Soils and Crops

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

CARE AND ADJUSTMENT OF COLTERS.

The colter has much more to do with the proper operation of a gang plow than is generally supposed. It affects more than its main purpose of cutting off the side of the furrow slice so that the shin of the moldboard will not have to tear its way through the ground, consequently permitting the plow to do a nice, smooth job and materially lightening the draft.

One of the marks of a poor job of plowing is unevenness or where the furrows made the same round can not always be plainly distinguished. Sometimes this is because the plow is not running level. At other times one bottom is a little too high or low, due to variation in the shape of the beams. Or the front furrow wheel is regularly run against the furrow bank when it is supposed to run at least two inches away from it. But the most common fault is that the operator forgets that each bottom turns over the soil that the colter allots it, no more and no less. They cannot be set in a haphazard manner, but exactly the same with respect to each bottom except for the one instance which I will mention later.

Practically all plow instructions give three-quarters of an inch as the proper distance to set the colter away from the shin of the moldboard. This insures a clean furrow wall and the minimum friction on the landside. There is often difficulty in determining this distance after it is known to be correct. The following method is commonly used by manufacturers' plow experts when getting a plow ready to enter a competitive demonstration: Take a planed fence board three feet long and six inches wide. It will be nearly three-quarters of an inch thick. Lay it against the landside so that it extends forward beyond the point of the share and raised just enough above the point so that it lies flat against the landside. Hold in this position by placing the right foot against it. Now adjust the colter so that its blade lies flat against the outside of the board. Do this with each bottom in turn and you will have no variation as far as the colters are concerned.

A puzzling problem sometimes comes up in the case of a three-bottom plow following a standard-type tractor which does not run in the furrow. In spite of all that is done, the middle bottom will turn a furrow which is lower than the others. The reason will generally be found in the fact that the middle bottom follows the right drive wheel and because the dirt loosened by the grouters rolls into the furrow, leaving the middle furrow slice apparently lower than the others. The remedy is to set the middle colter a trifle farther out.

In sod plowing the colters should be set deep enough to cut off most of the roots, but not deep enough to interfere with the penetration of the plow. In stubble plowing there is no necessity of running them more than three inches deep, even in deep plowing. In cornstalk ground especially, the stalks and other trash will not be cut satisfactorily when the colters are set so deep that they will simply push the trash ahead instead of running over and cutting through it. The colter axle should be directly above or a trifle back of the point of the share. The colter blades must be sharpened from time to time to give best results. It is well to remember that it is cheaper and better to pay the cost of sharpening the shares and colters than to pay for the fuel necessary to pull dull tools through the ground.

Britain Needs Wrangel Island.

Wihjalmur Steffansson, who is urging Britain to assert its rights to Wrangel Island, because it will become an important base for wireless and airplanes when mail carrying across the Arctic has become a commonplace. Soviet Russia is reported to have given orders to prevent any British ship reaching the Islands.

Eat Vegetables for Vitamins.

By L. F. Burrows, Secretary, Canadian Horticultural Council.

Comparatively recent is the addition of the word "Vitamin" to our vocabulary, and even though the use of the word is now common, its meaning is not yet understood. Physicians have long recognized the value of vegetables in the daily diet and we are now told that this value lies largely in the fact that they contain vitamins, and that vitamins are necessary to life. Some vegetables contain greater quantities and of different kinds than others. Three distinct kinds of vitamins have been named "A," "B" and "C."

Vitamin "A" is a mysterious element in food, without which children cannot grow, but which grown folks also need. Shortage of vitamin "A" leads to disease of the eye, skin, and kidneys, and may cause bad teeth, diarrhoea, pellagra and other ailments. As a rule, seeds of all kinds are rather deficient in vitamin "A," although green peas contain appreciable amounts. Leafy plants, on the other hand, are valuable foods in this regard. Spinach and chard are probably the richest of the common leafy foods in this element: lettuce ranks next, with cabbage holding third place.

