

Farm Crop Queries

CONDUCTED BY PROF. 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. When writing kindly mention this paper. 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.

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J. W. W.: I have a piece of runout land which is badly infested with quack grass, which I am planning on summer-fallowing. Do you think it would help build the land if I sow it to buckwheat and then plow it under when in blossom or before, or do you think it would lessen my chances of killing the quack grass? I want to kill this weed and build the land at the same time if possible, with a view to planting to oats and seeding with clover next spring. I plan to top-dress with manure when I seed to oats.

Answer: Some have endeavored to kill out quack grass by a smothering crop, that is, by sowing buckwheat or rape sufficiently thick to smother the grass. Others have found summer-fallowing very effective. I would not advise you to try to mix both methods. If you are summer-fallowing the ground, rake up the root stalks at least once in three or four weeks and burn the pile when dry. Then keep the ground worked at least once in three or four weeks and burn the pile the ground worked at least every two weeks, so as to prevent the root stalks that yet remain from getting a firm hold on the ground.

If you are growing corn or wheat, or root crops, I believe I would use the manure there and apply fertilizer where you are seeding to oats, since the fertilizer adds absolutely no weeds and the ground, if it is thoroughly worked, should be in fair shape to grow a good crop of oats. Use about 200 lbs. to the acre of a fertilizer analyzing 2 to 3 per cent. ammonia, 8 per cent. phosphoric acid,

and about 2 to 3 per cent. potash. Put this on when the grain is sown. If you get a good stand of oats followed by a good catch of clover it should compete pretty strongly with the quack grass, and in fact should kill it out.

F. J.: What will kill dandelion in lawns?

Answer: If the lawn area is not too large cut out the dandelions with a knife. On large areas spraying with an iron sulphate solution will do a great deal towards killing out this pest. Make a solution of iron sulphate, dissolve about 2 lbs. in a gallon of water. With this strong solution spray the portions of the lawn where most dandelions are growing. This will turn the surface of the grass dark, but will kill out the weeds. In a few days the grass will regain its strength, but the dandelions will kill out. Much publicity has been given to the idea of applying sulphate of ammonia to lawns to kill out dandelions, but there is danger in doing this, since sulphate of ammonia is an acid-producing salt and will, therefore, tend to make the soil sour. This is detrimental to the growth of best lawn grasses.

R. H.: Would like some information about insect pests on vegetables and flowers, roses especially, and how to destroy them.

Answer: We would advise you to write the Dominion Department of Agriculture, Ottawa, for information regarding insect pests on vegetables, flowers and bushes. They have several good bulletins which describe this subject thoroughly.



Do You Have Water Fit To Drink?

By Harriet Bowen

Have you ever noticed how often a farmhouse will be situated on a slight hill, while the outhouse will be just a little lower, while the barn with the well close beside it is at the bottom of the hill? Just why the well should be so much more convenient to the barn than to the kitchen, is a matter for the farm women's clubs to discuss; the thing that interests the sanitarian is that slope from the outhouse to the source of the drinking water.

While typhoid germs may never be introduced into your well by this system of drainage, there is always a chance that they will be introduced, for it is not only the person who is actually sick who is a source of infection.

Only a few years ago "Typhoid Mary" set us all guessing by the strange tales that were told of her. To-day we know that there are people who, having once had the disease harbor the germs in the intestines for a long time thereafter. These people may be perfectly well, but leave in their tracks a trail of cases due to pollution of water into which sewage has drained or through food handled by the "carrier" whose hands are not scrupulously clean.

So we may never know until we are rudely enlightened, just who will pollute a well. In the days when death from typhoid was a common thing, and that is not very long ago, some people seem to have had a certain immunity in communities where the water was particularly bad. Then again, one person could have the disease several times. At any rate, escape seems to have been a matter of luck rather than immunity, but modern science takes little stock in luck; it prefers to play safe.

Health protection is an interesting subject. We are inclined to take so much for granted in civilized life; we pay our taxes and let "them" do the rest. The earnest, honest labor of many lives is summarized in the medical knowledge of to-day; the plodding conscientious work of many more carries that knowledge into the daily life of the community. But of all the wonders of modern sanitation perhaps none is so striking and far-reaching as the romance of typhoid, and its eradication from the earth; for that

is what we are doing to-day. Think how many of our friends of a quarter of a century ago died of typhoid, and how few are the cases nowadays.

