

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. 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.

Some Modern Farm Machinery.

Leaving out of consideration tractors, all engines and farm power plants, dairy, poultry, barn and household machinery and equipment as demanding too much space for treatment in this article, the following resume of recent developments and progress in implement design and an enumeration of what the market affords to-day is not without practical value.

We begin with machinery for conserving and increasing the fertility of the farm, manure, straw and fertilizer spreaders and the like. Nearly all manure spreaders are now made with some form of widespread apparatus, some perhaps a little more efficient than others, probably the worst fault of any of them being the tendency to wind themselves with tough straw or marsh hay and to clog and increase the draft of the machine. Personally, I have but little liking for a return apron spreader, as the return mechanism is about as complicated and as likely to get out of order as anything about the machine, and while its weight is not so great as half the apron of the full apron spreader, yet I cannot see where the disadvantages of its complication and the bother of always having to see that the apron is returned before the machine is ready to be loaded, is offset by any practical advantage. It is sufficient to say apropos to this, that by far the larger numbers of spreaders now being sold are of the endless apron type. Excepting where it is intended to use a mechanical loader, I am inclined to favor the low-down extended four-truck type rather than the higher machine having all four wheels under the load. The increased draft of the former is so slight that it will never be noticed in actual work, but change from pitching into a low machine to loading a high one, and you will notice the difference quite enough. It is true that the spreaders with the front wheels under the load as now built, are much lower than those of a few years ago, at least one maker having practically succeeded in putting the front wheels under the load and yet retaining a low-down front truck construction by means of an "automobile" type of front axle, the front and rear wheels of this spreader having the same width of track. In buying a spreader it might be well to consider whether or not the wheels are so spaced that the machine can be used for top-dressing row crops or for strawberry mulching, and there are jobs for which some spreaders are adapted for which others will not serve. Some spreaders may be equipped with lime hoods, at least two makes are furnished with extra top boards for increasing the capacity of the machine in drawing light manure, one at least can be equipped for distributing the manure in rows, a device of particular value to market gardeners, melon and cucumber growers, and four spreaders are now furnished with straw spreading attachments.

This brings us to the straw spreader, a machine of comparatively recent introduction and one whose use will probably remain somewhat restricted to localities that are largely grain raising and where the straw is neither baled and sold or fed and used for bedding for live stock. There are now, exclusive of manure spreader attachments, at least seven of these machines on the market and there is no standardization, only two of them being anything alike. Four are designed to be used with any wagon or truck with a cake rack or "header barge," one is a combined straw and manure spreader, rack and all that may be used on practically any wagon gear, one is a separate wheeled machine to be hitched behind the wagon like a hay loader, and the seventh is a complete machine, truck, rack, spreading apparatus altogether, being a rather bulky machine. Five of these machines are advertised as being also adapted to spreading manure, one maker claiming that his machine will spread manure over twenty feet wide. I doubt very much if they will be able to compete in this respect with the regular manure spreader, as four of them require two men for their operation, a driver and a man to help feed the spreader, the prongs or carriers of these machines are short and narrow, the longest of them being ten feet. Further, as mounted on a flat rack, they would be unhandy to load. As these machines are wagon attachments they cost but about half as much as the regular manure spreader, and it may be that they could be used with a wagon box and give better

service than would at first thought be expected. These restrictions do not, of course, apply to the combined one-man straw and manure spreader which is intended to handle both materials. Anyone who contemplates the purchase of a straw spreader should familiarize himself with all the makes, as each has some advantage peculiar to itself, as for example, a device for saving the grain left in the straw, a feature of one make.

As for lime spreaders and commercial fertilizer distributors, I can but mention the narrow truss "broadcast" type, a lime spreader with a harrow attachment by means of which the material is spread and harrowed into the ground at one operation, the row compost drill, and the fertilizer attachment for cultivators, by means of which commercial fertilizers are distributed to growing row crops at the time of cultivation. At least two makes of cultivators are furnished with these attachments, and there is a separate attachment that may be attached to most any cultivator.

Coming now to the actual tillage tools, beginning with the plows, the most prominent features are the development of tractor plows and the elimination of left hand, wood beam, and other obsolete types.

