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ORCHARD AND GARDEN NOTES.

July 15.

Early celery should be ready for use by the middle of July.

It pays to cultivate garden crops as long as one can get between the rows.

The common and golden elder were very attractive shrubs the first part of July.

Early celery can best be blanched with paper or boards. Dirt is likely to cause rust and decay.

The Japanese lilac was one of the most attractive shrubs the last of June.

Pansies should not be allowed to go to seed if a long blooming season is desired.

Many vegetable and fruit growers find it an advantage to put their name and address on every package.

A neat and attractively put up package will sell much more readily and at a better price than one carelessly packed even though it contains better produce.

The wet season has been splendid for lawns and shrubberies. It is also aiding the oaks to build up and be better able to withstand the borer.

Blight has been very bad in some sections this summer. Better cut out badly infested trees and trim out infested parts of others. Disinfect all pruning tools frequently with corrosive sublimate and water in the proportion of 1 to 1,000.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul, Minn.

ORCHARD AND GARDEN NOTES.

July 22.

Look up a market for onions and late cabbage during July.

Plant iris the latter part of August and peonies in September.

Do not allow rhubarb to send up seed stalks if it is to be used all season.

Keep the sweet peas picked every day if you expect them to continue blooming.

Cultivate the flower beds and around the shrubs occasionally. They will be the better for it.

Cut out old canes of raspberries as soon as they are through fruiting and start the cultivator going between the rows.

Gladioli and dahlias should be in bloom by late July. There is no bulb more satisfactory for the summer garden than the gladiolus.

Nitrate of soda at the rate of 150 pounds per acre, applied to the lawn just before sprinkling or before a rain hastens the growth of grass and gives it a darker color. It is well to apply two or three times during the summer.

Look over the vegetables, flowers, and fruits and begin preparations for showing some of them at the county or state fairs. It is worth the effort even though a prize is not the result.

One of the pretty sights in the Minneapolis Park System the last week in June was the rose garden at Lake Harriet. Anna Diesbach, Capt. Hayward, Robert Duncan, Crimson Rambler, Prairie Queen, Hugh Dickson, Frau Karl Druski, Clio, Jubilee, and Duke of Wellington were among the best varieties.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul.

THE PROPAGATION OF THE BEE.

Bees, like other insects, pass through three different stages before they reach maturity. The egg, about the size of a timothy seed, is laid by the queen in a wax cell. In about three days a tiny, crescent-shaped larva is seen in the bottom of the cell. Unlike the grubs, worms, and caterpillars, she cannot feed herself, but nurse bees supply her with food which consists of a predigested mixture of honey and pollen, and is absorbed through the skin. The mouth and abdominal openings do not form until later. She moults often, as she grows so fast that her skin frequently becomes too tight for her. After six days, when she is several hundred times the original size, and has filled the cell, a porous cover is put on the cell and she spins her cocoon and goes into a dormant state for eleven days. About twenty-one days after the egg was laid she gnaws down the cover of the cell and comes forth a perfect bee.—Francis Jager, Apiculturist, University Farm, St. Paul.

CONFERENCE ON RURAL LIFE PROBLEMS.

A conference on rural life problems will be held at University Farm, St. Paul, July 28-31. Pastors of country churches, Sunday School superintendents, farmers' club presidents, and social workers generally are invited to attend. There will be something for each in the excellent program offered. The faculty of University Farm will give a part of the work and speakers from other parts will present some of the social problems which will be followed by free discussion by those present. Board and rooms in the dormitories of the School of Agriculture can be secured at very reasonable rates. The campus at University Farm is a very cool and delightful spot in which to spend a short vacation and the inspiration from a visit to University Farm and from attending such a conference will be a valuable acquisition to those who have rural social problems to meet.

For bulletin describing the course, or further information, address Dean A. F. Woods, University Farm, St. Paul.

TENT CATERPILLARS.

Tent caterpillars come from an egg laid by a brownish moth, of medium size. The eggs are laid in July, being deposited in bands around the smaller twigs of apple, wild cherry, and other trees. They hatch the following spring, and the caterpillars begin feeding upon the young leaves.

When full-grown, the caterpillars are about two inches long, somewhat hairy, and one form has a longitudinal white stripe in the center of the back. At this time they leave the tree and wander off singly, to seek sheltered places where they spin their cocoons. Three weeks later, the moths emerge and lay their eggs.

