

Soils and Crops

Address communications to Agronomist, 73 Adelaide St. West, Toronto.

Cleaning Milking-Machines.

The following method of cleaning milking-machines has been found to be practical and should give good results:

After each milking, immediately rinse the machine with cold or lukewarm water. This is done by attaching the machine to the pump line, and immersing the test cups in a pail containing the rinsing water. It is best to break the flow through the machine by pulling the cups out of the water and then immediately immersing them again; this should be done ten or twelve times.

In another pail, containing hot water and a soda solution, repeat the same procedure. At this time, wash the outside of the test-cups and rubber tubing. Run the brush in test cups. Repeat the process, using clean rinsing water. Draw a chlorine solution through the machine (chlorine solution described later).

Detach long milk tubes from the head of pail. Plug air tubes (in the inflation type of machine), and place the test-cups and tubing in a chlorine sterilizing solution made fresh every day. It is important that the tubes be placed in the solution carefully, so that no air pockets will remain. Place the tubing in the solution slowly, and in such a manner as to allow the air to be expelled.

Wash the buckets and covers thoroughly after each use. These should be washed in the same manner as is recommended for milk pails and cans, and thoroughly sterilized with steam.

When the units are assembled for milking, be sure that all liquid has been drained out of the air system. (This system should have been plugged, but it is best to be sure that no water has leaked in, as moisture will sometimes interfere with the pulsations.) After assembling is completed, rinse units with clean, fresh water.

Twice each week the machines must be taken completely apart and washed thoroughly. Brushes should

be used in cleaning the tubing, test-cups and inflations. The best results will be obtained if a soda solution is used. Never use soap.

Every two weeks clean out the vacuum line. This is done by drawing hot soda solution through the pipe line by means of the vacuum. The construction of the line permits this solution to be drained out of the line. Usually provision is made for it near the pump. If at any time milk is drawn into the vacuum line, clean the pipe immediately after milking.

The moisture trap on the head of the machine (cover of the bucket) should be cleaned after each milking.

To make the chlorine solution—Dissolve a twelve-ounce can of commercial chlorinated lime in two gallons of water. Strain into a crock or glass jar, discarding the sediment. Cover and keep in a cool, dark place. This is known as the stock solution, and will keep a long time.

To make the chlorine solution in which the tubing and cups are kept, use one pint of stock chlorine solution to every eight gallons of water. This diluted solution should be used but twenty-four hours. Make up new solution every day.

The crock or box in which the tubing and cups are kept should be kept covered and clean at all times. The presence of slime or dirt in the solution will destroy its usefulness. The machine must be thoroughly washed before any of the parts are placed in the chlorine solution.

In preparing the cows for milking, the same care should be used as in milking by hand. It is necessary that the teats be very clean if a clean milk is to be obtained.

Make Concrete Floors When You Need Them.

Just now is when concrete feeding floors and sidewalks are most needed—in snowy, sloppy weather.

"But we can't do concrete work in freezing weather, can we?" some folk ask.

The best answer is the experience of scores of farmers who are doing concrete work in winter; they heat the water, cement, sand and gravel, and after the concrete is in the forms, cover it with canvas and straw. Laying concrete floors inside the barn or hog house in cold weather is not attended with such great danger from freezing.

It is necessary to mix, place and protect the concrete that early hardening will be complete before the work is exposed to freezing temperatures. To do this:

1. Sand and pebbles or broken stone used must be free from frost or lumps of frozen materials.
2. If these materials contain frost or frozen lumps they must be thawed out before using.
3. As cement forms but a relatively small bulk of the materials in any batch of concrete, it need not be heated.
4. Mixing water should always be heated.

Although adding common salt to mixing water will prevent freezing of fresh concrete until it has had time to harden, there is a limit to the quantity of salt which may be added if the final strength of the concrete is not to be affected. Salt simply lowers the freezing point of the mixing water; it does not supply what is most needed—heat and warmth. It delays, instead of hastens, the hardening of the concrete to the desired permanency.

