooth, before blending with the other solution. 2. Your garden is afflicted with cutworms. These usually work at night and are among the most malicious of insect pests. One way to help is to make a ring around each plant in the effected area of quicklime. Another is to use a poison mash. This is made with one pint bran, one-half teaspoonful paris green and one teaspoonful molasses with enough water to moisten to a thick dough. Put a little of this along the rows, and the cutworms will eat it and die. In the fall dig in a good lot of quicklime in the affected ground, after the garden crops are all in. Care should be taken to keep children and domestic animals from the poison bait.

Mother:—1. To protect the child from flies and mosquitoes, make a framework of slender strips of wood the size of the bed, and tie the four supporting uprights to the bedposts, over this frame a two-yard-wide piece of cotton mosquito netting is thrown and the edges tucked in under the mattress. Let there be plenty of fresh air in the room; it spells health. 2. The rubber diaper is decidedly harmful to baby. It acts like a heating compress, keeping the genitals in a constant state of moist heat which encourages itching, with its consequent scratching and rubbing. One of its most serious after effects is bad practices. The mother or caretaker seeking protection may carry about a rubber pad to place on their laps under the child, but under no circumstances bind up the child with rubber cloth. 3. A child's bed should not be too soft. A hair mattress or some firm sanitary cotton mattress is best. This should be covered with a protective strip of stork sheeting and the pad, over which should be spread a cotton sheet. The covering on the bed should be as light as is consistent with needed warmth. Overheating is highly injurious. A baby should have a bed to himself. 4. The best method of removing superfluous hair is to destroy each individual hair with a little electric needle. This method is called electrolysis. 5. Vitamines are the vital elements in cereal grains, milk, eggs and vegetable products. They lie very close to the outer covering in grains, cereals and many vegetables; are easily destroyed by high temperature in cooking.

O. W. G.:—1. To remove white spots from a polished surface rub with a soft cloth wet in essence of peppermint until spot disappears; then polish with flannel. This will not injure the most highly polished wood. 2. For a holder to remove boiling pots from the stove or in draining vegetables, use an ordinary canton flannel mitt with palm and thumb padded with cotton and a loop of tape sewed to the wrist for a hanger. The protection it gives the back of the hand is obvious. 3. I am told that a paste of molasses and flour will remove grass stains from colored fabrics without effecting the color. To remove grass stains from white flannel trousers, dissolve one cupful washing soda in two cupfuls water, heat the solution, make a suds of naphtha soap, immerse the stain and rub gently. Ammonia and water or alcohol are also good if the stains are fresh. 4. A faded black silk dress may be cleaned by the use of a weak solution of coffee water. Restore the lustre by careful rubbing with a soft silk handkerchief and do not wet the silk too much. 5. By all means write to your hostess within two or three days after your return home. Just write an easy chatty letter about things in general. Be sure to tell your hostess how much you enjoyed visiting her.

INTERNATIONAL LESSON JULY 8.

Lesson II. Ahaz, The Faithless King—2 Chron. 28. Golden Text—Heb. 11. 6.

Verses 1-4. Ahaz—Came to the throne about B. C. 735; he is said to have reigned sixteen years, that is, until about 720; but the chronology of the period is uncertain. Baalim—The native Canaanite deities. Valley . . . Hinnom—For a full description see George A. Smith, Jerusalem, I. 173 pp. ff. It was located to the south and southwest of Jerusalem. In the days of Jeremiah human sacrifice was offered there (Jer. 7. 31). Burned—As sacrifice, probably to Jehovah. Human sacrifice was not unknown in early Israel (Judg. 11. 30ff.); but efforts were made to remove it from Jehovah worship (this is the purpose of Gen. 22), and for several centuries it seems to have been a rare occurrence, until Ahaz, influenced by the practices of other nations, began to encourage it. During the closing years of the history of Judah it was more common (2 Kings 17.17; 21. 6; 23. 10; Mic. 6. 7; Jer. 7. 31; 19. 5; Ezek. 16. 20. 21). Under every green tree—The Hebrew word here used for "green" means rather "flourishing," the reference being not so much to color as to condition and size. Large fine trees . . . acquired a sacred or semi-sacred character (Gen. 18. 1; 21. 33; Judg. 6. 11); in some cases because the flourishing state of the tree was regarded as the sign of the presence of some local deity (Cambridge Bible).

