Soils and Crops

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The Removal of the Honey Crop and Requeening.

In both extracted and comb honey production, sufficient storage room on the hive for the whole crop should be provided. This should have been given consideration when planning and ordering for the season's work.

In the production of extracted honey, allow three full depth Langstroth supers or six shallow supers for each colony spring count; and for comb honey, six supers of twenty-eight sections each.

As it is desirable in extract honey production that most of the honey should ripen on the hive, supers should not be removed till, at least, two-thirds of the honey is capped over.

In comb honey production, however, supers should be removed as fast as they are capped, to prevent travel stain.

To get the bees out of the supers, the best method employed is by means of the bee-escape, which prevents both disturbance and robbing. The escapes should be placed late in the afternoon, when the supers should be clear of bees in from twelve to twenty-four hours' time—depending on weather condition. One escape board, equipped with two 2-way bee-escapes should be allowed per colony—thus, with a full equipment, but one trip is necessary to remove the crop of an out-apiary. The springs of the escapes must be set properly; that is, so that a bee can just pass through; otherwise much brushing, shaking and smoking may be required to clear the supers of bees.

To place an escape all that is necessary is to tip the stack of supers to be removed and to slide the escape-board underneath. If, however, clustering space for the bees and room to take care of the fall honey which may be gathered are required, place a super of empty combs on the brood chamber after which the escape and the supers of honey may be placed above.

Having placed the escapes, make a careful survey of the hives to see that there are no openings through which robber bees can enter the soon to be unguarded supers.

If the supers, after removal, are not immediately taken from the apiary, they should be stacked at different points in the yards with escapes below and above to exclude robbers; till they can be removed by truck or wheelbarrow. This distribution of supers, by distributing the attention of the robbers, reduces the disturbance and facilitates the work of loading the truck. In loading a truck or wagon, supers should be placed that all combs are parallel with the axles; but on a wheelbarrow they should be parallel with the wheel. Robber cloths, also, may be used to cover and protect the supers when taking them to the honey house. As a further means of preventing robbing, the entrance of the honey house should be large enough to permit the vehicle being driven through it.

Having considered the removal of this season's crop, we turn our attention to the first step in the production of the crop of next season—requeening.

Though the time and method of requeening will vary with the system of management employed, it is necessary that a vigorous queen shall head each colony in time to fill the hive with plenty of young bees for wintering. Therefore, all weak or failing queens should be replaced.

A good method of requeening—also of swarm control—is that practiced at the Central Experimental Farm. Ottawa, for the past two seasons. It consists in removing the old queen, on the appearance of advanced queen cells early in the clover flow, and destroying all cells; and nine days later again destroying cells and introducing a young laying queen.

Silage Cuts Milk Costs.

Dairymen have found that the cow's board bill is the largest item connected with cost of milk. The man who buys a first-class dairy herd is inclined to believe that the original cost of the cows is the expensive part. After he has a few years of experience he changes his mind. It is the feed bill, in season and out, year after year, that totals up the big expense.

Our experiment stations have conducted many tests to determine the value of silage in the ration. The figures vary to quite an extent, but they all show the economic value of silage. Several years ago it was demonstrated that corn silage saved the dairy farmer ten cents a pound on the cost of producing a pound of butter, and forty cents on the cost of producing 100 pounds of milk. Many of the early cow-testing associations demonstrated that the silo was one of the most important factors in lowering the cost of milk. All of these experiments and tests, however, are only a small part of the proof of the economy of the silo. The most important proof is the fact that one-half million silos are now being used by our most progressive farmers.

Wealth in Stones

By Louis Hurtubise

The Federal and Provincial Departments of Agriculture are continually urging Canadian farmers to follow methods calculated to produce larger yields from the areas they already have in crop rather than in increasing the acreage and being unable to till it properly. Crop yields in general are very much below what is possible, in many cases below that which is profitable. Compare, for instance, the achievements of Seager Wheeler and J. G. Hill with the harvests secured by the average farmer. Dr. Shutt, the chief chemist of the Dominion Experimental Farm says:—"We have now arrived at that stage where we must change from extensive to intensive farming. It is going to be easier and more profitable to farmers to get sixty bushels from one acre than to get thirty bushels from two acres."

Fertility Depends on Many Factors.

It is a postulate that what comes out of the soil must be put back if it is to be maintained with its productive powers unimpaired. One of the prime necessities for soil improvement is lime. Annual replenishing of the soil is necessary because the rainfall each year continually leaches the soil to such an extent that it becomes acid and the yields of nearly all common crops are reduced considerably. Expert agriculturists on both sides of the line are unanimous in the opinion that the cheapest, quickest and most prolific means of correcting this acidity is through the use of lime, and the wonder is that supplies of this product being easily procured in almost all farming areas, lime is not in more general use by Canadian farmers, particularly in the Provinces of Ontario and Quebec.