Sand and pebbles or broken stone and mixing water must be heated so that the concrete when placed shall have a temperature of from 75 deg. to 80 deg. F. Some sands are injured by too much heat. The same applies to certain varieties of pebbles and broken stones. A temperature not exceeding 150 deg. F. will generally prove most satisfactory. Place concrete immediately after mixing so that none of the heat will be lost before placing in the forms.

Warm the metal forms and reinforcing before placing concrete. Remove ice and snow and frozen concrete remaining on the forms from preceding work. Forms can be warmed by turning a jet of steam against them or by wetting with hot water. Even though materials have been heated and the concrete placed im-

When you pay 30 cents for a half-pound package of Red Rose Tea (Crimson Label) you get exactly the same tea for which you formerly paid 35 cents a package.—Quality in Red Rose Tea is the first consideration.

mediately after mixing, it will lose much of its heat if not protected from low temperatures, at once. Therefore protect the concrete immediately after placing. Canvas covering, sheathing, housing-in the work, or hay or straw properly applied will furnish the required protection for different jobs. In addition to these means, small oil or coke-burning stoves or salamanders can be used in enclosed structures. Guard against dry heat.

Temperatures which may not be low enough to freeze the concrete may, nevertheless, delay its hardening for a considerable time. Do not expect concrete placed when the temperature is low, and remains low for some time afterward, to be safe for use as soon as when placed during warmer weather. If concreting is unavoidably delayed or interrupted, the work should be covered until concreting is again begun. Cover and protect each section of the work as soon as completed. In severe weather continue this protection for at least five days. Do not remove forms from concrete work too soon.

Frozen concrete sometimes very closely resembles concrete that has thoroughly hardened. When frozen concrete is struck with a hammer it will often ring like properly hardened concrete. Before removing forms, examine the work carefully to see whether it has hardened or simply frozen. To determine this, remove one board from some section of a form, pour hot water on the concrete or turn the flame of a plumber's blow-torch or a jet of steam under pressure against the concrete. If the concrete is frozen, the heat will soften it.

A Good Way to Cut Your Fuel Bill.

Last winter several farmers in a neighboring community found a way to beat the "high cost of fuel." This is how they did it:

Harry Bartlett had five acres of land which he wanted cleared, and the trees made into fuel. He secured tools and started the job. Bartlett soon saw that he was paying out more than his wood was worth, and that he might have to spend a fuel-less winter. Rains set in, roads were bad, and the prospect of coal was poor.

He knew that several neighbors were in the same shape, so one evening he talked to eight farmers about a community plan, and six agreed to it. The following day the six men met, elected a secretary, and decided to purchase a wood saw and engine. All agreed to share expenses equally, and also to share alike in either profit or loss. To guard against two parties wanting work done on the same date, they arranged the names according to distance and the amount of work to be done. The first and last Tuesdays in each month were set aside as regular work days.

When the outfit was put in operation, others saw that the plan was good, and asked for admittance. The members decided to do the work on a cash basis for these non-members at a lower rate than by the old methods. Later on, however, labor was taken in exchange.

"We paid out on the outfit before

spring," Mr. Bartlett told me. "We sawed wood, cleared land, and cut posts and logs for each other. We have purchased a light truck on which to haul the machine, and it does not take long to set up and begin work. If it rains, we cover the outfit with a canvas and begin business as soon as it ceases. This enables us to get a job done in quick time."

"A correct list of all expenses, as well as profits, is kept in the secretary's ledger," continued Bartlett. "This is open for inspection at all times, which prevents misunderstandings. We do not try to make a profit, but rather to do a community service. Our own locality comes first, although we often receive calls from farmers ten miles away."

It isn't a complicated process to organize a community co-operative association such as these men did. All it takes is the need for it, and the willingness of the organizers to give and take—which, after all, is the basis of all true co-operation.

Stopping Gullies and Washes.

I live in a part of the country where the land is hilly, and the fields sloping and subject to soil washing; such as gullies and ditches. When I notice a wash starting in one of my fields, I fill the wash with old hay, straw, or almost any worthless material. I pack this tightly in the wash, because it will make the wash fill up with rich soil. Then I use a little fine manure and sow grass-seed; and, in a short time, the place occupied by the small wash will be covered over with a heavy sod.

