

Efficient Farming

SEED TESTING AND FEED SOWING.

Seed Testing—It is a good plan to test all seeds before sowing for a crop. This can be done by counting out any given number of seeds, not less than 20 or 25 of each kind, and sowing them in sand or sandy soil in a temperature of about 60 to 65 degrees F., or a small piece of damp cotton or an ordinary dinner plate and the seeds placed singly and separately on the flannel or cotton. Over this spread another piece of damp cotton or flannel and then place an inverted dinner plate over all. The soil or material used should be kept damp enough to aid germination. Examine the seeds and keep close watch as to date and percentage of germination. In selecting seed for testing, select a fair average of large and of small and imperfect seeds as well so that a fair test can be made.

Soil—The soil used to sow seeds in should be of a sandy nature, not too coarse in texture or too rich in fertilizers. Old hotbed soil or good loamy garden soil with a good proportion of sand mixed with it, about one part sand to five or six parts of moderately rich loamy soil is suitable. The soil should be dry, not wet; it should not be dust dry.

Preparing Boxes—Shallow, well-drained boxes, flower pots, or seed pans should be used to sow seed in for growing early plants indoors. Boxes (flats) three or three and one-half inches in depth, with half-inch holes about six inches apart bored through the bottom for drainage purposes, are ideal for sowing seeds in to transplant again, much better than deep boxes. The boxes may be of any required length or width, 10 x 12 inches for small flats, and 12 x 24 inches for large flats, are useful sizes to use. Empty hattie boxes are good for sowing seed in or for transplanting seedlings.

First place some broken pieces of flower pot, coarse gravel or similar material sufficient to about cover the bottom of the box, for drainage. Then put about an inch in depth of soil of a coarse, fibrous texture on top of the drainage in the pot or box. The balance of the soil, to within about an inch of the top, should be of medium texture, not too fine. About half an inch in depth of quite fine soil should be sifted on top of this to sow the seed in. The different layers of soil should be quite level and pressed fairly firm as they are placed in the box. The surface of the soil should be quite level and from one-quarter to one-half inch below the top of the box or pot when filled, so as to allow space for water.

Sowing Seed for Transplanting Purposes—There are two methods of sowing seed in drills or broadcast on the surface of the soil, the broadcast (scattering) method being the best for very fine seeds. Use a marker made of a piece of lath the exact length of side of box—outside measurement—for large flats, with nails or pegs in it at proper distances apart to mark where drills are to go, or a marked measure stick or a gauge can be used so as to get the rows the proper distances apart.

About one and one-half inches apart for the rows or drills is about the right distance for most seeds. A drill presser is also very useful to secure straight drills and an even depth for seeds. This can be made from a piece of hard wood the width and thickness of a lath, and half an inch shorter than width of flat or box used. It should be bevelled on one or both edges to about one-quarter inch in thickness. It should not be pressed straight down into the soil when being used, but moved backward and forward and pressed lightly and evenly, so as to secure a drill of uniform and proper depth for the different kinds of seed sown, or a piece of heavy flat board the size of inside of flat with raised handle on back and strips of wood nailed on face of board about one and one-half inches apart, so that shallow parallel drills will be made on surface of soil when pressed down is useful. The strip of wood nailed on surface should be bevelled slightly and should be of proper depth for drill required. Do not sow seeds direct from the package, as an even distribution is seldom obtained by this method. Pour the seed into the hand, or into a small saucer and sow with the thumb and first finger so as to sow evenly.

Quantity of Seed to Sow for Transplanting—In drills the seed should almost cover the bottom of the drill and when sown broadcast the seed should cover from one-third to one-half of the surface of the soil.

Covering the Seed—The drills should be filled in lightly and level with a label or with the fingers. The seed sown broadcast should be covered with dry finely sifted soil. The soil should not be sifted on the seed but should be sifted first, and applied with the sand in the same way as recommended for sowing the seed. If soil is sifted on, it results in an uneven application, and necessitates scraping or levelling off, an operation that often causes the seed to be disturbed or perhaps scraped away altogether. The surface of the soil should be quite level, and may be pressed down lightly after the seed is covered.

Depth to Sow Seed—About three times the diameter or thickness of the

seed, slightly deeper for very large seeds.

