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ORCHARD AND GARDEN NOTES FOR FEBRUARY.

Get hotbeds ready for use the latter part of the month or early in March.

Lucullus is one of the best varieties of Swisschard. This is a leaf beet excellent for greens.

Prepare a garden plan and order the seed needed for a good succession of vegetables during the season.

Begin to test the vegetable and farm seeds this month. Look for impurities in the seed as well as seed of low germinating quality.

The reason Europeans get such large returns from a small area is that they apply immense quantities of manure and then thoroughly cultivate the crop.

It has been proved many times that the large plump well-formed seed will give the best and quickest crop returns. Moral: Plant only large well developed seeds.

Spinach is one of the earliest and quickest maturing of vegetable crops. It is excellent used as "greens." Triumph and Bloomsdale are two good varieties. Plant early as it runs to seed quickly when sown in hot weather.

Early peas may be planted between rows of newly set raspberries or blackberries the first year. As soon as the peas are gone plow the vines under and plant beans. This will pay for taking care of the land until the raspberries fruit.

If snow has drifted over the small evergreens or currants and there is danger of breaking the branches scatter some coarse ashes or cinders over the snow on a bright day. This will help melt it and as the cinders settle will cut the drifts and allow the branches to break through.

Now is a good time to study the matter of buying a small home canning outfit for saving the surplus vegetables for next winter's use. There are some good makes on the market, costing from a few dollars up. They will save many crops for winter use at comparatively small cost. A gardener told me the other day that he canned peas, beans, corn, etc., in quantity for use during the winter and so far had experienced no loss. He used a canning outfit costing about twelve dollars and put the material in glass jars.—LeRoy Cady.

LOAN OF CUTS.

Loan Not Donation Was Offered.

A loan is not a donation. We are prepared to loan cuts at University Farm but not to give them away under any circumstances. Some of the editors replying to the article on the "Free Use of Cuts" in the last issue of the Press News, clearly assume that they are to become the owners of the cuts without any payment whatever. It is not proposed to permanently dispose of any of the cuts now available at University Farm, but only to loan them to responsible parties who will return them promptly upon their use. When a cut is sent out it is charged up on our records to the party receiving it and he is required to sign a receipt stating the date on which it will be returned. Disregard of these rules will make it necessary for us to cut an editor off from this privilege, while a general disregard of them would make it necessary for us to discontinue loaning cuts at all.

We hope that there will not be a few careless parties who will make it necessary for us to shut off the privilege from all. Even the temporary absence of a cut from University Farm may mean inconvenience in case it is unexpectedly wanted for use in some other publication. If the loans should terminate in permanent losses their discontinuance would be absolutely necessary.

THE FARM BATHTUB.

A fixed bathtub in the house is a benefit to every member of the household and especially to the children because it encourages habits of cleanliness. Who does not look with more favor on a bath when warm soft water can be readily run into an attractive white-lined tub, than when the only accommodations are a cold portable tub which must be brought from the cellar, and hard water carried from the well and heated in the wash boiler, carried outside and emptied after used, and all utensils cleaned, dried and put away, five unnecessary operations. All that should be needed is simply to clean the bath tub after using and take care of the towels.—Miss Juniata L. Shepperd, Domestic Science, University Farm, St. Paul.

ORGANIZE BETTER FARMING.

New Laws Would Add to Old Laws.

Agricultural Schools and Experiment Stations have accomplished much under existing laws. Statesmen, farsighted business men and educators are awake to the fact that an extension of their work is needed. Congress has accordingly been making plans to lay still broader foundations for permanent agriculture on a scientific basis.

The results of station investigation and the advantages offered by the colleges must be made available to the great majority of farmers and their wives who are unable to leave their farms. Much has been and is being accomplished in this direction through the press. But the work needs to be organized on a more definite and permanent basis with a view to keeping in touch with those not reached by present methods.

The provisions of the Page or the Lever bill would do much to bring this to pass. Every important manufacturing enterprise has a corps of experts in constant touch with every phase of the work, endeavoring to make improvements in methods and solve difficulties as they arise. The farmer conducting the most complicated series of manufacturing and business enterprises requiring the assistance of nearly every science known to man, under constantly changing conditions, must be in close touch with an organized system of research, demonstration and education that will enable him to get advice and help needed at the time he needs it.

