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## ORCHARD AND GARDEN NOTES

September 15

Some of the double portulacas have been very showy this summer. Try a few as a border plant next year.

When digging gladioli bulbs, save the small bulbets for future planting. In time these will make flowering bulbs.

Gladioli should be cut when the flowers first begin to open, as the flowers will last longer and the bulb will develop better.

Have plans been made for better plantings around the home next spring? Now is the time to study these things and decide what plants to use.

Cut off and burn the foliage of the asparagus as soon as it has been killed by frost. This will destroy many insects and plant diseases.

The common, old-fashioned petunia is very attractive and can be used to advantage almost anywhere in the garden, in shrubberies, and in beds.

The seed of many of our berried shrubs, such as buckthorn, sandthorn, and highbush cranberry, may be stratified in sand over winter and planted next spring.

Bulletin 90, of the United States Department of Agriculture, Washington, D. C., entitled "The Rose Aphid", gives some interesting information about this pest. The bulletin may be had free by addressing the Department of Agriculture, Washington, D. C.

The National Cash Register company, of Dayton, Ohio, found it cheaper to furnish the boys of the neighborhood with land and interest them in gardens than to replace the glass of broken factory windows and repair other damage. Perhaps some of our so-called bad boys could have their energies directed along good lines, to the advantage of both the community and themselves. Gardens and wood-working machines are worth while in any community.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul.

September 22

It will soon be time to take in celery for winter storage.

Plant tulips for spring flowering. They should be set about four inches deep.

Black walnuts, butternuts, etc., should be planted or stratified as soon as ripe. Once they become dry they seldom germinate.

The common old-fashioned zinnia has been one of the best flowering annual plants this season. It comes into flower early and will remain in bloom until killed by frost.

As soon as frost cuts the tops of cannas or dahlias, lift the plants, removing all but five or six inches of the top. Let the roots dry a few hours and store in a room of even temperature. It should not be too warm or dry. The bulbs should not shrivel or be moist enough to start into growth.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul, Minn.

## CORN FOR FAT AND PASTURE FOR PORK

"Corn for fat and pasture for pork," said a farmer. He meant, says R. C. Ashby, assistant animal husbandman in charge of swine, University Farm, St. Paul, that the pasture furnished exercise in gathering the green succulent feed and by keeping the hogs healthy and vigorous, it put them in the best condition to make good gains from their grain feed.

It pays to feed grain on pasture, for pasture alone will do little more than keep up a pig's weight. A light to medium grain ration is usually most profitable. About two or three pounds of grain a day is a good ration for shoats weighing eighty to one hundred pounds. If you have scales, weigh your pigs occasionally and feed about three pounds of grain daily for each one hundred pounds live weight of hogs.

Good rations for summer feeding are easily obtained. On clover, alfalfa or rape pasture, feed corn and a little skim milk. On blue grass or timothy pasture feed three pounds of skim milk to each two pounds of corn. More milk would do no harm. If skim milk is not at hand, it will pay to feed oil meal or tankage with the corn, where blue-grass or timothy pasture is used about one part tankage to eleven parts corn or one part oil meal to seven parts corn. Mr. Ashby adds:

Give your hogs good pasture all summer.

Give them a change of pasture frequently.

Feed a liberal grain ration.

Keep good clean water accessible.

Provide sunshades or wet wallows.

## HEALTH BOARD CHECKS TYPHOID

Typhoid was rampant in Benson, Minn. The condition was reported to the State Board of Health on August 12. Within 24 hours after the report was received by the board, possibilities of the further spread of the disease were cut off. How was this done? Dr. H. W. Hill, executive secretary of the Minnesota Public Health association gives the answer.

Typhoid, says Dr. Hill, is caused by a tiny plant growth in the body. This enters the body by the mouth. The plants are so small that 200,000,000 of them might lie on your thumb nail, yet you could not see them with the naked eye. They grow best, almost exclusively, in the human body, but may be carried from one human body to another by water, milk, food, flies, and fingers. They are found in discharges from typhoid patients and from "typhoid carriers." Carriers are well persons, in whom the germs dwell without making them sick, but they are just as dangerous to others as if they were sick. The epidemic at Benson was caused by typhoid germs from some patient's discharges getting into the city's water supply through a sewer pipe which became overcharged on July 17. The further spread of the disease was stopped by installing an emergency hypochlorite plant which the State Board of Health keeps for just such cases, ready to ship at a moment's notice.

