SOIL SURVEYS 3000 YEARS OLD

BY G. N. RUHNKE, DEPT. OF CHEMISTRY, O.A.C.

Two thousand years before the birth of Christ, the soil was recognized as "the foundation of agriculture," and an organized study made of its nature and properties.

According to early Chinese records, which are said to be authentic, in the Yao dynasty, from 2357 B.C. to 2261 B.C., certain parts of that country were so thickly settled that the emperor directed that there be made what was probably the first soil survey in which there were established nine types of soil.

There were the yellow and mellow soils of Yung Chow, which formed the first class and the rich red clayey soils of Su Chow, which were put into the second class.

The third class comprised the whitish and rich salty soils of Tsing Chow, while in the fourth class were placed the mellow, rich, dark and thin soils of Yu Chow.

In the fifth class were the whitish and mellow soils of Ki Chow, in the sixth class the blackish and rich soils of Yen Chow, and in the seventh class the greenish and light soils of Liang Chow.

The miry soils of King Chow and the miry soils of Kiangsu, were in the ninth class.

On this classification were established the size of the holdings of each farmer, the amount of taxes payable to the state, and the system of education regarding agricultural methods and procedure.

The United States, to the south of us, has been promoting soil surveys for twenty-five years or more, and has made excellent progress in the classification of her soils, and the utilization of this information. The science of the soil survey has developed wonderfully in that time and a vast amount of data has been collected. Farmers are apt to remark upon the wonderful advance being made in the study of the soil, but when we realize we are merely beginning where older nations left off thousands of years ago, we have a long way to go.

In 1914 the work of surveying soils was first begun in S. W. Ontario and in 1922 a complete report with map was ready for publication. This bulletin number 298, Preliminary Soil Survey of Southwestern Ontario, contains a complete account of the formation of our soils, a description of the different soils, and their properties, while an accompanying map shows their extent and distribution. This publication is unique in that it is the only complete treatize ever published on soil conditions in south western Ontario. A copy may be obtained free, by writing the Dept. of Agriculture, Toronto.

Removing Old Canes.

We are often asked, "When is the best time to remove the old canes from the berry patch?" The practice seems to vary in different sections and with individual growers. Some remove the canes as soon as the fruit is harvested; others leave them until the ground is frozen in the fall or until the following spring; and occasionally we find one who never attempts to remove them.

Except in the case of the latter all have some good arguments in their favor. In northern sections where there is a heavy snowfall or in places where there is likelihood of high winds the old canes act as a support for the new and thus prevent considerable damage from breaking over which might otherwise occur. In the case of the black raspberry the old canes can be removed without disturbing the root system much better when the ground is frozen. This is particularly true when the plants are grown on light sandy soils.

From the standpoint of disease and insect control it is much better to remove the old canes as soon as possible after harvest. Cane blight and crown gall, two of the most common and the most serious diseases of the raspberry, are typical "wound diseases." That is, they gain entrance into the tissues of the plant largely through wounds made by insects, tillage implements or in other ways. Undoubtedly many abrasions occur through contact of the new shoots with the stiff prickles of the old canes which are left.

The possibility of at least partial control of cane blight and crown gall alone should be sufficient argument for the prompt removal of all old canes after harvest. Furthermore, there is good reason to believe that the old canes act as parasites on the new shoots as long as they remain alive in the plantation.

Butter Making on the Farm.

Dairy farmers who have no creamery or cheese factory near enough to be available to them will find a new bulletin on butter making on the farm, just issued by the Dept. of Agriculture at Ottawa, of great interest. This bulletin gives detailed instructions for the production of high class butter on the farm. It is pointed out that much of the butter produced on the farm is of inferior quality. The main defects as compared with creamery butter are staleness, bad flavor, rancidity, too many shades of color, and the fact that it is often placed on the market in packages that are neither attractive nor convenient to handle. The annual loss to the farmers of Canada as represented by the difference in value of farm dairy butter and creamery butter amounts, it is stated, to several million dollars per year.

The bulletin, which was prepared by the Dairy and Cold Storage Branch and is distributed free by the Publications Branch of the Department, emphasizes the observance of a number of rules as being necessary if the best results are to be obtained in farm dairy work. Only good cows should be kept and they should be fed liberally and kept comfortable and clean when in the stable. Cream should be skimmed of such richness that it will show in testing about 30 per cent. of butter fat. It should be cooled to under 60 deg. Fahrenheit and kept cool until about twelve hours before churning. The churning should be completed in from twenty-five to thirty minutes. For washing the butter clean, pure water, not varying more than three degrees from the temperature of the buttermilk, should be used, finally the butter should be put up in neat, clean and attractive packages.

