# Soils and Crops

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

### Five Principles of Soil Fertility.

Soil Moisture—Underlying all other requisites for maintaining the fertility of the soil is the proper regulation of the moisture supply. It determines the solution of plantfood, the physical condition of the soil, the efficiency of tillage, the effect of fertilizers, and the biological activity. It is therefore the first thing to be adjusted. This may involve irrigation, as in arid sections; or it may necessitate drainage. Always, however, it means the proper handling of the soil in order to conserve and effectively use the water received and stored therein. Large areas of land require better drainage, particularly of the subsoil.

Lime—Lime stands second in range of importance. It maintains the proper balance between the acid and the alkaline constituents of the soil. As a result of tillage and cropping, soils may become more acid—a condition unfavorable to most of the important farm crops. Lime is best suited to counteract this tendency. It may be used in different forms, depending on the local situation of the farm. Lime is not a plantfood.

Organic Matter or Humus—The maintenance of a fair amount of decaying organic matter is essential because of the nitrogen which it contains and which is most economically secured by the aid of certain soil bacteria and leguminous crops, and because of its many beneficial physical effects on the soil. Its increase is accomplished, according to circumstances, by means of large residues to which rotation and inoculation contribute, by the use of stock manure and by the utilization of green manure crops.

Tillage—Tillage, deep and thorough, stirs and fines the soil, incorporates manures and fertilizers that may be added, and contributes to general ventilation and sanitation. Various implements may be employed, according to the needs of the soil.

Fertilizers—The chemical nature of the average soil is such that by the proper adjustment of the conditions of moisture, lime, organic matter and tillage, the largest possible quantity of plantfood will be made available and the soil will be maintained in a sanitary condition. Fertilizers should be applied in such quantities and forms as will give the greatest economic results. The treatment preceding the application of a fertilizer should all contribute to a rise in its efficiency.

### Fall Feeding of Strawberries.

Considerable can be done in the next couple of months to ensure maximum yields of next summer's strawberries, and the man who takes advantage of what opportunities are at hand will get the largest number of boxes of fine fruit at the least cost per box at next berry time. The strawberry is a heavy consumer of plantfood, but its root system does not prepare it to forage into the soil like corn or oats or other vigorous growing farm crops. There is a tremendous call for plantfood between the time the strawberries set and the ripening period. This is what the commercial strawberry grower prepares for in the fall or in the spring.

If a young strawberry bed is to be set, no doubt you will be preparing for deep fall plowing, turning under as much humus-bearing crop as possible. Some growers prefer to apply fertilizer in the fall, even while preparing for next spring's planting. By so doing they claim that the fertilizer has opportunity to dissolve and work through the feeding areas of the soil so that it is immediately ready for consumption when the plants are set in spring. Other growers prefer to apply the fertilizer on the fall plowed land just as soon as the soil is sufficiently dry.

Since the strawberry crop is such a heavy feeder, plant food of high grade is required in order to get best results. Experience has shown that 400 to 500 lbs. per acre of fertilizer carrying 4 to 5 per cent. ammonia, 8 to 12 per cent. phosphoric acid and sometimes 4 per cent. potash, worked into the soil, supplies an exceedingly good plantfood ration for the young plant.

If you are anxious to strengthen the plants now standing so that they may bear another crop, a similar application to the growing plant during the fall is an exceedingly good thing. It gives vigor of stalk, leaf and root growth, which means that the crop is ready to begin business as soon as growth starts in the spring. In applying fertilizer to the standing crop in fall, it is good practice to work it in around the plants by late cultivation so that they may make immediate use of this strengthener.

Talk of reduction in crop prices seems to be general at this time. Undoubtedly, if present conditions continue, the market gardener and fruit grower will have to face his share of such conditions, but he should keep in mind that when falling prices prevail, it is quantity and quality yields that make the difference between profit and loss. If he feeds his strawberry crop well this fall or early in the spring, he can make sure of largest yields of fine quality fruit.—Henry G. Bell, B.S.A.

