EFFICIENT FARMING

Troubles of the Cucurbits.

Although the grower of melons, cucumbers, squashes, etc., is especially cursed with insect pests and diseases, yet, if taken in time, most of these yield to prevention or cure.

The most common insects which attack cucurbits are the yellow beetle, the squash bug, the squash vine borer, and the aphis, or melon louse; the principal diseases are the wilt and the blight.

The easiest way to treat plants for the yellow beetle is to use some form of repellent. They abhor dust of any kind, and any odors are offensive to them. Slaked lime is very commonly used. It is generally scented with kerosene, turpentine, or carbolic acid. As the beetles spread so rapidly, it is important that the lime be on the plants all the time. Therefore, they should be dusted when they first appear and at frequent intervals thereafter until the danger is passed. Paris green is sometimes mixed with the lime and gets some of the beetles that the lime fails to drive away.

Other dusts are often used in place of lime, as land plaster, road dust, tobacco dust and cayenne pepper. The two latter do not need anything to scent them with. Tobacco dust is especially good. Instead of the dust, tobacco stems are sometimes used and placed around the plants on the ground. Besides acting as a repellent, they have a high fertilizing value. Wood ashes saturated with kerosene are also used in this way, but care must be taken that they do not touch the plants as they are rather strong.

Instead of dusts, some growers use sprays. The most common is Bordeaux mixture, which is the best, as it is a fungicide as well as a repellant. Arsenate of lead is usually mixed with it, about three pounds of lead to fifty gallons of 3-3-50 Bordeaux. Lime-sulphur is sometimes used with good effect in conjunction with the arsenate of lead. A spray made by dissolving a bar of laundry soap in a pail of warm water is excellent. It kills every bug it touches and repels the rest. By pouring a barrel of water on a gallon or two of coal tar and letting it stand a day, then sprinkling on the plants, an effective spray is made.

The yellow beetle is usually ready for business at least a week before the vine crops appear, feeding this time on other foliage, but deserting it as soon as the cucurbits come. Many gardeners take advantage of this and plant early squashes as "traps" for the beetle, killing them by pouring on pure kerosene or scalding water.

The squash vine borer is a grub which bores into the stems of melons, cucumbers, and squashes near the ground about blossoming time, where it stays until the plants wilt and die. The presence of the grub is indicated by a yellowish excrement on the outside of the stem. The only way to kill them is to split the vine carefully with a sharp knife and remove them, covering the wound with fresh earth. Trap plants are often planted for them as in the case of the yellow beetle.

The squash bug, often called stink bug, is familiar to every vine grower. It is a hard bug to kill, not succumbing to either dust or spray. Vines on which they are numerous should be pulled and burned. Flat boards may be laid on the ground in the patch, under which they crawl at night. In the early morning these may be lifted and the bugs drenched with kerosene or scalding water.

The aphis, or melon louse, is very destructive and sometimes whole fields are in a critical condition from its attack before the grower is aware of their presence. They congregate in masses on the foliage, starting with three or four but soon increasing until the whole plant is covered with them. They may be repelled with tobacco dust sprinkled directly upon the lice, or by tobacco stems placed on the ground around the plants. As they are sucking insects, the poisons that kill the yellow beetle have no effect on them. If a spray is used, it must be one that will kill them by contact. Kerosene emulsion is one of the best sprays. This is made by dissolving a half pound of chipped laundry soap in a gallon of hot water, and adding two gallons of kerosene while it is boiling hot. This mixture must then be churned with a pump or otherwise for ten or fifteen minutes until it is a creamy mass. When ready to use, put one part of the emulsion to fifteen or twenty parts of water. Another good spray is made by dissolving six pounds of whale oil soap in fifty gallons of water. If the lice have such a start that the plant is beginning to die, pull the plant, drench it with emulsion, and bury it right where it is.

The wilt disease of vine crops is often as destructive as the aphis. As the vines are likely to wilt from several other causes, it will pay to investigate to find out the real cause. Cut across a wilted stem and let the slime ooze out, then touch the slime with the finger. If the material can be drawn out in a long cobwebby thread, it is the wilt disease, as none of the other causes possess this peculiarity.

There is no known remedy for this disease except prevention. A rotation of crops, not planting these crops in succession on the same ground, will help to prevent it. All diseased plants should be removed as soon as they appear. It is spread very rapidly from plant to plant by the yellow beetle and other insects; hence "get the beetle" should be the slogan of the grower.