The prosperity of our nation depends upon the permanency and efficiency of our agriculture. From now on it must receive constant and careful attention. The agricultural colleges, experiment stations and extension departments must be made more efficient in all of these directions and must come into close and vital touch with the work on the farms.—Dean A. F. Woods, University Farm, St. Paul.

FARM BOOKKEEPING.

The United States Department of Agriculture has just published a Farmers' Bulletin, treating of the subject of Farm Bookkeeping, which will be found very useful by any one who desires to start a system of Accounting. The bulletin discusses the advantages of farm bookkeeping and outlines the principles upon which a system of Farm Accounting should be built up. Forms are given illustrating methods for taking a farm inventory, which is the basis of all farm accounting. Other forms are shown for receipts and expenditures and for learning the farm profit. Forms of labor records are shown, also time sheets and labor reports. While the bulletin in itself is not a treatise on bookkeeping with data and instructions for keeping a system of farm accounts, it is particularly valuable in giving suggestions regarding the details of Farm Accounting. If carefully studied it will enable one to devise a system of accounting that will be satisfactory and complete enough for the business of most farms. The bulletin may be had without cost by addressing the Division of Publications, U. S. Department of Agriculture, Washington, D. C., asking for a copy of Farmers' Bulletin No. 511.—Andrew Boss, Agriculturist, University Farm, St. Paul.

SALE OF SERUM.

The Veterinary Division at University Farm sends out serum—only on specific order or definite information and has been compelled to take the position that a definite order must constitute a sale. Only under very unusual circumstances, if at all, will the Institution accept return serum for credit. Hog cholera serum must be carefully handled and kept under favorable conditions to avoid contamination and retain potency. If cholera appears in the herd and the owner desires serum, he should send in his order by mail, telephone, or telegraph directly or through the veterinarian who is to administer the serum.

Serum is sold to everybody at the uniform rate of two cents per cubic centimeter. Calls for serum are filled as rapidly as possible in the order received, and everybody is treated alike.—Dr. M. H. Reynolds, University Farm, St. Paul.

Farmers ordering hog cholera serum from University Farm, St. Paul should state the number and weights of hogs which they wish to have treated and tell whether hog cholera has made its appearance in the herd; size of the herd; number of hogs already sick or dead; and the name of the veterinarian who is to administer the serum. The serum is shipped by express, C. O. D.—Dr. H. P. Hoskins, University Farm, St. Paul.

TUBERCULOSIS OF FOWLS.

The number of affected fowls received at the Veterinary Division laboratory would lead one to suspect that this disease is becoming quite prevalent in various parts of the state. Numerous cases of liver troubles which have been diagnosed by poultrymen as "going light," spotted liver, fatty liver, and rheumatism, have proved to be tuberculosis.

Tuberculous fowls are usually found on premises where the disease is present or has been present in either cattle or hogs, or both. The disease is caused by germs or minute vegetable organism known as the Bacterium tuberculosis. This organism is strictly parasitic, and does not find conditions favorable for growth outside of the animal body but it may live in the soil protected from sunshine for a number of years.

The disease or infection may be transmitted directly from a tuberculous fowl to healthy ones, but it is undoubtedly more frequently spread through the foodstuffs which are obtained from the droppings of tuberculous cattle or hogs. The droppings of the diseased birds contain the germs which serve as a means of disseminating the disease through the entire flock.

Some of the outbreaks have been brought to notice through the finding of this disease among cattle and hogs, by means of the tuberculin test.

The general appearance of the fowls received at this laboratory for diagnosis, and experimental purposes, has not been such as would lead one to suspect that they were sick with tuberculosis or any other disease. In one instance one of the fowls had a very pale comb and was extremely thin, a condition which has been popularly termed "going light" by poultry raisers.

The disease develops slowly among fowls as well as in other animals, and after they are noticed to be ill, they linger for months before they die. Because of the slowness of the disease, and lack of interest and curiosity concerning it, this disease has probably been allowed to go unrecognized by a number of poultry raisers.

The chief bodily alteration arising from tuberculosis is a small, usually raised spot, varying in size, and ranging from a white to a yellowish white in color. This constitutes what is known as a tubercle. The tubercle is soft at first, and of a cheese-like consistency, later it becomes hard and gritty. This can be determined by cutting them with a knife.

In the chicken the liver is the chief organ selected as the point of attack. The liver becomes enlarged and covered with small spots or tubercles, which may be soft or calcified (gritty) depending upon the stage of the disease. At times the intestines may be covered with tubercles and they may also be found in the sheetlike tissue supporting the intestines. The lungs or "lights" are rarely affected.

