TREES AND MICE.

The young tree plantation and older orchard have two serious enemies among our rodents. These are rabbits and mice. Each require separate means of combatting. A fence of two-inch mesh poultry netting is admirable to keep rabbits from girdling the tree trunks, but the smaller rodents, to be foiled of tree-bark fodder, must meet further obstacles.

Many methods have been advocated and tried with total or partial success. Among these are the raising of a small mound of earth from eight to twelve inches about the base of the trunk; the tramping of snow firmly about the trees; the use of tar paper; the use of sulphite white building paper; the use of wire protectors,—mosquito netting, or galvanized wire cloth; the use of wooden veneer protectors; poison, with one part of arsenic and three parts, by weight, of corn meal.

Probably the cheapest safe protection is secured by wrapping each individual tree trunk with white building paper in late October or November and then placing a slight mound of earth around the bottom of the wrapping. This treatment has not failed in seven years' trial. The sulphite used in the making of the paper acts as a repellant to the mice. Tar paper may be used but there are instances where this paper has caused injury to the trees.

A durable protection is made from galvanized wire cloth. This is purchased by the roll and should be twice as wide as the protection is to be in height. The roll is cut in two and then into strips twelve to eighteen inches long to fit around each tree trunk. These protectors are rolled around an iron rod to give them a spring, then placed about the tree trunk and pressed downward a couple of inches into the soil. Such protectors will last several years. Mosquito wire netting is fairly satisfactory as a temporary protection.

At the Morden Experimental Station the protectors most in favor are made from galvanized Perfect Metal Cloth. They are similar to those made from wire cloth except for difference of material. The protectors may be allowed to remain on trees from year to year, or gathered in spring and replaced in autumn.

As a rule, mice will be generally troublesome only where a cover crop, grass, or weeds are growing, or where other harbors for nests are found. If clean cultivation is practiced, it will probably be necessary only to protect the trees about borders of the plantation.

THE BROOD SOW.

The well kept brood sow is an asset on any farm. She will turn the by-products of the farm into ready cash products quickly and profitably.

At the Experimental Farm, Nappan, N.S., the eleven Yorkshire sows kept for breeding purposes for 1922 dropped seventeen litters within the year with an average of 11.7 pigs per litter and raised an average of 9.4 per litter. The eleven sows consumed 29,075 pounds of meal at a cost of $32.80 per ton, 3,570 pounds of skim-milk at $4 per ton, 8,679 pounds roots at $3.27 per ton, and were on pasture three months each during the season at a charge of 50 cents per sow per month, making a total cost for feed of $367.07 or an average cost of $33.37 per sow per year. These sows raised 159 young pigs to six weeks of age at a feed cost of $2.31 per pig. The average market value per pig at six weeks was $6.25 (selling them as feeders, not as pure-breds for breeding purposes, otherwise the value would have been $10 at six weeks), leaving a net profit over feed cost of $3.94 per pig. In other words, the average profit per sow over feed cost was $56.90 or for the eleven sows $625.94. If one wishes to gain profitable results, the first consideration must be the selection of the brood sow; she should be of correct bacon type, having also along with deep straight sides, a well-arched back, good full quarters well carried down, strong heart girth, no undue flabbiness about the jowl and from a sow that has produced large litters. After having made a careful selection, breed to a good sire of the bacon type—provide comfortable quarters, well-lighted and ventilated, also free from dampness and draught. Yards should be provided for all growing stock as exercise is very necessary for them as well as for the mature sow.

At this Farm, our brood sows are kept in log-cabins for at least three-quarters of the year and have yards to run in at all times, as well as small paddocks with green feed such as clover for the early spring, oats, peas and vetch and rape for the mid-season and autumn feeding. The sows are turned into these fields for three or four hours each day; in this way, we have not only reduced our cost of maintaining the brood sow from 6 to 8 cents per day but have provided green feed which is most essential to the health of the breeding stock as it supplies bone which is necessary for litter and milk. Sows that are kept indoors all the time and heavily fed on concentrates usually produce small litters of pigs weak in bone and with soft flabby muscles. Brood sows should never be allowed to become over-fat but should be kept in good thriving condition all the time. If comfortable quarters are provided and the sow well cared for, she will produce two litters a year with an occasional rest, without impairing her health.