Watering—The seed should now be thoroughly but carefully watered so as not to rinse the seed from the soil. A watering can having a fine sprinkler may be used or a piece of wet burlap (sacking) the exact size of the inside of the box, may be spread closely over the surface of the soil. A water can without a sprinkler or a pither or a jug may be used for applying the water if burlap is used, and only moderate care used in the operation. Be sure and allow the water to soak well into the soil before removing the burlap. The burlap may be used at each watering until growth starts. A light sprinkle of fine, dry sand over the surface after the first watering will help to prevent "mycelium" or "damping off" as it is termed. This "damping off" is a fungus disease induced mainly by a too close, humid, warm atmosphere, insufficient ventilation, or by imperfect drainage or careless watering. Giving the plants more air by ventilation, and a lower temperature, will help to prevent "damping off." A temperature of from 60 to 65 deg. F. is suitable for starting most kinds of seeds. A night temperature of 50 deg. F. and a day temperature of about 60 to 65 deg. F. will suit most growing plants also. Give all the air possible on hot, sunny days, avoiding cold chilly draughts of air. Careful ventilation will help to produce sturdy, hardy plants. Keep the soil moist, not too wet. Water seedlings in the morning before noon; watering them late in the day induces damping-off. A good remedy for plants starting to dampen off is to remove the diseased plants as soon as seen and dust those remaining with dry powdered flowers of sulphur.

Shading—Seeds should be shaded from hot sun until germination starts, when they should gradually be given more sunlight. Avoid shading plants too densely as it induces a weak spindly growth.

Transplanting—Seedlings should be transplanted when from four to six leaves have started as soon as the plants can be handled before they get too crowded or too tall and slender. Soil of a coarser texture and slightly richer in fertilizers may be used for transplanting seedlings in. One part sand to eight or nine parts of fairly rich loamy soil will suit most seedlings.

Soil too rich in fertilizers causes abnormal rank growth, and often induces disease. Stout, sturdy growth is better than rank abnormal growth for transplanting purposes. It is best to transplant each plant singly into small sized clay pots or in "soil banks" about two and one-half inches deep and two and one-half inches in diameter. The plants will form balls of roots in these so that they can be easily transferred later on into larger sized pots, or planted out in the garden as required, without disturbing the root system very much, thus preventing any check or set-back to the plants when transplanting them. Avoid exposing the roots of seedlings (or any plants) when transplanting, to sun and air; it is very injurious, and sometimes the results are fatal to the plants. Keep the roots covered as much as possible when transplanting with a damp cloth or with damp moss and get them into soil again as quickly as possible. Water seedlings carefully at once as soon as transplanted and shade them from sun for a few days. Water them sparingly the first week or ten days. Keep the soil moist, not too wet, during growth. Seedlings may be transplanted in shallow, well-drained boxes (flats), but they do not transplant again as well as from these as they do from clay pots or from soil banks as before mentioned. In transplanting seedlings the plants should be set a little deeper than when in the seed box so that the roots are well under the soil. Care should be taken with seedlings such as lettuce, celery, primulas, golden pyrethrum and plants of similar growth, that the crown or centre of the plant should not be below the surface of the soil. Plants having a well-defined main stem such as cabbage, cauliflower, tomato and similar plants should be set rather deeply in the soil so that the roots and about half the length of the stem is inserted in the soil. The roots should hang perpendicularly in the soil, the tips of the roots on no account to be pointing upward, and all the roots should be at least one-quarter of an inch or more below the surface. Press the soil firmly around each plant so as to set it in position firmly. Water the plants carefully at once and shade from sun for a few days. Water the plants rather sparingly after the first watering for a week or so until growth starts, when more liberal waterings may be given. Cultivate on surface, stir the soil around the plants about once a week. This should be done when the surface soil is fairly dry. Surface stirring the soil will keep down weeds, promote growth, and help to conserve the moisture.

Although many apparently try, it cannot be done—this forcing cows to drink ice water with the expectation that they will produce ice cream.

Japan has now adopted the metric system of calculating weights and measures.



Here is the World's "greatest" farmer, Peter Paxton, who, at the age of 36, weighs just 680 pounds and is still gaining. Two years ago he was comparatively thin, weighing only 300 pounds.

TRAINING OUR CHILDREN

BY HELEN GREGG GREEN.

Ray's mother proudly showed the members of our Motherhood Club a handsome new pocketbook her son had sent her from college.