I fill the large gullies about two-thirds full of various kinds of material, as it would require too much soil to fill them. In the bottom of the gully I use stone, which I cover with brush, old hay, cornstalks, or anything I have that is of no value. I then bore a line of holes on each side of the gully, spacing them about three feet apart, and in each hole I place a stick of twenty per cent. dynamite primed with a No. 6 blasting cap attached to a piece of good fuse. Battery and electric fuses may be used, but the fuse and cap is the cheapest method. The force of the explosion finished the work of filling the gully with dirt. I use a good drag harrow to smooth over the dirt, and the place once occupied by the gully can now be used for sowing seed. The work can be done in a very short time and the cost of the dynamite used is a small item in comparison with the value of the improvement.

To-day is none too soon to start making up your list of seeds, bulbs, and nursery stock for spring planting.

Pots and saucers are now made semicircular, with one flat side, so that two of them appear as one when placed together. By this device two dishes may be cooked at once with the gas required for one.

Read this twice: Which is the best, to give that boy of yours an acre of ground and have him raise a hundred bushels of corn, or to have him go to the city and maybe raise a hundred kinds of Cain?

Are You Prepared to Fight a Fire?

A little group stood in front of the post office discussing the fire at the George Halsey farm.

"Didn't George have any insurance?" someone inquired.

"No," was the reply. "He said the rate was too high, so he never took out any. The fire began in a rubbish heap near the barn. There wasn't any water handy; the spring that supplied the barn had run dry."

"He told me," continued the speaker, "that there was only a small blaze when first discovered; that if there had been a fire extinguisher handy they easily could have put out the flames, but they had to run to the house for one and by the time they got back it was too late. A brisk wind was blowing; the house caught fire and everything went."

Every year the fire losses in this country total the enormous sum of about \$25,000,000. This is the actual loss, without considering the sacrifices of life and the many millions of dollars necessary to maintain fire departments and fire appliances. Yet experts tell us that by the timely use of chemical fire extinguishers the loss at many of these fires could be kept down to a few hundred dollars. Chemical fire extinguishers are especially valuable on farms where the water supply runs low at certain seasons of the year, or where a fire department is too far away to be depended upon.

The type of chemical fire extinguisher most commonly used is the acid-bicarbonate type. This consists of a copper container holding a solution of bicarbonate soda, with a separate glass bottle containing sulphuric acid. When the two chemicals are

mixed, carbonic-acid gas is produced and a stream of water charged with this gas is thrown on the flames. Carbonic-acid gas is the gas found in soda water. Fire cannot burn in it.

The acid-and-soda solution in these extinguishers are usually mixed by inverting the apparatus, although in some makes you must use a lever or handle to break the acid bottle. Another kind of carbonic-acid extinguisher throws a foam. This is especially good for burning oil, gasoline, etc.

One objection to soda-acid extinguishers is that in winter the liquids may freeze. The soda solution freezes at about 20 to 25 degrees Fahrenheit, above zero, the acid ordinarily at about 29 degrees above zero, but after it has stood for awhile the acid absorbs moisture from the air, causing its freezing point to rise, sometimes above that of water. A way to prevent this is to put the extinguisher in an air-tight box in which an electric light is kept burning. Extinguishers of this type should be discharged, cleaned, and recharged once each year.

The popular small hand extinguisher containing carbon tetrachloride or something similar is highly effective against gasoline or oil fires, hence it is much used in automobiles and garages. A fifteen per cent. reduction on the fire insurance premium for automobiles is usually allowed, when the car is new, if equipped with an extinguisher of this kind.

Fire extinguishers, like other fire appliances, should be inspected regularly; their chief value lying in their being always ready to guard your house or buildings against the demon

The Growing Child—Article VI.

Keeping the Skin Healthy.

The skin is one of the principal organs of excretion. The body in its life activity is constantly forming waste products somewhat as a fire forms ashes in the process of burning. The kidneys and the liver, the lungs and the skin, all play a part in getting these wastes out of the system. In the case of the skin there are millions of little pockets called the sweat glands which have this work to do, for the sweat is a watery extract of the waste products of the body.