For a change when cooking pork or mutton chops, trim away all fat and bone, dip in egg and roll in bread or cracker crumbs. Fry in deep fat (like doughnuts) and when nicely browned drain, and serve hot with minced parsley or green pepper and chopped pimento sprinkled on top.

Eggs for the Hatchery.

In many sections of the country there are baby-chick hatcheries that depend upon farm flocks for their egg supply. These afford a splendid market through a fairly long season for farmers and others who have well-bred flocks.

As time goes on the hatcheries that are looking for permanent business are becoming more and more critical of the flocks from which they secure eggs. This is always in the interest of producing the best possible kind of chick.

The supply of really suitable hatching eggs is quite inadequate, so the owner of high-quality stock should have little difficulty in arranging a satisfactory connection even though it may be necessary to ship his eggs by express or parcel post in order to get them to the hatchery.

Get in touch with the hatchery operators located near you and find out exactly what they want. If you can meet their requirements you will find them ready to meet you more than halfway, and the premium of ten cents or more a dozen over prevailing market egg prices during the hatching season is well worth working for.

To get the highest prices for eggs sold in this manner some grading and sorting must be done. The eggs must also be delivered regularly and promptly. It is well for the producer of such eggs to remember that the chicks that hatch from them will very likely go to make up some other farm flock. Delivering good eggs, therefore, helps the other fellow as well as the first flock owner.

Shrinkage of Cattle En Route.

The Superintendent (Mr. W. H. Fairfield, of the Lethbridge, Alta., Dominion Experimental Station, has been keeping tab on the shrinking of cattle in rail and ocean shipping. He records in his report for 1924 that fat cattle lose more than thinner cattle; that the short-keeps lost 38 lbs. per steer from Lethbridge to Moose Jaw or 2.9 per cent.; that from Lethbridge to Winnipeg the loss per steer was 43 lbs., or 3.3 per cent. and from Lethbridge to Montreal 88 lbs. or 6.7 per cent., while on feeders the loss from Lethbridge to Moose Jaw was 28 lbs. per head, or 2.2 per cent., from Lethbridge to Winnipeg 26 lbs. or 2.1 per cent., and from Lethbridge to Montreal 68 lbs. per head or 5.4 per cent. During ocean travel the loss was very light. The short-keeps lost 36 lbs. per head or 2.8 per cent. on the ocean and the feeders 30 lbs. per head or 2.4 per cent. The former sold in England at a total loss in weight of 98 lbs. per head, or 7.5 per cent., and the latter at a loss of 73 lbs. per head or 5.8 per cent.

Mr. Fairfield points out that when it is considered that it is customary to sell cattle in Canada for so much per hundred based on farm weights, less 3 per cent. shrink, the shrink for which the animals sold for in England was only 4.5 per cent. greater than this on the shortkeeps and 2.8 per cent. on the feeders.

Keeping Down Harness Expenses.

A little care adds much to the service of a harness. The dirt that collects on the leather shortens its life. I have formed the habit of keeping mine clean. A damp cloth, or sponge, will readily remove the ordinary dirt that collects. A light application of oil once a month for new harnesses, and about three times a year for old ones, goes far in keeping them in good condition and pliable. The oil keeps out moisture and protects the leather from rotting. A cool, dry place is best for storing harnesses. Drying the leather out slowly when wet, is also good practice.—R. D.

The winter months prove, more than does the summer time, what managerial ability a farmer has.

DISCOVERER OF FAMOUS ROUYN GOLD FIELDS

It's the search rather than the find that is the glorious thing, believes Ed. Horne, New Liskeard prospector, discoverer of the famous Rouyn gold fields. After 17 lean years of prospecting through Labrador, Ontario and Quebec, Mr. Horne's judgment led to the Rouyn find. With his partner, Ed. Miller, financed by a group of New Liskeard men to the extent of $5,000, Mr. Horne succeeded in finding the Rouyn vein. It was love of the woods and solitudes, and life in the open, rather than the lust for gold that inspired his efforts, Ed. Horne says—a statement borne out by the fact that even now, when comfortably well off, he still spends much of his time in the open.

IN NO ARITHMETIC LAND

BY M. P. HANDY.

