Soils and Crops

By Agronomist.

This Department is for the use of our farm readers who want the advice of an expert on any question regarding soil, seed, crops, etc. If your question is of sufficient general interest, it will be answered through this column. If stamped and addressed envelope is enclosed with your letter, a complete answer will be mailed to you. Address Agronomist, care of Wilson Publishing Co., Ltd., 73 Adelaide St. W., Toronto.

Smut of Oats.

The oat crop of Canada is estimated at about 400,000,000 bushels. The average loss from oat smut, usually placed at four to six per cent., means the destruction of about 20,000,000 bushels, a loss which can easily be prevented by seed treatment.

Oat smut is easily recognized as it destroys the kernel and hull and sometimes the chaff, changing them to a black dusty powder composed of millions of spores, which are scattered by the wind and which lodge on the sound oats in the vicinity. When this grain is sown the smut spores germinate and infect the young seedlings. The smut develops inside the growing plant and reduces the kernel to a mass of spores instead of sound grain.

The object of seed treatment is to kill the spores lodged on the grain. The safest and best method is to treat the seed with a solution of formaldehyde by one of the following methods:

Dipping method.—Mix well one pint of formaldehyde (formalin) in forty gallons of water, putting the solution in barrels or casks. Put the seed in coarse bags that the solution will readily pass through, and dip into the casks, allowing to soak for about five minutes until every grain is wet. Remove the bags and allow to drain on slats into the casks, as the solution may be used several times. Then pile the grain on a clean floor and cover with sacks or canvas for two or three hours. Dry the grain by spreading on a clean floor and stirring now and then. Sow the grain as soon as it will run freely or, if necessary to store, dry thoroughly, as damp seed will mould or sprout.

Sprinkling method.—Pile the grain on a clean floor or grain wagon and sprinkle the grain with the solution, using a sprinkling can, shovelling the seed from one pile to another so that each kernel will be thoroughly wet. About a gallon of solution will be required for each bushel of grain. Cover the grain as in the dipping method and dry.

Do not allow the wet grain to freeze as it might injure germination. When the grain has been treated and is damp and swollen the rate of seeding should be increased about three-fourths of a bushel per acre. Any bags or receptacles used for holding the treated grain should be disinfected in the solution of formaldehyde.

Dry method.—This method has been recently introduced but requires more care. A solution consisting of one pint of formaldehyde to one pint of water is sprayed on the grain while it is being shovelled over on a clean floor or canvas. A sprinkling can must not be used as a sprayer that will deliver the solution in the form of a mist is necessary. In this method there is no danger of freezing and no drying is required. It should not be used for wheat except in an experimental way. One quart of the solution will treat about fifty bushels of seed.

Farm Machinery.

Conservation is the watch-word of Canada to-day. Conservation has always been the aim on a certain farm known to the writer. A description of one or two little "saving" devices which have been in satisfactory use for the past five years may be of some assistance to those who are now, more than ever, feeling the need of getting more service out of their farm machinery.

In the centre of the engine house on this particular farm is the gasoline engine, to the left, the air-compressor tank and the dynamo, the corn-sheller and feed grinder on the right. At the extreme left is the well-pit. On the opposite side of the room are the storage batteries and a work-bench.

The five horse-power engine is run for half an hour night and morning. It is capable of filling the air-compressor, running the dynamo, which charges the batteries for a thirty-five-light electric plant, and shelling and grinding corn all at the same time. The air-compressor furnishes the motive power for an air-pump in the six-inch well, supplying fresh water, direct from the well, for all parts of the farm, including three residences. In this system there are four fully equipped bathrooms, three kitchen sinks, two laundry tubs, and various out-door faucets for lawn-sprinkling. Four residences, the barn, engine room and henhouse are electrically lighted. The owner's house is installed with electric iron and washing machine. The motor for the latter also runs the churn.

The well, which is over ninety feet deep, overflows during the greater part of the year. And at all times, the exhaust from the air pump throws a small stream of water into the pit. This surplus water is piped to the henhouse, where it flows through a cement trough. This trough is built along the front of the house, just beneath the windows, and is of proper height to make it easily accessible for the hens. It runs the entire length of the fifty-six-foot house and is connected at the farther end with a pipe which carries the water off beyond the yards. A stiff brush is used to clean the trough, making it possible for the hens to have plenty of fresh water at all times without any trouble to the poultry keeper.