5. Syria . . . Israel—The Chronicler seems to picture the invasion of Judah as two distinct expeditions. It was one united campaign (2 Kings 16. 5; Isa. 7. 1ff.). The losses given here are much greater than those suggested in the other two passages.

20-21. Tilgath-Pilneser—A corruption of Tilgath-pilneser; the fourth king of Assyria bearing this name ruled from B. C. 745 to 727. The Chronicler knew history of his people sufficiently to recognize the fact that the appeal to Assyria (verse 16) proved disastrous in the end.

22-25. Distress—Seemed to be evidence that Jehovah could not or would not help; hence he determined to try gods. Gods of Damascus—The statement here is an inference from 2 Kings 16. 10-12. Verses 24, 25 furnish the Chronicler's interpretation of 2 Kings 16. 17, 18. "He saves the sanctity of the temple by having Ahaz's idolatries outside of its precincts, as though he had abandoned altogether the worship of Jehovah. In reality Ahaz introduced innovations in the temple worship, which he seems to have assiduously cultivated. There is no reason, then, to think that the temple was closed during his reign" (Curtis).

26, 27. The close of Ahaz's reign. Book of the kings—not the canonical book of Kings, but perhaps a work bassed upon it. Sepulchers of the kings—According to the Chronicler Ahaz was dishonored by being excluded from the royal tombs (compare 2 Kings 16. 20).

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.

Secrets in Securing Layers.

An egg-laying strain can not be produced by inbreeding. In order for a hen to be a good producer, she must be in good health and full of vigor. Use a male that was bred from a hen that laid 200 eggs or more in a year. Breed for high averages instead of exceptionally high individuals. A good layer usually stands high in front and her back is not on a level, or the rear higher than the front. The best producers usually have large combs, a high tail, and a prominent, large bright eye. Prefer the wedge shape, rather narrow in front but wide behind, and wide between the legs. A hen inclined to be squirrel-tailed is the best layer.

Not always the largest hen is the best layer; generally the smallest one.

The heavy laying hens are those with white legs.

A tight-feathered bird is a better layer than a loose-feathered one.

As a rule, the first pullets of a brood to begin laying make the best layers, and the first cockerels to crow usually make the best breeders for egg production.

The laying hen is usually nervous and active; she has a strong appetite, evidenced by a full crop at night; she is the last to retire at night and the first to be about in the morning; she is also late to molt in the fall; she is distinguished by width and depth of abdomen; the comb is usually large and the eye bright.

An authority says that an examination of the earlobe is considered to be almost infallible. A chalky white earlobe indicates that a bird is laying heavily, whereas a cream-colored one shows that the bird is laying moderately, has just started or has just stopped. A milk-colored earlobe shows that the hen has laid slightly or has stopped laying. A very yellow or dark earlobe indicates that the hen has not laid at all. A extremely white earlobe also may mean very low vitality. The more velvety the texture of the hen's comb the better her health, and it is almost a certain sign that she is laying heavily.

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Flatulent colic may be caused by change in food, too much succulent and easily fermented food, as green clover, etc. It is indicated by uneasiness, stamping, pawing, rolling, etc., with continuous pain of varying intensity. Bloating soon occurs, more noticeable on the right side.

Drench with 2 to 3 oz. oil of turpentine in a pint of raw linseed oil, and if necessary repeat in 2 hours. Give rectal injections of warm soapy water. If pain be excessive give drench of 1½ oz. each of laudanum, sweet spirits of nitre and tincture of belladonna in a pint of water. Repeat in 2 hours if necessary.