REMEDIES.

If a grower is spraying his fruit trees faithfully with arsenate of lead in any shape, this, of itself, will prevent injury from tent caterpillars, since any internal poison is fatal to them; or, the tents may be crushed with the gloved hand, when they can be reached; or, they can be burned by a torch on the end of a pole; or, they can be twisted out of their place by means of a wire brush made for the purpose, attached to the end of a long pole. These remedies are effective only when the caterpillars are in their tents early in the morning, or in wet weather. Even on trees which are not ordinarily sprayed, a single spraying of arsenate of lead, when caterpillars are observed, would probably stop their depredations.

In the case of the forest tent caterpillar the larvae can be destroyed when they collect in bunches on the trunks of trees. Prune off and destroy the twigs holding the eggs.—F. L. Washburn, Entomologist, University Farm, St. Paul.

CHEAP POULTRY FOOD.

Mr. Blatchley, in his report on the Orthoptera of Indiana, referring to turkeys as a remedy for grasshoppers, writes as follows: "Under the leadership of an experienced gobbler, almost their entire time during the summer and fall months is spent in wandering over the fields and pastures in search of the fat and juicy nymphs of locusts, grasshoppers and crickets. Indeed, much of the luscious white and brown meat of our Thanksgiving and Christmas dinners was once grass, then grasshopper, and finally turkey. No better and more practical remedy can be devised, for the damage which the insects do is, especially in these days of 'turkey trusts,' often more than compensated by the value of the pounds of flesh which this domesticated fowl stores up from its favorite food of locusts." It is also a well known fact that guinea fowl are pre-eminent as grasshopper and insect destroyers. Our farmers seem to be unaware of their qualities in this line as well as of their value for the table. Every farm in Minnesota might have a flock of these guineas. The common domestic fowl is also an excellent destroyer of grasshoppers.

If animals in the pasture in the daytime can resort to a shed or deep shade, or to water, they are much less troubled by flies. Nets or light covers are, of course, a protection. Some members of one genus of horse fly attack principally the region about the eyes and ears of stock. Horses' ears may be protected by nets, or the ears and skin about the eyes may be smeared with a repellent solution.—F. L. Washburn, Entomologist, University Farm, St. Paul.

HOG CHOLERA IN CANADA.

In the campaign for the control and ultimate eradication of hog cholera, Minnesota is fortunate in at least one respect, namely, that on one side the State is bounded by territory that is relatively free from the disease. Canada does not tolerate hog cholera at all. True it is that the disease frequently makes its appearance within her borders, but it is not allowed to spread, on account of the rather energetic way they have of dealing with it.

Canada employs what is commonly called the 'slaughter method' when an outbreak of the disease occurs. Upon a diagnosis of cholera being made, all hogs in the herd are appraised and slaughtered. The owner is compensated in full for all carcasses that fall to show any evidence of the disease, and receives two-thirds value for the affected carcasses. All exposed herds are dealt with in the same way, the work being in charge of veterinary inspectors under the Veterinary Director General of the Canadian Department of Agriculture.

A very interesting fact in connection with hog cholera in Canada is that it has been found, with a few exceptions, that the probable source of infection has been uncooked bits of pork rind, etc., which have been eaten by hogs fed on garbage. A large quantity of the pork consumed by Canadians is imported from the United States where the disease has been prevalent for a long time. It is possible for a hog to be in the incubative stage of the disease when slaughtered, and the carcass passed for human consumption. This pork apparently has no bad effect on human beings, but will convey the disease to susceptible hogs unless it is thoroughly cooked. Pickling and smoking apparently fail to destroy the cholera germs.

Vaccination of hogs is not permitted in Canada. A regulation of the Canadian Government reads as follows: "The use of hog cholera serum or virus, being considered a source of danger, the importation, manufacture, sale or use of such serum or virus is prohibited."

The regulations for the admission of hogs into Canada from the United States are very strict. Hogs that have been vaccinated by the double method can not be admitted. Hogs coming from localities in which there has been cholera within the past six months are refused entrance. Hogs which are not excluded for these reasons are held in quarantine for one month at the Canadian border before being allowed to go to their destination.—H. Preston Hoskins, Assistant Veterinarian, University Farm, St. Paul.