A galvanized tank is set in front of the engine. This was a hot water tank, discarded because of a small leak. During the winter the tank is connected with the engine in such a manner that the exhaust enters it below, leaves it at the top and passes through a pipe leading along the ceiling, down the wall and thence through the wall to the rim of the horse-trough outside. There the pipe is connected with a rectangular frame of gas pipe resting on the floor of the trough. An elbow over the rim permits the exhaust to escape into the air. When the engine is running there is sufficient heat generated by the exhaust and radiated from the tank to raise the temperature of the room to a degree which prevents the storage batteries from freezing, and also warms the drinking water for the cattle. By this simple device a waste product is made of practical use—which is carrying "conservation" to its highest efficiency.

Plow Early for Corn.

Most farmers realize that in preparing land for corn the earlier the land can be plowed in the spring the better. There are, of course, exceptional years when very early plowing is not desirable, but these exceptions are rare. Consequently it is generally wise practice to plow the land as early as possible. The fact that many farmers fail to get this done is not so much because they do not believe in early plowing as it is because of a failure to organize their work properly. Of course, there are seasons when no man can plow early, but again it may be said that these seasons are rare.

Early plowing makes possible a good seed bed. The soil is given time to settle together below, which is a very important principle, the weeds are held back and the farmer has more time in which to prepare a thorough pulverized surface. Late plowing means either clods or the necessity of turning under a large growth of weeds too late for its proper decay. Usually it means both of these things and the impossibility of preparing a good seed bed.

The only cases where early plowing is not desirable are on those seasons and on those soils in which the land runs together after plowing. A soil lacking in organic matter may readily be beaten down by spring rains after it is plowed, so that it becomes very hard. On the average soil, however, such a condition is not to be expected, and the early plowing means a much better seed bed than can possibly be prepared where the plowing is done late.

Facts Worth Jotting Down.

A fowl consumes about three ounces of mash in the morning, two ounces of grain at noon, and four ounces of grain at the evening meal.

Guineas, like geese and pigeons, pair when the number of males and females is equal.

The turkey does not fully mature until two years old, and is at its best at three years.

One pound of feathers can be secured from five ordinary fowls, or from ten ducks or from four geese.

For producing strong chicks two-year-old hens are best, and well-developed yearlings come next. There is a risk with pullets under nine months of age.

Nine dozen eggs a year is the egg record of the average hen. The record for a turkey is two dozen; a goose, three dozen; a duck, eight dozen; a Guinea, eight dozen.

Young gobblers may be distinguished from the females by being heavier, more masculine in appearance, more naked fleshy growth on the head, and a development of the tassels on the breast.

A "chicken" is a young fowl, usually under six months of age. It becomes a "fowl" after that period. In the same manner a young male under twelve months old is a "cockerel"—after that a "cock"; and a young female until a year old is a "pullet"—after that a "hen." A "baby chick" is one just hatched.

Hens lay best in damp weather, even during winter. It will be noticed that they are more prolific during showery spells than they are when it is dry. The theory is that moisture produces expansion and growth, whereas cold or dry warmth contracts.

In salting the mash dissolve sufficient salt in the water with which the mash is to be moistened. In this way the salt will be more evenly distributed. An ounce of salt is about right for 100 fowls.

An attractive table fowl is long in body, wide in back, full in breast, and plump over the keel—showing meat all over. Taking the legs as a center more body should be shown in front than behind.

The sex of geese can generally be told by observation. The gander grows larger than the goose. The goose is deeper in body, a trifle slimmer in neck, and smaller in head. The call of the gander is loud, long and shrill, while that of the goose is merely an answer to it. The male, too, is more aggressive.

The male Guinea is larger than the female, and more aggressive. The cry of the female sounds like "Come back, come back," while that of the male resembles: "Tick, tick." The red earlobes are larger in the cock than in the hen.

The hatching periods required for eggs of domesticated fowls are: Chickens, twenty-one days; ducks, twenty-eight days; turkeys, twenty-eight days; geese, thirty days. The Chinese goose egg requires five weeks to hatch.