Make the horse understand what you want him to do. Kind words and caressing touches will improve both his mind and his temper. You will never fail in this way unless you delay the beginning too long.

When he is afraid of harness, papers or machines it is not affectation—it is serious business with him. Flogging will not remove it. Convince him by talking that he is wrong and then you will cure him.

Whipping is likely to send his hot blood from his heart to his head, deluging his sensitive brain and driving him to a frenzy or blinding him with fear.

When he is old enough to set up in business for himself he should be taught the horse alphabet—the halter, bit, harness, the words that mean "come," "go on," "stop," "back" and the feeling of pleasure under the owner's hand. These should all be familiar from colthood up. Horses whose education is begun early will always develop a good character. They will never be balky, scary, nor will they be biters, kickers or have a tendency to run away.

Some horses will become frightened and will kick when given a dry-straw bedding. This probably means that at one time he was hurt with a pitchfork. He isn't wicked but nervous. Teach him that there is no danger.

"I Wish I Were."

One summer morning a fairy awoke so late that the dew was all gone from the flowers and he had to run down to the brook to get his before-breakfast drink. And after he had had his drink he discovered that he was too late for honey, too; he could not find a speck of honey, not even one taste. You see, the fairies usually get up so early that they can eat all the honey they want long before the bees start from their hives.

But on this particular morning the lazy little fairy had slept so late that the bees had been round and eaten all the honey,—every scrap,—and that made the fairy so cross that he did not even remember that he might stir round and hunt for something else to eat.

He sat down at the foot of a tree, intending to sulk all day long; but before he had more than started sulking a robin came by.

"Good morning, Friend Fairy!" said the robin cheerfully. "Isn't this a fine day?"

"No, it's a very bad day," said the fairy crossly, "and I wish I were an apple!"

"What a funny wish for a fairy to make," said the robin, laughing. "If you change into an apple, I'll eat a hole in you."

"Then I won't be an apple," replied the fairy crossly, "for I don't want a hole eaten in me! I'll be something else."

The robin laughed and flew away just as a big toad hopped out from behind a tree.

"Good morning, Friend Fairy!" he croaked. "Isn't this a fine day?"

"No, it isn't," said the fairy crossly; "and I wish I were a spider!"

"What a funny wish!" croaked the toad. "Don't you know that spiders have to work very hard and spin a web before they can crawl on it through the air? But I hope you do change into a spider; I'm looking for spiders this very minute, and if you become one I'll gobble you up!"

"Then I won't be a spider," said the fairy, "for I certainly don't care to be gobbled up. I'll be something else."

The toad laughed and hopped away, and the fairy was left alone to sulk.

"I don't know what I want to be," he sighed fretfully. "This is such a horrid world—no dew, no honey, no nice wishes! I think I'll be a star."

"A star?" exclaimed a soft little voice by his side. "Would you be a star and leave this beautiful world—all the flowers and birds—to live up in the bare sky?"

The fairy turned and looked. There, near by, was a tiny ant tugging away at a big grain of sand.

"Do you think this is such a fine world?" asked the fairy. "I should think you would hate it. You have to work all the time."

"To be sure I do," replied the ant proudly. "That's the reason I like to live. Working is the jolliest and most interesting thing in this whole big world—didn't you know that? It's true." And the sturdy little ant picked up his burden and started away.

Left by himself, the sulking fairy began to feel very foolish and very sorry. He remembered the flower bud he ought to have opened long ago; and he thought of the sunbeams he should have helped.

"What I should be wishing for," he whispered to himself, "is work. And then I should hunt round and answer my own wish."

Slyly he slipped round the tree to open a buttercup bud he was sure he had seen there. And as the flower opened, what do you suppose that surprised fairy found? A drop of fresh, sweet honey all ready for him to eat!

As he sipped the honey and planned what to do next, a cardinal bird hopped by.

"Good cheer! Good cheer, Friend Fairy!" called the cardinal. "Isn't this a fine day?"

And the happy little fairy called back, "A fine day for working, indeed it is!"