# Poultry

I'm not a little orphan, sir,
But I am just as sad,
A-peakin' and a-pinin' for
The love I never had.
One touch of human sympathy
Would melt my poultry natur';
But I refrain from hope so vain,
For Ma's an incubator!

When first I burst my parent shell—
How hideous the dream—
No "cluck, cluck," fond love to tell,
No sound, alas, but steam!
I felt in vain for sheltering wings
Within that broiling crater;
And then, in sooth, the horrid truth—
Ma was an incubator!

Clipping the wing and tail feathers of young chicks that grow this plumage quickly will prevent droopiness. The plumage should never be pulled, as there is danger of injuring the sockets where the feathers grow. A new feather will grow to each socket, but it will generally be without color.

The best layers usually roost on the front perches. The reason seems to be that they stay up to scratch and hunt for food as long as there is light. The layers are the ones first off the roost in the morning and busy at scratching.

When the litter in the house was clean, a poultryman with 440 hens found the egg production to be 212 a day. He left the same litter in the house until it became befouled, and gradually his egg crop went down to eighty eggs a day. He then put in clean litter and changed it frequently, and in two weeks time the egg yield went up to more than 200 a day.

A good disinfectant and vermin exterminator is the waste oil from automobiles that is usually thrown away at garages. It can be diluted with kerosene, and its effectiveness is increased by mixing a small quantity of sulphur in it. This oil can be secured free of cost at some public garages. It can also be used successfully in preventing toe-pecking by little chicks. When a toe has been pecked, simply dip it in the oil, and the other chicks will cease to bother it after one or two applications.

Hens worry. Some folks laugh at me when I told them so. It is a fact, nevertheless. By watching my hens when I shut them up in close quarters, after they had been in the open field, I saw that they spent most of their time running up and down the yard hunting for a place to get out. They surely were not happy. When I counted my eggs, there were few to count; worrying caused a shrinkage. But when I gave the hens a yard so large that they scarcely missed the free range, they stopped worrying and did their old-time stunt of laying freely. The proof of the pudding is being able to count the eggs.

### Try Selling Red Apples at Your Next Fair.

Of course, your school, your Sunday school, your clan or club, or perhaps the church, is to have its annual fair shortly and very, very naturally you and Mother and small sister will want to take part.

But, just what part?

The candy table, the ice cream booth, Punch and Judy, the fish-pond—each and all have been bespoken quite this long time. The same is true of each and every one of the other long-established features of every such fair.

Just what to do then?

Has it ever occurred to you to sell red apples? Just ordinary, big red apples which people can munch as they go along.

It wouldn't pay?

Indeed it would; especially since selling them at the fair would make it quite the fashion for each and all to munch the apples there; and, liking them, they would buy more to eat, and still more to take home.

Of course, there are ways and ways of selling apples. You don't want to have just a barrel, and expect people to come up and buy. Instead, rig up a simple box-cart, such as the French use in the cities. Mount this on a pair of wheels. Any smithy will gladly loan you these, as his "bit" for the occasion.

If you can't get the apples donated, you can get some friend to let you take them out on consignment; that is, you pay for what you sell, and return the rest.

Five cents, even ten cents, might be charged for a big red apple; and people will gladly pay it.

If mother and sister and you dress up like French apple-vendors, you will catch the eyes of every passer, and sell even more in the end. Selling the apples will be quite good sport, seeing which of the three can outsell the others. Then, too, selling the apples will net the bazaar mighty good returns in the end.

For the convenience of travelers a collapsible milk bottle heater has been invented, solidified alcohol being the fuel used.

# The Welfare of the Home

## Sensible Shoes for the Day's Journey In and Around the Home.

By IDA M. ALEXANDER, M.D.

Because a woman walks from fifteen to twenty-five miles in doing a day's work, it is desirable that she be well shod for her journey. Too many women think any shoe is good enough to wear at home, so the dress shoe which is too shabby for "best" becomes the work shoe. With styles what they are at the present day, we know by experience the difficulty in getting the nice broad toe in a shoe that looks neat and business-like, and is above all things comfortable.