All typhoid, however, is not carried by water. The fact is, only about one-third of Minnesota's typhoid comes from water that has become infected by discharges. Smaller and more frequent outbreaks of the disease come from infected milk or food, from filthy flies or unwashed fingers. From these sources come twice as much trouble as from tainted water.

Milk most frequently carries typhoid when it is handled by milkmen who are attending typhoid cases or have the disease in a mild form themselves. Food carries typhoid chiefly under similar conditions, or when it has been infected by flies. Flies pick up the typhoid germs in open closets and then leave them on everything they touch. Water typhoid is commonest in cities, fly typhoid in the country, and milk typhoid in small towns. Food typhoid is not common anywhere, but finger typhoid where non-immunized people are caring for typhoid patients, if such people fail to wash their hands as frequently as they should, does much harm. In Benson, those exposed to infection from the sick were immunized by the new typhoid vaccination to the number of about 1,200.

## NO BACKACHE IN KIDNEYS

People Often Misled and Needlessly Alarmed

"Shameful lying seems to be a necessity in all fake medical treatment," says Dr. H. W. Hill, executive secretary of the Minnesota Public Health association. "For instance, backaches are common. They are, therefore, advertised as invariably indicating kidney trouble. Most people with backaches believe this, and, so, call for kidney treatment. The fact is, kidney trouble almost never produces pain in the back. Backaches are caused by almost anything except the kidneys. Of all the different things that go to make up our bodies, almost the last and the least to ache is the kidney. Kidney trouble sometimes produces headaches, but people do not know this and neglect the sign entirely, taking headache powders or something equally harmful. The only safe way to discover whether you have kidney disease or not is to go to an expert physician and have a thorough examination made."

## DAIRY SCHOOL TO OPEN SEPTEMBER 9

The next session of the Dairy school at the Minnesota College of Agriculture will open November 9, 1914, and continue for five weeks. The first four weeks will be given to a study of butter and cheese making, and the last week almost wholly to ice-cream.

The purpose of the school is to offer opportunity to young men to become more thoroughly trained in the science and art of making the largest quantity of butter and cheese of the highest quality, and to encourage them to greater community usefulness. The demand for such young men is greater than the supply. Creamery butter-making and factory cheese-making offer splendid openings to young men willing to apply themselves faithfully. The expense of the course includes a registration fee of \$15.00; board at from \$4.00 to \$4.50 a week and two white suits which cost about \$4.50. For the ice cream course there is a registration fee of \$5.00.

## RIGHT FEED GIVES HARD-SHELL EGGS

The feeding of hens for the production of hard-shelled eggs, not easily breakable in handling, is possible and demands attention. Shells vary greatly in strength. A strong, heavy shell is not nearly so likely to be broken by the jars, jolts and rough handling incident to ordinary shipment as a weak one.

Chemical analyses show that the shell of the egg is largely carbonate of lime, but that it also contains carbonate of magnesia, mineral phosphate and some organic matter. If strong shells are to be produced, the mineral elements must not be lacking. Grains that are ordinarily fed do not contain these mineral elements in sufficient proportions, and an additional and separate supply is necessary. Fortunately, these mineral elements are available in much cheaper forms than in grains. Lime is the principle ingredient of oyster shells, which may be procured for about \$12.00 a ton. Iron, magnesia and often phosphorus in many kinds of artificial grit, may be procured for about the same price, while these elements in grain would cost at least double these figures.

Bone meal contains phosphorus in appreciable amounts, besides lime, magnesia, etc., and while expensive, it is effective in giving the shell an evenness and fineness of texture which adds much to its strength. It is, therefore, often used as an ingredient for dry mashes for laying flocks, usually in amount varying from three to five per cent.

Eggs that won't break give the poultryman greater profits than eggs that will. Make your hens lay the non-breakable kind.

## CLEAN EGGS FROM CLEAN NESTS ONLY

Poultry keepers may easily reduce the percentage of dirty or soiled eggs, and losses entailed to insignificant figures, says Arthur C. Smith, of the Minnesota College of Agriculture. First, an ample number of nests is of course, necessary, but an ample number means no more, than, and probably not as many as, are usually directed by poultry writers. Laying houses are, as a rule, provided with a sufficient number, but where the keeper falls down is in failing to supply enough nesting material and floor litter.