If we but realized the protection thrown about us by even the average city or town government with its Board of Health, we would be thankful for the age in which we live, eager to uphold the hands of government, though ever critical that the government may grow better rather than worse, through our intelligent support.

It is in the out-of-the-way places that typhoid still lurks. The babbling brook far off in the country, or the picturesque well of clear cold water is the most likely place in which to find it. Large cities, and the smaller cities, too, have a regular system of inspection and protect their drinking water, not only that which is piped into homes, but the wells and springs which are found within the city limits. Most people don't realize the anxious care with which the city is guarded in this respect. Every case of typhoid that occurs in a city is reported to the Board of Health, and contrary to the accepted belief that municipal employees are chair-warmers, this department of the public weal, at least, is very much on the job.

When a case of typhoid is discovered—usually with the help of the Board of Health laboratory which diagnoses the case microscopically, in order to supplement the finding of the doctor in charge—there is a quiet investigation of the reason. We get typhoid germs in but one way, and that is by eating or drinking—usually the latter. Water, and to a less degree milk, are the chief sources, and your health officer proceeds to find out what you have been drinking. If the source of contagion is a well or spring, the officer gets busy and sees that no one else drinks water from that source until it is made safe. But it is the experience of most health officers that water is polluted because of the easy-going methods still prevalent in the less protected sections. So if the country districts value the health and lives of farm dwellers, the wells and springs should be kept free from all contamination which might drain into them through the soil or from the surface.

that were sleeping in the sunshine. As for the fishes, they were pleased and proud.

Now, all day long in the singing brook that ran into the clear lake still other fishes, the trout, played like a white ribbon under the ripples. When they saw the lake fishes they, too, wanted beautiful colors. They did not know about using flowers, but one day, after they had puzzled over the matter for a long time, they found a way to change their color.

It was on a June day after a storm. The trout went zigzagging up the brook in a company until they reached the spring where the stream began. There they saw, resting in the clear white water of the spring, the end of a wonderful rainbow. Backward and forward through the rainbow colors they swam until the bow faded. But when the trout started down the creek again they found to their joy and wonder that, instead of being plain in hue as before, they were of a beautiful bluish tint on the upper part of the body, with sides of silver, marked with a band of red and with spots of darker color. To this day they are known as rainbow trout.

And that is the way, so it is said, the fishes got their colors.

Best Shade Tree, and Why.

Forty-seven years ago the writer bought this farm. There were no buildings, so a two-acre field was selected for the home grounds. As soon as the buildings were finished and the front yard leveled we began to plan for shade.

My father, who in his younger days had been a nurseryman, said: "Son, if you want the best shade, the cleanest and most interesting and the longest-lived trees, plant the sugar maple." Believing the advice was good, I acted upon it.

We (my father and I) went to the little run on the side hill where the young sugar maples grew tall and straight in the rich mellow soil, and there picked out twenty-five trees that seemed to us to be the pick of the woods. These were carefully taken up and cut to about twelve feet in height. We properly pruned the roots and carefully set them in holes fifty feet apart.

On the left of the driveway from the road to the barn, which was south of the house (which faced east), we set a row of cut-leaf or weeping birch. This is one of the most popular of the weeping trees, clean, slender, graceful and a rapid grower. Its graceful drooping branches, silvery-white bark and delicate foliage make it the most attractive single tree I know of.

Along the fence, between the gardens and the paddock by the barn, I set six cherry trees and they have proved a wise selection, for they have furnished shade for the paddock, have been a favorite resort for the children, who feasted upon the luscious fruit; but best of all have attracted the birds and taken them away from the garden and other fruits, which they so voraciously touched when they could get the cherries.

On the west side of the paddock lies

The Sunday School Lesson

JULY 3.

The Early Life of Saul. Acts 21: 39; 22: 3, 28; 2 Tim. 3: 14, 15; Duet. 6: 4-9. Golden Text—Hebrews 3: 7, 8.

Connecting Links—For the Sunday-school teacher and Bible class student the best helps for the study of the life and work of the great apostle will be found in the available commentaries on the Acts and Epistles. Bosworth's Studies in the Acts and Epistles (arranged for daily reading), Patterson Smyth's Life and Letters of St. Paul, Stalker's Life of Paul, R. D. Shaw's The Pauline Epistles, Ramsay's St. Paul the Traveller and Roman Citizen, and Lake's The Earlier Epistles of Paul.

