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## ORCHARD AND GARDEN NOTES.

Cucumbers may be sown now with good results.

Have you made several plantings of peas and corn?

Keep the soil about the shrubs spaded and suckers cut down.

Portulaca, candytuft, sweet alyssum, and phlox may still be planted.

Canna beds of one color are more effective on a lawn than mixed colors.

It is safe to set out any of the annuals or vegetable plants after June first.

Cultivate the vegetables, fruits, and flowers thoroughly if you would be successful.

A good time to trim the spirea Van Houttei and other spring flowering shrubs is just after they are through flowering.

Swiss Chard takes the place of other leaf crops for "greens" in hot weather and kale makes good "greens" late in the fall. Plant them now.

Remove all blossoms from newly set strawberry plants. They take too much strength from the plant and thus do not allow it to make the best growth of vine.

Watch the roses for insects and either keep them picked off or spray with insecticides. Soapsuds makes a good spray to get rid of the aphids. Use a clean soap that is free from chemicals.

Don't plant small fruits or bushes between the tree in the orchard. They soon become a nuisance. Potatoes or beans may often be planted to advantage. Corn should not be used as it shades too much.—LeRoy Cady, Horticulturist, University Farm, St. Paul.

## SEED CORN PATCH.

Start a separate breeding plot of corn this year. Its the only way to insure perfect purity, strong vitality, and uniform type. Many farmers are now trying this plan of getting good seed corn. A quarter or half acre is enough land, but it must be separate from other corn to prevent crossing. It must be in good condition to make strong plants. It must be uniform in fertility to make selection safe. Plant only the best seed obtainable. Suit yourself as to variety and go ahead.—C. P. Bull, Associate in Farm Crops, University Farm, St. Paul.

## WOODCHUCK REMEDIES.

The woodchuck, or "ground hog" is so destructive to gardens in some counties in this section, that a few remedial measures may be of interest. White muslin strips may be tied to the peavine supports about a foot above the ground, at intervals of about a foot in the row, to keep the animal away. Cotton or oakum may be wrapped around a stone soaked in carbon bisulphid, and the mass rolled into the hole as far as possible. In order that the fumes may have the fullest possible effect, close the hole as tightly as possible. A good marksman with a rifle, stationed where he can secure a good view of the infested field, may prove effective. Blasting powder and a long fuse are sometimes used and so is the steel trap.—F. L. Washburn, Entomologist, University Farm, St. Paul.

## SOME POINTS ABOUT THE KINGBIRD.

The kingbird or bee martin is so well known that a description of him is unnecessary to Minnesota readers. The Biological Survey of the United States Department of Agriculture has examined the stomachs of 665 kingbirds from twenty-nine states with a view to determining to just what extent the bird feeds on bees.

The survey disclosed the fact that only twenty-two of the stomachs contained honey bees and the total number in those stomachs was sixty-one bees of which fifty-one were drones, eight workers and two undetermined. Fifty per cent of the kingbird's food was found to consist of injurious insects and the balance was practically all made up of insects of neutral or slightly beneficial character. It would seem that we may as well spare the kingbird along with most of our other birds. Bulletin 44 of the Biological Survey of the United States Department of Agriculture gives full particulars of the investigation.—H. R. Flint, University Farm, St. Paul.

## SOUR MILK SAVES CHICKS.

One of the main causes of death among chicks is white diarrhea. This is very prevalent and investigations have shown conclusively that the original source is often from parent stock. Many chicks have the disease when hatched, and others contract it from them, through feed and forage in infected litter or grounds. This transmission from chick to chick is common during the first three or four days, and this is the period of great danger, especially among chicks of low vitality.

The symptoms are a whitish discharge from the vent, which results in "pasting up behind." The chicks become listless and sleepy, lose appetite, the feathers become ruffled, breathing labored, and they constantly peep or chirp. They may die suddenly or gradually waste away.

This disease is being most carefully investigated by the Agricultural Experiment Station at Storrs, Connecticut, and the third report of their investigations has been published. This report recommends the feeding of sour milk as the best thing to use for a preventive of this disease. It advocates feeding sour milk from the very first and keeping it before the chicks constantly. The acidity of the milk acts as a germicide. Moreover the milk is an animal product which chicks require in some form and it is a great factor in the growth and vigor of the young flock. Of course the commercial chick feeds now so common are fed and pure water supplied, but in addition sour milk is kept before the chicks constantly, the vessels being cleaned and refilled daily during the first few weeks.