ONE FARMER'S INCOME.

The following figures for a year's business represent the experience of a farmer in Rice County, Minnesota, who thought that he was succeeding as a farmer.

Value of farm and equipment.....	\$13,688
Receipts.....	1,504
Cash expenses (not including groceries, clothes, etc.).....	301
Receipts above cash expense.....	1,203

This farmer, if his farm was un-mortgaged, was \$1,203 ahead at the end of the year. However, if we assume that 5 per cent is the current rate of interest, the interest on \$13,688 would be \$684, \$1,203 less \$684 leaves \$519, the amount that the farmer and his family received for the year's work.

This farmer has a grown son who worked at home all the year. If the son had done this work for another farmer he would have received about \$300 and his board. Assuming his board to cost \$150 per year the total value of the son's labor was \$450. The amount earned by the farmer and his son, above cash expenses and interest, was \$519. This \$519 less \$450 the value of the son's time, leaves \$69 as the farmer's labor income, or the amount that he received for his own work. In addition to the \$69, of course, he had his house rent and such meat, dairy products, fruit, and vegetables as the farm furnished for use in the home. Even with this allowance \$69 is far from being a satisfactory showing. Many farmers do not do as well as this one. The most successful farmers have labor incomes of from \$1,000 to \$3,000.

To which class do you belong? Do you live on your earnings as a farmer or on the interest from money invested in the farm business, and the labor of your sons and daughters? Do you take an inventory each year, or keep any accounts that will help to tell you to which class you belong? If the increase in the value of land were counted as a receipt, this farmer's showing would be somewhat better.—W. L. Cavert, Assistant Agriculturist, University Farm, St. Paul.

COÖPERATIVE ELEVATORS IN WESTERN CANADA.

In compliance with the demands of the powerful Grain Growers' Association, the Manitoba Government adopted the scheme of provincial ownership in 1910. The government bought 170 country elevators, and operated them for a year at a heavy loss. These elevators are now operated under lease by the Grain Growers' Grain Company, the farmers' terminal marketing company of Winnipeg.

The Saskatchewan government dealt with the problem differently. It appointed a competent commission to study the situation. This commission advised against government ownership and in favor of a centralized system of farmers' cooperative elevators to be controlled by the farmers, but built with the aid of Government loans. This scheme was adopted and the Saskatchewan Co-operative Elevator Company Act was passed in March, 1911. It provided that local associations of stockholders should be formed and that when such a local association had paid in 15 per cent of the cost of an elevator, the Provincial Government should loan the remaining 85 per cent—this loan to be repaid in twenty annual installments. The rate of interest is only 5 per cent.

The farmers of Saskatchewan lost no time in taking advantage of this law. They immediately organized their central and local associations, and started to build 40 elevators, which were put in operation in the fall of 1911, within eight months after the law was passed. In 1912 they had 137 elevators, and during the past fall, 192 elevators. According to the last report there were 13,156 stockholders, all farmers, and the subscribed capital was \$1,818,000. In the year 1912-13 the company marketed 12,900,000 bushels of grain, and made a clear profit of \$168,000. On July 31, 1913, the Government loan stood at \$1,206,000.

The Province of Alberta followed the example of Saskatchewan, and passed an act providing for the incorporation of the Alberta Farmers' Co-operative Elevator Company in January, 1913, only a little over a year ago. By the first of September, organization had been perfected, and 50 elevators actually built and put in operation, in time to handle the 1913 crop. The Government loan amounted to over \$300,000 in April, 1914.—L. D. H. Weld, Agricultural Economist, University Farm, St. Paul.

PASTURING CLOVER.

Clover is an excellent pasture crop for all classes of stock, as it furnishes a luxuriant growth of a highly nutritious food from early spring until late in the fall, if it is not pastured too closely. During the heat of the summer it should not be pastured closely, as this will curtail the fall feed. The after-crop that grows after taking off the hay crop makes excellent fall pasture. The grave danger from clover pasture is bloat. Where stock are turned on to it gradually until they are accustomed to it, and then kept on it continuously, with access to some kind of dry feed, salt, and water, there is very little danger from bloat.—From Bulletin 47, entitled "Clover," by Andrew Boss and A. C. Arny, which may be obtained without charge by addressing the Agricultural Extension Division, University Farm, St. Paul.