Another of the very important things which the skin does for us is to help regulate the body temperature. It does this by automatic changes in the size of the blood vessels of the skin and by changes in the amount of sweat. When it is hot outside the skin blood vessels expand and carry a larger amount of blood through the skin to be cooled off, while the sweat is discharged freely and cools the body by its evaporation. When it is cold the blood vessels contract and keep the blood in the inner parts of the body, while the sweat glands cease to discharge moisture in visible form.

Clothing should be warm enough to protect the body from undue chill, but if it is too warm it makes one dull and sleepy and weakens the machinery for temperature regulation in the skin. People who bundle up too warmly catch cold more often than those who dress too lightly, although the body must always be protected from sudden chills and cold to which it is unaccustomed. Woolen clothes are good for cold weather because they are porous and hold a good deal of air, which is a poor conductor of heat, and because they take up moisture readily and thus protect the body from chill after exercise has made the sweat flow. Cotton clothing is cooler and softer to wear next the skin and is better for warm weather.

Bathing is necessary, first of all, to remove dirt from outside and to wash off the waste materials deposited on the skin by the evaporation of the sweat, which soon produce an unpleasant body smell if they are not removed. It has also, however, an important influence upon the heat-regulating machinery of the skin.

Warm baths increase the size of the blood vessels in the skin and draw the blood away from the brain, making one feel comfortably sleepy. This is why a warm bath is usually taken at bedtime.

A cold bath on the other hand, contracts the skin blood vessels and drives the blood to the brain and makes one feel alert and keen. Cold bathing is a powerful tonic to the skin, since it trains the blood vessels to respond quickly to changes in temperatures. People who take cold baths regularly are likely to be harder and much less subject to colds than others. It should be remembered, however, that some people do not bear cold baths well.

Lateral Curvature of the Spine.

Broadly speaking, lateral curvature of the spine may be divided into two classes—functional and structural—though there seems to be an intermediate or transitional stage between the two. A functional lateral curve is a postural one, of mild degree, in which no actual change in bone has taken place. In a structural, or organic, lateral curve, certain changes have occurred in the bones of the spine and the ribs. These may vary from the mild case, in which these changes are not extensive, to the severe form where the alterations in the bones are marked and the deformity is extreme.

It has been found that about 25 per cent. of school children are affected with some form of lateral curvature, the larger proportion of which is the functional type.

Lateral curvature may be due to any one or more of many causes, and in some cases it is impossible to point to any particular cause. In general terms it may be said to be the result of any condition that causes the spine to be held habitually in a curved position during the growing period. Weak muscles and a certain yielding quality of bone are conditions that favor its development.

Since it is true that lateral curvature may be associated with either round shoulders or a flat back, the mother cannot use these conditions as evidence for or against the existence of lateral curvature. But she (or the dressmaker) may notice that the child's shoulders are not the same height, or that one projects farther backward than the other, or that one side of the back is fuller or more prominent than the other, or that the hips are uneven. In all cases the child's spine should be examined, and since it is of great importance to know whether the curve is functional or structural, the examination should be made by one trained to differentiate between these two types. It is occasionally difficult, even for an expert, to make a sharp distinction between these two forms of curvature. The treatment of postural, or functional, lateral curvature is mainly by means of corrective gymnastic exercises. Hence, since this condition is very common in children, every parent is naturally vitally concerned in the establishment of adequate physical education for all the children of the country.

Eyes and Lighting.

It has been estimated that at least one-fourth of the population is more or less handicapped by some defect

of the eyes. Among the school population, from 10 to 30 per cent. need glasses. The defects requiring their correction are nearsightedness (myopia), farsightedness (hyperopia), astigmatism and squint.

The shape of the orbit, or bony socket of the eye, is probably the chief factor in the production of nearsightedness, and an excessive amount of near work in schools increases this tendency. Therefore, though the schools cannot be said to be the underlying cause of a child's nearsightedness, bad school hygiene will undoubtedly aggravate the trouble already existing. Anything which causes a pupil to hold his book too near the eyes, or to assume a stooping position while at work in school, as too fine print, insufficient light, or unsuitable desk or chair, may result in the development of a more serious degree of nearsightedness. An excessive amount of near work will cause strain in even a normal eye.