A good reliable feed for brood sows is a slop made up of equal parts of crushed oats, barley and bran or shorts, fed at the rate of from 4 to 7 pounds per day. During the winter months they should have, in addition to the meal, 4 to 6 pounds roots per day and clover or alfalfa hay to take the place of the green feed fed during the summer. The brood sow must have access to mineral or earthy feeds. Soda, which may be stored in a root house, are excellent. Charcoal, soft coal or ashes containing charred wood, should be accessible at all times during the winter or when the sow is indoors. As a direct addition to the sow's meal ration the following is suggested: Tankage 3 to 5 per cent. of the weight of the mixture, or tankage, 3 per cent., bone meal 3 per cent. The further addition of 2 per cent. of ground limestone will frequently be of great value. Tankage is valuable, aside from its protein content, in that it contains desirable mineral salts derived from animal products; charcoal is high in phosphates and has a highly beneficial action on digestion; bone meal is also rich in phosphates. Lime and phosphates are particularly necessary in the ration of the sow carrying a litter of pigs.

Select your brood sows from prolific stock of good bacon type and, with proper care and attention, they will make a profitable return.

What Breed of Poultry is the Best for Small Town Lots?

By S. W. Knife.

This is a point long discussed and without getting anywhere. Personally, I believe every fancier believes the breed he keeps is the best. A man starting into poultry looked around to see what sort of birds he should keep. He took a fancy to the Wyandottes, but his neighbor spoke so highly of Leghorns, he decided he would toss a coin to see what breed it would be. He tossed it five times before it turned up for Wyandottes.

Still, if a person wants to keep a few birds for supplying ample table eggs throughout the year, and having an occasional chicken dinner, there is not a much better breed than the Barred Rocks. They are a very nice bird to look upon, of good size for a dinner, and in the egg laying contests they have shown their worth as layers. They are easy to keep in condition and quite hardy. You can let them have free use of back yard and not worry about their seeing some nice juicy lettuce next door, jumping a fence and making themselves at home, as some of the lighter breeds are very fond of doing.

But if egg production for profit is the main object in keeping poultry, I would advise you to turn your eyes to the handsome looking and active White Leghorn. Just look over some of the egg-laying contest reports and you will see that, though there may be individuals with a higher record, such as the Australian Black Orpington, yet as a class they out-distance other breeds for laying. While their houses must be kept more comfortable in winter and more wire fencing is required to keep them in bounds than the larger breeds, still there are points in their favor:—They require less floor space per bird, and eat about one-third less of feed and maybe lay 25% more eggs than do their more docile and hardier sisters. Yet with either of above two breeds an interested poultry keeper should make quite a nice little profit, as your neighbors will buy all the fresh eggs you can supply and at a higher price than store eggs.

Sheep Notes

I make it a point to see that the ram is thrifty, vigorous, and not over-fat at mating time. If the ram is too fat, he will be clumsy, slow, and likely to prove impotent.

The mating season is strenuous for the ram, and he must be in the best physical condition. This requires that he have plenty of exercise; a regular supply of salt and fresh water; a suitable grain feed, such as equal parts of corn, oats and wheat bran.

We often find that a ram which did excellent service one year will not always render the same quality of service the following year. Nor can one depend upon a young, strong-appearing ram lamb. The good sheep breeder must have first-hand knowledge of the condition of the head of the flock through frequent examinations.

After mother has milked, fed the chickens, cooked breakfast, dressed the small children, ironed a shirt for the oldest boy, fixed all the children's lunches, gotten their books together and found their hats, she is glad for them to get off to school so she can begin her day's work.

Don't Cry After the Fire!

BY WERNER P. MEYER.