Practically all the newer light tractor plows are of the self-lift or automatic type, may be furnished with combined leveling coulters and jointers, have quick detachable shares, and may be furnished with a variety of bottoms to suit soil conditions. Mention may also be made of the self-lift light tractor disc plow, a plow with interchangeable disc and mould-board bottoms, and special plows for plowing stony land. Here also may be considered the peculiar machine known as the "once-over" tiller. This implement, which is made in both tractor and horse plow sizes, consists of a rotating knife member which is held in the furrow slice as it is turned by the mould-board. This "rotor" is driven by a small gas engine mounted on the frame of the plow, or, in case of engine plows, by power from the tractor. The "rotor" revolving at high speed threshes and pulverizes the soil to a perfect seed bed at a single passage of the machine. Another curious implement that is primarily a plow is the "once-over" quack grass killer. This machine is mounted on wheels and bulks about as large as a road-grading machine. There is first a sixteen-inch plowshare, followed by an elevator somewhat on the plan of that of a potato digger, but with a solid or continuous carrier, which elevates the furrow slice to a revolving cylinder very similar to that of a threshing machine which thoroughly threshes and pulverizes the soil, which is then passed back to a revolving screen which allows the finely pulverized soil to drop back to the furrow, while the quack grass and other roots are retained to be passed to an elevator which deposits them in a wagon that is driven alongside the machine. This machine is engine driven, and as might be expected, requires a fair-sized tractor to pull it, and it is, of course, a rather expensive affair. Neither of these machines have as yet come into very extensive usage but they are interesting developments that hold promise for the future. Of the common horse-drawn plow there are two mentioned a new very light and simple riding plow, harrow and subsoil attachments, and two deep-tilling plows of the disc type, one of which while not adapted to quite as deep plowing as the other may be converted into a two-furrow shallow disc plow.

In land rollers the tendency is toward an increased use of the bar and corrugated types, and also of various forms of pulverizers, crushers, and roller-harrows, some of these last, particularly a "western" double star-wheel design, are very efficient implements.

A very prominent feature of the tendency toward the better tillage of the soil is the increasing use of the double disc harrow, the solid disc proving to be more popular than the cutaway. Perhaps the last word in this implement is the double disc, solid in front, cutaway rear, equipped with tongue or fore-truck, transport trucks, and so designed that the rear discs may be readily detached. There are now a number of special engine disc harrows conveniently designed for control from the tractor, and a new horse-drawn single disc harrow with offset gangs that leave no uncultivated ridge.

Other implements that deserve more extensive use are the curve blade harrows and pulverizers of the "acme" and "killifer" types, for some purposes to be preferred to the disc, and the light straight blade disc harrows of the "Meeker" type used by gardeners and onion growers in preparing very fine seed beds, these implements, in fact, practically taking the place of hand raking. Another good implement is the "light draft" spring tooth harrow, originally intended for the

orchardist but of almost equal value to the general crop and grain farmer. The sulky weeder or riding mulcher as it is sometimes called, is a much lighter implement and may be equipped with grass and grain seeder attachments. It is particularly adapted to the needs of the grain and alfalfa farmer who wants to cover a large field in a short time.

But slight changes have recently been made in grain drills, that is, with the exception of the designing of special tractor-drawn designs. The use of narrow, three and four-inch drills, does not seem to be increasing very fast, and as for other crop planting machinery, a special four-row bean planter, the motor corn planter as combined with the motor cultivator, large four-row listers, and a potato planter that cuts the seed as it plants it, completes the list. Nor has there been any marked change in the design of the new cultivators placed on the market within the last few years. There is some increase in the popularity of the shallow or surface type, some very efficient one horse implements with wide cultivating sweeps or blades that cut all the space between the rows being offered, and attention may well be called to devices for weeding in or very close to the rows, brush weeder, tobacco hoes, some new three and four row beet and bean cultivators, and the motor cultivators of which there are now five makes actively on the market, exclusive of garden tractors.

Horse Sense

The foal should be well fed during the summer. When it begins to nibble at the mare's feed, a low feed box should be erected out of the reach of the mother, where the young animal can be fed regularly. A mixture of ground oats and bran, or a mixture of ground oats, ground corn and bran or oil-meal is a good feed during the summer and early fall.

By weaning time the colt should be eating grain and grass or hay. Under careful management there will be little trouble in weaning the foal. The mare and colt should be separated, and the mare milked by hand to prevent caking of the udder. In the meantime the colt should receive plenty of feed and water, and should be kept in a well-fenced lot, paddock, pasture, or a good box stall where there is plenty of fresh air and where exercise comes naturally.

Every phase of labor and organization required by the exigencies of modern warfare are shown in the Canadian War Memorials, paintings to be exhibited at the Canadian National Exhibition this year.

H.R.H. the Prince of Wales will spend three days in Toronto during the Big Fair. He will open the Exhibition on Monday, August 25th, in the open air, where many thousands may see him, and will remain in the city until Wednesday, spending all or part of three days at the Exhibition grounds.

