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ORCHARD AND GARDEN NOTES.

April 1.

Water hotbeds in the morning. Transplant celery to the cold frame early this month. Sow all seed of flowers and vegetables that are to be transplanted later. Cannas should be potted now if this has not already been done. Cuttings of chrysanthemums, coleus, etc., may still be taken. Watch the hotbeds closely. They will need ventilation on warm days. Top-working may be done this month. Try setting a few grafts. Rake and cart away all trash from the premises as soon as possible. Onion sets may be planted as soon as the ground is workable. White sets are best. Spinach may be planted at any time now. Cover not over one-half inch deep. Has the orchard been sprayed? There is still time if the leaves have not started. Secure a good supply of Golden Bantam sweet corn and make frequent plantings until July. Finish orchard pruning and burn all brush and rubbish about the orchard. Gladiolus bulbs should be purchased now for planting later. America is one of the best, but is rather expensive.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul.

ORCHARD AND GARDEN NOTES.

April 8.

Daybreak is an excellent pink aster. Sow Alaska peas as soon as the garden can be worked. Plant sweet peas early. They require cool moist weather for best growth. A good lawn and garden will make the home brighter and better. Lettuce and pepper cress may be sown any time now. If peonies are to be moved in the spring the work must be done before growth starts. Rosa rugosa should be cut back one-third or one-half each spring. This gives better flowers and a better bush. Take part of the covering off the tulip beds as soon as the shoots begin to show well above ground before they grow white. Forty-two pounds pure Kentucky blue-grass, 5 pounds redtop and 3 pounds white clover per acre make a good lawn grass mixture. Better results are obtained by planting asters and sweet peas in colors, although mixtures are cheaper and if good do very well. The lawn should be gone over and patched where needed either by adding manure to worn places and spading it in or by adding rich soil and sowing seed on it. Attractive surroundings both indoors and out will help to keep the boy and girl on the farm. Give them something of their own; some stock, or as much land as they can care for, and they will become interested in and attached to the farm. Personal ownership goes far to interest us in things about us.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul.

PRUNING TIME.

The orchard trees should be pruned before the buds begin to swell. Trees can be put into fairly good shape by careful work, but this must not be done all at once if it means the removal of a considerable quantity of wood. If properly done there will be no evil results and the work of spraying, thinning, and harvesting will be made easier. Make all cuts close up so that no stubs are left to die and start decay in the heart of the tree. After the wound is made, if it is more than three quarters of an inch across, be sure to give it a good coat of paint, or of melted grafting wax. Cut all dead or injured wood for a start and then remove some of the tangled crossing branches in the center. This will open up the center and give fruit of better color on the shady side of the tree. Some heading-back may be needed, but it will be best to leave that for another year if much wood has been removed. Following this plan will give moderate pruning, which will give best results.—W. G. Brierley, Assistant Horticulturist, University Farm, St. Paul.

HOG CHOLERA.

Serum Treatment of Pregnant Sows May Injure the Pigs.

There is little accurate information concerning the danger of treating pregnant sows by either the serum-only or the serum-virus method. We have some evidence that if either treatment is given when the sow is advanced in pregnancy there is danger of premature birth, or birth of dead pigs at the natural time, or the birth of living but very weak pigs. For the present we are not advising either form of treatment for pregnant sows except in early stages of pregnancy or in later stages when there is great risk from neighborhood infection and loss of the sows themselves. In this case it is not a question of saving the pigs but of saving the sow at a sacrifice of the pigs if necessary.

Correspondence concerning state serum should be addressed to Veterinary Division, University Farm, St. Paul, Minn., where it is produced, but letters concerning the use of virus to State Live Stock Sanitary Board, Old Capitol, St. Paul.

ORDERING SERUM.

Proper Information With Order Helps to Avoid Delay in Shipment.

Delays in filling orders for hog cholera serum often occur because insufficient information accompanies the order. It is not enough to specify fifty doses of serum or that the hogs to be treated have a total weight of 3,000 pounds. Such orders cannot be filled intelligently because the amount of serum required varies with the weight of the hog and method of treatment to be used. Much depends upon the diagnosis, and the statement of a veterinarian or a description of the symptoms and the results of a post mortem examination should be given if possible.