The melon blight or rust appears about the time the melons begin to set, appearing near the base of the plant in the form of round rust-colored spots which rapidly spread until the leaves die. In a week or so the patch looks as though a fire had run over it. After it has attacked a vine, there is but little use of spraying. The only preventive is to spray with Bordeaux mixture, starting when the vines begin to run and repeating every week or ten days until the crop is matured.

Controlling Chicken Mites.

Probably one of the worst nuisances that the average poultryman has to contend with is the presence of mites in and about the chicken houses. It doesn't take a very exhaustive examination to find them in nearly all parts of the coop. Therefore, you cannot blame the hen for not being interested in breaking the egg-laying record. The nest is literally alive with them and she does not relish the thought of nestling among them. Without doubt, when these tiny pests are numerous, egg-production is greatly reduced and the growth of the younger chickens retarded as well as affecting the quality of the flesh on the infested birds.

Their presence can readily be determined by noticing small areas on boards that have a speckled appearance, looking as if dusted with salt and pepper. This is probably their excrement and cast-off skins. The mites themselves are probably hiding in nearby cracks in great numbers, where their eggs will also be found. In badly infested houses it is not unusual for the chickens to become weak and their combs pale, due to the insidious attacks of these pests. Many times conditions are so unbearable that setting hens will desert their nests and spoil the eggs, and instances have been known where the hens have been killed while on their nests, due to the attack of thousands of these pests.

About a week is required for the mites to develop from the egg to the adult and each female lays about twenty-five to thirty-five eggs, so it is seen that the rate of development is very rapid. It is absolutely essential that the mites have blood during all stages of their growth and this is taken for the most part at night.

If these pests are at all numerous no half-way measures will give relief. If they are to be controlled energetic methods must be pursued. Inasmuch as there are but few mites on the chickens during the day time and as a majority are hiding in cracks, or similar places, the daylight hours are the best time to apply remedial measures.

The first thing to do is to remove the roosts, if possible, as well as all of the unnecessary boards and boxes. Clean the straw and litter from the nests and when this is done it will be ready for the application of a good insecticide.

Crude petroleum is very effective and retains its killing power for several weeks, and in most localities it is quite cheap. If used as a spray it should be thinned by adding one part of kerosene to four parts of the crude oil. It might be well to strain it before spraying so as to remove any foreign particles that might tend to clog the nozzles. Pure kerosene, or kerosene emulsion, used at double the strength usually applied to plants, will destroy any mites that it hits, but it doesn't penetrate into cracks very readily and so the application may have to be repeated in about two or three weeks. When spraying with any material the chickens should be kept out until after it has had a chance to dry. When spraying be sure to hit everything, even the ceiling. Before replacing the roosts be sure that they have been treated thoroughly with some insecticide so as to kill the mites hiding there. A coat of whitewash, in which five per cent. of crude carbolic acid or cresol has been added, will aid greatly after the insecticide has been applied and dried. It not only helps in the general control campaign but also gives a clean appearance to the coop. A dust bath for the chickens gives much relief but, at the time they use it there are very few mites on the hens.

The Undesirable Scrub Bull.

That invariably defective animal, the scrub bull, is being gradually eliminated. The Live Stock Branch at Ottawa, by its policy of loaning pure-bred bulls to specially organized associations in newly settled districts and in backward sections of the older provinces, is doing much towards achieving this end. In the seven years following the inauguration of this policy in 1913, 2,531 bulls, purchased for $368,596, an average of $144.85 per head, had been loaned. Of these, British Columbia has had 119, Alberta 497, Saskatchewan 539, Manitoba 220, Ontario 216, Quebec 759, New Brunswick 64, Nova Scotia 79 and Prince Edward Island 38. Returns substantiate the statement that where these bulls have been used there has been a considerable improvement in the stock marketed, and that in many districts to which bulls were loaned five or six years ago, farmers have felt warranted in buying pure-bred animals of their own. As a result, department-loaned sires are released and sent to more needy districts. This is particularly noticeable in Quebec, where the number loaned decreased from 200 in 1916 to 62 in 1919, while in Alberta and Saskatchewan the loaning had increased. It is interesting to note as evidence of the economy practiced in carrying out the policy that in one year 426 bulls whose usefulness had become impaired were sold for an average of 67 per cent. of their original cost.

One of the most valuable features of rye as a forage for the pigs is that it furnishes a supply of green food during the seasons when the ordinary crops and pastures are of little value.