Next to our Lord Himself the greatest and most outstanding figure of the New Testament is that of Paul. A thorough-going Jew, of a strict Jewish family, an ardent patriot, a lover of his people and of their ancient faith, a man of quick impulses, zealous for the cause which he had at heart, indomitably persevering, and yet with a deeply affectionate and generous nature, he attracts and holds our attention from the first. The first three lessons of our present series show him to us as the Jew and Pharisee, the lessons that follow, as the Christian preacher and teacher, traveller and missionary.

It was Paul who first saw clearly the significance of the gospel message for the whole world, and not for the Jews and Jewish proselytes only. It was he who conceived the noble ambition to be an apostle to the Gentiles, called of God to that great task. From the narrowest of Jewish circles he stepped forth as the leader of a great international movement of brotherhood and good will. His ambition was truly imperial, being nothing less than to win the empire of the world for his crucified Master, to break down race barriers, and to build a temple of humanity, in the midst of which God, by His spirit, would dwell. Christianity might have become the religion of a Jewish sect; Paul made it what Jesus had declared it would be, a world-conquering force.

Acts 21: 39. A Jew of Tarsus. We are fortunate in having, both in Luke's history in the book of Acts, and in several of the Epistles, definite statements about Paul's earlier life. Here Luke tells us (chaps. 21 and 22) of Paul's return to Jerusalem after his third great missionary journey, and of the riot which was stirred up against him by bigoted and narrow-minded Jews, who hated him for his preaching a gospel of salvation to other nations, and for declaring that the Gentiles would share with the Jews the future glory of the Kingdom of God. Paul was rescued from the mob by the captain of the Roman troops which held the castle, or citadel, of Jerusalem, and was afterward permitted by him to address the crowd from the castle stairs. To the captain's inquiry as to who and what he was he made the answer of this verse.

Tarsus, the city of his birth, was the chief city of the province of Cilicia, in Asia Minor. Paul's family must have belonged to a colony of Jews which had settled there, and he held by inheritance the rights and privileges of a free citizen of the Roman empire. He must have been familiar with the Greek language from his childhood. In the schools and in the university he must have become acquainted with Greek and Roman literature, and with the philosophy and poetry both of the east and the west. The university of Tarsus rivalled, indeed, the two other great seats of learning of that age, Athens and Alexandria, and was reckoned superior to them in love of learning by Strabo, a well-known ancient writer. Tarsus received students from all parts of the world, and sent teachers abroad to many lands. From Tarsus Paul went to continue his studies in Jerusalem under the great Jewish scholar, Gamaliel, and so became an accomplished scholar both in Greek and Hebrew.

a low cut in the hills, allowing a draft of air through. Here I set a row of twenty-five Lombardy poplars, fifteen feet apart. They are pleasing and graceful trees and serve admirably as a windbreak.

At the extreme southern end of the grounds is a beautiful cold, clear, never-falling spring coming from under a large boulder setting back about twenty feet from the highway. Here was a slight indentation of the fence, leaving the spring accessible from the road. Here was placed a granite horse trough into which unnumbered lips have dipped.

Close by, and a little south of this spring, I set a weeping willow. The tree must have been suited with its new home, for it settled down to business at once and to-day its shade covers the entire space occupied by the spring and trough, and autoists find here an ideal spot for rest and refreshments; and if one-half of the "slips" that have been taken from the old trees have lived and grown, there must be trees enough somewhere for a good-sized forest.

Now to return to the maples: At the age of twenty-five years we found every tree alive, well-formed (due to judicious pruning) and averaging about twelve inches in diameter.

Myriads of feathered friends have been fostered in those spreading branches; children and grown-ups alike have gathered beneath their friendly shade, and the yellow leaves have done duty to the last by furnishing litter for the poultry houses. During the recent war when sugar was wanted for the boys "over there" these giants were inducted into the service and furnished 112 pounds of fine pure sweets.

And to-day, were I to show this row

Acts 22: 3. According to the perfect manner of the law of the fathers. Of the Jewish scholars and teachers Gamaliel was one of the greatest. He was grandson of Hillel, founder of one of the two Rabbinical schools which had an extraordinary influence over the minds of the people in the time of Christ. That he was also a man of tolerant and liberal views appears from the story told of him in Acts 5: 34-40. Under his teaching Paul studied the books which now form our Old Testament, and in particular the ancient laws, which the Jewish doctors had sought to adapt to the needs of their own time in what has come to be known as the Mishna, the central and oldest part of the Talmud. From this school of Gamaliel Paul (or Saul, as he was then called) was taken to become an officer of the supreme council of the Jews, the Sanhedrin.