When it was handed to Ted Record's mother, a little woman with a face like an angel, tears filled her eyes.

"Oh, how lovely!" she exclaimed, "I'm afraid my Teddy isn't very thoughtful. He's a dear boy, but he never thinks to send me anything."

"Perhaps it's your fault," Ray's mother offered. "We always taught Ray how to spend money. I'll wager he's saved for months to get me this birthday gift."

"How to spend it?" Mrs. Record looked surprised. "Why, Anna! We taught Ted to save his allowance. You see, his father has given him a certain amount every two weeks ever since he was a little fellow. And that money we taught Ted to put in the bank and save. He never has spent a cent of it. And now!" proudly, "he has nearly enough for his college education." And then, as if in answer to an unasked question, "You see, his father always bought him all his clothes, and skates, and weekly movie tickets, and toys."

"Doesn't he have any just to spend?" someone wanted to know. "Yes, occasionally, now that he's older and has learned to save," the

mother answered. "But he usually puts the extra money into the bank, too."

"Well, my dear, I see your mistake. I think," Ray's mother spoke up, "and I'm going to tell you before it's too late. At this rate you'll make your boy into a selfish tightwad."

"Listen to her slang!" someone laughed.

"Well, it expresses just what I mean. Didn't Maryannis say Teddy never bought her anything?"

The mother with the thoughtless son gave a little gasp. "Pardon me, Maryannis," continued the little owner of the pocketbook, gently, "as you say, Teddy is a dear boy, but he has been taught only one lesson with regard to the care of his money and, as I see it, not the most important one. We always gave Ray an allowance. From the first he was encouraged to save a definite part of it and to spend the rest thoughtfully, wisely and unselfishly. This he learned to do. Sometimes he bought things for himself, but often his money went for something for someone else. He was given a good deal of freedom and he learned to be neither extravagant, nor close. He is grateful for this training now, for to know and be able to follow the 'happy medium' in spending is an accomplishment well worth while."

"Yes," said the other mother thoughtfully, "it's a fine idea! I'm going home to talk it over with Father."

A few months later Mrs. Record came to our meeting, wearing dewy, pink roses. "From Ted," she smiled proudly.

front of the droppings board. All rests were open, but no tier was provided with an alighting board for the convenience of the hens. Hence they could not make use of the middle rows. Leghorns seem to choose high nests in preference to low ones when provision is made for them to alight easily in front of any nest. A five weeks' count on a flock of about 200 Leghorns in early February showed 718, 518 and 506 eggs, respectively, in the top, middle and bottom rows of nests.

The bottom row was one foot off the floor, the middle row two feet and the top row three feet. In each of the five weeks about 41 per cent of all eggs laid were found in the upper row of nests.

Studies made at an experimental station revealed the fact that for every 100 eggs laid in openly exposed nests, 113 were laid in partly secluded nests, even when the position of the open and secluded nests was alternated day by day.

The latter point is of special significance when one is keeping fowls of the general purpose type. In one case which came to the writer's attention a flock of Plymouth Rocks was found to be laying practically all eggs in the top and bottom tiers of nests, leaving the intervening rows unused.

Observation brought out the fact that the bottom tier was the only one that could be reached easily from the floor. The top tier was in use because the hens could fly to it easily from the

Poultry

That hens show a decided preference for nests in certain locations can hardly be questioned by those who have watched them closely. Factors that influence a hen's choice of a nest with respect to its location are its height above the floor, its relative seclusion and the ease with which it can be reached.

The holding sacred of even fine specimens of trees is not justified when lawn decoration is prevented by their presence. Horticultural societies have a fine opportunity to exercise their influence about the saner system of street tree planting and control, with a view to improvement of the homes through the more generous use of flowering shrubs and beds of flowers.

A canvas of policies with regard to street trees in the larger cities of this continent, where the work is handled by thoroughly qualified men, has shown that much greater space is now being allowed between trees than heretofore. The elm is permitted only on very wide streets and parks and seldom nearer than eighty feet. The maple, which represents the smaller type of street tree, is seldom placed nearer than forty feet. In some of the cities fifty feet is the limit between individual trees.

One seldom has an opportunity of viewing a row of really fine street trees. These are never seen on the ordinary city street where the planting is usually from fifteen to thirty feet apart. The opinion is growing that the finer residential streets will have fewer trees and more of the smaller and ornamentals that we have become accustomed to see and unfortunately to be satisfied without.