Lime occurs under different forms, burned lime, water-slacked lime and ground limestone. The last is the most important for correction of soil; it is a simple material to handle and apply and under most conditions, the cheapest. Within certain limits it may be said that the more coarsely the limestone is ground the slower will be its action on the soil. Agronomists have recently and after elaborate experimentation reached the conclusion that the most economical form in which limestone should be applied to the soil is in the size of one-quarter inch and finer (almost the size of the average waste from commercial rock crushing plants). In this form, the limestone will be so graded that the finest particles will become almost immediately available to the soil; the coarser particles gradually taking effect, and the coarsest (one-quarter inch) being a reserve supply available after all the finer have been utilized. Such application will need, therefore, only to be made at longer intervals than if all the limestone applied were so fine as to be immediately utilized by the soil, leaving no reserve supply for future seasons.

Dr. Shutt's Recommendation.

Dr. Shutt, the Dominion Government Agricultural Chemist, recommends that this crushed rock be applied from two to ten tons to the acre but generally about four tons to the acre will be required for practical purposes. The application offers no difficulties as a spreader may be used or the ground rock be distributed by a shovel from truck or wagon. The spreading may be done at any time of the year, the rock being suited to light loams, heavy clays and soil poor in organic matter. The material should be harrowed in on cropped land but merely spread on the surface of meadows or pastures. The coarser limestone described above can be applied once in four or five years, the finer ground limestone requiring more frequent applications.

The Washington Department of Agriculture states "that the application frequently pays a dividend of 100 per cent. the first year and the profits in agriculture from its continual use are estimated to be from 300 to 500 per cent." The same department goes on to say that "if all sources of artificial chemical fertilizers failed, our total farm output could not only be maintained but even increased for a time simply by the application of lime to acreage that are now low in yield or lying fallow because they are too sour to grow profitable crops."

The Dairyman's Dreams.

No. T. B. bugs.
Easy milkers.
A clean barnyard.
Cows all profit-makers.
A steady worth-while market.
A hired man who doesn't need a guide book of the farm.
Methods of production that will be approved by the cost accountant.

Even the rich should be conserving of the natural resources as extravagance on their part makes less for others to use, and adds to them the burden of higher prices.

Poultry

Here is a description of the worst case of feather eating I have ever seen. There were about thirty hens and two cockerels penned in a small bare yard. They were fed largely on table scraps emptied on the ground, plus a small amount of corn at night. The house contained no scratching litter and there was no place to scratch in the yard. The hens were in fair condition as regards bodily weight.

The two cockerels were nearly denuded of feathers and many of the hens showed large bare patches. Those cockerels would stand patiently while certain of the hens tugged away at the feathers until they came out. Then the hens promptly swallowed the feathers. A few of the hens were undoubtedly about ready to become sick because of the crop-bound condition caused by mats of feathers in the digestive system.

The cause of the feather eating was apparent. The cure is also made by removing the causes. I have not seen many cases of feather eating in a farm flock with abundant range and a chance to exercise and scratch some place. It usually occurs in the small flock owned by a town or city breeder who is compelled to keep his poultry within a very narrow range. This lack of exercise seems to be the prime cause. It is the idle hen that has time to stand around and pull feathers from her flock mates. When one hen starts the habit it may spread through the flock through imitation. Turn such birds on the range if the weather is at all favorable. Give them plenty of deep scratching litter in the laying-house and furnish a balanced dry mash. Possibly kill the worst offenders or isolate them until they can be turned on the range where they may forget the habit.

Dipping the Lambs.

The presence of ticks on lambs and sheep often cause much annoyance and occasionally result in stunted growth, and even a loss in bodily weight. These ticks can be easily discovered by parting the wool.

The insect is killed by dipping. One dipping will kill all the living ticks, but the eggs then on the sheep will hatch when a second dipping is necessary. This should be given about ten days after the first one is made.

There are a number of standard dips on the market, any of which are good. Directions are always given on the package and these should be followed closely. Where many sheep are being dipped a tank should be provided. This will save much time. In case only a few are treated, a barrel or tub can be employed. The water should be heated slightly and the mixture thoroughly stirred into the water before using. The bottom of the tank or barrel should be kept well agitated. Hold the sheep in the mixture for one or two minutes before removing. The work should be done on a warm day, preferably right after the sheep have been shorn.