22: 28. Free born. Paul's father must, therefore, have also been a Roman citizen. The Romans were masters of all the lands about the Mediterranean Sea, and of large parts of Europe and western Asia and northern Africa. The privileges enjoyed by those who had the rights of citizenship were very great, and Paul found afterward in his travels, when in difficult and dangerous places, that he could rely upon protection from Roman officers and magistrates. His Greek learning gave him approach to the people of many lands, and his Roman citizenship gave him protection in his great missionary work.

2 Timothy 3: 14-15. From a child. It was near the end of Paul's life, and while in a Roman prison that he wrote this letter to his younger and dearly beloved friend Timothy. Timothy, like Paul, had been born and brought up in Asia Minor. His home was in Lystra (Acts 16: 1), his mother was a Jewess, his father a Greek. His childhood, no doubt, had been like that of Paul, and by a good mother he had been carefully taught in the holy scriptures. The Old Testament stories, poetry, and prophecy were familiar to him, and Paul urges him to continue in those things which he had thus learned, and which were able to make wise unto salvation, not in themselves, but through the faith of Christ. What Paul says here about his friend may very well reflect the lessons of his own childhood, and we do not need to doubt the genuine and sincere piety of those simple Jewish homes, which was fed upon the sublime and pure teachings of the Old Testament.

Duet. 6: 4-9. Thou shalt teach them. In the time of Christ and ever since, in devout Jewish homes, a sincere effort has been made to keep this command. These words are repeated morning and evening. The law and the prophets and the psalms are diligently read. It would be strange indeed if the Jews did not thus learn much that is good, and as a matter of fact there has been developed in many hearts and homes a real faith in God, and a sincere desire to do good. We, who have received the inestimable gift of the knowledge of Christ, should seek to know and to understand better the people from whose homes came both Jesus and Paul.

Application. There may be men who, as we are sometimes told, are beyond church influence, but there are few with whom the church has not had its opportunity. Abel the worshipper and Cain the murderer; Moses the man of God and Pharaoh the oppressor; Elijah the prophet and Ahab the idolater; Miriam the prophetess and Jezebel the serpent; Nero the incarnate demon and Paul the apostle; Wesley the evangelist and Voltaire the nocker; Chalmers the savior and Napoleon the destroyer—all these men were children once. In their cradles there slumbered the energy which afterwards went forth for blessing or for blessing the world.

of trees to a stranger, he could but say with us: "You could not have made a better selection"; for he would see twenty-five giants averaging about twenty-six inches in diameter sound and thrifty, apparently good for another generation.

Sunflowers as a Silage Crop.

Much interest is being taken both in Canada and the United States in the value of sunflowers as a silage crop, particularly in districts where corn is not a reliable crop. The claim is made that sunflowers are a hardier crop than corn, withstanding both drouth and frost to a greater degree. Insofar as the claims put forth for sunflowers as a food for cattle are virtually of recent origin, experiments and investigation regarding them are practically in an introductory stage. It is interesting to note, however, that an analysis of sunflower silage fed at an Idaho agricultural experimental station indicated that it compared favorably with corn silage. In Canada also studies of the relative value of sunflowers and corn for silage purposes suggest that in nutrition there is not any great difference, although corn is to be preferred where it can be plentifully and easily grown. Where this is not the case, sunflowers are an excellent substitute.

Don't always stew your rhubarb—the kiddies may like it better served as a summer drink, and it is just as good for them. Cut up some half-dozen sticks of the fruit into cubes, pour over 1½ quarts of water—must be boiling—and add sugar to taste. Slice in a lemon, and let the beverage stand for a good while before using, when it can be strained off and served as required.

Poultry

The ideal place for hatching and rearing summer chicks is an orchard. Where an orchard is out of the question, the next best place is a cornfield. After the corn is about three feet high, chick coops may be scattered over this field, and for a week or so a small run should be placed in front of each coop so the chicks may become acquainted with their home and surroundings. After that they will hunt up their own coop. Avoid overcrowding, and regularly clean all filth from the coops.

