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ORCHARD AND GARDEN NOTES.

March 15.

Hotbeds may be started now if this has not been done before.

Plan a good flower garden from which flowers may be cut this summer. Order the seed now.

Try topworking a few apple or plum trees. The work is interesting but not hard.

Flower and vegetable seed for later transplanting may be sown in hotbeds now or in flats set on the hotbed.

Melons and cucumbers may be started in hotbeds in berry boxes, or on squares of sod, by the middle of April.

Plant more berry-producing shrubs about the home for ornamental purposes. Some are useful for both food and ornamentation.

Feed and shelter the birds that will soon be migrating to the north. They have especially hard times in our early spring snow storms.

Early sweet peas may be sown in berry boxes or pots and transplanted outdoors as soon as the weather is settled and the soil workable.

Berries of highbush cranberry, barberry, mountain ash, cotoneaster, and seed pods of Japanese lilac still add interest to the shrubby plantings.

A few currant bushes ought to be in every garden. White Grape is the best white; Perfection and Red Cross are good red; and Lee's Prolific is a good black variety.

Cuttings of willow, dogwood, grape, etc., may now be made ready to plant as soon as the weather is warm and settled.

It is safest to plant all kinds of nursery stock in the spring. It will soon be time to do this work. Better order it now so as to get it in good season.

If snow has drifted over currants and small shrubs, forming a crust, scatter cinders or ashes over them. These will melt the snow irregularly and the bushes will not be smothered.

A few boxes fitted up for bird nests or houses and placed in trees where cats cannot get at them often help to keep very desirable feathered neighbors in the neighborhood. Now is a good time to put these up.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul.

ORCHARD AND GARDEN NOTES.

March 22.

Pruning may be done any warm day now.

Is any attempt being made to put a windbreak and a few shrubs about the school house?

Topworking apple and plum trees is in order now. Use healthy cions on which the buds have not started.

Golden Bantam sweet corn is one of the best early kinds. Planted every day or so until July 1, it will furnish green corn throughout the season.

Good seed and good, vigorous, healthy plants are essential for success in vegetable gardening. They are obtained by careful management.

Sprays of pussy willows and cherry branches in water at this time of year are useful for decorating purposes.

Grow your own asparagus plants if they cannot be purchased readily. The seed is as easily sown as that of onions or radishes. Buy only the best seed.

Do not buy many novelties and do not expect too much from those you do buy. Some are worth while but many turn out to be old friends renamed.

If you grow vegetables for a local market plant only those of best quality, even though the yield is not quite as great as that of an inferior kind. Quality will pay in the end.

Plant a few white elm, hackberry, or basswood trees about the buildings for shade. They should be set as soon as the ground is settled and in good condition for seeding.

Soil has much to do with quality. Study your soil and use those varieties that do best on it. This is something that the individual must work out for himself.

A good useful flower garden should be a part of every vegetable garden. Cut flowers should be seen in the home as frequently as good pictures.

The hard maple is a splendid shade tree on account of its thick foliage. The change of foliage during autumn adds to its attractiveness. It is a much slower growing tree than some of the others.—LeRoy Cady, Associate Horticulturist University Farm, St. Paul.

SPRING MANAGEMENT OF BEES.

Proper Feed and Protection Needed After Removal from Cellar.

The bees are at their lowest ebb when taken out of the cellar in the spring. There are only old, worn-out bees from the preceding fall in the hive, greatly decreased in numbers by winter losses. The old bees will die in about five weeks so the queen now begins to lay eggs in the wax cells which the bees feed and keep at a temperature of about 98 degrees. To provide food for the growing swarm the bees begin to forage the surrounding country for honey and pollen. To keep the brood warm they cover it with their bodies and wings. If there is no pollen or honey in the hive, or if the brood gets chilled, the larvae or young bees will die, and their white bodies will be found in front of the hive in large numbers some morning.

A good bee-keeper will not allow this waste of life. He will feed his bees sugar syrup if there be no honey in the hive or put some scented rye flour in a sunny place near by to take the place of the pollen if no natural pollen can be had. It is especially important to keep the hive warm by covering it with tar paper, sacks, or blankets, and closing part of the entrance, and to see that there are no cracks or openings left in the hive through which the wind may blow. Such management lays the foundation for a large crop of honey.—Francis Jaeger, Apiculturist, University Farm, St. Paul.