Arithmetic, he would have told you, was the worry of Rob Henry's life. His other studies were, as a rule, easy enough—perhaps because he found them more interesting, and so liked them better—and he stood well in his classes; but in arithmetic he was always foot, and, at twelve years old, was stuck fast in the multiplication table, which could not be persuaded to stick fast to him.

He had been kept in one afternoon, over a long sum in fractions, and came home late, to find a cold dinner and his mother out.

Indeed, a cold dinner was always part of the penalty for being kept in. School was out at half-past two, and the dinner hour being three, allowed plenty of time for Rob to be punctual, so Mrs. Henry never suffered dinner to be kept hot for him.

This day, cold mutton and cold potatoes, with cold batter-pudding, were not inviting to even a hungry boy, and Rob went up to the sitting-room thoroughly out of humor.

He threw himself down on the table and himself on the lounge.

"I hate arithmetic," he said. "I wish there was no such thing in the world."

"Good-morning!" said a strange voice at his elbow.

He looked round, and there stood the oddest-looking little man he had ever seen. It was not himself, but his dress that was so queer. One sleeve was long and the other short; the legs of his trousers were not matches, and his coat looked more like a bag than a coat.

"Would you like to take a walk?" said this queer little man.

"Walk? Where?" asked Rob, rubbing his eyes.

There was no sitting-room, no lounge, no table near. Instead, he was lying on the ground, just outside of what seemed to be a town of some sort.

"Where am I?"

"Oh, this is No Arithmetic Land!" answered his companion. "We have no mathematics in this country, and everybody is forbidden by law to count more than ten. Come, let me show you our city."

City, indeed! Rob thought of the tall, regularly-built houses at home, the well-laid-out blocks and smooth pavements. This place was all a jumble.

The houses, if houses they could be called, were of all sorts—wigwams, log-cabins, cave-like dugouts in the side of the hills, and brush shelters, for all the world like those built for the cattle on his uncle's farm in the country.

"What funny-looking houses!" he exclaimed, with more truth than politeness. "What makes you build them so? Why don't you have them like other people?"

The little man looked at him in astonishment.

"Pray, how could such houses as you are used to be built without arithmetic? How could you measure the doors and windows and calculate the size of the rooms? Then the bricks would have to be counted, and I have already told you that it is against the law to count more than ten!"

"Oh!" said Rob.

Just then they came to a stand where some tempting-looking fruits were piled for sale. Rob felt hungry and took up a large red apple.

"How much for this?" he asked.

"One piece," replied the vender.

Rob took out his whole pocket-money, a silver half-dollar, and handed it to him. To his surprise, the man coolly pocketed the money, and gave him no change.

"I want my change, please," remonstrated he, but the man shook his head, and his guide hurried Rob off.

"Hush!" he said, looking around, to see if any one had overheard. "Nobody can make change here. Did I not tell you that we are forbidden to count more than ten?"

"But that was all the money I had," said Rob, "and I am hungry!"

"Are you? All right, come in and have dinner; this is my house."

The little man spoke with some pride, and, indeed, compared to the other habitations in the town, it was quite a stately dwelling, being a double log-cabin, with a loft above each part.

A rudely-fashioned table was set for dinner in one of the rooms, and in this room were the wife and children of the little man. They were all as queerly dressed as he was, in clothes that were made wtihout the least effort at regularity.

"I suppose," thought Rob, "it is because they have no tape-line or yard-stick, and so cannot measure. Dear me, who would have thought that arithmetic was so necessary to the comforts of life?"

"They sat down to table on benches and stools and a singular meal it was. Fruits and vegetables were plenty, and there was tea, made in an earthen jar. But there was no bread, only hominy and thick molasses, instead of sugar.

"We have no bread to offer you," said the host. "Only those few of us who have traveled have ever seen it. We can have no mills to grind our corn, as nobody can build them without machinery and many calculations.

Bob stared, but helped himself to the hominy in silence. When his tea was handed him, he meekly asked for the sugar.

"I do not understand you," said the lady, but her husband came to her assistance.

"We have none here," he said. "This syrup is the nearest approach we can make to it. But then this is all that is needed—something to sweeten the tea. Think of the freedom we enjoy! No multiplication-table, no hard sums, no fractions!"

"Yes, sir," answered Rob, who was beginning to feel doubtful about the blessings of such liberty. "Will you please tell me what o'clock it is?