Apparently the man who put "mine" into vitamine knew what he was doing.

Most indelible ink stains contain nitrate of silver, the stain of which may be removed by soaking in a solution of common salt and water and afterward washing with ammonia.

When Battery is Fully Charged Turn on the Lights.

When you start on a long drive, and you are sure before you start that your battery is fully charged, say, at 1,275 or 1,300, turn on your lights while driving, even though it may be daytime. Cramming current into an already full or charged battery is like trying to force a filled bucket to hold more water.

Burning the lights shunts much of the extra current from the battery and saves it from heating. Leaving the lights turned on overnight is also a good way for slowly discharging a battery that has been for too long a time up to high gravity. Discharge slowly at intervals, but always keep the battery charged without overdoing it one way or the other. Endeavor to keep the balance at all times between the two processes of discharging and charging.

Vitamines in Meat.

Scientists now tell us that vitamines also exist in the muscle fibre of beef, veal, mutton, lamb and pork. The latter meat is said to be particularly well supplied with these vitamines.

Various cuts of the different kinds of meats were fed to rats and pigeons. In every instance pork was found to be relatively rich in vitamine content. It was fed in the form of pork tenderloin, fresh ham, smoked ham and pressed boiled ham. The results were much the same in each instance. In lamb, the amounts varied greatly, while beef and veal showed a relatively lower content.

In considering this evidence the reader should not be led to the conclusion that certain meats are low in nutritive value because they may be deficient in vitamines. Even though none was found in meats they would still have the distinction of ranking among our most important foods.

Potato Scab in the Soil.

It has been learned that the potato scab disease persists in the soil for a long time after potatoes have been grown there. This is particularly true of clay and loam soils. Less trouble is experienced on sandy land. Seed tubers should be disinfected in the usual way with corrosive sublimate or formalin. This treatment will prevent scab in soil that is free from the disease, but if the soil is already badly infected, then the seed treatment is likely to be of little benefit. In such instances the best course is to grow other crops on the land for a few years and probably plow under a green manure crop, such as clover or rye. The decomposition of these crops develops an acidity which will prevent growth of potato scab.

Keep Colts from Mares.

If mares are being used for farm work, do not let colts run with them in the field. Keep the colts penned in a roomy, clean, cool, ventilated box stall in the barn. If the stall is screened to keep out flies, so much the better. Let the colts nurse morning, noon and night, and run with their mothers in the horse paddock at night.

Intensive cultivation is the key to the production of garden products of high quality.

Parents as Educators

Nature Study for Little Children—By Augusta M. Swan

When Froebel was looking for a name suitable for his system of education, he did not call it "Child School," or "Child House," but "Child Garden," and he intended that the "gardener" of the kindergarten should be the teacher herself.

Nearly half of Froebel's Mother Plays deal with the things of nature. At one time he said, "A little child that freely seeks flowers and cherishes and cares for them in order to wind them into a bouquet for parents or teachers cannot be a bad child, or become a bad man. Such a child can easily be led to the love, and to a knowledge of his Father—God—who gives him such gifts."

Love of nature is the heritage of childhood. It is a tendency in every child of every land, be he black, white or yellow.

All nature is akin to childhood; birds, animals, flowers, insects are all beautiful to children, even the "lovely crawly caterpillar," and the "creepy snail."

We all know how a dog will allow a child to stumble over him, recognizing the action by only an expression of long-suffering indifference; he will stand all kinds of teasing which he would not tolerate from an adult.

There seems to be a silent but mutual understanding among young animals of all kinds whether they have four legs or two.

As primitive man opened the early scenes of his life among the wonders of nature, so the child needs the experience of the race in nature wonder and play. All natural phenomena are matters of personal interest to the young child; and towards the moon, stars, sun, wind and rain he feels the inherent interest of the race.

It is well to be able to tell the children the names of the plants and flowers they bring, and to awaken in them a longing to know more of the wonderful life of the bird, bee and other insects.

Children love the stories of animal and plant life; they love nature because they are a part of it. It is a good thing for children to collect specimens; how they revel in the woods no matter what season it may be! What can be more joyous than to gather acorns, nuts and berries in the autumn woods? Will not the children be interested to know that acorns grow only on oak trees, and that they are the seeds of the oak as well as food for squirrels?

We may have only a vacant lot near, but if so, we possess a whole plant colony for,

"In the mud and scum of things,
There always, always something sings."

How many different weeds grow there, while others are unable to do so?