Orders should always be accompanied by a statement as to whether cholera has appeared in the herd and if so how long it has been there, how many hogs have died, how many are sick, and how many are in proper condition for treatment. The approximate weight of the healthy hogs per head should also be included, and it is necessary to furnish the name of the party who is to administer the serum, as State serum can be lawfully used only by veterinarians authorized by the State Live Stock Sanitary Board, Old Capitol, St. Paul.

These instructions for use in ordering serum should not be regarded as unnecessary red tape. They are merely safeguards for preventing any waste of serum. The demand is often greater than the supply and under such conditions every drop of serum must do its duty.—H. Preston Hoskins, Assistant Veterinarian, University Farm, St. Paul.

TEACHING AGRICULTURE.

The teaching of agriculture in the public schools is not a fad but the inevitable result of our development. We have been making progress in this direction for four hundred years and the time has arrived when the promotion of education in scientific agriculture must be conducted through the public schools as well as through the special agricultural schools that have been established.

Agricultural colleges, experiment stations, technical schools of agriculture, agricultural papers, farmers' institutes, short courses, and other similar activities have accomplished much but they are now insufficient without the aid of the public schools. The study of agriculture has a distinct value as mental training which improves the quality of the school work sufficiently to justify its use even if we disregard the great value of the information obtained. The fear that it could not be taught was quickly shown to be groundless because it is actually being taught and very successfully in a great many places. Certain useless portions of arithmetic, grammar, physiology, and other studies may readily be supplanted by more practical work in agriculture, home-making, and other subjects relating to the every-day life of the students.

In the rural schools the many things that may be done or studied include counting the stand of corn, saving and storing seed corn, corn-judging, corn-testing, planter-testing, preparing the seed for the planter, the preparation of the seed bed, growth of the corn plant, processes of cultivation, the history of corn and a study of what becomes of the corn crop, the study of weeds, the harm they do, and the means of getting rid of them, study of poultry and other live stock, and the study of the small grains.—A. V. Storm, Specialist in Agricultural Education, University Farm, St. Paul.

COMMERCIAL CLUB AND FARMERS START TOWN AND COUNTRY CLUB.

The Commercial Club of Osseo recently invited the farmers of the surrounding country to meet in the City Hall of Osseo for the purpose of organizing a Town and Country Club. About 150 farmers responded. The enthusiasm ran high and a good live club was started. Farmers were elected as officers, but business men are on some of the committees which will arrange the work of the club. A lunch was served by the Commercial Club after the meeting. This club is organized for the purpose of considering any matter which comes up that is of interest to the entire community.

One of the first things they intend to take up is lengthening the side-track to hold more cars when the rush of potato-shipping is on in the fall. The club has the use of the town hall with heat and light free. This club intends to meet once a month and will accomplish much in bringing the farmers and business men closer together and in improving the general conditions about Osseo.—H. M. Bush, Farmers' Club Specialist, University Farm, St. Paul.

DODDER AND ALFALFA.

In the western states, and in some European countries, dodder is the worst weed found in alfalfa fields. It is an annual parasitic plant which starts from the seed in the ground and develops into a long threadlike stem winding itself around the alfalfa plant, and sending parasitic roots or suckers into the plant. It then lives on the nourishment which should be used in developing the alfalfa plant. Dodder has not yet secured a strong foothold in the alfalfa fields of this state, probably because alfalfa has not been raised for seed to any considerable extent. As long as alfalfa is grown only for hay, dodder should not become a very serious weed pest. However, as alfalfa will probably be grown more and more for seed each year, extreme care should be taken to secure seed which is free from dodder and to avoid the introduction of dodder into the states.

There are two dodder varieties common in alfalfa fields. The small-seeded alfalfa dodder is not as bad as the large-seeded variety, as the seed is easily separated from that of alfalfa. The seed of the large-seeded alfalfa dodder is about the same size as alfalfa seed and it is almost impossible to separate them.—W. L. Oswald, In charge of Seed Laboratory, University Farm, St. Paul.

TREATMENT OF SOIL FOR POTATOES.