Farmers and poultry raisers should feed sour skim milk constantly, at least after chicks are a few days old, as a preventive of this dread disease, and to stimulate their growth. It also increases egg production in the laying flock. Numerous experiments have demonstrated that skim milk and curds, or cottage cheese, are among the most stimulating feeds for poultry of all kinds, except very young chicks. Many claim that sweet milk is much safer until the chicks are at least a week or ten days old. There is a constant supply on nearly every farm and it should be universally used for the farm flock.—N. E. Chapman, Poultry Specialist, University Farm, St. Paul.

## DESTROYING WEEDS.

A good system of rotation, that includes cultivated crops, offers the best means of combating the common weeds; but its success is almost entirely dependent upon the manner and persistency with which the soil is cultivated. To insure reasonable success, the disk and the harrow should be used frequently while the weeds are still small, and the crops while growing should be given frequent cultivation.

Fortunately, the same tillage operations that are used in putting the soil in a condition to receive and conserve rainfall, to prepare the seed-bed and to liberate plant food, are likewise useful in combating weeds.

## PEPPERGRASS.

Peppergrass flowers early in June and in July, and early plants ripen seeds by the end of June. It is propagated only by seeds, but the plant sometimes breaks away and scatters the seeds as it is blown before the wind. The weed thrives in all kinds of soil and is usually found in gardens, meadows, and by the roadside in all parts of the State. The seed is readily distinguished from that of timothy, clover, and grasses by its bright yellow color. Prevent peppergrass from seeding by mowing it while green. Disc or plow, if possible, to destroy the roots. It is troublesome mainly as a roadside and waste-place weed.—W. L. Oswald, Assistant Agricultural Botanist, University Farm, St. Paul.

## ERADICATION OF FOXTAIL.

Yellow foxtail frequently springs up in cultivated crops and matures soon after cultivation ceases. These plants should be pulled or hoed out to prevent the seed from shattering on the land. If the seed matures, it should be removed from seed grain as perfectly as possible.

This weed will yield to short rotations and frequent thorough cultivation. The plants are easily smothered when young. The early use of the harrow in cultivated crops will destroy most of the plants. Where a crop of seed has ripened and shattered out, the seeds may be covered by discing. This will induce germination and the plants can be destroyed by plowing or cultivation.

Minnesota Station Bulletin 129 tells how to recognize and eradicate twenty-four of our most common and important weeds.—Andrew Boss, Agriculturist, University Farm, St. Paul.

## THE GARDEN.

Most successful farmers are careful to have a good garden. It is usually carefully fenced to keep out chickens, dogs and stray animals and the soil is made rich with barnyard compost. It should be located as conveniently as possible to the dwelling house, but not in the front yard.

Too little attention is given as a rule to planning the cropping system of the garden. The vegetables must not be grown on the same spot each season, but like other crops, must be rotated to prevent the accumulation in the soil of injurious insects, fungi, and bacteria. With a little planning a succession of vegetables, fruits, and flowers can be provided for the spring, summer, and fall, with a considerable supply for canning and for winter use.

Fruits and vegetables not only increase the healthfulness and attractiveness of the daily bill of fare, but they save a great deal of expense, and are far better than the canned goods from the store. The farmer who sets a good table, well supplied with fruits and vegetables, is making a high bid to attract and keep good farm help.—A. F. Woods, Dean, Department of Agriculture, University Farm, St. Paul.

## DISEASES MISTAKEN FOR HOG CHOLERA.

Do not Blame Serum if it Fails to Prevent Other Diseases.

Ninety per cent of the losses from disease among hogs are due to cholera, but other diseases are often mistaken for it. This sometimes leads owners to blame serum because they have used it without benefit.

Garbage poisoning is one trouble sometimes mistaken for cholera. It results from feeding hotel and restaurant table refuse containing large quantities of soap. The soap causes severe inflammation and it or other irritating substances produce symptoms much like those of cholera.

Worms cause troubles mistaken for cholera by multiplying in the lungs, causing irritation, stopping the air passages and giving rise to a cough and pneumonia. The animal becomes unthrifty and loses flesh but does not die quickly or show the other characteristic symptoms of true cholera.

Worms in the intestines cause diarrhea, dullness, and lack of thrift but their presence can usually be detected in the droppings. Cholera is not present if the animal does not show the other symptoms, including fever, redness of the skin, and sudden death. When worms are present the appetite remains good. Loss of appetite is usually an early symptom of cholera.