A slight degree of farsight is normal in young children and need cause no special concern other than to avoid overmuch near work. Marked farsightedness, however, is one of the most serious causes of eyestrain, and if not corrected, may lead to very harmful results.

Astigmatism is the effect of irregularity in the shape of the cornea (the clear part of the eyeball). This produces blurred vision because the child can see better in one meridian than the other. If the astigmatism is slight the eye corrects the fault by using its power of accommodation, but this entails strain. Hence, astigmatism ranks with farsight as a cause of eyestrain. It is also one of the causes of faulty posture, since the child naturally turns his head and twists his body till he gets into the position where he can see best.

Squint, or cross-eye, is one of the very serious defects of the eye, the importance of which many parents fail to realize. Though they, of course, are troubled with its effect on the appearance of their children, they do not understand that unless the defect is corrected early in life (by the sixth or seventh year) there is great danger that the vision in the affected eye will be greatly impaired if not lost altogether.

If treatment is begun early, even in infancy, if observed then, the eyes may usually be straightened by glasses, without an operation.

Any evidence of eyestrain or defective vision should call for an examination by an oculist. Painful, watering, or congested eyes, twitching or sore lids, sensitiveness to light, frowning, peculiar position of the head, difficulty in seeing work on the board, holding the book near the eyes, poor spelling or reading, blurred or double vision, headache (common), fatigue, nervousness, dizziness, sleeplessness, irritability and lack of control are among the symptoms of eyestrain.

Every effort should be made in both home and school to conserve the vision of the child. The light should come from the left and the rear. In schoolrooms the windows should be massed on the left side, toward the rear, with none in the back of the room because the teacher's eyes should not be subjected to the strain of looking toward the light.

The window glass space of a schoolroom should be about one-fourth of the floor space, and all windows should reach almost to the ceiling. Opaque shades should be used only to exclude direct sunlight. In addition to these, light colored translucent shades should be used. The combination up-and-down shade or the new style adjustable roller shade should be substituted for the old-fashioned shade.

The coloring of the room should be such as to reflect the light without glare. The ceiling should be almost white, and the walls may be buff, pale tan or gray (either creamy or with just a touch of green).

For further protection of the eyes of school children, the textbooks should be printed on white, unglazed paper, with large print, short lines and wide margins. Every child should be seated where he will have sufficient light, and the program of near work should be broken by periods when there will be no tax on the eyes. Especially is this desirable in the case of younger children.

Ontario's field crop value reached the record figure of \$398,000,000 in 1920.

The male of the honey-bee comes between the queen and the workers in size, and is stingless.

Modesty is the essential characteristic of mankind. The history of religions proves it, for man adores everything, positively everything before adoring himself.—Remy de Gourmont.

Many farmers are pooling their interests and purchasing fertilizers together in carload lots. Have you tried it?

HIDES-WOOL-FURS
Our business has been built up on the willingness and ability to give you real service.
WILLIAM STONE & SONS LIMITED
WOODSTOCK, ONTARIO
ESTABLISHED 1870



LESSEN THE STRAIN

Imperial Mica Axle Grease and Imperial Eureka Harness Oil lessen the strain on wagon, team and harness. They make heavy hauling safe and easy.

The mica in Imperial Mica Axle Grease forms a smooth, heat-resisting coat on axle and hub. Over this the grease works easily and kills all friction. Imperial Mica Axle Grease goes twice as far as ordinary greases.

Imperial Eureka Harness Oil keeps harness soft, flexible and strong. It protects leather from sweat, dust and moisture, and prevents cracking. It is easily applied and quickly saves its small cost in harness and repairs. It improves the appearance of any dark dressed leather and keeps it in good condition.

IMPERIAL OIL LIMITED
Power Heat Light Lubrication
Branches in all Cities.

Imperial Mica Axle Grease comes in convenient sizes, ranging from a 1 lb. tin to a barrel.

Imperial Eureka Harness Oil is also from 1 pint to a barrel.
Sold by dealers everywhere.



FOR BIGGER & BETTER CROPS
USE
STONE'S FERTILIZER
Your Best Investment—Assures a more Profitable Yield
W. STONE & SONS LIMITED
INGERSOLL, ONTARIO