The roots and tubers vary, sweet potatoes and carrots ranking first, while white or Irish potatoes contain but a small amount, and it is doubtful if beets, rutabagas and parsnips contain appreciable amounts. Tomatoes, however, are very rich in vitamin "A" and Hubbard squash is also a valuable source. Little work has been done on the fruits, but there is evidence that apples, bananas and oranges contain small amounts of this vitamin.

Vitamin "B" is guardian of good digestion and proper functioning of the liver and other glands. This vitamin is found in the germ and branny portion of cereals. In the milling of wheat, however, this vitamin is so completely removed that the best grades of flour are entirely lacking. This does not mean that we should condemn the white breads, starchy foods, white rice, etc.; it merely means that we must choose our foods intelligently and eat more vegetables.

Potatoes, sweet and white, contain appreciable amounts of vitamin "B," although the turnip and onion are more valuable in this regard. The beet root contains a fair amount, although its leaves appear to be much richer. This vitamin is also found in the tomato, cabbage, spinach, lettuce, parsley, and the lowly dandelion, the tomato being especially valuable.

While many fruits have not been studied, it is probably safe to state that most fruit juices contain appreciable amounts of vitamin "B." It is likewise probably true that nuts are valuable sources of this vitamin, inasmuch as all nuts that have been studied contain appreciable amounts.

Vitamin "C" prevents disease and promotes the general health. Lack of it gives the skin a bad color and makes the heart weak. It has long been known that lemons, limes, oranges and fresh fruits were curative in scurvy. It has only been in recent years that we have understood that this curative effect was due to vitamin "C." While oranges have been used for a number of years in the treatment of infantile scurvy, it is only recently that it has become the common practice to supply orange juice to infants as part of the regular feeding practice. More recently it has been discovered that tomato juice is practically equal to the juice of the orange in this regard, and many physicians in the poorer districts of the large cities are prescribing strained tomato juice in place of orange juice. The juice of canned tomatoes seems to be very satisfactory for this purpose, indicating that the canning process is not particularly destructive as far as vitamin "C" is concerned. Berries are known to have scurvy-curing properties, although little investigational work has been done.

The Swedish turnip or rutabaga is very valuable as a source of vitamin "C" and the same is true of the carrot. Young carrots are apparently more valuable than old carrots and this appears to be true for many vegetables. As a rule, it is probably safe to state that the vitamin content of vegetables is highest at the time that the vegetable is most prized from the standpoint of tenderness and taste. Potatoes, onions and parsnips are also considered valuable antiscorbutic foods. Rhubarb, lettuce and cauliflower must also be included in the list, while lovers of cabbage salad and "slaw" will be glad to know that raw cabbage is one of the best sources of vitamin "C" that we have. Tomatoes have the three kinds of vitamines necessary to human health. Most vegetables have one or two but seldom all three.

It is probably best to eat our fruits and vegetables in the fresh form when it is possible to do so. There is little, however, to be feared from the usual methods of canning and cooking. If we eat a sufficient amount of vegetables and fruits throughout the year, it will not matter if a small percentage of the vitamins are destroyed in the cooking process. As a rule, long continued heating or cooking is considered undesirable, and air should be excluded as far as possible.

It is not necessary that we be vegetarians. We should be reasonable and sensible and not faddists. Every diet, especially that of growing children, should contain milk, butter, eggs, fresh vegetables, and fresh fruits if we expect to obtain the best results.

Various fruit and vegetable canning recipe books have been issued from time to time, but the best that has recently come to my attention is that issued by the Fruit Branch of the Dominion Department of Agriculture. These booklets contain recipes which have been thoroughly tested, are practical and economical. They may be had free upon application to the Fruit Commissioner, Department of Agriculture, Ottawa.

He Needed Another Year.