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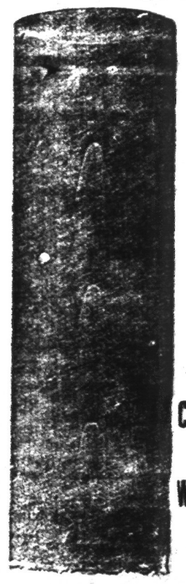

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Poultry

If there is not plenty of natural shade to protect the fowls and chicks from the sun's rays, make shelters of cloth, burlap, boards or brush, or raise the coops a food from the ground so that the poultry can find a cool place underneath.

Water is very important for old fowls and young stock in all kinds of poultry. Unless they have free access all the time to a fresh, clean supply in clean dishes, you cannot expect the best results from your investment.

As the chicks grow they require more coop room and unless more room is provided they crowd at night and overheat, their strength is decreased and their growth checked, and in some cases actual death results. This is a costly way of economizing.

Do not let damp mash of any kind remain in the troughs or dishes after the poultry has finished eating because it soon spoils, and reduces the appetite of the poultry and, if they eat it in considerable quantities, causes digestive troubles.

Do not feed the young and old stock in the same place and at the same time; the young ones need all the food that they can eat while the old ones, if given such an opportunity, will sometimes eat more than is at all necessary or advisable.

Useful Leg Bands.

When birds are not to be trapnested the colored single coil spiral bands are all that is necessary. If there are only two classes the pullets can be left unbanded. Then the bands will denote hens and it is only necessary to band hens that are retained as breeders. The double coil spiral bands show up more plainly than the single coil but they cost more money and the single coil answers all practical purposes.

The large numbered aluminum bands are useful in marking hens to be trapnested. Then each bird must have a number and the bands must fit very securely so that none will be lost and cause a confusion of the laying records. Some breeders buy the large numbered bands which are colored and made of aluminum and celluloid. They are attractive and seem to add to the appearance of the flock of pure-bred birds wearing them.

Aluminum bands can be purchased which are sealed with a soft metal rivet. This is of value when shipping breeding stock to unknown customers. It is also practically a guarantee that the bands will not be lost. Bands cost more money than formerly and it pays to remove them from birds that are marketed for meat. When birds are sold as breeders they can be banded before shipment and then the buyer will always be able to distinguish them from his own stock even if the birds are very similar.

Do not forget that all kinds of poultry, young and old, require lots of clean, cool water during hot weather and that unless it is furnished the best results cannot be obtained. Keep the water dishes full.

Two Farm Ideas I Found in Europe

By CHARLES P. HUNTINGDON.

During the war I "got across," and had an opportunity to study agriculture in France and Luxembourg. Two things made a deep impression on me—things which we Canadians can learn and practice to advantage.

The first, and the one of greatest importance, is the high value which Europeans place on manure. Not a drop is wasted, and it is returned in its entirety, practically, to their fields. The farmers in France and in Luxembourg do not live on their farms, but in little villages, going to and from their fields daily. Stock, crops, and people are all housed under the same roof. And the manure pile is an omnipresent part of the village home. We used jokingly to say that we could judge whether a family were wealthy or poor by the size of the manure heap. And we were usually correct.

When we first noticed the pretentiousness of these manure piles and the careful manner in which they were cared for, we thought that it was due to France's serious food situation, and to the fact that she had been in the war for four long years. But when I asked one farmer if it were a new practice, which they had acquired through the stress of war conditions, he replied that as far back as he could remember his father had taught him that his success as a farmer would be dependent, to a large extent, on his care in handling manure.

Whenever they cleaned their stables they piled the manure neatly, the dung from the cattle being mixed with that of the horses, swine, and chickens, and, if they had them, that of the sheep. The pile was always kept in a moist state, water being poured on it if necessary. Most of the year they were able to haul it out weekly, and so they had little trouble with fire-fang or burning. The liquid drained into a cistern from which it was pumped into large tank wagons. This most valuable part of the manure was thus taken direct to the fields.

I wonder how many such appliances there are on Canadian farms? Certainly too few. But with the increasing cost of every commodity, we too are coming to realize the true value of manure. Proper drains for our stables, gutters which allow no liquid to run off, cisterns, and tank wagons are coming to be a part of our farm equipment. And with them is coming a more profitable and more permanent agriculture.