Obviously the nesting material must be clean, or the eggs become soiled by contact, and it must be sufficient in quantity, or the eggs are often broken by dropping upon the hard floor of the nest. In houses where the dropping boards are above the nests, and the custom is to sand the boards, small stones often drop into the nest and breakage results when newly laid eggs fall upon them. The condition of nests should be noticed daily, and the nesting material replenished when necessary. Purity of nesting material prevents breakage and insures clean eggs.

An ample and clean litter on the floor is also very essential when an A-1 clean product is sought. Particularly is this true when the hens are allowed out doors during wet weather. The litter acts as a foot mat for the hens on their way to the nests.

Clean eggs bring better prices than dirty ones.

## CONTESTS AN AID TO EGG-LAYING

Egg-laying contests have been conducted during the last year in many rural schools in St. Louis and Itasca counties. They have proved very popular not only with the boys and girls, but with their parents as well, says N. E. Chapman, University Farm, St. Paul.

In some of these schools, friends interested in the poultry industry offered liberal prizes for the best percentage of egg production for the various months. In St. Louis county the bankers have contributed \$25 each, this sum to be divided into prizes for the boys and girls who have entered the potato and poultry contests in that county. The contest is for 90 days, ending September 1, 1914.

The boys and girls in this contest must keep a record of the home flock on blanks furnished by the county agent. They must have complete care of the flock, and may be advised, but not assisted by anyone. The prizes are \$3.00, \$2.00 and \$1.00, for the best three records on a basis of percentage of egg-production. Small flocks have a handicap of a few points for each ten fowls.

During the coming year it is hoped that like contests will be held in the rural schools of every county in the state. The extension division of the College of Agriculture will furnish egg records, and egg-laying contest blanks free to all rural school teachers, or others who may apply. The division will also co-operate in securing local and county prizes for the boys and girls entering contests of one month or more in duration.

## NEW EXPERIMENT STATION BULLETINS

Three bulletins have recently been issued by the Minnesota Experiment Station, University Farm, St. Paul. They are: "Investigations in Milk Production", by T. L. Haecker, dairy and animal husbandman; "Spore Germinations of Cereal Smuts," by E. C. Stakman, assistant plant pathologist, division of plant pathology and botany; "Selection and Preparation of Land for Cranberry Culture," by C. L. Lewis, division of agricultural engineering.

The bulletin on spore germinations is intended principally for students and investigators, containing "a historical summary of the development of knowledge concerning the identity of the various cereal smuts," with "synonymies of the various forms."

"Investigations in Milk Production" tells of the results of experiments which have followed those reported in Bulletin 79. It gives more definite data "on the minimum amount of protein and other nutrients that may be prescribed in a feeding standard."

Mr. Lewis' bulletin gives "information covering the first five years in the development of a cranberry bog."

## PROSPERITY IN AMENDMENT NO. 9

"Amendment No. 9, known as the state forests amendment, is a move in the direction of a greater and more permanent prosperity for Minnesota," says E. O. Buhler, secretary of the Minnesota Forestry association. "The amendment provides that all those state lands which are unfit for farming should not be sold but used as state forests. At least 1,000,000 acres are affected by this amendment. Whereas this area would become a barren waste after being cut over under ordinary conditions, under those provided for by this amendment it will become a permanently profitable resource. It will be profitable not only for the state as a state, but for the people who inhabit it."

"The idea is just this: Create, or maintain, large forest areas in Minnesota, to supply the necessary raw material, and there will spring up in various parts of the state wood-using factories. These will employ many men, and gather round them considerable commercial communities. All of these people will be consumers of the products of Minnesota's farms. The farmers will have more markets at their doors, they will save transportation charges, they will get quick returns. All this will mean prosperity for the farmer, and prosperity for the farmer in a great agricultural state means prosperity for all."

"It isn't too much to say, then, that amendment No. 9 is a prosperity amendment."

## MAKE WAR ON WIRE WORMS NOW

From many parts of the state have come this summer reports of depredations by wireworms, writes C. W. Howard, of the College of Agriculture, in Minnesota Insect Life, edited by the state entomologist and his staff. The crop which the wireworms attack is usually corn. Either the seed is eaten in the soil or the roots of the young plants are eaten off. They are found most abundantly in land which has recently been turned under from sod, and usually the second season after this has been done.

Wire worms are hard, shiny, dark brown worms about an inch in length, resembling a small piece of wire, so hard and shiny is the outer skeleton. They are the grubs from which come medium-sized, elongate, dark brown beetles, known commonly as "click beetles."