To plump a dressed fowl first dip it for ten seconds in water nearly, but not quite, boiling hot, and then immediately in cold water. Afterward hang in a cool place until the animal heat is all gone. Plumping adds to the appearance of the dressed poultry.

In ancient times the country now known as Portugal was called Lusitania. The present name is derived from Porto Callo, the original appellation of Opporto, which has ever been the chief commercial city of the country.

THE FARMER'S LIBRARY

By C. B. Ford

You perhaps are the one farmer in a hundred who appreciates the value of agricultural literature and spends more or less money every year to add to his collection of agricultural books. You may realize the advantage of having at hand the collected ideas of other men who have made a study of managing a farm, and yet it is likely that you do not regard what agricultural literature you have in the light of a library, and yet I believe it does give added importance to it to allow it that dignity. And more than than, if you habitually view your business literature from that standpoint, you will be more likely to give it the care and attention it deserves.

In every farm home there ought to be a growing collection of books, and these books ought to be kept in a suitable case or set of shelves where they will be easily reached by anyone connected with the farm. If the farm is so small that the work is all done by the owner, or with the help of one man, this little library is none the less important; perhaps I should say it is all the more important. If the farm is large and employes are many, the library ought to be correspondingly large, and perhaps divided or duplicated so that the different departments of the farm will each have a library. Whatever the farm, whatever the labor and managing conditions, there ought to be good agricultural literature within reach of the help and of the employer. The help will be benfited by reading such books, and it will pay them to take an interest in that kind of reading, but the manager must read. He cannot succeed in any large degree without reading. On the small farm there are times nearly every day when the hired man and his employer have time to spare for a little reading. It may be during unfavorable weather, dinner hour, or the evening. One cannot keep keyed up to hard work all of the time. When you let down, instead of merely loafing read something out of the farm library. If a man wants to get ahead he can do it through agricultural books. If he does not want to get ahead—well, he will not be reading this article.

The laboring positions on farms are filled to too large an extent with people who are simply waiting and hanging on. They are living from week to week with nothing more than a vague hope that sometime, somehow, luck will come their way. As a matter of fact, they give almost no thought to what they are going to do or become. It is perhaps the fault of the employer that the help are not shown that they have in their own hands the making of the future, and that one thing that will do more than almost anything else to develop their power and ability is reading good agricultural literature.

The editor of any good farm paper will advise a subscriber at any time as to what books are best for him to use in his farm library. In fact, practically all agricultural books can be bought from the publishers of farm papers. If you know of a book you want and know its price, send the money to the farm paper and you will get the book without any trouble. My advice to the farmer who has never made a start toward developing a farm library is to ask the editor of this paper to name for him in importance the twenty best books for his library. While it is important to buy the books, it is more important to have them read. The attitude of the farmer should be that both he and his men should read the books. The owner himself needs the books to develop his ideals as much as the hired men. The farmer can no more stand still than can the hired man. We are all on our way up or down. The question as to which way is our way, can be very nearly answered by noting whether we are or are not readers of agricultural literature.

There ought to be a willingness to read agricultural books and papers, and this willingness ought to amount even to anxiety. We all ought to be anxious to get ahead and anxious to find means of doing so. The key to success is knowledge. Some knowledge we can get by our own experience, but more we can get from books and papers. The reading route to success is so much easier than the hap-hazard, pick it up as you go along way, that it ought to be the only way. The farm library ought to be a circulating library to the extent that everyone connected with the farm shall be allowed to take any book home to read. Employes ought to be encouraged to do such reading outside. They ought to be shown its great advantage to them.

A most important feature of the farm library should be the farm papers. It is not enough to read agricultural books. There is much in the agricultural papers that never appears in a book, and in addition there is the news of the business that will keep everyone connected with the farm up to date, and informed on what is new in stock, tools, equipment, methods and practice.

Some employes take the position that it is not their business to keep themselves informed, that they are merely laborers, and all they have to do is follow orders put out by the manager or owner of the farm. This may be theoretically correct, but when it comes time to raise wages, or when it comes time to choose employes to be kept or promoted while others are discharged, the fortunate ones are those who have tried to see how much they could learn about the business, rather than how little. And when another farm owner wants a manager or herdsman, or when the owner wants to advance a man, the one that is capable of taking the position, who has read books, studied the farm papers and informed himself is the one that is selected. It is not enough to take one agricultural paper and keep it on file. There ought to be papers taken representing every phase of agriculture that is conducted, when there is a special publication for that branch of the business.

