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## ORCHARD AND GARDEN

May 15 to 22

The tomato is a very desirable garden plant. Earliana, Globe, and Beauty are good varieties.

Keep the garden land busy. As soon as one crop is off put in another.

Much surplus and often unsalable fruit can be profitably made into jelly and marmalade.

You can not raise good apples and plums without pruning and spraying at the right time.

A good straw mulch between the rows and about the strawberries will mean clean fruit at picking time.

Be sure to have a good supply of berry boxes and crates on hand if any berries are to be marketed.

A planting of sweet corn should be made now. Make plantings every ten days or so and be liberal in the quantity.

Thorough and frequent cultivation goes a long way in making a good garden. A good dust blanket holds moisture in the soil and frequent stirring aids chemical action which makes plant food more easily available.

The strawberry weevil lays its eggs in the strawberry bud and then cuts the bud off. This is the reason that many beds do not fruit. Clean culture and the keeping of rubbish away from the beds is a good preventive.—LeRoy Cady, associate horticulturist, University Farm, St. Paul, Minn.

## ORCHARD AND GARDEN

May 22 to 30

Tomatoes can be set out as soon as the ground is warm and danger of frost is over.

Usually after May 25 it is safe to plant or set out any of the tender house or garden plants.

Dahlias may be planted now. Divide the clumps so that each tuber has at least one eye.

Nasturtiums or petunias often make a good plant to use at the foundation of a house or along a wall.

Good crops of grass could well be grown where weeds and rubbish are found along some of our highways.

Plant nasturtiums now. They will thrive on the poorest land about the yard if they have what water they need.

Plant the border and garden liberally with perennials. They require less work than annuals and come again each year.

The spiraea Van Houttei may be pruned when it is through blooming. Cut out old wood on branches that are crowding.

Be sure to clean the spraying machinery each time when you are through with it.

The Colorado Blue Spruce and the Black Hills Spruce are fine ornamental trees for the home yard.

More and more the value of windbreaks in saving moisture and protecting crops is being demonstrated. You can not grow a good garden, orchard or fruit plantation, neither can you live comfortably, on a prairie without a windbreak.—LeRoy Cady, associate horticulturist, University Farm, St. Paul, Minnesota.

## A PROGRAM FOR SAVING CLOTHES

For these days of high costs, a program for clothing conservation is a welcome thing, and such a program has been prepared by Marion Weller, of the division of home economics, University of Minnesota, for use throughout the state. Effective posters go with it. The object is to teach the facts with regard to clothing resources and methods of conservation. The program calls for the collection and preparation of demonstration material, the giving of demonstrations with illuminating talks, and a lot of other things incidental to these things.

Copies of this program and posters may be had by those interested in promoting clothing conservation in their communities by addressing: Home Economics Division, University Farm, St. Paul.

## SHOP MATHEMATICS BY CORRESPONDENCE

A course for any one interested in machines is Shop Mathematics offered by the correspondence-study department of the State University. In this course the necessary mathematical functions are taught and then applied to problems dealing with machines. In this course the student learns how to simplify what seems hard and to apply well known facts in new ways.—General Extension Division, University of Minnesota, Minneapolis.

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## WAYS OF REPELLING PAMPERED MOSQUITO

"We are doing about all for mosquitos that the most insistent mosquito could ask—we are not only leaving her unmolested in her natural breeding places, but are furnishing her with old tin cans, rain barrels, water troughs, and all manner of extra inducements for rearing her family in our neighborhood," says W. A. Riley, chief of the division of entomology in the department of agriculture, University Farm, St. Paul. "If we are to avoid mosquito plagues, the mosquito like the housefly, must be fought in her own territory.

"However, questions as to how to avoid mosquitos usually arise after the pests are with us in swarms as a result of our earlier carelessness and indifference. What then can be done to protect ourselves from their attacks?

"Many substances have been recommended as efficacious in warding off mosquitos. The majority of these are only of value for very limited periods, and most of them have been selected on the theory that they are disagreeable enough to repel any living thing. A few are more enduring and are to be recommended as giving some relief.

"A mixture of equal parts of kerosene and oil of pennyroyal applied lightly to the face and hands affords temporary protection against several species. A mixture of oil of citronella, 1 ounce; spirits of camphor, 1 ounce; oil of cedar, 1/2 ounce, applied to the clothes or body is excellent. A few drops on a towel hung over the head of the bed will protect against some species for the whole night.