CULTIVATION OF THE ORCHARD.

The main object in the cultivation of a young orchard is to secure the fastest, thrickest possible growth of the trees, without unduly endangering them from disease attacks, or from winter-killing occasioned by going into the winter in an immature condition. Continuous cultivation throughout the growing season best conserves moisture and liberates plant food. These conditions make for a splendid growth in the young trees. A good supply of humus should be kept in the soil of a young orchard at all times, by dressing with stable manure or growing and working in green manure crops.

The best tool for working a young orchard is an extension reversible disk, of the ordinary or the cutaway type. This allows working up close to and under low-headed trees, without injury to their trunks. A spring tooth harrow may take the place of the disk, but cannot be gotten so close to the trees without injury to them. Harness as free as possible from projecting parts, and short single-trees, should always be used in orchard culture.—Farmers' Library Bulletin 22, Published by Agricultural Extension Division, University Farm, St. Paul.

KEEP HARVEST RECORDS.

The value of keeping farm records cannot be overestimated. The farmer who knows the operating costs and the financial results of each farm enterprise is on the road to financial success, for such a knowledge discloses leaks in business operations and displays in an accurate manner the relative profitableness of the various enterprises on the farm.

To keep a complete record of every transaction embracing labor, financial accounts, and crop yields will seem at first to be almost impossible, yet it is surprising how the habit of keeping those records will become established if the first record attempted is a simple one.

At present a very interesting and profitable record to work upon is a harvest record of the different grain crops. The accompanying form shows how simple such a record is. It can readily be seen that such a record, while it does not constitute a complete record of the cost of the crop, shows the farmer how much his crops yielded and how much it cost to thresh the grain.

The value of this record lies in the knowledge obtained regarding farm crops and is the incentive which arises to increase crop yields and to keep more complete records of cropping operations. When the value of the farm record sheet is realized and the habit of keeping records has become established, more complete records will be used, which will place the farm, eventually, upon a strict business basis.

HARVEST RECORD.

Farm of .....	.....
Address .....	.....
Crop .....	.....
Acres .....	.....
Yield .....	.....
Machine measure .....	.....
Elevator or bin weights .....	.....
Grade of grain .....	.....
Weight per bu .....	.....
Yield per acre .....	.....
Twine used .....	.....
Oil .....	.....
Fuel .....	.....
Thresh. bill .....	.....
Time required to cut .....	.....
Time required to shock .....	.....
Time required to thresh .....	.....
(Give dates)	.....

Remarks:
F. W. Peck, Assistant Agriculturist,
University Farm, St. Paul.

COMBATING THE FLY.

Until quite recently we have been content simply to keep out flies by means of screens on windows and doors and have done little or nothing to prevent their increase.

A stable should not be built near a dwelling house and manure should not be allowed to accumulate. Keep the manure covered or in a dark place if possible until removed. If not possible to do this the hauling away of manure every few days and spreading it over the field where it will dry, will lessen the fly evil. Spraying a manure pile with poison or other liquid is not practical. Keep your premises clean, as free as possible from filth of all kinds—slop, water, garbage, and refuse heaps. If you live in town and your neighbor allows such nuisances upon his premises, complain to your board of health. Numerous other methods of combating flies are stated in Extension Bulletin 43, entitled "Flies and Their Control"—F. L. Washburn, Entomologist, University Farm, St. Paul.

COMMUNITY MARKETING.

Coöperation in marketing and in buying is, we believe, essential to the economical distribution of products. Large quantities of uniformly good products can be sold much more advantageously than can smaller quantities of products, each sample of which may be good in itself but which when brought together are not uniform. When every farm was manufacturing its own butter, and each of the hundred or more farmers in the community was trying to sell butter of a different quality, the price of butter was comparatively low. Where butter is manufactured in one plant, the manager of the creamery has at his disposal large quantities of a uniform product and can sell at the best possible price.

If the products of a community, such as grain, potatoes, and live stock, can be made uniform by coöperation among the members of the community in production, and then these larger quantities of uniform products can be sold by one man, the same advantages that come to the large farmer, or have come to the dairy industry, can be secured in other enterprises on the farm.—A. D. Wilson, Director of Agricultural Extension and Farmers' Institutes, University Farm, St. Paul.