The whole family looked aghast, and the host whispered anxiously:

"For pity's sake, my young friend, speak lower! Such a question is forbidden by law, and there may be spies under the window!"

"But," said Rob, "have you no means of telling the time of day? How do you manage?"

"Oh, that is easy enough!" answered the little man. "We have daybreak and sunrise; noon, when the shadows fall directly under us, and sunset. What more do we want?"

"Oh!" said Rob, not knowing what else to say.

"I have been thinking," said the little man, "that perhaps it would be a good thing for you and my eldest son to exchange places. He has a fondness for figures, and gives us much anxiety and trouble by his vice in that direction. Now you hate them, you say, so we will send him back in your place, and you can stay here in his."

He made this proposition with the air of a person conferring a great favor. Rob was horrified.

"No, I thank you!" he cried.

"What!" said the little man, making a plunge at Rob, who fell from his stool, in his effort to escape.

Lo and behold! he was sprawling on the sitting-room floor, and his mother was asking him:

"What is the matter, Rob?"

"Oh, Mother, I have had such a curious dream! I have been in No Arithmetic Land, and I didn't like it a bit!"

"I should think not!" she said, when he was through. "But the wonder is that they had anything at all—how they managed to buy and sell, or do anything without arithmetic!"

Feeding Grain in Definite Portions.

To those who have not had experience, I might say that it takes more time to feed each cow definite amounts of grain, than it does to throw it in any old way. We have found that a quart of corn meal weighs just one and one-half pounds; that a quart of coarse bran weighs a half pound, and the same measure of oats, one and one-fifth pounds. So the quart measure, and not the scales, is the thing we use on our grain cart, as it is wheeled down the feed aisle.—D. Fargo.

Hens can't lay eggs on a corn-alone feed. They need a balanced diet.

CONTESTS FOR THE WINTER PARTY

NOTED PERSONAGES.

The names given here are to be supplied by the guests.

1. Masterful artist—Michael Angelo.
2. He made search—H. M. Stanley.
3. Terrible complainer—Thomas Carlyle.
4. Noted words—Noah Webster.
5. Came confidently — Christopher Columbus.
6. Best broadcloth—Beau Brummel.
7. Rabid iconoclast—Robert Ingersoll.
8. Beguiling traveller — Bayard Taylor.
9. England's bright bard—Elizabeth Barrett Browning.
10. Recognized wisdom everywhere—Ralph Waldo Emerson.
11. Joyous wondrous genius—Johan W. Goethe.
12. Her books sell—Harriet Beecher Stowe.
13. Always loyal—Abraham Lincoln.
14. Naturally belligerent — Napoleon Bonaparte.
15. Rustic bard—Robert Burns.
16. Wonderful sapience — William Shakespeare.
17. Feminine nobleness—Florence Nightingale.
18. Opposed cavaliers—Oliver Cromwell.
19—Hard-working brother—Henry W. Beecher.
20. Universally successful General—Ulysses S. Grant.
21. Wit meets tenderness—W. M. Thackeray.
22. Makes travesties—Mark Twain.
23. Brilliantly nonsensical — Bill Nye.
24. Fighting whiskey — Frances Willard.
25. Narrated horrors—Nathaniel Hawthorne.
26. Left many admirers—Louisa M. Alcott.
27. Attuned trumpeter — Alfred Tennyson.
28. His works live—Henry W. Longfellow.

KITCHEN CONTEST.

What a good worman has and to rent—Skillet.

A poet and a dog—Poe-cur.

A number of mountains.—Range.

Member of a baseball nine—Pitcher.

What men sometimes do with their money—Sink (it).

The appearance of being ill—Pale.

What some curious people try to do—Pump.

Impudence and a receptacle for pie—Sauce-pan.

A football ground—Gridiron.

The branches of a river—Fork.

An affectionate couple—Spoons.

Only questions are written on cards for guests, but you should prepare two or three with answers also for reference.

FLOWERS.

1. An amiable man.—Sweet William.
2. The pulse of the business world—Stocks.
3. A title for the sun—Morning-glory.
4. A bird and a riding accessory—Larkspur.
5. A pillar of a building and a syllable that rhymes with dine—Columbine.
6. A flower between mountains.—Lily of the valley.
7. A farewell sentiment.—Forget-me-not.
8. A dude and an animal.—Dandelion.
9. A part of the day.—Four o'clock.
10. The result of Cupid's arrows.—Bleeding heart.
11. The place for a kiss.—Tulips.
12. A yellow stick.—Golden rod.
13. A product of the dairy and a drinking utensil.—Buttercup.
14. One of the Four Hundred.—Aster.
15. What Cinderella should have advertised for.—Lady's slipper.
16. A wild animal and a bit of outdoor wearing apparel.—Foxglove.
17. A body of water and a girl's name.—Pond lily.