"For protection within the house thorough screening is the only satisfactory measure. Ordinary window screening is 12 or 16 mesh, that is, it has 12 or 16 strands of wire to the inch. This is efficient against the majority of our mosquitos, but there are some smaller and very troublesome species which are not excluded by less than a 20 mesh screen."

## SPRAYING NECESSARY TO GET GOOD APPLES

The agricultural extension division of the University of Minnesota through R. S. Mackintosh, horticultural specialist, is starting a campaign for the encouragement of the spraying of apples this season. This follows a pruning campaign and good results are expected.

That sprays may be bought at reasonable prices, Mr. Mackintosh suggests the forming of cooperative groups for the purchase of supplies. Iowa farmers have followed this plan, he says, with success.

Special bulletin No. 29, issued by the agricultural extension division of University Farm, deals with garden and small fruit insects and describes sprays and spraying machinery.

## DYNAMITE PROVES A GOOD STUMP-PULLER

Under existing conditions on the average farm in the region of the northeastern experiment station near Duluth, dynamite is usually to be preferred to the stump-puller, says M. J. Thompson, superintendent of the station, in bulletin 163 of the Minnesota experiment station—Investigations in Cost and Methods of Clearing Land. A new issue of this bulletin has just been published, copies of which may be had by addressing Office of Publications, University Farm, St. Paul.

## INSECT HELPERS OF THE FARMERS

Under the title "The Hymenoptera of Minnesota," F. L. Washburn, in the seventeenth report of the state entomologist, A. G. Ruggles, describes those insects of Minnesota which serve farmers well by preying upon parasites and by aiding in the pollination and cross-fertilization of plants. Mr. Washburn's article is profusely illustrated, in part with color plates. Incidentally, it is asserted that the Minnesota collection of these insects is one of the best in the country outside of some of the larger eastern collections and that of the federal bureau of entomology.

## STATE TO SELL GUERNSEY COWS

The North Central Experiment station at Grand Rapids, Minnesota, will hold a sale of dairy cattle May 31. Fifty head of high grade Guernseys, including 20 cows, some fresh and others due to freshen, and about 30 head of heifers, will be sold. The station announces that descriptive catalogs will be sent on request.

## SCHOOL REUNIONS FOR THE SUMMER

According to announcement being sent out by W. L. Witte, secretary of the Y. M. C. A. at University Farm, all students, alumni and friends of the school of agriculture, University of Minnesota, will be welcome to attend any one or more of the student and alumni reunions to be held this summer. The schedule of meetings follows:

Northfield, May 24.  
Waseca, June 7.  
Alexandria, June 11.  
Taylor Falls, June 12.  
Redwood Falls, June 14.  
Spicer, June 21.  
Sturgeon Lake, June 24.  
New Ulm, June 25.  
University Farm, June 28.

Those who attend are expected to bring lunches. Any one desiring information may write the Y. M. C. A. secretary at University Farm, St. Paul.

## ADDITIONAL EVIDENCE AGAINST BARBERRY

The old idea that stem rust of wheat swept northward from the wheat fields of the southwest with the advance of the wheat season and that this caused many of the losses in the north has been exploded. For three years now the rust has been found on the common barberry in the northern states in advance of the time when it has appeared on the wheat in the southwestern states. Already the rust has been found on barberries in Minnesota this year so that it could not possibly have come from southern wheat fields.

This is just another evidence in support of the campaign which is being waged by E. C. Stakman of the Minnesota experiment station and a large staff, under federal approval and the new anti-barberry law in Minnesota, to rid the state of the plant.

The task of ridding the state of the common barberry is going to be more difficult even than at first supposed, because scouts are finding that the plant is growing wild in several parts of the state. This will mean the necessity of an even more complete scouting system than has been used.

## WOMEN ARE URGED TO PLAN FAIR EXHIBITS

A call to the women of the state to make plans for exhibits at county fairs is being made by Miss L. Cordiner, of the home demonstration staff, agricultural extension division, University of Minnesota. Miss Cordiner says: "The woman's department of the county fair brings to the attention of visitors from all over the state the splendid accomplishments of women. It is the public medium by which women's work can be measured and their standards approved. It is essential, therefore, that every woman should plan early to exhibit some of her very best work."