FARM CREDIT BANKS.

Minnesota College of Agriculture Plans to Debate Question with Wisconsin.

The first debates between the Colleges of Agriculture of Wisconsin and Minnesota will occur on March 27. The literary societies have been interested for some time in establishing intercollegiate debating and have raised a guarantee fund to provide for expenses. It is intended to make this

one of a series of public discussions of current agricultural problems. For this contest the question is, Will co-operative rural banks best meet the demands for real credit of the farmers of Minnesota and Wisconsin? The team upholding the affirmative will debate at home and the negative team will go to Madison. Minnesota has the following representatives: F. C. Clapp, Otis Brewster, Arvid Nelson, C. Wirth, Neil Head, C. A. Halverson.—R. C. Lansing, Minnesota College of Agriculture, University Farm, St. Paul.

SERUM-VIRUS TREATMENT.

Ordinarily Used Only for Apparently Healthy Hogs in Infected Territory.

When treated by the serum-virus method, hogs receive simultaneous injections of serum and virus. Serum-virus treatment should as a rule be permitted only for healthy hogs in a cholera neighborhood and hogs with normal temperatures in infected herds. Under any ordinary circumstances serum-virus treatment should not be permitted in uninfected territory.

The only safe or economical rule is to use full doses of serum or even larger doses than may be actually necessary in either the serum-only or serum-virus method. The serum-only and serum-virus methods should both be recognized as legitimate and standard procedures when used in a proper way and under proper control. Cholera-free neighborhoods should aim to produce their own feeding-stock and not risk infection by shipping in feeders.—M. H. Reynolds, Veterinarian, University Farm, St. Paul.

HOG CHOLERA.

Protection of Uninfected Territory.

A farmer living in uninfected territory and who wishes to increase his herd should do so if possible by raising his own stock or buying from the immediate neighborhood where he can be sure there has been no cholera. There can be no assurance of entire safety to the neighborhood if hogs are shipped in any stock car or pass through any stockyards or have had any real serum-virus treatment. "Doctored" virus is being sent out by some commercial firms. This is safe if sufficiently "doctored"; but it is of no use so far as conferring immunity is concerned.—M. H. Reynolds, Veterinarian, University Farm, St. Paul.

IS THE INCUBATOR BETTER?

The Hen Has Many Advantages for the Small Flock.

The hen is an efficient mother and has certain advantages which no artificial system has yet been able to provide, but the incubator is better adapted to large enterprises and to some small ones where the hen is not properly understood. Notwithstanding the popularity of incubators, large and small, and of brooders of different styles and sizes, there are yet many of our best authorities as well as our most successful raisers that maintain that there is no incubator or brooder that can rear chicks quite equal to those hatched and raised by the natural process.

There are however a few fundamental advantages in the old-fashioned method for the small grower. First of all a good setting hen involves very little additional expense,—none at all if she is one of your own flock. Second, a small number of eggs may be set, thereby allowing incubation soon after eggs are laid which often means better hatches and stronger chicks. Third, with proper arrangements, and up to a small limit, the same number of eggs set under hens, requires no more work than when in an incubator. Fourth, fewer eggs are spoiled when a hen abandons a nest than when an incubator goes wrong. Fifth, perhaps the greatest advantage of all lies in the fact that the average hen takes a great deal better care of a young chick than the average human being can take. Sixth, the hen supplies much cheaper labor. Chicks with hens require very much less attention than those reared in brooders. Finally, results are usually more satisfactory because of less mortality and with only average skill, growth is much more rapid.

Man selects a box of large or small dimensions, but usually not less than ten or twelve inches in height, places therein a nest of hay, the eggs, the hen, and outside a little water and corn, and expects the hen to do the rest. Of course the hen has to leave the nest, and to return she must jump first upon the edge of the box ten or

twelve inches high and from this perch she is expected to alight in the midst of 13 to 15 eggs without striking one. If the hen selected that nest it would be where she could walk on and off, and the sensational high dive would be omitted from the daily program.—A. C. Smith, Poultryman, University Farm, St. Paul.

HARD SEEDS IN ALFALFA AND CLOVERS.