A good shoe and a good looking shoe to wear while doing our work and our walking, is made on a last which considers the outline of the human foot and not the outline desired by the shoe designers. It has a low broad heel, it fits snugly over the ankle and permits the toe to point forward in walking instead of pointing outwards. This shoe is long enough so that all the toes can spread in walking just as they do when you walk in your bare feet. The snug fit over the ankle depends upon the last of the shoe. The smaller towns seldom stock a shoe that is narrower than a D last and as a result, the woman with a slender foot does not get a shoe that fits at the ankle, unless she buys a shoe that is too short for the toes.

We do not blame the shoe man for this, but rather our own lack of judgment in permitting the changeable, sometimes foolish thing called "style" to tell us just how our feet are to be deformed this year and the next.

Of course we do have shoes made now that conform to the foot, but these are stout, mannish shoes with heavy soles and heavy calfskin leather, or occasionally, you will find a shoe made after the style of fifty years ago with a five-inch top and an extra long vamp. They are hideous and inartistic in the extreme, and the most earnest advocate of sensible footwear can be pardoned for choosing a razor-toe shoe rather than this.

An increasing number of women are actually ashamed of foolish footwear to the extent of remarking to the person who wears comfortable and well-fitting shoes, "I never wear these at home, they are only my dress-up shoes." One evening while talking to two women who stood for big things in the world, one holding a Federal office and the other a provincial office with the same organization, I looked at their feet with pity that was sometimes actual pain. It was so easy to see that their shoes were very new, very tight, and very painful to wear. A short time after, they spoke regretfully of not being able to go out for a walk though they both wanted to very much. I knew what they were missing for I had just come in from a walk and the sunset over the river had been glorious, but being footbound they could not see these glories. Honestly, do you think we should send missionaries to China to teach the Chinese not to bind up the feet of their children when our women who are reputed to be well educated and wise, deform their feet and limit their labor and pleasure?

Imagine the woman who weighs a hundred and sixty pounds suffering in a pair of modern shoes. Only eight square inches of her foot area are allowed to touch the ground, which means that there is a pressure of twenty pounds of her weight on every square inch of area. And then she wonders why her heel aches like the toothache and walking in her bare feet on the floor means pain across the ball of the foot, and more pain in the calf of the leg, not knowing that the muscles of the calf of the leg have really become shortened as a result of the high-heeled shoe.

The high heel which tips the body forward, makes it absolutely necessary for the wearer to throw the body backward in order to maintain the erect position. This throws an added strain on the muscles of the back; the angle of the pelvis is changed and the natural muscular support of the reproductive organs changes its slope is such a way as to be conducive to displacements. Nature makes her protest with headaches and backaches, painful feet, and a general tiredness, but if the protest remains unheeded, does her best to maintain normal health under abnormal conditions. When she fails, little by little the poor fashion devotee has to pay for her folly. How serious this may be will depend on how much other health habits and her method of earning a livelihood add to or lessen the danger of faulty standing position. We should be very, very kind to the faithful feet that carry us.

One woman whose work made it necessary for her to do much walking, wore French-heel shoes. Her father remonstrated vainly. After two years, the condition of her feet was such that she went to see an orthopedist. Now she is spending six months in bed while her feet are being put in condition to support her body once more.

Since our feet were made for use and not only for looks, why not have foot coverings made for the same purpose?

Sometimes, even with the best of care, the feet will be tired and aching, especially during the hot weather. For this condition get a half pound of borax and an equal amount of alum, add the same amount of common salt, and mix thoroughly. At night fill a large basin with water as hot as you can stand it, add a handful of the mixture and soak your feet in this solution until the tiredness goes out. Then go to bed with your pillows under your feet instead of your head or use something to raise your feet higher than your head. By morning your feet should feel ready for another twenty-mile walk about the house and farm.