"When canning, put up one or more pint jars of each kind for exhibition. Larger cans may result in waste," adds Miss Cordiner. "Let the jars be new and all of the same kind. Mixed types of jars do not make an attractive exhibit. Distinguish between preserves, jams, butters, and marmalades. Preserves are of whole fruit or pieces of fruit which retain the original shape in a clear syrup. A conserve is a preserve made of mixed fruits. Jams are made usually from small fruits, cooked until they cannot be distinguished from the syrup. Butters have neither skins nor seeds. Marmalades are made from the acid fruits, usually lemons, oranges and grape fruit, cooked until somewhat clear, with a clear, partly jellied syrup."

## EDITOR'S CORNER

## CREAMERY ADVERTISING

The creamery as an advertiser was discussed by George A. Starring, editor of the South Dakota State college, before the recent convention of the South Dakota Dairymen's and Buttermarkers' association. Mr. Starring said that all creameries would like to secure more patrons, to have such patrons breed better dairy cows, to have them bring in better cream, and to increase the local retail trade. He says that the logical method of bringing these things about, provided the creamery "has the goods," is to advertise.

Several students taking their first year's work in journalism at the University—a course in reporting—are anxious to find places where they may gain experience and, if possible, some remuneration, in Minnesota newspaper offices this summer. Editors interested should communicate with Office of Publications, University Farm, St. Paul.

## WAY TO OBTAIN BIG WINTER CREAM CHECKS

"To provide the foundation for successful winter feeding in Minnesota means either corn silage or roots for the succulent feed, and clover or alfalfa for hay," says C. H. Eckles, head of the dairy husbandry division of the University of Minnesota. "The farmer who neglects to provide now for enough of these necessities will find himself next winter without a satisfactory ration, and will either have to be content with a small cream or milk check or be willing to go to the feed store and spend good money for feed to balance up his ration.

"The important thing is to be wise in time and to be properly prepared for the winter when it comes by having a silo full of silage, wherever corn is a safe crop, and a root cellar stocked with mangels where the corn crop is uncertain. With these and plenty of good legume hay in the barn, the main part of the ration is ready and the cow will scarcely know she is changed from grass to winter ration. With this good roughage the grain ration is not so difficult to provide."

## LEAGUE OF TOWNS WILL MEET IN JUNE

The sixth annual convention of the League of Minnesota Municipalities will be held at Rochester, Minnesota, June 17 and 18, 1919. The program will include one or more addresses on phases of the public utility situation, by Delos F. Wilcox; an address on "Proportional Representation," by A. R. Hatton, illustrated by a demonstration election; reports by the committee on legislation as to its successful efforts during the 1919 session of the legislature, and plans looking to the next; a report of the telephone rate case and the league's part in it.

Minnesota Municipalities for June will give you more convention news, also it will carry a complete analysis of new legislation affecting the municipalities of the state, excepting Minneapolis, and other local bills.

## GOOD USE FOUND FOR CREAMERY WASTE

Several thousand pounds of sulphuric acid are used every year by every busy creamery, and after making the butter-fat test this is usually washed down the drains and wasted, says R. A. Gortner, of the Minnesota Experiment station. This sulphuric acid, however, might be profitably employed in preparing acid phosphate from raw rock phosphate. Prof. R. H. Carr, of the Indiana experiment station, finds that the waste acid contains about 27 per cent of sulphuric acid and has worked out directions for the preparation of the acid phosphate. Doctor Gortner thinks that with acid phosphate selling at double the price of rock phosphate and with the recovery of waste fat in addition to the recovery of the acid, installation of the equipment necessary might be made with profit by the creameries in Minnesota.

## FARM HOUSE PLANS FOR BURNT-OVER AREAS

Plans which the division of agricultural engineering of the department of agriculture of the University of Minnesota has prepared for the extension division to be used in the forest fire areas of Minnesota have been distributed to the county agents of the state. These plans are part of a series now being prepared, and includes drawings for farm houses and barns. They are educational in nature and, although not completely detailed, much good information may be obtained by a careful study of them before building a farm house or barn. County agents throughout the state are using the plans in a campaign for better farm buildings.