Tuberculosis rarely runs a rapid course in hogs and should not be mistaken for cholera. It occurs most frequently among hogs fed on slaughter house refuse, creamery or other skim milk containing tubercle bacilli, or those following cattle.

If in doubt as to the presence of cholera have a competent veterinarian examine one or more of the dead hogs, but do not expect serum to protect against any of these other diseases. Hogs entirely immune to cholera may die from one of these other troubles.—H. P. Hoskins, Assistant Veterinarian, University Farm, St. Paul.

## TO CAN PIEPLANT.

Wash and cut tender young pieplant into half-inch lengths. Select a granite pan of the desired size, put a layer of the pieplant in the bottom, cover with sugar, add another layer of pieplant, another of sugar, and continue in this manner until all is in, having sugar on top. Put in a moderate oven and bake until the pieplant is tender. Put into sterile jars and seal. Use pieplant and sugar in the proportion of one cup of sugar to one and one-half quarts of the pieplant.

Do not stir the material, as stirring breaks the pieces of pieplant and gives it a mushy appearance.

Pieplant canned in this manner is much superior to that cooked on top of stove.—Mary L. Bull, Domestic Science, University Farm, St. Paul.

## SQUASH BUGS.

Unfortunately two insects are included under this one common name. They call for radically different treatment because one—the Cucumber Beetle is a biting insect, while the other or true Squash Bug is a sucking insect, which attacks melons, cucumbers and squashes. In combating the true Squash Bug, the small plants may be kept covered with cheese cloth over light frames or hand picking of the large yellow eggs and of the bugs themselves in the early morning may be resorted to. After the crop is harvested the vines should be destroyed.

To avoid trouble from the Cucumber Beetle, plant an excess of seed and when the plants appear dust them with a mixture of one pound of Paris green with fifty pounds of lime or cheap flour.—Division of Entomology, University Farm, St. Paul.

## THE HOUSE AND THE YARD.

House conveniences to save work and increase the attractiveness of the home are now essential on a modern farm. A good bath tub, with hot and cold water from the kitchen range, and a good drainage and sewage-disposal system are not expensive and are within the reach of every up-to-date farmer. Water should be piped to the house, and the windows and doors should be carefully screened to keep out flies and mosquitos.

The yard around the home should be made attractive and beautiful with trees, grass, and flowers. They have a restful and uplifting influence on any tired soul, and greatly increase the value and salability of the property, while the cost of planting and care is trifling.—A. F. Woods, Dean, Department of Agriculture, University Farm, St. Paul.

## THINNING VEGETABLES.

Because of limited space the rows of vegetables in a home garden are usually close together, and often the seed is planted thickly in order to have a large yield. This is a mistaken idea, as the plants cannot develop to their full size if crowded. Vegetables grown for their roots should be given as much space as a mature plant needs. The very early radishes which are ready for the table in three or four weeks can be thinned out as used, but the larger varieties should be allowed two or more inches of space. Beets can be thinned out and used for greens, giving those left to mature, about three inches of space.

Plants grown for their foliage, as lettuce, parsley, and spinach need more room than those whose roots are edible; and those which bear fruit, need plenty of room in which to develop the fruit bearing branches.

Seeds of vining plants, as cucumber, melons, squash, and pumpkin are usually planted thickly, as the early bugs and cutworms take some of the plants. Only three or four should be allowed to grow in each hill. Nearly all plants can be transplanted, some of them, as lettuce and parsley, seeming to grow faster after being reset than before. The best guide as to the room needed is a good reliable seed catalog or garden text book, which usually give the size of a fully developed plant.

Transplanting is almost entirely done in May and June—as soon as the seedlings can be handled with the thumb and finger. A good tool to use is a sharp pointed stick about the size of a pencil. The plant can be loosened with this without disturbing those that are to be left in the row. It is also a good tool for making the hole for the plant. For larger plants, as those transplanted from hot beds or cold frames a trowel or large dibber will be useful. Keep all the soil possible about the roots, and firm the soil around the ones left in the row as well as those reset.

Do not let the roots dry out, and shade the reset plants for three or four days if the sun is bright.—Alice McFeeley, University Farm, St. Paul.

## SPECIMENS WANTED.

In order to ascertain distribution and other facts about insect pests in this state, we will be pleased to receive specimens from anyone interested. In return we will be glad to give all information now at our disposal and suggest means of repression, etc., in the case of injurious species. Cost of sending will be borne by this office.