The worms form cells in the soil from midsummer on, and remain there as pupae for about four weeks, and then as adult beetles until the following spring, continues Mr. Howard. This makes it possible to plow in late summer or early fall and, by following this with thorough harrowing, to break up the cells, crushing the occupants or exposing them to the destructive action of sun and wind or to raids by their enemies, such as ants or birds.

A short rotation of crops will also help to reduce their numbers by starving them out, provided the land is kept free from grass during the growth of the rotation crops.

## CROP IMPROVEMENT MEETING

The Minnesota Crop Improvement association will hold its annual meeting December 1-4 at Brainerd, in connection with the annual meeting of the Northern Minnesota Development association. A feature of the Crop Improvement meeting will be the regular midwinter seed fair, for which there are premiums amounting to more than \$1,500.

(EDITORS:—THIS WILL REACH YOU IN SEED CORN WEEK, SEPT. 14-19. IT IS A FINAL EFFORT FOR THE YEAR TO ENCOURAGE THE EARLY SELECTION OF SEED CORN. WE BELIEVE IT WOULD HELP A GREAT DEAL IF EVERY NEWSPAPER WOULD PRINT IT IN A CONSPICUOUS PLACE IN THEIR ISSUE OF THE WEEK. WILL YOU HELP?)

## EARLY SEED CORN SELECTION PAYS

Does it pay to select seed corn from standing stalks in the field? It does.

The United States department of agriculture has proved it by careful experiments, says A. D. Wilson, director of the Minnesota Agricultural College's extension division. From a report recently sent out it appears that by selection alone the average yield to the acre on a ten-acre field was increased 12 bushels. The experiment has extended over a period of fourteen years. The first seven the yield was 63 bushels on an average. The second seven it was 75. Say the average corn area on Minnesota farms is 20 acres, a gain of 12 bushels to the acre would mean 240 extra bushels. This at 50 cents a bushel would be \$120. Worth some effort every fall,—to increase the farm income \$120.

Does it pay to make such field selection early? It does.

Here again Mr. Wilson has at his disposal some interesting facts. He tells of a farmer at Olivia, Renville county, who last year proved the value of early selection quite to his own satisfaction. For 15 years this man had practiced early selection. Last year, however, the work of selection was interrupted, and he was compelled to select at different periods. The first seed corn was picked early in September. Another lot was gathered a month later, and a third lot was gotten in two weeks later yet. The first corn picked gave a 100 per cent. germination test, the second lot 60 per cent, and the third 40 per cent. When it came to planting, of course, the 100 per cent. corn was used.

But early selection does more, says Mr. Wilson. It enables farmers to push the northern limit of the corn belt toward the Canadian line. D. B. Jewell, county agent of Koochiching county, tells of a Koochiching county farmer who has grown corn with success for years, and he has been able to win out because he has selected his seed corn from the standing stalks in the field before killing-frost time. He grows 40 bushels of corn to the acre, which was the average for the state last year, when the record went high for the average.

It pays to select seed corn early. It pays because selection increases the yield and because early selection gives security against frosts and enables one to grow corn in latitudes where corn has not been considered safe.

This is Seed Corn Week, and it is a good time to get the early-seed-corn-selection habit.

## SERUM FOR HOG CHOLERA FIGHT

Hog cholera has again made its presence felt in Minnesota during the past two months, but the losses have not been anywhere near so heavy this year as they were during the outbreak of 1913. There are two main reasons for this, says H. Preston Hoskins, University Farm, St. Paul. The farmers and swine breeders of Minnesota were much better organized and prepared for a repetition of the epidemic, and there has been no scarcity of good serum this year, except for a week or so in Mid-August.

The state serum plant was able to meet the demand for serum until almost the end of July. Early in August the heaviest demand was felt. In less than two weeks the local commercial serum plants had exhausted their reserve supplies, and were obliged to turn down many orders. To meet the emergency the state serum plant took advantage of a clause in the 1913 law, and purchased one million cubic centimeters of tested serum.

This amount was secured from a plant operating under a United States Government license, at one and one-half cents a cubic centimeter. The state serum plant is now distributing this serum at cost, when orders cannot be filled with state serum. Arrangements have been made for the purchase of another million c.c. of serum if necessary. In this way the state serum plant will be able to meet practically any demand for serum that is placed upon it. By purchasing commercial serum in such a large quantity and distributing it at cost, about 25 per cent. is being saved the farmers of Minnesota.