In order to prevent this disease it becomes necessary to provide sanitary surroundings. The hen house or brooder should be well ventilated and should have plenty of sunshine. The manure should not be allowed to accumulate in quantity. The interior of the house should be whitewashed twice a year. The drinking jars should be cleaned by boiling, and the feeding places should be cleaned regularly.

When an outbreak appears the healthy birds should be removed, if possible, into new quarters, the sick ones remaining in the old quarters. If this is not possible, then the sick fowls should be separated from the healthy ones and the house should be thoroughly disinfected. Tuberculous chicken carcasses should not be fed to swine as the latter may contract the disease from the carcasses. Eggs from tuberculous fowls should be considered as unsafe for food and should not be used unless thoroughly cooked. If tuberculous fowls are placed on the market they should be sold subject to inspection.—Dr. W. L. Boyd, University Farm, St. Paul.

THE ATTIC TANK.

If a soft water system is to be established on a farm with no power pump and no cistern, a tank can be placed in the loft of a kitchen, laundry, woodshed, or any room built in an ell and attached to, but not in the body of the house. The water can be run from the eave troughs or roof gutters into the tank instead of into a cistern, arrangement being made for turning the water on and off as desired in just the same way as with an outside cistern. Such a system, when once installed, is not liable to give much expense, because, being inside and the pipes well covered, there is not great danger of freezing and if the equipment is good in the first place, all should last a long time. The writer knows of one such system which has been in service for twenty-five years and is still in use.—J. L. Shepperd, Domestic Science, University Farm, St. Paul.

ALFALFA SEED IN MINNESOTA.

Up to the present time what little alfalfa seed has been raised in Minnesota has been grown largely in Carver County. There are, undoubtedly, other counties in the state just as well or better suited to alfalfa hay and seed production than is Carver County. The time is probably coming in the very near future when alfalfa seed will be purchased in every county in the state. Up to the present time alfalfa has not been as sure a seeder as has medium red clover. However, it will probably be found that in some localities in the state it will produce seed in paying amounts. The indications are that it will seed more heavily in the northern half of the state, particularly on soils leaning toward a sandy character.

It is always well to go into any new crop slowly, learning by experience most of the details necessary to successfully handle it. A great many trials of alfalfa are being made in Minnesota, some on a small scale and others on quite extensive scales. A report of success is always encouraging. In the spring of 1911, three acres were sown to alfalfa in the eastern part of Polk County. In 1912, the first crop was cut for hay and the second crop left for seed. The grower cut the first crop for hay just at the right time, which is one of the essentials to getting a good yield of seed in the second crop. The second crop was cut in October and produced 250 pounds of a good grade of seed. This is better than 80 pounds of seed per acre. A yield of two bushels per acre is a good yield. Yields are on record in the State of Minnesota of ten bushels per acre, but such yields are exceptional.—A. C. Army, Farm Crops, University Farm, St. Paul.

FARM WASTE WATER.

Kitchen and laundry waste is neither especially offensive nor dangerous, hence can be run in pipes underground for twenty or thirty feet, the end of the pipe screened to prevent obstructions entering and allowed to open on to a green, an orchard, on any growing plant whose fruit will not be contaminated by it. It should not be discharged onto the garden, for instance. The pipes must of course be laid below the frost line.—Miss Juniata L. Shepperd, Domestic Science, University Farm, St. Paul.

HOG CHOLERA SERUM

An owner may reasonably hope for good results from serum when used in an infected herd. This does not mean that he should expect to save all of the hogs treated. He should save enough more by reason of the treatment to make the serum a good investment, provided, of course, the serum is administered soon after the disease starts. In many cases results are most gratifying. In some cases they are very disappointing in sick herds even when conditions for their successful use seem favorable.

The various factors such as degree of virulence in the herd, infection, extent of spread through the herd, duration of infection in the individual hogs, and natural resistance to the disease, are all uncertain and variable factors. We cannot make positive statements in advance as to what results will follow the use of serum in a sick herd. On a large average, owners save a little over eighty per cent just as the serum is used under all sorts of favorable or unfavorable conditions throughout the entire state.

A farmer from the southern part of the state wrote that cholera appeared in his herd December 4. He was losing on an average one hog each day until treatment December 19. None have died since except a few that were very sick at the time of treatment.