Tubers disinfected by any method will produce a scab-free crop if planted on clean land. If they are planted on land which has grown scabby potatoes within six or seven years, some scab may appear. The only effective method of ridding scab-infested soil of the scab organism is to practice a rotation which avoids the planting of susceptible crops on the soil for a period of six or seven years. Turnips, beets, mangels, cabbages, and possibly some other root crops are attacked in the same way as potatoes, and should not be planted on scab-infested soil. Alkalinity of the soil is favorable to the growth of the fungus, while acidity is not. Turning under green crops and good drainage aid somewhat in decreasing the amount of scab, but cannot be relied on entirely. The use of lime, and any materials that increase alkalinity should be avoided, especially where trouble has been experienced.—A. G. Tolaas, Assistant Plant Pathologist, University Farm, St. Paul.

STORAGE ROT OF POTATOES.

Tubers So Infected Are Unfit for Seed.

Potatoes from wilted vines very often rot in storage if the storage house is warm and moist. It is doubtful whether this rotting is caused by the same fungus which causes the wilt of the vines. If it is not identical with the wilt fungus it is very closely related to it. As a matter of fact there seem to be a number of closely related forms which are responsible for the dry rot in Minnesota. Sometimes when the potatoes are moist the rot may be a typical soft rot, and a white, moldlike growth may appear on the tubers. Usually, however, the rot is a typical dry rot, often beginning at the stem end of the tuber and finally reducing it to a dry, light-brown mass. Such potatoes are absolutely unfit for seed, a fact which should be very distinctly remembered. This blackened ring is the living-over place of the wilt fungus, and such potatoes, if used for seed, would produce diseased vines. This makes it very imperative that seed tubers should be carefully selected.—A. G. Tolaas, Assistant Plant Pathologist, University Farm, St. Paul.

DISEASE-FREE SEED POTATOES.

Three very serious potato diseases in Minnesota, which are assuming greater importance every year, are fusarium wilt, rhizoctonia or stem rot, and scab.

All of these diseases live over winter in or on the tubers and in the soil. Hence if diseased tubers are used for seed or planted in diseased soil, the resulting yield will be considerably smaller than if clean soil and clean seed were used. The disease will also accumulate in the soil. Proper methods of rotation, seed selection, and seed treatment, will keep the amount of these diseases down to a minimum.

The only way to prevent scab on potatoes is to disinfect the tubers and plant them in clean soil. Formaldehyde and corrosive sublimate are about equally effective in treating potatoes for scab.

If corrosive sublimate is used, four ounces should be dissolved in four or five gallons of hot water and allowed to stand for a time. Then enough water should be added to bring the total to thirty gallons. Tubers should be soaked for an hour and a half, when they may be cut and planted. It must be remembered that the corrosive sublimate is a poison, and proper disposition should be made of any treated "seed" which may remain so that there is no danger that it will be eaten by any farm animals. Thirty gallons of the solution will usually be sufficient to treat forty or fifty bushels of potatoes.

A discussion of these diseases together with preventive measures is given in Agricultural Extension Bulletin 35, which can be obtained free by writing to the Division of Publications, University Farm, St. Paul.—A. G. Tolaas.

HOW BEES SWARM.

Bees increase by swarming, or dividing one large colony of bees into two. The old queen with about half of the bees leaves the old home and starts a new colony somewhere else. The young queen will take charge of the old home as soon as she hatches. Long before swarming-time bees begin to make preparations for it. First they raise a large number of drones or male bees, from which some day the young queen may choose her mate. When later the colony increases in strength the queen lays from eight to twenty eggs in especially prepared wax cells called queen cells.

The egg laid in a queen cell, being a common worker egg, will hatch into a larva which the bees will feed abundantly on "royal jelly." This special food and the large cell will make the egg develop a queen. The ninth day after the egg is laid, the bees cover the wormlike larva which hatches from it, with a porous cap. The queen cell at this time is not unlike a peanut in appearance. As soon as the first queen cell is capped over, a sign is given and the old queen with her workers leaves the hive.

After circling in the air for a while the swarm settles upon some tree or shrub and sends out scouts to find a new home for them, and the old queen never again sees her old home or her children, and even if starving to death she will not go back to the old house for one drop of honey.—Francis Jaeger, Apiculturist, University Farm, St. Paul.

DRONES.