FASCINATING DOUBLES.

Each question must be answered by two words, each pronounced the same, but spelt differently and with distinct, different meanings.

1. I fall from the clouds and I control the action of horses.—Rain, rein.
2. I am part of a church, I am also surrounded by water.—Aisle, isle.
3. I am a sweet perfume and am also under orders.—Scent, cent.
4. I work below ground and am youthful.—Miner, minor.
5. I discharge balls and I am also seen outside a theatre.—Cue, queue.
6. I am part of a foot, I am also spiritual.—Sole, soul.
7. I am a road and I am also essential for junket.—Way, whey.
8. I am inflicted on boys and I am the product of insects.—Whacks, wax.
9. I am an article of attire and a fierce wild creature.—Links, lynx.
10. I am a necessity in a house and am also good-looking.—Fare, fair.
11. I am 24 inches long and am a skilful undertaking.—Feet, feat.
12. I am of high social rank but also of no value.—Baron, barren.
13. I am a lady's garment and am responsible for a clear light.—Mantle, mantel.
14. I represent an authoritative assembly and am also an advocate.—Council, counsel.

DELIGHTFUL VERSION OF THE TWO-PIECE SPORTS FROCK.

Many points of interest centre in this sports frock. First, the material, leaf green and fawn tweed, is the smartest thing for these essential costumes, then there is the deep yoke front and back from which extend two box-plaits. The long sleeves are gathered into tight little wrist-bands of contrasting-color silk, this harmonizing note being used for the convertible collar and all around belt. It is obvious the skirt, which is joined to a camisole top, gets its fulness by repeating the box-plait of the overblouse. The blouse, No. 1272, is in sizes 34, 36, 38, 40 and 42 inches bust. Size 36 bust requires 2⅝ yards 36-inch, or 1⅞ yards 54-inch material. The skirt, No. 1266, is in sizes 34, 36, 38, 40 and 42 inches bust. Size 36 bust requires 1¾ yards 36 or 40-inch material, with 1¼ yards lining for the camisole top. Price 20 cents, each pattern.

Our Fashion Book, illustrating the newest and most practical styles, will be of interest to every home dressmaker. Price of the book 10 cents the copy.

HOW TO ORDER PATTERNS.

Write your name and address plainly, giving number and size of such patterns as you want. Enclose 20c in stamps or coin (coin preferred; wrap it carefully) for each number, and address your order to Pattern Dept., Wilson Publishing Co., 73 West Adelaide St., Toronto Patterns sent by return mail.

Did You Ever—

Drop a piece of butter into the meat grinder before grinding raisins or sticky substances? They don't stick.

Grease your cake tins cold, and flour them? They seldom, if ever, stick.

Weigh each layer of your cakes? Then one is not larger than the other.

Weigh all borrowed articles? Then you are sure to return the full amount (and add a little for good measure).

Turn the sharp point of your dough in and put the cutter over it in cutting biscuits? I have only a very little to re-shape. I find this much quicker.

To-morrow is Another Day.

Sometimes when plans go all awry
And all the world seems sad and grey,
A sentence cheers my flagging zeal—
"To-morrow is another day."

Ah, comfort to my mind and soul,
When al my hopes have gone astray
I still shal have my chance again—
"To-morrow is another day."

What if to-day my courage failed
Or yesterday some dull delay
Caused me to miss the goal I sought—
"To-morrow is another day."

To-morrow, ah, the very word
Illumines bright my troubled way,
Thank God for that fair hope within—
"To-morrow is another day."

—George Elliston.

If your hired man shirked half the time, you would discharge him, wouldn't you? And yet, you keep two hired servants, the gasoline engine and the tractor, standing around a good share of the time. Perhaps you get the wood sawed through the help of these servants, but that is about all. Why not make the engine pump water, cut ice, etc., and your tractor run a feed-grinder? A farmer I know of is doing just that. He figures that he saved enough in hired help this fall to pay for a new ensilage-cutter. Next year he will clear the debt off. Then he will get a thresher. These machines make a man almost independent of hired help.

New York city has more than 2' 000 telephone operators