One of our most delightful kindergarten excursions was the suggestion of a child, to see how many different kinds of clovers we could find, and no one seemed bored. We need not be surprised if questions of real scientific value be asked by the children—"Why do people call those white flowers dogwood?" was the thoughtful inquiry of one of my kindergarten children.

"How do birds fight snakes?"

"What is the grease inside the buttercup used for?"

"Is it true that only female polar bears hibernate?"

"Why does the mullein have such a fuzzy coat?"

This shows a spirit of real inquiry.

How the child's imagination grows as he pictures the building of the nests, the return of birds and insects! Their songs become part of his nature, and give strength and sweetness to his life.

To cultivate direct observation, to enlarge the growth of character, to stimulate the imaginative powers, in other words, to see things, to know things,—does it not seem worth while?

Who knows the inspiration given to an embryo artist, poet or scientist, when we wander with the fairies through the meadows and woods, enjoying with them the concert of insect bird and breeze?

THE SUNDAY SCHOOL LESSON

AUGUST 6

The Temple Rebuilt and Dedicated, Ezra 3: 10-13; 6: 14-16. Golden Text—My soul longeth, yea, even fainteth for the courts of the Lord.—Ps. 84: 2.

Lesson Foreword—There is no section of the history of Israel so difficult to unravel in its historical sequence, as that which followed the return from exile. The following seems to have been the actual course of events. In B.C. 586 the Babylonians utterly destroyed the temple, so that for many years it was a heap of ruins. The people who were not carried into exile, meanwhile performed their ceremonies on a rude altar in the old temple area. Soon after the first return, the foundations of the temple were laid. Then the work of rebuilding was suspended for a number of years, partly because of the opposition offered by the Samaritans, partly because the people were poor and could not afford to go on with it and partly also because those who returned had to build homes for themselves. In B.C. 520, after the urgent appeals of Haggai and Zechariah, it was commenced again and finished in B.C. 516.

I. The Foundations Laid, 3: 10-13.

V. 10. **The builders**; the workmen mentioned in v. 7. These included the masons who quarried and dressed the stone, and the carpenters. Carpenters from Tyre and Sidon were hired because of their skill in woodcraft. Soloman had engaged them in the building of the first temple. **Laid the foundations**; on the site of the old temple. The fact that the Babylonians did not leave even the foundations standing when they destroyed the temple in B.C. 586, shows how complete was the demolition. Laying the foundations of any building, and especially of a temple, was considered a very sacred rite. In older times a human sacrifice was sometimes offered on the occasion. (See 1 Kings 16: 34.) **The priests in their apparel**; in their priestly vestments of fine linen. The priests, of course, were there because they were the guardians of Israel's sanctity, and because they alone could perform certain of the rites. **With trumpets.** The silver trumpets of the priests, instruments of about a yard long and with a bell-like end, were blown to announce a sacred festival (see Num. 10: 2), to provide an interlude between each of the three sections of the psalm of the day and to increase a joyous uproar of the people, Ps. 98: 6. **The Levites, the sons of Asaph.** The Levites were a subordinate order of ministers who did the more menial work in connection with the temple. Among the Levites were the two hereditary choirs who furnished the temple music. They were known as the sons of Asaph and the sons of Korah. **With cymbals**; bronze discs which were held in the hands of the performers and struck together. They were used to furnish an orchestration—the marking of time—for the chanting. **The ordnance of David.** It was traditionally held that David had instituted the musical service of the temple.

V. 11. The music of the temple was rendered by two choirs who sang antiphonally. That is, one choir would sing, "O give thanks unto the Lord; for He is good," and the other would respond, "For His mercy endureth for ever." This seems to have been a frequent form of liturgy at the great festivals. (See Ps. 136.) **All the people shouted.** The priests blew on their trumpets, the Levites struck their cymbals and the crowds of the people shouted triumphantly. This doubtless refers to the moment when the foundation stone was laid in its place.

V. 12. **Ancient men, that had seen the first house.** The original temple was destroyed in B.C. 586 and the foundations of the new temple were laid in B.C. 536. Thus there was a lapse of fifty years between the two houses and the older men could remember very well the temple which stood there in their youth. **Wept with a loud voice.** Possibly they wept because the new temple was, in its plans, disappointingly insignificant as compared with Solomon's temple; it is also likely that they wept because the floodgates of memory were unloosed and they lived over again in their hearts the disasters and sorrows of the exile.

V. 13. The older men wept aloud for sadness and the younger men shouted for joy, and thus the sounds of sorrow and joy were so intermingled that those at a distance could not distinguish the one from the other. The commotion was audible a long way off.