## DROSOPHILA IN STERILIZED MILK

Argument for the enforcement of ordinances requiring milk bottles to be washed when emptied has been found in the discovery of the puparia of a fly of the genus *Drosophila*, even in certified, sterilized milk. The puparia of *Drosophila* look like grass or hay seed and are often supposed to be such by those seeing them in milk bottles. An investigation discloses the fact that the contamination was in bottles which had been returned to the central station infested. Lying about homes, and especially about restaurants and saloons, they had served to attract flies which had deposited their eggs in the souring milk. Because of this disclosure, it is plain that to prevent flies from breeding in milk the bottles should be cleaned immediately upon being emptied.

A statement of the case as investigated by Dr. W. A. Riley appears in the Seventeenth Report of the State Entomologist, A. G. Ruggles.

## QUALITY MEANS LIFE FOR LOCAL CREAMERY

"The local creameries of Minnesota have two great advantages over the larger creameries located at considerable distance from the farmers," says R. M. Washburn of the dairy division at University Farm, "first, in the low cost of delivering the butterfat to the factory, and second, in the fresher, better quality cream which the local creamery has an opportunity to secure. These two advantages are in favor of the small creamery in competition with the larger creamery some distance away."

"Minnesota butter has a nation-wide reputation for quality, yet many creameries in the state are not doing their share in maintaining this reputation," adds Mr. Washburn. "If California oranges, Florida grape-fruit, Washington apples, or New Jersey cranberries, or any one of the thousand-and-one manufactured foods, came on to the market as irregular in quality as the butter from the small Minnesota creameries, fewer would be sold and all would sell for lower prices.

"The best advertisement for butter is good butter. Butter scoring 93 sells for from 3 to 4 cents more per pound in the eastern market than butter scoring 88. If butter is selling at 50 cents a pound, this difference amounts to 6 or 8 per cent of the sale price. Good interest on money invested.

"The farmer is the loser if the grade is low."

## GOOD DRAINAGE IS FIRST NEED FOR CORN

The first requisite for successful and profitable corn culture, so far as the soil is concerned, is sufficient drainage, says R. O. Bridgford, agronomist, West Central school and experiment station, Morris, Minn. It is useless to attempt to produce a good corn crop on wet ground, no matter how careful the tillage operations may be. If the water does not drain off the ground naturally, a good system of underdrains will soon pay for itself in added returns.

The ground for corn must be made loose and mellow by plenty of disking and dragging. Corn requires a deep, mellow, warm seed bed. Early disking checks evaporation and dragging aids in the same direction. It also causes many weed seeds to germinate, which may be killed by later harrowings before the corn is planted, aerates the soil, and makes more plant food available.

It is better to plant corn somewhat later than the usual time, in a loose well prepared seed bed, than to plant earlier on unprepared or poorly prepared soil.

## PLAGUE-FREE HERDS ATTRACTING BUYERS

Buyers of high-class, purebred cattle are looking to Minnesota for their breeding stock, because there is, perhaps, less tuberculosis among cattle in this state than in any other intensive dairy state in the union, says W. A. McKerrow, state leader of livestock and dairy extension at University Farm. The Minnesota Livestock Sanitary board has always taken great precaution to safeguard the interests of the livestock industry and has been in the advance in eliminating tuberculosis. When the government established a system of federal accredited herds, or tuberculosis-free herds, Minnesota was the first state to take up the work and today leads all other states in the number of herds on this list.

A recent report of the records of the Livestock Sanitary board of Minnesota shows that in 1908, out of a total of 27,216 grade and purebred cattle tested, 9.4 per cent reacted. Out of a total of 65,968 cattle tested during the fiscal year of 1918, 2.4 per cent reacted. Report says that in the testing period of the last six months, this percentage has been decreased greatly.

Post-mortem inspection of all the cattle killed at the South St. Paul market showed 1.9 per cent to be affected with tuberculosis, whereas, on the Chicago, Milwaukee, and Sioux City markets the percentage was 3.8. The whole number of hogs retained at the leading markets on account of tuberculosis was 16.6 per cent, whereas only 5 per cent showed infection at the St. Paul market.

## LOGIC IS NOW TAUGHT BY MAIL

A correspondence course in Logic is offered through the General Extension Division of the University of Minnesota at Minneapolis.

Among all the studies that present themselves for consideration these days, one that receives scant attention is that of ideas—of learning how to think and to weigh reasons for things. Persons interested should address the General Extension Division at the University of Minnesota.