"Position wanted" ran an advertisement in a Shanghai newspaper. "A young Chinese with four years' experience in English seeks place as a junior clerk. Salary no objection." As a matter of fact, it usually isn't.

Keep looking ahead unless you are in a pasture with a ram.

Ontario's Better Live Stock Train

By L. Stevenson, Secretary and Supervising Director, Ontario Dept. of Agriculture.

The Ontario Better Live Stock Train of 1923 was organized by the officials of the Live Stock Branch of the Ontario Department of Agriculture, assisted by the officials of the following organizations: Dominion Department of Agriculture, Industrial and Development Council of Meat Packers, Ontario Live Stock Association, the Canadian Pacific Railway, and the Canadian National Railway.

The train was made up of sixteen cars, eleven of which carried live stock for demonstration and sale. A lecture car and staff maintenance cars completed the train.

During March the train made twenty-one all-day stops (9 a.m. to 10 p.m.) and twelve half-day stops. During April, twenty-one all-day stops and four half-day stops were made. The total number of actual farmers visiting the train during the period was 37,600. The number of school children that were conducted through the train by officials and teachers was 6,500. Lecturers, demonstrators and salesmen were continuously on duty in the various cars, and dealt with the varied inquiries of the visitors.

EDUCATIONAL FEATURES.

The swine cars were specially fitted to make demonstrations in swine grading possible, and give the farmers throughout the province a clear idea of the type and conformation required for the different grades of hogs under the new grading regulations. Representative hogs, with the corresponding cured Wiltshire sides, were used in this demonstration. For the convenience of farmers desirous of purchasing young breeding stock of the bacon producing type, a carload of boars and sows from six to eight months of age was included in the train. Many sales were made, and good type young breeding stock left the train for new homes at every stop. The supply of stock was replenished at various points along the line of travel by previous arrangement.

POULTRY KEEPING.

The poultry car was fitted out to demonstrate the most approved methods of selecting, feeding, housing and preparing poultry and poultry products for market. In the exhibit were included live birds showing desirable types for egg production and also those for meat production. Culling demonstrations were given throughout the day, being illustrated with living specimens and skeletons. Models of poultry houses and equipment, and of hatching and brooding devices, occupied a prominent position in the exhibit. Poultry nutrition was illustrated in an attractive way through the use of colored transparencies, giving rations used in chick rearing and the results. The Canadian Egg Standard was well illustrated by a continuous candling and grading demonstration. Killing and plucking, as done by the expert in charge, was a revelation to many, as the loosened feathers were stripped from the bird in the short space of one minute.

DAIRYING.

The dairy cow car contained good grade cows, representing the Holstein, Jersey, Ayrshire and Shorthorn breeds. These animals were selected to show the influence of pure bred bulls, and demonstrate the high degree of excellence that may be obtained by careful breeding. Demonstrations and lectures were given on these cows, with special emphasis on type and conformation as associated with high class cattle. Ayrshire, Holstein, Jersey, and Gurnsey bulls were offered for sale at cost. These bulls were selected for their excellence of type and the production of ancestry. A number of young bulls were sold at the various stops. A dairy lecture was given each afternoon in the lecture car, dealing with feeds, herd improvement, and the rearing of young stock.

SHEEP AND WOOL.

In the sheep and wool car, a very attractive exhibit was presented, prepared by the Provincial live stock men, co-operating with the wool growers, the breeders and the woollen mills. Typical fleeces of the principal grades of Canadian wool were shown and used in demonstrating the various grades, classes and purposes for which each was used. The preparation of wool for market was strongly emphasized. Samples of cloth, knitted goods, blankets and yarn made from Canadian wool from Canadian mills, were shown and described. A number of live sheep were carried and suitably displayed, emphasizing the best breed types and market classes. Lectures were given on breeds, breeding, judging, and the care and management of the flock. Two pens, one showing the progeny of a good type pure bred ram and another showing the progeny of a grade ram, attracted considerable interest through the lesson of superior lambs from the pure bred sire. A full line of shepherd's tools and sheepfold requirements was shown, and explanations or demonstrations in the use of same were given by the officials in charge.