Last summer, on a hot August evening, a farmer known to the writer, had just hauled in the last load of hay, unhitched the team, milked the cows and gone to bed. The characteristic silence of the farm hung over the homestead until half an hour after the family had retired.

Yet within forty-five minutes, hundreds of motor cars were lined up along the country road. All eyes within a radius of twenty miles were centred on this farm. The buildings were on fire and within another hour the year's crops and all the property were nothing but a smouldering pile of charcoal.

Public opinion traced the fire to a cigarette left by strangers seen on the premises during the day. And thus another home had been ruined on account of carelessness. Smoking around farm buildings is just one of many causes which annually help to destroy over $5,000,000 worth of farm property.

OCTOBER A BAD MONTH FOR FIRES.

August, September and October are the months of farm fires. In August, the newly hauled hay or grain often causes fire by spontaneous combustion. Destruction by lightning is also heavier in August. Tourists and campers usually pick late August and September for their trips, and very frequently are to be blamed for forest fires. In October, people begin setting up stoves; defective chimneys and dry roofs cause trouble.

The first step in the prevention of fires is to safeguard against these causes. If you keep tramps and cigarette-smoking visitors off the place, provide proper ventilation in the hayloft, put up lightning rods, look out for overheated stoves and chimneys, and don't allow tourist brigands to start anything in your woods, you can feel fairly safe.

Nevertheless, any additional fire protection possible should be used. Every farm can not be equipped with a modern fire engine, but there is some equipment which every farmer can afford.

First of all, there are chemical fire extinguishers. Although these are not cheap enough to be classed as playthings, they are much cheaper than a new barn, silo and farm machinery.

There are also water-tanks, one of which is present on almost every farm, and several smaller ones distributed over the barnyard and buildings provide a good safety measure. If you do not have metal tanks, three or four vinegar barrels can be had almost for the asking. In making use of tanks and barrels, buckets should always be attached to them, and a strict rule should be that these buckets are not to be used except in case of fire; otherwise they are likely to be down in the vegetable garden when the fire breaks out in the barn or chicken house. On many big dairy and stock farms, a large tank is usually located on the highest place on the farmstead. Where this is the case, it is wise to install a few hydrants in several places and supply hose for each of them.

Many localities have established rural fire-fighting units. Where the roads are at all favorable, this co-operative protective measure will save thousands of dollars. A motor fire truck is usually kept in a centralized engine house, and when a fire breaks out the neighbors speed to the scene in motor cars. One of these trucks will put out fires that have good headway, and save the buildings that have not caught fire. Centralized water-tanks on high places are a help to the volunteer engine force.

TEN FIRE "DONT'S."

In addition to these safety measures, the following *Dont's* should be observed on every farm:

Don't use gasoline carelessly, or inside the main buildings. Handle it in the open air. Machine sheds and garages should have concrete floors.

Don't allow children to play with matches or fire.

Don't leave bonfires or open fireplaces unwatched.

Don't use a stove unless it has proper brick or metal protection underneath.

Don't neglect an unsafe chimney.

Don't pile coal or wood against a furnace wall or near it.

Don't bank houses with leaves or straw, unless these are entirely covered with earth.

Don't allow careless wiring, if electricity is used.

Don't use any inflammable cleaners, except with the greatest care.

Don't go into closets or other places at night with a lighted match or candle. Use a flash-light.

Despite all care and safety measures, fires occur and total destruction often takes place. All of us know of cases like the farmer mentioned above, yet there is a greater enemy on many farms than the tramp or hired man who smokes a pipe in the strawstack. That enemy is the owner. He is the type of man who will lean on his wife's shoulder the morning after the fire and, with tears in his eyes, tell his neighbors that the place was not insured.

The one safeguard against total loss which every farmer can have, is fire insurance. Had my farmer friend not been insured, his farm probably would have been mortgaged for the rest of his life.

Is your property protected against fire? If not, timely insurance will keep you from crying over spilled milk.