In testing alfalfa and clover seed for germination, it will be noticed that some seeds will not germinate although they are healthy in appearance and not decayed at the end of the test. These are termed "hard seeds." They have unusually hard seed coats which prevent them from taking up water readily. These seeds germinate readily when the seed coats are scratched. In former years it was thought by some that hard seeds in alfalfa and clovers were as so much inert matter. It is reasonable, however, to believe that many of the seeds become sufficiently scratched during seeding operations so that they will grow at once, while others will grow later on. Experimental work is being done along this line and it is hoped that soon the hard seeds in alfalfa and clovers will be found nearly as useful as the others. It is found that alfalfa seed from the various states differs greatly in the percentage of hard seeds. Minnesota grown seed nearly always has from 15 to 30 per cent hard seeds.

The Minnesota Seed Laboratory, in its enforcement of the new seed law, has made a regulation regarding the hard seeds in alfalfa and the clovers as follows: In placing the germination test on the label when seed is sold, one-half the percentage of hard seed may be added to the percentage of seeds that germinated.—W. L. Oswald, in charge of Seed Laboratory, University Farm, St. Paul.

TURKEYS.

The Bronze turkey is the most popular turkey with the farmers in America. It is very hardy, and lays a large number of eggs. The standard weights are: Gobbler, 36 lbs.; hen, 20 lbs.; cockerel, 15 lbs.; pullet, 12 lbs.

The White Holland, the Narragansett, and the Black are all splendid varieties, though smaller than the Bronze turkey. For markets that require small birds, these are more suitable.—C. E. Brown, Poultryman, Northwest Experiment Station, Crookston, Minn.

AZOTURIA.

At this time of the year azoturia is a rather common disease among farm horses. Horses that are kept in badly ventilated stables and fed on rich nitrogenous feeds without being allowed to exercise are the ones most often affected. This disease has been termed or called spinal meningitis by a great many people but this name should be discarded as the spinal cord and its coverings are not affected. Azoturia is primarily a disease of the muscles, usually affecting the muscles of the hind parts, but may at times attack the muscles of the front limbs. As the disease progresses the kidneys become overworked in the attempt to throw off the poisonous material from the blood stream.

If this process is continued for a certain length of time the kidneys will become inflamed, greatly reducing the chances of the patient's recovery.

Symptoms.

The first signs of azoturia may appear soon after the animal is taken from the stable or they may fail to appear until the animal has exercised for several hours. Sudden lameness is usually the first sign to be noticed by the driver, this is seen by the knuckling over of one or both of the fetlock joints. The horse is inclined to hold back and is soon sweating profusely. If he is encouraged or forced to go further he soon loses control of the hind limbs and falls to the ground, being able to rise again only with great difficulty. The paralysis may be so severe as to prevent the animal from getting to its feet again during the course of the disease. The most characteristic symptom of azoturia is the coffee-colored urine which has a very peculiar odor.

Treatment.

When this disease occurs while the animal is on the road he should be stopped immediately and if possible taken to the nearest stable. He should be well blanketed as the cold aggravates the disease. At times it will be necessary to use a stoneboat in order to get the animal to a place of shelter. A veterinarian should be called as soon as possible as the medicinal treatment should be begun early.

Prevention.

Azoturia may be prevented by reducing the animal's feed while he is at rest. Bran mashes should be given occasionally in order to keep the contents of the bowels from becoming dry and hard. The animal should be allowed to exercise in a lot or paddock for one or two hours during the warmest part of each day.—W. L. Boyd, Assistant Veterinarian, University Farm, St. Paul.

DORMANT SPRAYING.

All orchardists should purchase their spraying supplies early so as to be sure to have everything on hand at the proper time. If left till the last minute, the shipment may be delayed for some time in transit and the spraying so delayed as to cause considerable loss to the orchard. It is very important that the spraying be done at the right time, for if applied too early or too late, its value may be greatly reduced. The mixtures used for dormant spraying are made much stronger than for later applications and hence should never be used after growth has started in the spring.