II. The Temple Completed, 6: 14-16.

After the foundations had been laid, the work was left off for a number of years. The Samaritans, when they were not allowed to join in the rebuilding, had strenuously opposed it. Those who returned from the exile had to build homes for themselves. Most of the people were too poor to contribute much to the building. Thus for one reason and another, it was about sixteen years before the building was commenced again.

V. 14. **The prophesying of Haggai.** In B.C. 520, Haggai appeared before the people and made a strong appeal for the continuation of the work on the temple.

V. 15. The temple was finished in March, B.C. 516.

V. 16. **Kept the dedication.** The dedication of the temple would be marked by special sacrifices, psalms of praise and other appropriate ceremonies.

Application.

It is said that when Michaelangelo was carving his famous statue of Moses, his friends noticed that an impressive dignity came into the sculptor's features. It was the result of lofty thinking. For long weeks and months, Michaelangelo sought to understand the inner life of the great Hebrew patriarch, and then he tried to chisel in marble what he believed Moses must have looked like. Our belief in God, and our worship of Him must have ennobling influence over our lives.

Dr. L. A. Banks in one of his books tells of the religious meetings he attended when a boy living on a farm in the backwoods. There were no lamps and the rule was that each family attending service should bring at least one candle. The first man who arrived lighted his candle and put it in one of the candlesticks, then others who arrived did the same thing, and as the congregation of worshippers grew, the place was illuminated. Every true worshipper adds something to the illumination of the world.

Writers and preachers of other days were fond of comparing the Church to a lifeboat seeking to rescue a few people from some great ship which was sinking. The great majority, they thought, must be lost; the best that the Church could do was to save a few. The Church's program to-day is a much more ambitious one. It is nothing less than saving the race.

THE CHILDREN'S HOUR

Why I Like the Farm.

Where we live we expect to work and farm life means pretty much of outdoor work, while city life means mostly inside work. Out of doors there is always plenty of good fresh air, often scented with sweet blooming flowers, while inside the air cannot be perfectly fresh and is often scented with stale tobacco and coal smoke.

On the farm the wonders we see are made by God. In the cities nearly everything is made by man. Although man has made wonderful and beautiful things they do not compare with the works of nature.

The farmer never knows his exact income. There is always little mysteries being worked out. One year one crop will do extremely well and another will nearly fail. The same way with the stock increase. There is always wonder and expectancy that keeps one hoping. The city man can figure everything in plain dollars and cents, but loses much in anticipation.

The farm is the ideal place for children. Here they can run and play over acres of green fields without being in danger of losing their lives by the traffic! They can gather beautiful flowers by the wayside without fear of rebuke. Running brooks are free for their pleasures. They learn many lessons from nature and learn to fear God instead of the cop.

Give me the farm life for all around natural existence. — Wayne Church, aged 16.

I have always lived on a farm and will tell you why I like it.

The air is pure and healthful and void of disease germs. A great variety of amusements can be found on a farm. I like the woodland swing, horseback riding, and even riding cattle—which some folks find difficult.

I like the farm because I like farm animals. It is a pleasure to gather eggs and hunt nests, feed the stock, milk, and drive cattle to and from the pasture and water.

I like to pick berries and work in soil, drive a team and dress as a boy and roam at will all over the farm.

I find real fun in picnics in the woods and a plunge in the lake on a hot, dry day.

The birds make music to wake me in the morning and the hill back of the house furnishes excellent coasting in winter. The lake over the hill furnishes skating.

The farm gives you a broader mind and good judgement. It makes you think clean thoughts and you are not always spending money on movies.

I enjoy telling visitors about the farm and explaining about the use of each thing.

I find many things to like about a farm, but very few to dislike.—Margaret McKibben, aged 16.

Keep the Lambs Growing.

It is an excellent practice to have growing some palatable forage near the regular sheep pasture for the lambs to feed upon while they are still suckling the ewes. If the forage crop is sown in an adjoining lot, a small opening can be made through the fence so that the lambs have access to the supplemental feed. They will soon learn the trick of running to the forage feed and in this way will stimulate flesh and bone growth. Rape is an excellent forage for this purpose. New clover is splendid. I like the rape because it can be sown at any time and comes on very rapidly.

A regular grain ration materially assists in balancing up the green forage. A grain ration composed of equal parts by measure of coarsely cracked corn, oats and wheat bran make an excellent feed. The lambs may be supplied with a light ration twice daily before weaning. Place it in a low trough, either in a small pen adjoining the pasture or at the barn.

Forest fires destroy your inheritance. Help to prevent them.