Poultry

Points of excellence in a breeding bird are: A good, bright color to the comb, face and wattles; fairly prominent and bright eyes; the head comparatively short and broad; the beak short and well curved. There should be alertness in the fowl; a strong, vigorous carriage; the legs set well apart and strongly supporting the body; the bone, as observed in the shank, should be strong and not too fine for the breed; the toes strong, straight, but not too long; the plumage smooth and clean.

There is action when the birds are industrious, when they leave the roosts early in the morning and return to them late at night, when the females are singing, scratching and working continually, when the males are proud and strutting, crowing often, and at all times ready to protect their flocks.

Females that idle or are continually on the roosts, and males that are cowardly and hold themselves away from the flock, should be discarded.

A good hen lays in one year about five times her weight in eggs. On an average she lays at least every third day during the year, or, in rare instances, every other day. There will be individuals that do better; but many that do worse.

To make a neat cover for a sleeve board, draw a discarded white cotton stocking over the padding. It will fit snugly without tacking, and is easily drawn off for washing.

I found that interest in the production of each cow not only made it easier to part with the poor ones; but, also, gave me real heart to feed more liberally those I found worth while keeping.—W. B.

For Home and Country

Two Hundred Thousand Members.

The English Press has much to say about Women's Institutes of late.

"Many efforts," points out the London Daily News, "have been made in recent years to keep alive the rural spirit in England, to give contentment in the villages by bringing into their daily existence new social and intellectual interests and by encouraging a finer local patriotism. Some of these efforts have failed, not through want of good will, but through want of knowledge or skilled organization and occasionally through a want of tact, which has led to suspicions of patronage and condescension. The true line of approach, we think has been found by the Women's Institutes, a body which has not learnt the uses of advertisement, but which when it held recently in London its seventh annual meeting, represented nearly 200,000 members."

WON BY FRANKNESS, DUCHESS DOUBLES GIFT.

The Dallas (Texas) News tells this story through a London correspondent:

The brighter Britain movement, which aims to popularize rural life, is attracting interested attention here, and one reason is that it has turned away from the time-honored English practice of having women of title on its list of patronesses.

A certain Duchess was asked for a subscription. Languidly she answered: "You may put me down for 100 guineas and you may add my name to your list of patronesses." The efficient young woman solicitor replied that they would gladly take her guineas, but that there were no patronesses, so that aspect of her contribution must be ignored.

The Duchess, at first amazed by this unexpected frankness, was not slow to see the possibility presented to become, for a moment, her own press agent. So she doubled her contribution, and said she was glad to belong without being listed as a patroness.

Women run this movement, peeresses and working women taking part, and it is affiliated with the National Women's Institutes. Co-operation is the keynote. Everybody is supposed to help somebody. Snobbishness, the bane of rural life in this old land is the one failing for which there is no forgiveness.

The members meet regularly at their institutes on terms of absolute equality and good fellowship. They teach one another useful handicrafts, especially in the domestic arts, discuss the problems of the day and brighten and stimulate the communal life with folk songs and dramatic performances. They are out to banish from the villages the deadly dullness which most people who have lived in them say makes existence intolerable.

The movement really started in Canada, which perhaps accounts for the spirit of independence and self-help which has always animated it.

The Sunday School Lesson

DECEMBER 16

World-Wide Missions, Acts 16: 1 to 28: 31; Romans 15: 18-21; Ephesians 3: 2-9. Golden Text—I am not ashamed of the gospel of Christ; for it is the power of God unto salvation to everyone that believeth.—Romans 1: 16.

LESSON SETTING.—Three great events must be noted as events preparing for the lesson of to-day. Saul the persecutor has become the follower of Christ and has been called to his great work as the apostle of the Gentiles. Second, a great Gentile movement towards Christianity has arisen in Antioch and has been approved by the church at Jerusalem. Out of this movement in Antioch came the first missionary journey of Paul and Barnabas in the provinces of Asia Minor. Third, it has been finally decided by the church at Jerusalem, that Gentile converts are to be free from the observance of such Jewish rites as circumcision, which belonged to the Old Dispensation.