We received many letters of this kind, but occasionally we get a very different letter which is to the effect that serum was used but hogs kept right on dying and the owner did not think he was getting much benefit from the serum. As a rule, such experiences can be easily explained without discredit to the serum.

The results of the double or serum-virus treatment are usually favorable but not invariably so. When good tested serum and clean virus are used there is on a large average a saving of about 97.6 per cent when treating healthy herds, and a loss from vaccination cholera of 2.46 per cent. In a large proportion of herds treated there are no losses at all, or only insignificant losses. In an occasional herd the loss from vaccination cholera may be considerable. This occurs rarely, but is always a possibility and may occur when exactly the same serum and same virus is used in the unfortunate herd as that which was used with gratifying results in a number of other herds.—Dr. M. H. Reynolds, Veterinary Division, University Farm, St. Paul.

WATER IN THE FARM HOUSE.

Few other home conveniences will save so much labor and add so much comfort as soft water, hot and cold, right at hand. The carrying and lifting of water, and the emptying of tubs are things that are extremely taxing and that could be readily accomplished by mechanical means. To open a faucet and lift a plug is all that should be necessary for filling and emptying tubs and washing machine. Water is needed, not only in the laundry but all over the house, the laundry being mentioned especially because wash day is the hardest day in the week, requiring the greatest amount of heavy lifting, which is hard on the back. Wash day also entails much danger of sickness because of necessary exposure when water must be carried in and out in cold weather.

The entire family should be interested in this needed improvement, because it would confer a personal benefit on each one. The long winter evenings are here, and they cannot be used to better purpose than in devising ways and means for securing these comforts, necessities and blessings. Soft water is better than hard for all kinds of cleaning, washing dishes, woodwork, floors, and also for bodily ablutions. Who enjoys the harsh, sticky feeling of hands washed in hard water, to say nothing of chapping incident to its use in cold weather. The wash basin, the wash boiler, everything used with hard water, give silent evidence of this characteristic, consuming time and requiring extra labor in scouring when simple washing alone would be necessary if soft water had been used. Cistern water is not best for the purposes of drinking and in preparing and cooking, and it is not the intention of this article to recommend it, but simply to insist that in case but one can be had in the house, let that be soft.—Miss Juniata L. Shepperd, Domestic Science, University Farm, St. Paul.

STORAGE OF MEAT.

Keeping Fresh Meat on the Farm.

Meat used while fresh is more nutritious and palatable than salted or cured meats. It is therefore desirable to use as much of it uncured as possible. It is very difficult to keep meat fresh during the summer months without the use of ice, and even then but little can be handled at one time on the ordinary farm. Where a room or family refrigerator can be kept at a temperature of 40° or less, with good ventilation and circulation of air, fresh meat can be kept for a week or ten days. It is very important that the circulation be free and the air dry. Moisture in a refrigerator tends to develop wet mold or slime, and a little decay soon contaminates the whole piece. Less difficulty will be experienced in keeping fresh meat if it is kept in a room where the temperature is high and the air dry than where the temperature is low and the air damp.

Insects should not be allowed to get at the meat. For this reason a dark, cool cellar is the best place for keeping fresh meat on the farm. The cellar should be clean and free from odors or the meat will become tainted.

For further information on any farm meat problem, write to your Congressman for Farmers' Bulletin, 183, published by the U. S. Department of Agriculture, Washington, D. C.—Andrew Boss, Agriculturist, University Farm, St. Paul.

KEEPING MEAT.

Fresh Meat for Home Use.

Where an ice house is filled each year a small portion of it may be partitioned off as a cold-storage room. With the ice properly packed on three sides of it, and with good drainage, this makes a very satisfactory place for keeping meat, and it may also be used for storing butter and other perishable products.

In the North meat is kept during the cold season by freezing. A carcass is cut up into quarters, or even smaller pieces, and hung in an out-building, where it will remain frozen solid. When a portion is wanted it may be cut off with a saw. If the meat is taken into a cold room and slowly thawed out the flavor is only slightly injured. No more should be taken in at one time than is wanted for immediate use. Repeated freezing and thawing are injurious to the flavor and quality of the meat; hence the importance of keeping it where the temperature will remain sufficiently low to prevent thawing.

Full information concerning farm meats is given in Farmer's Bulletin 183 published by the U. S. Department of Agriculture, Washington, D. C.—Andrew Boss, Agriculturist, University Farm, St. Paul.