Putting "Pep" Into the Home Fair

County fairs in general were hard hit by the war. Many associations went by the board. Acres upon acres of centre rings were planted in corn. Midways and parking spaces were turned into sheep pastures and the ballyhoo and bark of the spieles are no more.

County fairs had degenerated even before the war. There is no denying that fact even by some of the sophisticated mortals who ran them.

Community fairs, on the other hand, were rapidly gaining a foothold when the war intervened. Let us hope they regain their standing and go ahead, for they are educational aids to raise standards in any community. They tend to arouse local pride, develop a friendly spirit of rivalry and bring about a better co-operation between families of the neighborhood, also between town and country. They have no gold mine of premiums. They are purely local affairs, sort of miniature county fairs with the commercial amusements left out.

Several years of experience in assisting in community fairs, acting as secretary and visiting many fairs in other localities, convince me that one of the chief faults of the average fair is lack of unity in exhibits. Lack of space is sometimes responsible for this. Lack of experience on the part of those in charge of departments often causes exhibits of high quality to show poorly. This hinders competent judging, spoils the effect and sometimes leads to dissatisfaction among those who are showing farm products. Where vegetables are being shown every exhibit should be uniform. A peck of potatoes, beets, turnips, three pumpkins, squashes, a definite number of this or that; then with plenty of room the display becomes both attractive and educational. Jam things together and the display is neither educational nor attractive.

If it is possible to secure enough vacant store buildings in town to hold the exhibits, half of the battle for a successful community fair is won. The next best plan, but one that usually takes more work and cash outlay, is to have booths along the sides of streets, or canvas tops erected in the street itself. Hartford City, Ind., a place where one of the most elaborate, best arranged and successful fairs I have ever seen is put on every year,

THE CHEERFUL CHERUB

The world has little beauties
To offer us each day.
Don't rush along too swiftly—
You'll miss things on the way.



Poultry

August is the opening month of the molting season. Hens that start molting this month generally end in time to become good winter layers. But, goodness, how ragged they look! Molting is not a disease, and yet nearly all the poultry doctor books refer to it. It is a condition that develops whatever weakness there is in a fowl, and sickness and death often follow. The period lasts about 100 days, which dates from the first falling of feathers to the completion of the work.

A fowl in good health will grow feathers rapidly. In such cases there will not be that ragged appearance which is noted in cases of slow or hard molt. Fat hens readily shed their feathers, but they seem to lack the power of promptly renewing the coat. A fowl that is poor in flesh has great difficulty in shedding her feathers.

Molting fowls must have clean, protected houses and plenty of exercise. They must be fed a nitrogenous food. Corn, cornmeal, middlings and potatoes must be given sparingly. The males should be separated from the females. Bran, green bone, sunflower seed and linseed meal are highly valuable in the bill of fare. Spicy condiments must be avoided, especially sulphur. If the hen is not in proper condition for molting, no amount of stimulating food will make up for the lack of a reserve of suitable material for cell growth; and the use of spices at this time can only overstimulate and act injuriously on the future of the fowl.

The laying season of the heavy-weight ducks ends this month. March-hatched pullets should be laying now. Get rid of the surplus fowls before they start to molt. Caponizing can be performed in August.

Set hens or incubators for February table poultry.

Remove scorch marks from linen by rubbing with a fresh-cut onion. Soak in cold water.

When peeling onions place in water deep enough to cover them. This protects the eyes.

Health Talks

By John B. Huber, AM.M.D.

Dr. Huber will answer all signed questions of general interest. It will be answered through these columns; if not, it will be answered personally. If stamped, addressed envelope is enclosed. Dr. Huber will not prescribe for individual cases or make diagnosis. Address Dr. John B. Huber, M.D., care of Wilson Publishing Co., 73 Adelaide St. West, Toronto.

Pure Milk.

No one who can afford to do otherwise should buy loose milk—that is from the can or taken home in pails. Bottles of milk should be wiped or washed as soon as received from the wagon and placed directly in the refrigerator. The latter should never be without ice nor allowed to become warm. Milk should at all times be covered, as a protection against dust and insects. It should be kept in some part of the ice box where there are no strong smelling foods. Like onions, cheese, or other substances from which odors might be absorbed. The object of such precautions as these is to keep the milk clean and to retard the growth of germs in this fluid.

What measures are necessary to safeguard the purity and safety of milk?