I. PAUL COMES TO EUROPE, ACTS 16:9-15

V. 9. *A vision appeared.* This incident belongs to Paul's second missionary journey. Paul had sought to continue his work, first in the province of Asia and then in Bithynia, but he was prevented by the Spirit from so doing. God closed these doors to open a wider door. *A man of Macedonia.* Macedonia lay across the Ægean sea from the seaport of Mysia. God was opening a continental—a world-door. *Come over . . and help us.* This is the plea from which Christianity cannot turn away.

Vs. 10-12. *Immediately we endeavored to go into Macedonia.* Paul knows it to be the call of God, and loses no time in making the necessary preparations. At this point the narrative begins to speak "we," for here Luke, the writer of the Acts, becomes the companion of Paul. Luke was a physician, and a man of means. He was a Gentile and is supposed by some to have been a native of Philippi. He was a man of deep human sympathies. Paul speaks of him later as "the beloved physician." *Loosing from Troas.* When the cables of the ship were loosed at Troas, Christianity left for ever all geographical limitations. *Philippi.* Philippi was an important centre. There was a Roman settlement here. It was not a colony in our sense of the word, but a military and civil community, planted by the Roman authorities in the interest of the Empire.

Vs. 13-15. *A river side, where prayer was . . made.* There was evidently no synagogue in Philippi, so Paul went to this place of prayer in the open. Because of Jewish ceremonial washings, these places were generally by a river or seaside. *Lydia.* She was a native of Thyatira, in Asia Minor, and sold in Philippi, the purple dye or cloth of that place. *Which worshipped God.* She was a proselyte or convert of the Jewish faith. *Whose heart the Lord opened.* She was waiting for more light, and found it in the teaching of Paul. *Abide there.* Her gratitude shows itself in practical form. Her home becomes a centre of light.

II. PAUL COMES TO ROME, ACTS 28: 30-31, ROM. 15: 18-21.

In Acts 19: 21, we find Paul saying, "I must also see Rome." This was not the curiosity of a traveler, but the logic of the missionary. From the fringe of Europe he must go to the centre of the Empire, and the heart of the world. In his Epistle, written to the Romans from the city of Corinth, while on his third missionary journey, he also expresses his desire to visit his brethren at Rome, and preach the gospel there.

Acts 28: 30, 31. *Paul dwelt two whole years.* Paul has at last come to Rome, but he comes as a prisoner. The Acts of the Apostles ends with Rome, as it began with Jerusalem, and it tells of the gradual and progressive breaking down of all the racial, religious and geographical barriers that lay between. *In his own hired house.* In his first imprisonment in Rome Paul has this measure of freedom. He is under military guard, but is free to have friends and seekers after truth come to him.

Rom. 15: 18-21. *I will not dare to speak . . of those things . . not wrought by me.* In these verses he declares himself as a breaker of new ground and a blazer of new trails, a layer of new foundation. He has been called to be the apostle of the Gentiles and he thinks it his true mission to lead the way, from Antioch to Asia Minor, from Asia Minor to Europe, from the fringe of Europe to its heart—even to Rome. The true greatness of Paul is that he, by life action and teaching, made the gospel irrevocably a challenge to the world.

APPLICATION.

I. *From Asia to Europe,* Acts 16:9-15. Paul in his secondary missionary journey was prevented from going to the right hand or the left, and was led by divine providence to Troas, where he saw a man of Macedonia standing and entreating him, saying "Come over into Macedonia and help us." This was the cry of Greece to Judaea. Greece was rich in art and philosophy and science and material progress. Judaea was lacking in most of these things, but had other and unsearchable riches. She had the Christ, the Saviour of the world. St. Paul was the ambassador of Christ, and through Luke he learned of the moral and spiritual needs of Macedonia. That land was like the church in Laodicea, which said, "I am rich," and did not know that it was pitiable, poor, blind, naked. The whole world apart from the spirit of Christ is as helpless as ever. Europe, forgetful of God, is still crying, "Come over and help us." The non-Christian peoples in Asia—the cradle of Christianity—are swelling the chorus, "Come over into the orient and help us."