Secondly, I was impressed with the care and attention European farmers give their livestock. It was untiring, practical, and almost paternal. An animal is, with them, almost a reverent being. Once we had a good night's rest continually disturbed by the frequent going out to the stable of the family with whom we were billeted. The cause of all this commotion was a mare about to foal. Farmer and spouse rested in turns, for two whole days during this eventful time. The foal arrived in due time and in excellent condition. And at calving time, at lambing time, and during the period when the swine litters were arriving, their care was equally painstaking. They lost very few animals, and each one seemed always in good, healthy condition. They did not have more stock than they could properly care for, and so the few head they did possess were good ones.

The cattle received their care from the women. Cows were used to supply milk, to produce a calf each year, and in many instances, to be the beast of burden. A sight which I used to be extremely interested in was to watch the family—old men, women, and children—go forth each morning to the fields with the family cow leading the procession and hauling the wagon after her. I was surprised to learn that these cows, even after working throughout the day, returned at night with large, full udders.

In Canada we have always had a super-abundance of things. One cow or a ton of manure has meant little to us. But with the skyward trend in the price of commercial fertilizers, with the need that the world has for food, manure and livestock have come to be of more significance to us. And as the population of our country increases, and the demand for food grows, perhaps we will learn that conservation pays.

And in addition to the profits which these practices bring is the joy of making our farms permanent, a heritage for our posterity.

The Sunday School Lesson

JUNE 23.

The Social Task of the Church (Review). Golden Text—Rev. 21: 3.

The great central truth which has been before us in all the lessons of the quarter is that the Christian law of love is the law of our common human life. It is the law of living together. God loves, and we must love. "God is love, and he that dwelleth in love dwelleth in God and God in him." The life and ministry of Jesus Christ was at the same time a revelation of God and a revelation of love. He loved us and gave Himself for us. The Christian who believes in Christ, who seeks to follow Christ, who takes Christ as his example and ideal, will therefore desire to be governed by the same law of love. Love will be his world, his inspiration, his life.

"I say to thee, do thou repeat
To the first man whom thou dost meet,
In lane, highway, or open street,
That he, and we and all men, move
Under a canopy of love,
As broad as the blue sky above."

The Christian whose life is thus governed by love will seek worthiness as well as usefulness. For love, if it be true and strong, ennobles the one who loves. He will desire to be true that so he may speak truth, to be strong that he may help the weak, to be good that he may do good. And so the Christian man will seek for himself, as well as for others, good health, and knowledge, and friendship, and recreation, and work in which he may exercise his powers—everything, indeed, which makes for a full, and rich, and happy life. He will avoid the habits and indulgences which are hurtful, the recreations that debase, and the work which is destructive of character and honor. He will not seek wealth at the expense of a good conscience, nor success by dishonest means. Always, while seeking what is best for himself, he will be regardful, in the largest way, of the interests of others, and will be content to sacrifice gain, or property, or even life itself, if by so doing he can help others to greater good.

The Christian will be a worker. Christ Himself, both in the carpenter's craft and His later ministry, was a strenuous and untiring worker. His follower cannot and will not be idle. The possession of wealth can be to him no excuse for idleness. He will find happiness, health, and true nobility in labor. Moreover he will gladly learn to work with others, recognizing their tasks important and honorable as his own. He will find firm and true comradeship and brotherhood in labor. Even in competition with others he will never lose the sense of comradeship. He will regard healthy and honorable rivalry as a form of co-operation, in business as on the sporting field. He will play the game and play it fairly and justly.

We have learned also that the follower of Jesus Christ will be interested and active in all efforts to make the home, the neighborhood, the business community and the whole world better. Not superficially or carelessly, but as a diligent and earnest student he will look upon the social and economic movements of his time. He will not be a mere partison, or blind follower of some social creed. He will be willing to learn, even if learning sometimes compels a change of view. What is true, and just, and right he will always be seeking; what is false only will he hate.

Application.

There is no limitation in the plan of redemption which God has for the world. What has been the experience of multitudes of men, "old things are passed away; behold all things are become new" is to be the final result even with the wolrd. All that has to do with the sin and misery of men will disappear and in its place there will appear a new world beautiful with the likeness of Paradise. This vision granted to St. John so many centuries ago is still the animating purpose of the Church. Daily millions of men pray, "Thy kingdom come; Thy will be done on earth as it is in Heaven," and day by day the marshalled hosts of the Christian army seek to secure that for which they pray.