BEEF CATTLE.

The beef cattle exhibit consisted of a display of steers illustrating market grades and type improvement through the use of pure bred sires. The Ontario Agricultural College supplied a number of animals from a breeding experiment that has been under way during the past two years, so that the farmers of the Province could see for themselves the result of good breeding, coupled with proper care, feeding and management. From the five cars of bulls for sale, many sales were made. Buyers were looking for quality and appreciated the guarantee and the likelihood of getting a good bull when purchasing from the government. To indicate the type of farmer that the lessons taught by the train was reaching, it can be said that, out of the first fifteen bulls sold, all but one went to farms where the owner had not previously kept a pure bred sire.

The demonstration train attracted and enlightened farmers who hitherto had been disinclined to admit the advantages of pure bred sires and of better live stock.

Home Education

"The Child's First School is the Family"—Froebel."

Mother's Clothes—By Lydia Lion Roberts

"Why, mother," cried the little boy, his eyes shining, "you look just like a schoolgirl in that white waist and blue tie. I like that, wear it again!"

Children do notice mother's clothes and are quite fine little critics. It is interesting and profitable to question the reasons for their approval or disapproval of various dresses, and a wise mother will talk over her clothes with the children. If she explains the reason she chose a certain color, how she matched her hat to her gloves, why this cloth is stronger than something else, and all the little effects that combine thrift and good taste, the children will not only be pleased at her confidence in their understanding, but will absorb much useful knowledge about clothes.

Sometimes a mother does not realize the pride and interest the children take in her clothes.

"I like to go out with you since you made that new skirt," said a little girl, "the other one didn't look so nice."

If a mother gets careless or discouraged and lets her clothes lose their charm, the children resent it even if they do not voice it. It is only fair to the children for mother to spend as much effort and thought on her own clothes as she does on their fascinating apparel, and then in later years they will not demand everything, but will want mother to have pretty things too.

It pays to understand and weigh a child's remarks about clothes as that is one way of learning how the little brain is working. A mother came into the room where two boys were playing and showed them her new silvery gray straw hat.

"You look just like a hearse," announced the younger boy delightedly.

The remark was rather startling, but the mother smiled and said, "Do you like this hat?"

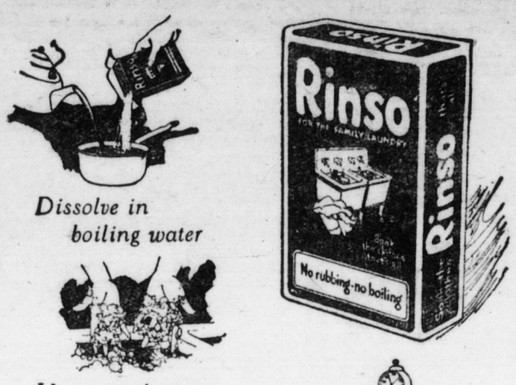
"Oh, yes, it's so shiny and pretty," replied the boy, "and I like the silver look."

"Did you see anything to-day about that same color?" asked the mother, still searching for the reason back of that first remark.

"Yes, I saw a carriage all silver and shiny like your hat," nodded the child, "and brother said it was a hearse."

The connection was explained, for, childike, he had connected the first gray hearse he had seen with the silvery gray hat. His mind was grasping the fact of a new color effect. If the mother had been irritated at his impulsive remark, or had laughed it away, she would have hurt the child and driven his new thoughts and confidences back into himself.

To dress tastefully, to bring the children into companionship with mother by sensibly discussing clothes and the art of dressing, to make it a jolly, festive occasion when mother has something new, is to realize that in the development of the child life an important part is played even by mother's clothes.