The dormant wash is especially important for orchards which have previously shown disease. The spores of the disease may live over winter on the dead leaves or fruit or in the crevices of the bark or the root-like mycelium of the organism may live over in the dead branches of the trees and thus be a continual source of infection for other trees. Therefore the logical thing to do is to cover the trees thoroughly with a fungicide that will kill the infection thread the minute the spores start growth in the spring. It is imperative that the trees be thoroughly covered with the spray or otherwise the work would not be worth while. As a secondary measure of precaution, all the dead and diseased branches should be pruned out and burned before spraying is done and the wounds covered with white lead to keep them from rotting while healing.

There are several different kinds of spraying compounds in use at the present time, the most important for dormant spraying are commercial lime-sulphur which is mixed with water at the rate of one gallon to nine gallons of water; self-boiled lime-sulphur (15-20-50) and copper sulphate, 3 pounds to 50 gallons of water. The first of these seems to be the most satisfactory and its use is gradually increasing each year. Further information on handling and applying spray mixtures is given in Bulletin 121 of the Minnesota Experiment Station.—R. C. Rose, Assistant in Plant Pathology, University Farm, St. Paul.

AN ACTIVE FARMERS' CLUB.

The Turtle River Township Farmers' Club which centers around Bass Lake is to be congratulated. This club which was organized last August by the local agriculturist, certainly has a corps of officers and members who are in for doing things. When these people first met as a club they were strangers to each other. The women had seldom, if ever, met before. They now meet once a month and each one brings something to eat so that a splendid dinner is served. The women brushed elbows in the preparing of the dinner while the men talked of things which would improve the community and increase farm profits. Outside talent is invited to the meetings and new ideas and suggestions are received. The members are beginning to get acquainted and community interest is growing.

This is only one of the active clubs in Beltrami county but after seeing what it is helping to bring about there can be no doubt left in the mind of the most skeptical as to the value of organizing these clubs. Alfalfa culture, community interest, better farming, a rural mail route, and a telephone line, are some of the direct results, yet the club is only five months old.—B. M. Gile, Agricultural Instructor in Bemidji High School.

ROPE ON THE FARM.

The ability to tie a few useful knots and splice a rope is useful to the farmer as well as the sailor, and at times to people in all walks of life. The average person does not wish to spend the time necessary to learn a large number of knots, but he should master a few of those that are most useful, so thoroughly that he can make them at any time from memory. There are several ways of tying some knots and of making some of the splices and hitches, but the beginner should confine himself to the one method by which he can obtain the best results, even though it may not be the way which the expert would find quickest and easiest. Those who wish to tie the simple knots and make the

splices of use on the farm, may secure, free of charge, a copy of Bulletin 136 entitled Rope and Its Use on the farm, by addressing the Agricultural Experiment Station, University Farm, St. Paul.

CHOOSING THE STALLION.

As the spring season draws near, the progressive farmer who keeps brood mares is confronted with the problem of choosing a stallion to which to breed. In many cases it is merely a question of eliminating the worst as there are many communities that are not supplied with a good stallion. In many other cases, however, the saving of five dollars on a service fee plays an all too important part. Fifty-five per cent of the stallions licensed in the State are grades or less than grades, which shows that too many are neglecting the matter of patronizing a good sire, and are thereby reducing their profits. A saving of \$5 on a service fee often means a loss of \$100 or more when the colt is two years old.

When looking at a stallion it is well to ask yourself, "How much would he be worth as a gelding? If his colts are are like him will they be good market geldings? How much improvement will he make when bred to the average farm mares?" The answer to these questions will decide whether the horse is a suitable sire or not. In answering them it should be kept in mind that good feet and legs are the first essential of a marketable horse. If the stallion does not have them he cannot be expected to produce them in his offspring.

The State license which the owner of a stallion must show is the best guide to the breeding of the stallion.—J. S. Montgomery, Assistant Animal Husbandman, University Farm, St. Paul.

The fourth annual Junior short course for Minnesota boys and girls will be held at the State Agricultural Schools at University Farm, St. Paul, Crookston, and Morris, March 30 to April 3, 1914. Programs for these courses will be issued by each school. They may be secured upon application to the schools.

W. L. French of Austin, and the boys of his animal husbandry class have bought two young steers. They are feeding and caring for them and expect to share in the profits of the venture. It is a commendable scheme for enlisting the interest of the class.

At the Lake Crystal farmers' short course the major portion of the premiums offered for the best exhibits of corn were carried off by one of the members of the Boys' Corn Club.