—Canadian Horticultural Council.

The Sunday School Lesson

FEBRUARY 22

Good Citizenship, Rom. 13: 1-14. Golden Text — Thou shalt love thy neighbor as thyself. — Rom. 13: 9.

ANALYSIS.
I. OBLIGATION OF THE CHRISTIAN TO RESPECT THE CIVIL POWER, 1-7.

II. NECESSITY OF SHOWING LOVE TO ALL MANKIND, 8-10.

III. SPECIAL OBLIGATIONS OF THE CHRISTIAN ERA, 11-14.

INTRODUCTION—St. Paul devotes the closing chapters of Romans to a setting forth of the conduct required of Christians as the result of faith in the Redeemer. What should be the spirit governing all our dealings with our fellow-men? St. Paul speaks of this generally in Chap. 12, in words which recall our Saviour's teaching in the Sermon on the Mount. In Chap. 13, which forms our lesson to-day, the apostle, as a citizen, or member of the body politic, What is to be his duty to the civil government and to the law of the State? Here again we find the apostle following out the precepts and commandments of Jesus and requiring of every Christian a personal respect for law and its enforcement in all matters, including taxation, and advocating a just submission to the civil authority in everything that is right and good.

The Jews had once asked Jesus whether it was right to pay tribute to Caesar. They imagined that there was some incompatibility between this recognition of the Roman power and the duty which they owed to God as their true king. Jesus answered that there was no incompatibility in matters such as tribute: "Render to Caesar," he said, "the things which are Caesar's, and to God the things which are God's."

St. Paul is here laying down the same principle. There were Christians at Rome and elsewhere who thought that because they belonged to Jesus, and because their citizenship was in heaven, they had, therefore, no longer any interest in the policy and law of the civil power on earth. St. Paul shows that on the contrary the law of the State is ordained by God, and is entitled not only to the respect, but to the sympathy and co-operation of all right-minded men, especially in its task of enforcing just laws. *The Christian ought to be the best of citizens.*

I. OBLIGATION OF THE CHRISTIAN TO RESPECT THE CIVIL POWER, 1-7.

V. 1. Political submission to the constituted authority is required of "every soul." This means that Christians will render it not less than pagans. Indeed, just because civil authority is part of God's ordinance for the well-being of society, the Christian will show a greater alacrity than others to respond to every just requirement. It must be remembered that St. Paul's own experience of Roman justice had been uniformly good. More than once, at Corinth and elsewhere, it had secured him fair play against Jewish violence. St. Paul is not contemplating cases where the law of the State might conceivably be contrary to justice. His primary principle is that properly constituted authority is part of God's order for the good of humanity.

V. 2. The law-breaker, therefore, brings himself under the condemnation not only of the State, but of God.

V. 3, 4. Fear of the State is not indeed the highest motive on which a citizen will wish to act. As a matter of fact, no well-disposed man need stand in any terror of just governments, for God appoints them for moral ends. On the other hand the State must inflict penalties on law-breakers; it has not received what Roman law calls the *ius gladii*, or "power of the sword" for nothing.

V. 5. The Christian, however, will base his submission, not on fear, but on the higher motive of conscience. He has moral and religious reasons of respecting the law.

V. 6. Thus he will pay taxes willingly, recognizing that the officers of the government are "ministers," or as St. Paul's language suggests, "priests" of God within their own sphere.

V. 7. The general principle is clear. The Christians will be foremost in rendering tribute, taxes, respect, and honor to those who by law are entitled to receive them.

II. NECESSITY OF SHOWING LOVE TO ALL MANKIND, 8-10.

V. 8. St. Paul now takes a step higher. He passes on to a still broader ground for inculcating Christian citizenship. The Christian will not be content merely to meet his obligations, or to pay his debts. He will, and must, act on the positive principle of loving, seeking the good of all mankind.

V. 9. For example, take the Decalogue—St. Paul here recalls to his readers the sixth, seventh, eighth, ninth, and tenth commandments. Do they not all go back to the one principle, "Thou shalt love thy neighbor as thyself?" The Christian will, therefore, consistently make the widest goodwill his motive. He will try to see things through the eyes of those with whom he deals. He will act towards them as though he were in their place. He will, in other words, face the social problem in the spirit of Christ.