The farm library will be the biggest paying investment the farmer ever made, if he uses care and intelligence in the choice of literature and methods for getting it read.

GOOD HEALTH QUESTION BOX

By Andrew F. Currier, M.D.

Dr. Currier will answer all signed letters pertaining to Health. If your question is of general interest it will be answered through these columns; if not, it will be answered personally if stamped, addressed envelope is enclosed. Dr. Currier will not prescribe for individual cases or make diagnosis. Address Dr. Andrew F. Currier, care of Wilson Publishing Co., 73 Adelaide St. West, Toronto.

Lumbago.

Recent medical writers fight shy of this term, but like crick-in-the-back, homely and expressive and supposed to mean the same thing, it has long been used by plain people and may not readily be displaced by a more scientific or exact term.

It means pain in the lower or lumbar region of the back and seems to be seated in the muscles of that region.

You may call it a neuralgia if you like, just as every painful trouble is a neuralgia, or you may call it muscular rheumatism, as many do, though it is unlikely that it is an infectious disease like the rheumatism which attacks the joints.

But whatever its cause it is a mighty unpleasant thing to have. It is one of the signs of approaching age and feebleness, for I never knew of a case in a person who had not passed middle life, and the older one gets the more susceptible to it he becomes.

There does not seem to be any outgrowing it as there is with some aches and pains, it may go away for a few weeks or months but it invariably comes back again no matter how careful you may be to get rid of it.

It is far less prevalent in summer than at any other season, and is not always troublesome during the clear cold days of winter but at all other seasons of the year particularly in the early spring and fall it flourishes causing great pain and misery.

It has seemed to me from a rather careful study of it in my own person that the most important influence in causing it is the atmosphere.

When the air is heavy, the barometric pressure low, the atmosphere nearly saturated with moisture and the wind south, south-east, or north-east an attack of lumbago may be expected by those who are susceptible to it, no matter what precautions they may take to keep it off.

It begins with stiffness in the muscles on one or both sides of the lower portion of the back, which rapidly become more and more annoying, more and more painful.

When you get down to a chair or the bed it seems as if you could never get up, and when you get up it is some seconds or minutes before you can get so limbered up that you can move with any degree of comfort or freedom from pain.

After being around a few hours during the day your back is so painful and all motion is so difficult that it seems as if you could never again get down to a chair or get into bed.

Not infrequently there is involuntary cramp or spasm of small portions of the muscles which is extremely painful.

Usually it is possible to get into a position in which the pain is only moderately acute, sometimes a change from one position to another seems only to start up a new kind of pain.

Other causes of this trouble are exposure to cold and dampness, violent exercise of the muscles, intense emotion, etc.

It is made worse by constipation, by overwork and fatigue, by improper eating and drinking, by loss of sleep and many other causes.

An attack may last a few days or several weeks, varying in its severity with the weather and with the treatment of the case.

It is frequently mistaken for disease of the kidney or spine or other organic diseases which seem to be located in the back.

Heat is perhaps the best and most soothing remedy we have for this ailment, a hot water bag at the feet and another at the back.

It is often helpful to cover the back with flannel and dron it vigorously with an iron as hot as can be borne.

Blistering, cupping, massage and electricity are also useful. It is best to avoid the use of drugs as far as possible, with the exception of such as may be necessary to keep the bowels freely open.

The clothing must always be sufficient to guard against chilling the surface.

Horse Sense

Many trainers make the mistake of hitching the colt to a wagon before teaching him to drive with harness without a load. The "bitting" harness should first be used. This consists of an open bridle with a snaffle-bit, check and side reins and surcingle with crupper. The side and check reins should be left comparatively loose when the "bitting" harness is put on, and the colt turned loose in a small yard for an hour. The reins should be slightly tightened the second day, and the lines put on the third day. One man should lead the colt while another walks behind, thus accustoming him to driving. After he is quieted sufficiently, the one who is leading can be dismissed.