Lest by reason of the slow maturing of God's plans, we grow sceptical of the success of the program and settle down to be content with things as they are, let us notice that first named amongst those who shall have no part in the New Jerusalem are two classes, whose only fault has been that they have been "fearful and unbelieving." They doubted God's ability to bring His great designs to pass. Because they doubted they were not prepared to give themselves heartily to serving those high plans. They have their part "in the lake which burneth." Donald Hankey said, "Religion is just betting your life that there is a God." That means not only believing it with one's mind, but "flinging ourselves and our energies after our belief." Difficult as the task may be, let us remember that "all power" has been committed to the Saviour of the world, and that with His Father, who is our Father and our Helper, "all things are possible."

My Farm Map Helps Me.

I can't expect to make my farm produce and pay me profits as it should, unless I know my soil.

In my bookcase is a good-sized map drawn to an accurate scale, and on this map is an entire contour of my farm which tells me what I want to know.

No matter how dark the night or how stormy the day, I can go to this map and tell exactly where each tile drain has its source, and just what kind of soil it is trying to drain. On this map is an accurate outline of each field showing just what kind of soil is in each section of each field, and just what condition this soil is in. If it's sandy loam, it is so marked; if thin, well-mellowed, well-fertilized, but not sufficiently drained, it is thus marked. If it is heavy clay, underlaid with hardpan, or if a washed hillside, or if a depression exists, these features are recorded. And so I have a complete picture of the farm before me at my fireside.

This map-making has caused me to study closely our entire farm, and it makes it easier to plan how deep or shallow it should be drained for best results, just what crops to plant in different fields, and just how to fertilize certain sections of these fields to get best results.

Thus I grow barley in black loam because I know it will grow barley best, following corn stubble; I grow oats on a sandy loam soil, following corn stubble, because it will produce oats better than barley. I grow my sugar-beet crop in a black, loose sandy loam, following clover, because it gets me the greatest tonnage; and I grow our potatoes in a yellow sandy loam plot because I get a good yield of smooth tubers, with a flavor that the black loose loam will not give.

I can put this map on the table during a wet, stormy day, and tell almost to a point of accuracy how much water this tile-drain outlet is carrying, and just how much that lateral in the back field is drawing from that swamp where I never used to grow anything but tadpoles and mosquitoes.

I can also read on this map just the acreage for wheat, or that best for oats, or any other crop, without going over the farm to hunt the spot.

Keep the little chickens out of the dew-covered grass, especially on cool mornings, as it may chill them.

Brooder chicks have no mother to talk to them, but their wooden mother never runs away from them.

Denizens of the poultry yard will benefit from good pasture as well as the larger live stock on the farm. In many cases it will pay to provide small patches of alfalfa, clovers, or some quick-growing pasture crop.

Bedtime Stories

A little clock grew weary.
As it sat upon the shelf,
'Twas tired of ticking all the time,
And murmured to itself:
"There isn't anybody else
That works so hard; I'm blest
If I don't think it's time that I
Should take a little rest."

And so it stopped, and Mrs. Brown
Took all its works apart
And oiled them with a feather.
But she couldn't make it start,
So, when she found her little clock
Had really stopped for good,
She threw it out among the junk
Behind a pile of wood.

And there it lay and pondered,
Doing nothing all the time
But thinking, thinking, thinking hard
Among the dust and grime,
Until it saw the folly
Of the thing that it had done,
And then it felt so sorry
That it started in to run.

When Mrs. Brown came out next day
To get a load of wood
She heard the ticking of the clock
And gladly cried: "Oh! Good!
My little clock is running now."
And, with a beaming face,
She took it back into the house
And put it in its place.

And now the clock is happy
For this secret it has found:
"There's lots more fun in working
Than there is in loafing round."

The Dairy

E. M.: What can be fed to veal calves to fatten when I am shy of milk to feed them?

There really is no substitute for whole milk for making veal. You can grow calves fairly well with substitutes. There are some calf meals made into gruel that calves do very well on, and in a little time the calves get so they eat dry food, like crushed oats, clover hay, and grow up to be good thrifty calves, but they never make veal calves. If you want fat veal calves at six or eight weeks old I know of nothing that will take the place of whole milk, but with plenty of skim-milk and oil meal or flaxseed meal with other grain, you can get a calf when he is four or five months old to be pretty good baby beef, but a veal calf is supposed to be six or eight weeks old when he is fattened and it takes whole milk to do that.

If you would have healthy and vigorous cattle, have the barn well lighted and ventilated.

Have you cane-seated chairs that need cleaning? Sponge with soapy hot water to both cleanse and tighten