V. 10. Such a Christian regard for others, as taught by Christ himself, will include obedience to everything that the law requires, and also—though St. Paul does not mention this matter here—it will include a great deal more.

III. SPECIAL OBLIGATIONS OF THE CHRISTIAN ERA, 11-14.

Vs. 11, 12. St. Paul and the early Christians lived in the expectation of the Lord's immediate return. They did not know how soon he would come back, and, therefore, the highest of all motives to Christian conduct lay in the necessity of being ready to receive him. St. Paul urges this motive now. Every man should be at his best, so that Christ at his coming may find him worthy. We might entitle this

part of the lesson, therefore, as "The Special Obligations of the Christian Era."

V. 13. How very unworthy would it be if Christ should find any of his followers living a scandalous or drunken life, degraded by sensual or profligate passions, or even quarrelsome and envious! There should be no place for such undisciplined conduct in Christian lives.

V. 14. No! The Christian must study daily to acquire, or put on, the character of the Lord Jesus Christ himself. If he does this, striving to be like Christ, the expulsive power of the new affection in him will successfully drive out the other cravings which have their origin in our lower natures.

APPLICATION.

The Quest of Power. Visible power is everywhere. It is around us in earth and the sea and sky. It is in all time and space. We can take as much of it as we can use. Newton, Watts, Fulton, Edison, and a host of others teach us how to harness physical force. The quest continues, going on apace until Sir Oliver Lodge fears new energies may become agents in the hands of a race not yet good enough to use unmeasured power wisely.

Above and beyond the pull of gravitation, or the life of the sun, or the thrust of the growing seed, or the mystery of electricity or the wind blowing where it listeth, is the power of the Spirit. "There is no power but of God." If only the lesson may reveal to us that little used secret, how all the pulses of our endeavor would quicken! The divine power is a treasure house of plenty. Let this truth lift the burden of fear and worry. How may we know? By what we see around us in the order of nature with which we regulate our outward lives, by the experiences of others, bad men made good, and good men made better; by what we have felt and know in our own hearts, but most of all by turning to him who said, "All power is given unto me." First essential of all such citizenship as Paul would have us exemplify, is to know, as he did, "whom" we have believed. Christianity is a faith, it is a teaching, it is a life to be lived. Are we rediscovering to-day, with radiant hope, that Christianity is also a power? The Power we need. "Be strong in the Lord, and in the power of his might."

Sheep Notes

Sheep should always have plenty of pure well water to drink. No food taken into the system of animals goes more directly into the blood than the water they drink. Impurity of the blood caused by drinking impure water must inevitably produce digestive disorder and ultimately disease.

During the winter and spring months there is greater danger of sheep drinking impure water than at any other time of the year. At this time the flock confined to limited quarters is dependent upon their shepherd for sustenance. If the water supply is scanty and unclean, the sheep are sure to drink from little pools of water that gather in low depressions about the yard. These little pools of water accumulate from thawing ice and snow and rain water percolating through the straw and manure, gathering up disease germs that, when taken into the sheep's system, starts trouble.

Drinking-water full of injurious bacteria is one of the common and most dangerous causes of winter ailments among sheep, and particularly among pregnant ewes. I have known of several heavy losses to occur among flocks of sheep traceable to drinking water from stagnant pools about the yard and pasture during the winter months.

The water supply for the breeding flock at all times should be very closely guarded. Water drawn from deep rock wells is preferable. —L. C. R.

The Soil Survey — Between the Niagara Escarpment and Ontario.

During the season of 1924, the work conducted by the Chemistry Dept. of the Ontario Agricultural College in soil survey has been carried on in the Niagara Fruit Belt. A detailed soil map constructed on a scale of one inch to one mile has been completed. It includes the land lying between the Niagara Escarpment and Lake Ontario from the Niagara River to Hamilton.

The soils of this area vary greatly in their characteristics and crop adaptations; they range in texture from fine sandy loam to the heaviest clays. A feature of the survey that is especially interesting, is that distinct correlations between soil type and crop adaptation can be made. Profitable peach growing is limited to a few distinct types of soil, and the percentage of land in the surveyed area that is well adapted to peach orchards, is small indeed.

One hundred and forty soil samples representative of the soils mapped on survey, have been taken for laboratory examination. As soon as these analyses have been made a complete report of the field work prepared, a bulletin will be published on this area.

Take heed—the "rest" in industry is a misnomer.