When the colt is ready to drive double, select a horse with which he is familiar, hitch the two together, drive them about the yard in a circle for about half an hour, first in one direction, then in another. Afterward hitch a light wagon and, with an assistant leading the colt, drive about, being sure that the brakes keep the wagon from running on to the colt. Use a short stay chain on the old horse so that the colt will learn to start the load. Gradually accustom him to automobiles, street cars and railway trains, until he learns they will not hurt him.

For To-Day.

Put off your griefs and your sorrows,
Laugh and be glad while you may;
There are so many to-morrows,
There is but one to-day.

Putting Your Mind On It.

The Boy's Market Garden.

Every farm boy should have some way to make his own spending money. Self-reliance is one of the most noble traits of character a boy or man may possess. It not only makes a boy feel independent of his parents when he wants money to spend, but it develops business traits and gives him a knowledge of the value of things. All boys would not make good gardeners, cattle breeders, swine breeders, horsemen, sheep men or poultry breeders, but each boy has a preference for some one kind of farming and he should try and induce his parents to let him start in some kind of a little business for himself.

For a boy who has only a few dollars to invest, and whose home is located near to some large village, city or summer resort, a well-managed garden or truck patch can be made to pay fine profits. Such a business will afford a good income during the summer and fall. For a garden spot a warm sandy soil is the best kind to select because it is easier to work; the soil being loose, the roots of the plants find it much easier to reach out in search of their food. Other kinds of soil may be made to produce good crops of vegetables, but as a rule they are much harder to get in good condition to plant and require more cultivating and hoeing to keep free from the weeds and in proper physical condition to grow fine vegetables.

The soil must be properly fitted before it can become a congenial home for the tiny plant roots to live in. It not only requires plowing and pulverizing, but the surface must be refined with a light harrow and rake. This is to put it in shape to hold moisture and to break soil lumps into particles from which it is easier for the plant roots to draw their food supply. Also the roots must have an ample food supply if they are to furnish enough food to develop a fine vegetable. As soon as the seed sprouts in the ground the root goes down and the stalk comes upward in the air. The root goes down because of the food of the plant being in the ground and it is the business of the root to draw up this food so that the plant may be nourished and grow. It is a sort of stomach for the plant.

If a plant has no root it would not grow any more than a boy would if he had no stomach in which to put his food. The root has numerous small mouths or openings that resemble a sponge but as the plants feed by them we may call them mouths—but do not think of them as real mouths. These are the fine parts of the roots that you see hanging to the main branches. When we transplant a plant to another part of the garden we must be very careful not to break off these tiny roots, or mouths, or the plant will die just the same as you would if you would stop eating.

The different plants grow in the ground just the same as the different people live from a well-supplied table. Each plant chooses its own food just the same as a person. Sometimes one plant requires different food than another and will not do well in a certain kind of soil where the other plant will thrive exceedingly well. When this is the case we must feed the plant by putting in the soil the kind of food that it needs for all plant food must first be put in the soil to be acted upon by the air and water before it can be taken up by the mouths of the plant.

Now is a good time to make plans for your garden. Send for some seed catalogues and study the descriptions of the different kinds and varieties of vegetables and make a map of your proposed garden. Make an estimate of the amount of seed needed to plant your garden, and order it early. Send your order to some reliable seedsman who has seed that is adapted to your soil and climate.

Care of Caulk Wounds.

Conditions are just right now for caulk wounds at the crown of the hoof. A caulk wound should be thoroughly cleansed at once by injections with a mild antiseptic, such as common salt—a teaspoonful to a quart of water. A tablespoonful of chlorinated lime to a quart of warm water, applied thoroughly twice a day to every part of the wound, is also very good for this preliminary cleansing. Either one should be applied continuously to every part of the wound for at least an hour before the wound is considered thoroughly and safely clean.

Strong disinfectants may also be used. These give quicker results and are in some cases more practical. Tincture of iodine in full strength may be used. Two or three thorough treatments should be given the first day. Plugs of cotton may be soaked in the tincture of iodine and packed in the wound.

After this first thorough treatment, use a drying antiseptic powder, composed of equal parts by bulk, of iodoform, tannic acid and boracic acid, applying lightly three times a day. It is of the utmost importance to keep such a wound out of mud and filth.

One of the peculiar properties of iodine is that a seven-thousandth part of it will give water a deep, yellow color, and starch a purple. When heated it rises as a dense, violet-colored vapor.