All data possible, such as date and place of collecting, plants attacked, habits noticed, etc., should be sent with the specimens, which should be packed for shipment, by post or express, in wooden or tin boxes. Never use glass bottles as the insects may decay while in transit. Very stiff cardboard boxes sometimes reach us safely but are more often crushed. Also use packing, such as crumpled paper, excelsior or the food plant of the insect, so as to prevent shaking and consequent injury of the specimens. Do not place insects loosely inside of a letter, for when crushed they are unrecognizable.

Whenever crops are attacked by some insect pest unknown to the farmer, a large number of specimens should be sent us alive, for it is sometimes necessary for us to rear them to the adult stage.

WE ARE INFORMED BY WASHINGTON AUTHORITIES THAT SUCH PACKAGES CAN BE SENT EITHER BY PARCELS POST OR AS FOURTH CLASS MATTER.

Such packages and accompanying letters should be addressed to State Entomologist, University Farm, St. Paul, Minn.

## GOOD BREAD.

What It Means in the Home.

There is no one food more universally used than bread. It appears on the tables of almost every nation three times a day and forms the base, at least, of the carried lunch of children and adults.

Bread is often called the "Staff of Life," but is far from filling that office if not of good quality. On the other hand, if bread is good, that is, nutritious, sweet, light, and well baked, it is one of the most valuable foods in the diet.

Good bread, properly baked, furnishes many nutrients required by the body in a pleasing, easily digestible form.

With really "good bread" on the table, there would be little desire or need for pastry or cake.

Good bread is not difficult to make. There are, however, three essentials to success: (1) good material, (2) proper temperature, and (3) proper manipulation. Good flour contains a large amount of good gluten. Gluten is the substance in flour which makes it possible to produce a light, fine-grained, well-rounded loaf having a sweet, nutty flavor. A little salt and the desired amount of liquid, milk and water in equal parts, are also important factors.—Mary L. Bull, Domestic Science, Extension Division, University Farm, St. Paul.

## KEEP MILK RECORDS.

Records of the dairy herd at Minnesota University Farm indicate that it is not necessary to weigh or test the milk more often than one day each month in order to secure a very accurate record of what the cow is doing. It is generally believed, however, that, while a monthly butter-fat test is sufficient, it is good practice on the farm to weigh and record the milk at each milking. This is very easily done if milk scales and record sheets are conveniently arranged.

This method not only furnishes an accurate record of each cow's work, but it also enables the dairyman to tell at once if anything is wrong with any cow in the herd. If a cow gives two or three pounds of milk less than usual, it is noted instantly, and an effort can be made to remedy the trouble. There may be several causes for a smaller milk flow, as poor pasture, exposure to cold or rain, or rough treatment. At any rate, no matter what the cause may be, if the milk is weighed regularly, a drop in the milk flow can be remedied before it has become permanent. It is urged, therefore, that the milk be weighed at each milking, that a sample for the butter-fat test be taken at about the same time each month, and that this sample be a composite sample from four consecutive milkings.

To secure a set of dairy record blanks, write to the bookstore, University Farm, St. Paul, Minn. Full directions for using the blanks accompany them.

## CORN "NUBS".

See that the ground is well worked when the corn is young.

Try blind cultivation if necessary. Keep the weeds down when they are young.

It pays to cultivate more than the usual "four times."

Six cultivations will pay better than four.—C. P. Bull, Associate in Farm Crops, University Farm, St. Paul.

## THE TUBER UNIT METHOD OF IMPROVING POTATOES.

In another article it was demonstrated that the selection of the best tubers regardless of hills (called "bin selection") gave better results in yield of potatoes than the selection of the best hills as ordinarily done.

There is, however, another method of selection which might be found to be better than bin selection if it were tried in comparison with that method. It is known as the "tuber-unit method." One tuber is used as a starting point. It is cut lengthwise into four pieces and four hills grown from it. As many other tubers may be selected and planted the same way as desired.

In the fall the best groups of four hills are saved and used for planting the next year, keeping each group separate and deciding which is the best principally on the basis of the yield and the desirability of the tubers. Some of the best tubers are saved from the best groups and in that way the selection is kept up from year to year.

This method was described by Dr. H. J. Webber, in Bulletin 251, of the Cornell Agricultural Experiment Station, and again by Prof. William Stuart in Circular 113 of the Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C. The latter publication may be obtained by applying for it directly to the author.—A. R. Kohler, Assistant Horticulturist, University Farm, St. Paul.