If you have developed corns and bunions, the advertised nostrums that will "cure a corn in three days" or overnight may look very attractive. They may even take off the callous on your toe which you have been blaming as the source of all your pain, but you will find your old friend callous back with you in a very short time unless the irritation which caused the first corn has been removed. When the corn is on the little toe, we are likely to find that the real cause of the corn is a dislocation of the toe joint. So long as the dislocation remains, the corn will return. If you want to really cure that corn, you will pull your toe out to its full length, and exercise your toes when you get your shoes off at night.

Bunions, too, are the result of dislocated toe joints. The callous is the result of the rubbing of the shoe on the joint and may be removed by the application of corn cures, but that will not remove the bunion. These really need a specialist's care.

### A Handy Root Cellar.

A very convenient adjunct to the barn is the root cellar. Especially is this useful to the dairy farmer since it affords him a very handy place for storing the root crops which he intends to feed to his herd during the winter. The cellar is, however, useful to any farmer, whether he keeps a number of cows or not, as it can be used to store any crop, such as potatoes, etc. Or it may be used as a shelter for the storage tank from which water is obtained for the stock.

The root cellar is best located under the driveway leading into the barn and gives one fair-sized room in which to store sugar beets, mangels, rutabagas, turnips, etc. The ceiling of the root cellar of course slants upwards towards the floor of the barn. There is a door opening through the wall of the basement of the barn through which access to the cellar is obtained and the roots are easily carried to the cows stabled in the barn basement. A window may be placed in the side of the cellar for necessary light and for shoveling the roots through, and if desired, one outside door, although this is not always necessary.

The root cellar is most conveniently installed when the barn is built but it may be added to any basement barn. Care should be taken to have it frostproof, so that the roots will not freeze. It may be built of heavy planks, or better still, of concrete. No additional space is needed for this cellar, and if it is built when the barn is put up considerable labor in hauling gravel for the driveway is saved, for instead of having a solid fill, the cellar occupies the space. When finished, one has both a good driveway and root cellar combined.

It is only by labor that thought can be made healthy, and only by thought that labor can be made happy; and the two cannot be separated with impunity.—Ruskin.

# The Community Nurse

A question which the residents of many small towns and farming districts of Ontario are being called upon to consider is that of the employment of a community nurse. This is one of the issues which the late war was instrumental in bringing to the front. With the cessation of hostilities, Red Cross workers turned their attention to peace conditions and peace problems. In the treasury of every Red Cross chapter and in the treasury of every auxiliary, funds were deposited, and some decision as to how these funds could be best used was necessary. Home aid to soldiers and sailors and their families would not necessitate the use of all this money—indeed, but a small part will be needed for this work. Out of this situation, then, has grown the community nurse proposition.

In the cities, with better equipment, with more stringent health regulations, with medical examination of pupils in the schools, and with expert specialists more readily available than in rural neighborhoods, the likelihood of permanent physical disability of any kind, through ignorance or neglect, is diminished many times. And it is for this very reason that the community nurse proposition has been brought up in the small towns and rural communities.

This article is not, primarily, a defence of the community nurse proposition. Its purpose is to call the attention of the readers of this paper to a question which, sooner or later, they must take a part in deciding. Like the consolidated school question, which is at present being brought forward in many localities, the community nurse movement is an innovation of great and far-reaching import. Incidentally, the influenza epidemics which for two winters have swept the land, have set some people thinking along the line of the community nurse idea.

One nurse in a county can do little more than examine the children of the schools occasionally. A nurse for every township could do much more.

It is possible that the community nurse movement is destined to result in a fight of more than usual bitterness. In its very nature the question is such that it arouses in opposition the forces of prejudice, ignorance, and superstition. There is a fear that the privacy of the home will be violated and that personal liberty will be interfered with.