For chicks the diet in summer is practically the same as in winter, only there should be less corn and more green stuff. There must, however, be some corn to balance the wheat and other nitrogenous grains. The chick feeds as sold commercially have as their basis wheat, corn and oats, all finely cracked, with other grains added for variety. The mashers are also prepared on the same basis, only finely ground.

The first few weeks the chicks should have nothing but the finely cracked grains. After that a little mash may be given in the morning. Of the latter only enough should be given so that it may be eaten up clean.

It is well to keep the cracked grain ration constantly before the youngsters so they may help themselves at will. A chick's crop is very small. A teaspoonful of food will fill it, and this digests quickly when the chick is active. Consequently hunger returns about every hour or two, and if food is available the chick will take a few mouthfuls and scamper off again. After the chicks are about

three months old, the regular scratch food may be given.

Grow Into the Purebreds.

The quickest but the costliest way to get a herd is to go out and buy an entire herd of animals, including a herd sire. A better plan, however, is to grow into the purebred business—not go into it. It takes real ability to develop a herd from a few good females and a good sire; anybody with money can buy good mature animals on the basis of the records they have made.

Using a purebred sire on common scrub or grade stock will work wonders. The animals resulting from several crosses will soon approach purebred type. Results secured will depend entirely on the sire, however. Three things are essential in a good sire:

First, he must have good breeding. This means a good pedigree. His dam and grand dams should be good producers. He should come from a family of consistent producers. Pedigree, however, is not everything. The sire must be a good individual. Often a sire with an excellent pedigree is so poor an individual that no good breeder would use him. Type is essential if you ever expect to sell any of the offspring. As far as young sires are concerned, breeding and individuality are all we have to judge from. With a bull four years old, however, there is another index to his value. His daughters should be good producers, at least as good as their dams at the same age. If a sire has these three qualities he is a good one. If he possesses the first two and it turns out that he does not have good daughters he is no good and should not be used longer. If, on the other hand, his daughters prove to be better than their dams you have the kind of a sire every breeder is looking for; one that builds up the herd.

"Oh, it's summer, summer weather, And you'd better believe I'm glad. Going to the pond with brother, Tramping all around with dad. Looking in the grass for birds' eggs. Not to touch them—goodness, no! Oh, it's summer, summer weather, And I love the summer so."



How the Fishes Got Their Colors.

Long ago all the fishes that lived in the cool, clear waters of a certain mountain lake were silvery brown—as brown as the Indian children who came and peered at them.

Often when the little Indians pushed their canoes out over the lake and paddled round among the water lilies the fishes would hide under the lily pads and listen to their talk. Sometimes the boys and girls pointed to the sunset colors in the water, or to the shadows of the gay autumn trees. Sometimes birds of bright plumage went skimming across the surface of the lake, or the petals of lovely wild flowers dropped into the crystal water. At those times the quiet brown fishes, listening under the lily pads, wondered why they, too, could not be bright-colored and fair.

One day they gathered in a cool, shady spot where a willow tree trailed its boughs in the lake and there talked the matter over. They said there surely must be some way by which they could color their coats; yet none of them could suggest a way.

But after a while an idea came to them. Sleeping in the sunshine on a log in the lake were two big mud turtles and twenty little ones. The fishes swam to the edge of the water and asked the big turtles if they would go into the fields and bring them some bright flowers so that they could dye their dull-brown coats and make them beautiful.

The obliging turtles were very glad to have a good excuse for going to land, for they had long wished to see something of the world; so they left their children fast asleep in the warm sunshine and swam to the bank.

Once ashore they moved slowly along, enjoying the new sights and sounds as they went. Now and then they stopped to rest in a convenient puddle of water. They had dinner in a patch of wild strawberries with their cousins, the land turtles, and enjoyed themselves immensely.

Then they found the fields with the bright-colored flowers dancing in the breeze. They picked the flowers, piled them on each other's back and set out for their mountain lake. Sometimes the flowers fell off and the turtles had to pile them on again. But they kept on their way perseveringly until they reached the lake.

The fishes swam out to meet their friends and were overjoyed to see the bowers. They colored their dull coats with the bright blossoms—some yellow, some green, some with spots of orange and blue. A few of the fishes, it is true, did not wish to color their coats; those stayed close at home in the shadow of the big rocks.

When the turtles saw how beautiful the fishes were they, too, grew discontented. Then they got more flowers and painted red and yellow markings on each other's shell and gave a bit of bright color to the baby turtles

WOOL

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