Big lasting suds—one secret of Rinso's amazing power to dissolve dirt. If you don't get lasting suds, you have not used enough Rinso.

After soaking, only the most soiled clothes need a light rubbing with dry Rinso.

Your clothes don't need boiling if you use Rinso. But if you like to boil your white cottons, use enough Rinso solution to get the suds you like.

Rinso is made by the largest soap makers in the world to do the family wash as easily and safely as LUX does fine things.

LEVER BROTHERS LIMITED
TORONTO R302

POULTRY

For several years past, the food value and medicinal qualities of yeast have been constantly before us. As to its tonic properties, as an aid to digestion and assimilation, as a corrective of constipation tendencies, and an appetite stimulator, it has been thoroughly and satisfactorily tried out—first by the family and now with the poultry.

One of the first experiments in feeding yeast to baby chicks, was found to be so satisfactory that its use as a general poultry feed has been adopted.

It is prepared by soaking a package in a half-gallon of water until the yeast is soft. Then it is made into a soft batter with cooked potatoes and flour, and allowed to raise. Then it is stiffened with cornmeal until crumbly, and spread out in the sun to dry. When it is thoroughly dry it may be sacked and stored for use, and will keep indefinitely if placed in a dry place where it will not mold.

For feeding baby chicks, goslings, ducks or turkeys, it may either be crumbled fine or soaked until soft; but do not feed oftener than three times a week.

For feeding the older fowls, allow a pint for each dozen fowls, mixed with the other feed used. It may be given either as a dry feed, or with a wet mash.

The Silo Foundation Has a Hard Job.

The silo foundation has two big jobs—it has to carry the vertical load of the silo walls and the bursting strain caused by the settling of the silage. To insure that it will do both jobs, use plenty of steel re-enforcing and make the masonry footings wide, so as to prevent uneven settling with the resulting cracking. Regardless of the kind of foundation that you build, always use the best of materials. Probably there are more silos standing upon concrete foundations to-day than upon any other.

The silo foundation on my neighbor's farm was made with dirty gravel (in the concrete), and the result is, the foundation has gone to pieces within a year after building. This same gravel was used for other work about the farm with pretty good results, but under the peculiar strain of the silo foundation it went to pieces.

Use one part cement, two and one-half of sand, and four parts of crushed rock or graded gravel for silo work. Use only clean, sharp sand, and water that is good to drink. Dirty water will not make good concrete.—R. K.

"Kraut or pickle kegs and tubs are cleaned thus," writes a subscriber: "I use plenty of boiling water, in which bicarbonate of soda is dissolved (one-fourth pound of soda to a gallon of water). After the kegs have been well scalded, I place them in the sun for several days, then go over the inside of the keg or tub with melted paro-wax or paraffin. This makes the keg perfectly sweet inside and keeps it from leaking."

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TORONTO CREAMERY, 9 CHURCH ST., TORONTO
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Let us remember that the only way to keep our life peaceful and happy is to keep the heart at rest.—C. H. Spurgeon.

See that you lay drains below the frost-line and out of the way of the plow-point.

FARMERS' BOOKLETS SENT FREE

Any of the following may be had free on application to the

Publications Branch Department of Agriculture Ottawa, Canada

The Milking Machine.
Report Experimental Station, Kapuskasing, Ont., 1922.
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A TREATISE on the Horse—FREE!

This book is one of the best ever written for the horseman and the farmer. In plain, everyday, unscientific English it deals with every ailment that horseflesh is left to, and tells how to treat them. It has chapters on stable and shoeing, breeding and feeding. The book is worth many dollars to the handler of horses, but all you have to do is to ask your druggist for it. It is absolutely free. Here is one opinion:

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"Please send me by mail your GREAT book showing positions and actions of sick horses. Have been using your Kendall's Spavin Treatment for years and think it is a great treatment."
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If your druggist has not a copy of the book left write us direct.

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ISSUE No. 37—'23.