Like all movements, too, there is an economic phase. The Red Cross fund is only a nucleus—a financial starting point. Funds must be raised in other ways to keep the movement going after it has once been launched. In these days of high taxes, tax-payers steer clear, as far as possible, of anything that may incur a new and an additional pull on the purse strings.

Speaking broadly, whatever stands for the upbuilding of humanity is worthy of our support. The community nurse movement is a humanitarian movement. It stands for the one-hundred-per-cent.-fit idea; it stands for more enlightened homes, for more of happiness and less of misery. We can only judge of a movement by its fruits. When thoroughly tried out, the community nurse idea has not been found wanting. It is in localities where the system is firmly established, that the most enthusiastic advocates are to be found. When you are called upon to decide this question, study it well, that you may decide wisely.

### The French Canadian Horse.

The French Canadian horse, which is comparatively little known outside the province of Quebec, is claimed to be one of the most durable and otherwise useful horses to be found anywhere in Canada. In bulletin 95 of the Experimental Farms, the author, Mr. Gus Langelier, points out that this breed is descended from the old-time French Canadian pony, sent from France to Canada by Louis XIV. These ponies were the best that could be procured in their native land. They remained for three years the property of the king, and were then distributed among the farmers of Canada, in order to encourage the development of agriculture.

Some few years ago the pedigree records for the French Canadian horse, maintained by the Quebec Government, were transferred to the National Live Stock Records. Other steps have been taken to maintain the breed as pure as possible. One of the latest methods, as pointed out in the bulletin which can be obtained from the Publications Branch of the Department of Agriculture, Ottawa, has been the establishment of a horse-breeding farm at St. Joachim, situated some twenty-five miles east of Quebec City. This farm, which is operated under the Experimental Farms system, has some thirty well selected brood mares. These, toegther with fifteen of similar quality, kept on the Experimental Station at Cap Rouge, Que., form a collection from which it is hoped to produce a superior new foundation stock for the breed.

### Publications Available for Distribution.

The Department of Agriculture at Ottawa includes in its available publications some four hundred titles which embrace practically every phase of farming in its broadest sense in Canada. The new list recently issued contains thirty new publications which relate to dairying, field crops, insect and plant diseases, live stock, the orchard and garden, and poultry. In the miscellaneous list is included "Farm Feeds," "The Use of Coarse Grain for Human Food," and a new edition of "The Maple Sugar Industry in Canada." All these publications are for the free use of the citizens of Canada and are obtainable for the asking from the Publications Branch of the Department of Agriculture at Ottawa.


ROOFING

SAVE 50c to 1.00 per roll

Prompt Shipment

YOURSELF THE JUDGE

We ship on approval to any station where there is an agent. We save you 50c to $1.00 a roll on Ready Roofing of guaranteed quality, yourself to be the judge after inspecting the Roofing at our risk. Samples free by mail, also free catalogue with prices and full information. Send letter or post card, "Send me free samples and price of Ready Roofing and particulars of Free Delivery Offer."

ASK FOR FREE SAMPLES

THE HALLIDAY COMPANY, Ltd.
Factory Distributors,
HAMILTON - CANADA



"It wears longer"

STANFIELD'S Unshrinkable UNDERWEAR

IF you are out all day in the cold, keep warm by wearing

STANFIELD'S
"Red Label" Underwear

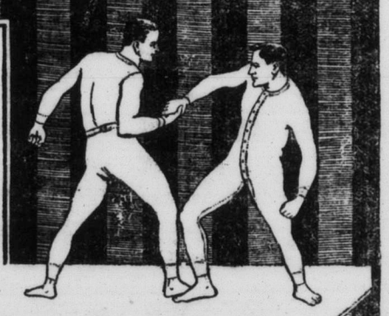
It is heavy wool underwear—thick enough to protect you against the piercing cold—easy and comfortable because so carefully made.

We make all weights suitable for men, women and children.

*Send for free sample book.*

STANFIELD'S LIMITED
Truro, N.S.

52



"Stands Strenuous Wear"


# BEATING THE GAME

There were holes—really holes—in the bottom of Peggy's small shoes, and there was a frown between her eyes. There was a very intimate connection between the holes and the frown.