1. The cow should be healthy, and the milk of any animal which seems indisposed should not be mixed with that from the healthy cows.
2. Cows must not be fed upon swill, or the refuse from breweries or glue-cake factories, or upon any other fermented food.
3. Milk cows must have access to fresh pure water.
4. The pasture must be freed from noxious weeds, and the barn and yard must be kept clean.
- 5.—The udders should be washed and then wiped dry before each milking.
6. The milk must be at once thoroughly cooled. This is best done in the summer by placing the milk in a tank of cold water or ice water, the water being at the same depth as

Doing Over Old Machinery.

A man was telling me what quips and quorks he was taking advantage of to help out when times pinch. It called to mind some of the ways we have taken on our own farm to get a little more wear out of different tools.

For example, there was a wheel rake that came to us along with some other things when we bought a piece of land adjoining our farm. As it seemed to be a fairly good one, we put our rake away and used the old one. When a shaft was broken, we took one out of the rake we had stored to put in the place of the broken one. So it has gone on. Now and then a part would give way in the rake and we would draft the pieces from the other.

We did the same thing with a mowing machine. We had two of the same kind after we bought the neighboring farm. These we used, changing off as we liked. When any part was badly worn or broken we went to the other for a substitute piece. In this way we have made out to keep from buying a new machine a number of years.

A neighbor of ours is a very handy man at this thing of rigging up machinery out of old parts. Out of some old mowing machine wheels he built a fine land-roller, so good that we got him to help us to make one just like it. If we have a breakdown he is almost sure to have some way of mending it without going to much expense. He certainly is a handy man in the neighborhood, and he saves a great deal of money for us every year. This knack of doing over old machinery is one of no small moment in farm economy and worth cultivating.

There is this danger—that the doing over of old machinery, and the replacing of worn parts, can be carried too far. Trying to make a piece of machinery do good work after it is almost ready for the junk-heap is very often poor economy; the time spent in tinkering would go a long way toward paying for new machinery. Besides, the old machinery that accumulates on a farm, when old machinery is saved, is quite an eye-sore.—E. L. V.

Soil For the Window Garden.

All who wish to have plants growing in pots in winter should prepare a heap of good soil for them immediately, in the following manner: Find some good rich soil which is covered with thick sod of grass but free from weeds, cut off the sod, digging about three inches deep, and pile up, mixing with it about one-fourth the bulk of well-rotted cow manure. Allow this to remain in a heap for a month, wetting it occasionally if there are not frequent rains; then turn it over, break the sods and mix well and leave it in a heap until needed for use. If the soil is heavy mix a little sand with it. Do this and next winter your plants will grow and bloom.

Romney's portrait of Joseph Brant, bought by the Canadian Memorials Fund at public auction for \$27,500, and the famous "Death of General Wolfe," generously presented to the Fund by the Duke of Westminster, are among the paintings to be shown in the War Memorials exhibit at the Canadian National Exhibition this year.

Are you buying W.S. Stamps?

the milk in the can. It would be well if the water in the tank could be kept flowing; and this will indeed be necessary unless ice water is used. The tank should be thoroughly cleaned each day to prevent bad odors. The tank should remain uncovered during the cooling, and the milk should be gently stirred. The temperature should be reduced to 60°F. or lower within an hour. The can should remain in cold water until ready for delivery.

7. The milk should be delivered during the summer, in refrigerated cans or in bottles about which ice is packed during transportation.

8. When received by the consumer it should be kept in a clean place and at a temperature below 60°F.

Questions and Answers.

Question—I am a boy of 16 and very small. Is there not some device for making me grow? I have been told that a device has been discovered by which your feet are held and which fits you somewhere around the spinal column. Is this true?

Answer—It is not true. You have plenty of time to grow. You will not attain your full growth until you are 21. I would not worry about it.

Question—I have had a lot of trouble with my nose lately. It seems to get blocked up making it very hard at times for me to breathe properly and affecting my speech.

Answer—There may be some obstruction, such as polypus or hypertrophied turbinates. You should have your nose examined by a competent specialist. Additional information is being mailed you.

Garden Hints.

Cut out and burn the old blackberry and raspberry canes as soon as they've fruited.

Stop cultivating the bush fruits this month. Keep the low and cultivator going in the strawberries.

Never hoe beans or cultivate them when the vines are wet, unless you want "rusty" plants.

Celery may be blanched by means of boards, paper or drain-tile. Earth is likely to cause decay if applied when the soil or foliage is wet.

Overwatering when transplanting in hot weather should be avoided. Until a new root system is established a plant can not take up much water.

Start geraniums during August for winter blooming. Break off the slips and put them in the ground beside the old plant. Pot them before frost.

For cabbage worms: Mix one part of fresh Persian insect-powder with four parts of air-slaked lime, and dust it on the plants at regular intervals.