II. *From the Outskirts of Europe to the Centre,* Acts 28: 30-31. St. Paul was a Roman citizen, and ever cherished the hope of preaching the gospel of Jesus at the capital of the Empire. When as far off as Corinth he wrote a letter to the Roman Christians in which he said, "So, as much as in me is, I am ready to preach the gospel to you that are at Rome also." When he said this he did not know that he would go to Rome, a prisoner of state, and one day perish beneath the axe of Nero. So, in all our work for the kingdom, man proposes, but God disposes.

III. *St. Paul's Summary of his Missionary Labors,* Romans 15: 18-21. We have the sphere,—from Jerusalem to Illyricum. We have the method,—not to preach where any other man had preached—always to be breaking virgin soil. We have the object of this method applied to so wide a sphere,—that the obedience of the Gentiles might be secured for Christ. His aim could well be couched in the language of the hymn:

Jesus shall reign where'er the sun
Does his successive journeys run.

That is the supreme need of the world at this hour. The human race knows not how to hang together and to work together for the common weal. Only the spirit of Christ can unify the race and make all men's good each man's rule.

Forcing Rhubarb in Winter.

Forcing rhubarb in winter either commercially or for home use is comparatively easy, and should be carried on much more generally than it is at the present time, as a supply of this very appetizing dish can by this means be had from January until the early spring. The roots for forcing are dug in the late autumn before the ground freezes, care being taken to preserve all the buds on the crowns, and to keep as much of the earth adhering to the roots as possible. Past experience has proven that roots that have been completely frozen force much better and quicker. It will require at least ten days of quite severe freezing to put the roots in good condition for forcing.

When the time comes to bring in the plants, a dark cellar should be available where a temperature of 50 to 60 deg. F. can be maintained. The frozen crowns are then placed on the cellar floor, as closely together as possible and the spaces between filled with moist sand or earth. It is a good plan to heap several inches of soil over the frozen buds and leave this covering on for a couple of days only to gradually draw out the frost. Water should be applied liberally, because upon the moisture supply will depend to quite an extent, the success of the crop. It is not necessary to use rich soil in this work, because the roots already contain the necessary plant food for the development of the leaf-stalks.

While the first planting will produce for about six weeks, yet to maintain an abundant supply, it is well to have a second lot of roots out of doors, ready for planting when the first lot is just ready for use. These frozen roots should be brought in, planted and treated in the manner described for the first lot.

To remove rust from metal, rub with lard and let stand over night. Then scour with wood ashes dampened with water, to which a little ammonia has been added.

Bedtime Stories

My Watch.

Mummy's got a little watch,
She wears it on her arm,
The only thing it seems to do
Is cause her great alarm;
She springs up from her comfy chair
As if a bomb had dropped,
And says, "Oh, dear! I shall be late!
My little watch has stopped."

Daddy's got a 'normous watch,
But quite a useful one,
He lets us blow it open an'
It causes lots of fun;
But when we gets excited
He says, "My sweethearts, pray
Be careful or you'll blow the watch
An' Daddy quite away."

Brother's got a watch as well,
It goes all right until
He biffs it with a cricket ball
And then it lies quite still.
He takes it to the jeweller,
Who says the mainspring's broke,
Then Daddy shouts, "Five bob again;
This is beyond a joke."

But my watch is the best of all,
Once it was goldiest gold,
An' now it's shimmery silver;
I 'spects it's getting old.
I blow it an' I blow it,
An' I say a little rhyme,
Whichever hour I want the most
It tells me is the time.

It's wonderfully convenient.
When Nurse says, "Time for bed,"
I blow my little fairy watch,
The hours fly round her head.
The little ghost of Dandelion
Whispers soft to me—
"It's reely neely bedtime, but
We'll tell her, time for tea."

Probably the most important improvement in rural life comes through the development of a real community of farm folks.