"I need shoes and gloves and a skirt," cried Peggy, "and at least two white blouses! How in the world am I going to get them on eighteen dollars a week? Why, shoes alone are nine dollars and ninety-five cents at places where they publicly call your attention to the fact that they don't profiteer! What shall I do? I've got to have shoes—Oh!"

The exclamation was because the lilac beneath her window had just said something. It was usually a dreary yard that Peggy's window looked down upon, but for one magic week each year it held the very heart of springtime. What the lilac said was: "Come out, come out! There are so many of us in bloom, and we can't come again until next May."

"Why, sure enough!" Peggy responded. "I couldn't buy new shoes to-day if I had a hundred dollars, for it is already ten minutes after six! I'll go and hunt springtime for an hour."

The hunt was wonderfully successful. Pegy discovered houses with curtains of wistaria, and tulip beds gay as little children at a party, and even an apple tree in bloom over an old brick wall. And somewhere on the way she discovered something even more valuable—a bit of philosophy.

"I don't have to think about clothes to-night, and I'm not going to! Maybe I'll get a promotion to-morrow! And anyway, there will be sales—there always are. I don't have to have holes in my soles and rumbles in my soul at the same time." Which bit of nonsense amused her so that she polished the shabby shoes cheerfully when she got back to the little room again.

Little Letty Downs looked at her with widening eyes when she came gayly to work the next morning.

"Oh, have you got a raise!" she cried.

"Not to my knowledge!" Peggy retorted.

"Then—O Peggy—have you—" Letty's thin face flushed, and her eyes said the rest of it for her. Peggy understood—she knew Letty.

"No, you goosey!" she told her. "No prince has appeared." Peggy's smile broadened.

"Then what—?"

"Only that I've found my common sense. I lost it the other day. I found it in a lilac bush. It's mean of me to tease you, Letty, but really that's it. I've been beating the game. I was worrying over shoes and things and suddenly I realized that I didn't have to keep thinking about them now—not until the time came to do something—which will be when the first bargain sale comes along. Meantime I could think happy things if I would."

"Why, I suppose you can," Letty responded. "I never thought of that."

And suddenly Peggy, looking at Letty's small, worried face, realized something even more wonderful than the lilac message. It was that in fighting her little battle she had been fighting for another girl, too.

### Seed Grain Distribution.

The annual free distribution of samples of seed grain will be conducted as usual at the Central Experimental Farm, Ottawa, by the Dominion Cerealist.

The following kinds of seed grain will be sent out this season:

Spring wheat (in about 5-lb. samples); white oats (about 4 lbs.), barley (about 5 lbs.), field peas (about 5 lbs.), field beans (about 2 lbs.), flax (about 2 lbs.).

Only one sample can be sent to each applicant.

Applications must be on printed forms which may be obtained by writing to the Dominion Cerealist, Experimental Farm, Ottawa, at any time after Sept. 1st.

As the stock of seed is limited, farmers are advised to apply early to avoid disappointment. Those who applied too late last season are particularly requested to send in their names at once so that application forms may be forwarded to them. No application forms will be furnished after Feb. 1st, 1921.

### Utilize Wastes.

In farm organization we may learn from manufacturers to give greater attention to the utilization of waste products. The great meat packers claim that they derive their profits from the saving of waste products. This may seem hard to believe when buying meat, but it does not seem unreasonable when paying our fertilizer bills. The value of the manure produced by thirty well-fed cows with the usual accompaniment of other stock is about one thousand dollars per year at the prices we are payin for plant food in other forms. Are we losing a large part of this value by careless methods of farming and going into the markets to buy expensive fertilizers?

Where nitrate of soda has been applied in planting the potato crop in the first year of a rotation consisting of potatoes, oats and hay, the hay has yielded so heavily as to indicate that there is a residual effect, even from that quickly available and easily-leached form of nitrogen.