Sun-scales is common on trees that have not sufficient foliage to shade their own trunk and main limbs. A little forethought will enable you to shade the threatened parts in some manner, and thus avoid having damaged bark on the southwest side.

Nearly 100 artists, British and Canadian, were engaged to produce the Canadian War Memorials paintings which will be shown at the Canadian National Exhibition this year. This will be the first showing in Canada. So far they have been shown only in London and New York.

To test the heat of an oven, put a bit of white paper in it. If too hot the paper will blacken.

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The Gospel of Service.

Every few minutes something comes up to make me glad I'm living in 1919. Of course, 1919 has its faults, what with the uncertainty about the Peace Treaty and the Germans acting as though they hadn't been given far less than they deserve, you could hardly call 1919 the golden year. But at that, it has given us a great many things to feel good about and to be devoutly thankful for.

The thing I am most glad for to-day, though, is the different idea about Christianity, that it is to be a religion of doing instead of one of not doing. Why, just a few years ago most everyone thought of Christianity as a religion of negation, at least they did in the town where I lived. If you were a Christian you mustn't do things that somehow or other you just naturally wanted to do. You mustn't play cards nor go to shows nor read novels nor dance, nor drive, nor swim nor row on Sunday. You mustn't joke and laugh, and some even went so far as to say you mustn't wear a ribbon on your hair nor a ruffle on your dress nor a bit of lace on your lingerie.

To-day, though, in 1919, we don't hear so much about crucifying the flesh as we do about lending a hand. And it is so much more in harmony with what Christ really taught. As I remember it, He gave just two commandments and they were both "do" ones. "Thou shalt love the Lord thy God with all thy heart, and thy neighbor as thyself." And He told His followers that when the Great Judge divided the sheep from the goats it would be on the principle of whether they had gone out and helped their brother, not as to whether they had kept all the Jewish ceremonial law.

I can't recall that He ever forbade anyone getting out the car on the Lord's day. On the contrary, He just went about on Sunday as He did on Monday and Tuesday—doing good. And when the Jews took Him to task for breaking the Sabbath He calmly told them that the Sabbath was made for man and not man for the Sabbath. There are a great many people to-day living narrow, poky lives under the mistaken idea that it is the Christian thing to do. A master of fact, Christ never anywhere said a word to the effect that it is wrong to enjoy life. And He did a great many things to show you that He was what we'd call a "good mixer" to-day. If you will really read your Bible instead of seeing in between the lines the ideas the some churchmen have implanted in your mind, you'll see that Christ went about all sorts of affairs and mingled with all kinds of men and women. Didn't the poor old Pharisees complain that He was a "wine-bibber" and "a friend of publicans and sinners"? They wanted to tie Him down to the charge of immorality, but He wouldn't be caught. His idea was a life of service to His fellows, mixed with such simple pleasures as His times gave. He went in for everything that makes for a well-rounded life, and He enjoyed all the experiences common to men.

A religion of service is the proper one for 1919, not one made up of "Thou shalt not's." Christ came to do away with the old Jewish idea of a thousand and one laws. Isn't it a pity that after two thousand years so many good people are still bound by laws of man's making?

Spring wagon axles are very frequently sprung out of shape by overloading, or by accidents and runaways. They can sometimes be straightened without hammering and without removing from the vehicle.

Place two pieces of oak 2x6 together, one on top of the other. Each must be a little longer than the track of the vehicle. In order that chains may be readily passed beneath the 2x6's, place a small strip under them to hold them off the ground. It is not necessary to remove the wheels.

Run the wheels on to the 2x6's and pass a log chain under the planks and over the axle to be straightened. Two chains are required—one on either side of the bend. Quite often the chains may be placed over an axle clip to avoid marring the wooden axle cap. If not, heavy pieces of leather should be placed under the chains.

Under the bend in the axle place a jack-screw. Now by raising the jack-screw the axle can be straightened very quickly.

Automobile axles which have been bent by running against objects should be removed, turned on their side with the bend down and straightened in the same manner. In a shop with a plank floor the chains can be fastened to eyebolts in the floor.

Twenty-five cents buys a Thrift Stamp.

The "Hell of Death" that faced the Canadians at the second battle of Ypres, when they were set against the first German gas attack, is vividly portrayed in the War Memorials paintings to be shown at the Canadian National Exhibition this year.

"Finish every day and be done with it. You have done what you could. Some blunders and absurdities, no doubt, crept in. Forget them as soon as you can. To-morrow is a new day; begin it well and serenely, with too high a spirit to be cumbered with your old nonsense. This day is all that is good and fair. It is too dear, with its hopes and invitations, to waste a moment on the yesterdays."—Emerson.