THE CHILDREN'S HOUR

THE AMUSING CROW.

Crows are usually unpopular birds. The sharp twinkle of their eye, their plumage and their astounding intelligence, have given them a prominent place in the myths and legends of every land.

In all times and countries man has regarded crows with superstitious awe. Odin took them for his heralds and counselors, but could not trust them, and they blabbed the secrets of Valhalla. They were the scandal-mongers of Olympus, and to their evil tongues poor Coronis owed her death. Indra, in wrath at their tale-bearing, hurled them down through all the hundred stages of his heaven. They would have disclosed to his enemies the hiding place of Mohammed, but the dove built her nest and the spider spun her web to hide it.

It was satisfactorily established by the old writers that the crows got their blackness in punishment for their sins. It seems to have been a futile punishment, for there is no living thing that shows in its demeanor less evidence of repentant spirit. Instead of being ashamed of their blackness, crows, as an Indian writer has said, "swagger in it, and pretend that they chose that exact shade for themselves."

The color of crows before they were smitten black is uncertain. It is a strange fact that they are most closely allied to the jays and magpies on one hand, and to birds of paradise on the other, so the possibilities are infinite. But the classical legend that they were originally white gains some support from the frequency with which albinos appear among all kinds of crows.

The voices of almost every member of the crow family have in their very harshness an unbirdlike and partly human quality that could not fail to impress the primitive imagination. In spite of the common idea that crows do nothing but caw, the old augerers recognized no less than sixty-five intonations of the raven's voice, each with its special significance. From the ringing *Rahk! rahk! rahk!* of the hooded crow, the Swedes have borrowed their fierce cheer, the finest battle-cry possessed by any people.

Nearly all the true crows, as well as many of their near relatives, will pick up more or less of human speech in captivity; and it is sometimes hard to believe that the slyness with which they invest their remarks, their aptness and intonation, are altogether accidental.

The Removal and Care of Comb Honey.

If the honey flow is heavy and of long duration the greater part of the crop can be removed before the flow is over. It is better to remove the supers of sections as they are finished as this prevents travel stain and propolizing. It is comparatively easy to remove supers during the flow as there is little danger from robber bees.

As the flow declines the comb honey producer must give extra supers sparingly in order to have as many sections finished as possible before the flow stops. In fact it may be necessary to reduce the number of supers. It is not well to leave a super on at this time until all the sections are finished as they may become travel stained. It is better to remove the finished sections and concentrate the unfinished sections to as few supers as possible. As the flow is drawing to a close the unfinished sections should be given to the best finishing colonies. When the sections are finished in the central rows they can be replaced by unfinished ones from the outside. It is well to remove all the sections before the flow ceases altogether.

As soon as the supers are removed by means of bee-escapes they should be taken to the honey-house, and care used to prevent robbing. Sections that are only partially filled and capped can usually be disposed of locally at a profit but those containing only a small amount of honey can be piled up near the apiary and the bees allowed to empty them. These empty sections can be used as bait sections next year.

Comb honey should be stored in a warm dry room to prevent spoiling. If exposed to great variations in temperature, moisture may condense on the surface of the cappings, and the honey will absorb it, or it may granulate in the comb. If exposed to freezing the combs will crack and the honey leak. The temperature of the room should not go lower than 70 deg. F., and is better if maintained between 80 and 90 deg. F.

Section honey that is well refined can be stored in the supers until ready for shipment. The supers should be tiered up in close piles, closed at the top and bottom; it will keep much better and also maintain its aroma. There is also less danger from wax moths. Some beekeepers find it necessary to fumigate to control this pest.

Comb honey is usually put up in single cartons or in cases holding 24 sections. Before placing the sections in the cartons or cases the wood must be scraped free of propolis and stain. Any sections that are leaking should not be packed.

A noble life, crowned with heroic death, rises above and outlives the pride and pomp and glory of the mightiest empire of the earth.—President Garfield.