Drones are usually looked upon as lazy, useless creatures. They never do any work but are fed by the worker bees on the best the hive can afford, and this is a season of the year when the workers are busiest for twenty-four hours a day with the gathering and curing of honey. Why do the bees treat them with such respect in the busy harvest time? The reason is that the bees are raising a number of young queens at this time for the future generation. The queen is destined to be the mother of all the bees reared in that hive for the next year or two. She is the only one in the hive that can lay eggs, and she will some day lay them at a rate of from two to four thousand a day. The drones are the male bees raised at the same time with the queens. From their midst the virgin queen will some day select her mate. Without them she could not attain maternity, held by the bees in greatest honor. For this reason they are treated royally until the wedding trip of the queen. When she returns a widow, leaving her drone-mate (usually the most persistent of all suitors) dead in the field, the bees make short work of the remaining drones. They seize them by the neck and throw them out of the hive bodily to die of hunger in the midst of plenty.—Francis Jaeger, Apiculturist, University Farm, St. Paul.

INCUBATOR VS. HEN.

Incubators are used for one of three reasons. First, they offer an opportunity for much more extensive operations; second, they are under the control of the operator, and can be operated as well one time as another, that is, they release the poultry man from depending upon the inclination of the hen to set, and third, many have become disgusted with the hen and will depend upon her no more.

Of these three reasons, the first and second are perfectly sound and valid, but as to the third, something must be said in justice to the hen. Failures with setting hens are not so much due to the hen as to the person setting the hen. Allowed her own sweet will as to the time, place and conditions, a hen seldom fails to produce good returns for the confidence imposed in her. We must all, if we are candid and fair, admit that about this one particular line of business the hen knows more than the most enlightened poultryman that has ever lived. Furthermore, she has designedly or otherwise neglected to reveal many of those mystifying secrets, the knowledge of which means success instead of failure. Man has, however, in endeavoring to set a hen according to his notions or precepts, made some mistakes so glaring yet so simple, as to be incredible if we were not almost daily eye witnesses to these occurrences.—A. C. Smith, Poultryman, University Farm, St. Paul.

CHOOSING A HEN TO SET.

It is quite essential to choose a hen of quiet demeanor and steadfast purpose to accomplish what she has undertaken. One of the wild, noisy, flighty kind should not be considered for a moment for such a one is almost worse than none at all. Visit the house at twilight, lift the hens that are on the nest showing an inclination to set by the feathers of the back. One that flies from the nest and squawks is not the kind you want. It is possible, though, that she may tame down a little in two or three days, so give her another trial. The hen that, after being lifted a little above the nest, is quick to resume her place and scolds you a little for disturbing her, even perhaps picks you in resentment, is the one you want for the real business of setting. Remove her to the box prepared for her and shut her in until the next morning, when she should be allowed to come off or be taken off for food and drink. She will probably return to the nest herself, and in case she does not, put her back and try her for another twenty-four hours. If on the third trial she does not return to her nest of her own accord, discard her and try another.—A. C. Smith, Poultryman, University Farm, St. Paul.

EFFECTIVE CLUB WORK.

A telephone was needed to connect the widely isolated houses of the Turtle River Township Farmers' Club, so a meeting was recently held and forty-two shares were sold so that now the telephone which will connect them with the outside world is a certainty. A petition was signed for rural free delivery and it is expected to be in operation in a short time. They wanted to make their spur a flag station so they drew up a petition, secured forty-one signatures, and have sent it in asking for the station, which they will probably get.

Meanwhile they have been thinking more seriously about hastening the land clearing process and getting a few more acres under cultivation each year. At a recent meeting 100 pounds of alfalfa seed was ordered to meet the needs of some of the members. Some of them are testing their cows to determine which are the more profitable ones. The club owns a Babcock tester, which is left at the school house. The children bring milk and the teacher helps them test it. They are interested in growing uniform products. They are all going to plant the same kind of potatoes. These they will carefully grade, wrap in tissue paper, and pack in bushel boxes to sell to the select trade in the cities and to the railroads for baking potatoes.—H. M. Gile, Agricultural Instructor, Bemidji High School.

A. M. Field of Northfield reports the establishment of twenty farmers' clubs. It is stated that there is not a farmer within a radius of ten miles of Northfield who has not access to at least one of these clubs. Has any school a better record?

E. G. Olson, instructor in agriculture at Winthrop, writes up the happenings of the farmers clubs and the local paper runs them under the caption "Farm Club Notes." This device has served to stimulate interest in the clubs.

The manual training department at Le Sueur has taken a contract to erect a barn.