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WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII

Madison, Wisconsin, September, 1916

Number 1

Caution to Prospective Drug Growers

Interruption of importations of many drugs, spices, and oils made from plants has resulted in certain cases in abnormally high prices for the raw materials and the products derived from them. As a result, many people are looking into the possibility of profit in growing these crops in the United States. Many letters are received each week at the U. S. Department of Agriculture asking how to raise this or that drug plant.

In almost every case, the drug plant specialists reply that it is doubtful whether the inexperienced grower can grow these plants successfully, or, if he succeeds, will find a satisfactory market for his crop. The raising of such plants, they point out, is a distinct specialty and calls for exact knowledge and skill comparable to that needed by the florist who, to satisfy his market, not only must raise flowers but must produce blooms at certain seasons and with un-

usual characteristics. Of even greater importance, however, is the fact that the total amount of drug plants that can be consumed in this country in any

the case of drugs is more serious than in the case of staple crops because staple crops such as corn and grain if not sold can be used at home for food or for



Cystopteris fragilis.

Two exquisite Wisconsin ferns. These and other ferns were plentiful through central and southern Wisconsin 20 years ago but the ruthless hand of the summer boarder and "resorter" has left but few of them.

Asplenium Trichomanes.

year is very small compared with our consumption of any of the staple crops. Over production in

feeding stock or chickens. The drug plant, however, is profitless

(Continued on page 2)

to the grower unless a drug manufacturer will buy it for use in medicine.

It is entirely possible, for example, to grow belladonna from which is derived atropine and other alkaloids very valuable in medicine. The total amount of belladonna plants the entire country uses, however, could all be grown on a few hundred acres. Because of the present interruption in the supply of belladonna, a few domestic growers have made a profit recently from this crop. A slight expansion of the industry would quickly increase the supply beyond the demand and this, together with importation, when resumed, might soon glut the local market and leave little or no profit to the raiser, unless an export market were developed.

Digitalis, although one of the most important and valuable of heart tonics, as a crop has relatively small monetary value. The drug plant specialists who have been developing this plant and testing possibilities of its culture in this country have done so, not merely with the idea of fostering an industry, but because this plant is so important in saving human lives that should all supplies be cut off a serious calamity would result. For the same reason the specialists have been working with many other drug plants. It was believed that the drug specialists should be ready to raise these plants in this country if for any reason the foreign supply should be entirely cut off.

For years, therefore, the Department has been producing many of these plants experimentally, but when the supply of certain of these drugs failed or their prices reached prohibitive figures, a few skilled growers, with the advice of the Depart-

ment, were able to raise small quantities of some of the more important drugs needed in the present emergency. Thymol, widely used for antiseptic purposes, is a drug manufactured in Germany from a seed grown in India. A few days after the interruption of imports the price leaped from \$2 to \$17 a pound. The Department, however, had been experimenting with a common weed known as horsemint, which grows readily in the South, and yields this substance. This horsemint was brought into cultivation, its drug-bearing quality improved, and a simple process for manufacturing thymol from it developed, with the result last year that there was produced commercially a small quantity of this drug. The industry, however, can not be widely extended because the total consumption, as indicated by previous reports, is only about 17,000 pounds a year, an amount which can be produced probably on less than 1,000 acres.

Lemon grass, producing lemon grass oil used widely by soap and perfume makers, can be grown in Florida on land not suitable for citrus fruits. At most, however, only about \$100,000 worth of this oil is used per year in this country, and even if none were imported, only 2,000 or 3,000 acres of the grass could be raised without overproduction.

Red pepper, used both as a drug and as a condiment, seems to offer one of the most promising fields for replacing an imported by a domestic article. In 1915 in South Carolina 118 acres, yielding 152,000 pounds, were harvested. There is indication that this year nearly 500 acres may be devoted to this crop. As 1 acre produces nearly 1,300 pounds and our total imports in 1914 were only 8,829,487 pounds,

it readily can be seen that a limited acreage would provide all the pepper this country ordinarily consumes.

In addition to the products mentioned, there are hundreds of other drugs, oils, and spices which are imported and which it is possible for this country to produce for itself. In the aggregate, the value of these imported articles is rather imposing, as the figures indicate that this country has been bringing in and using about \$25,000,000 annually of the various drugs, oils, and condiments. Much of this money undoubtedly can be kept at home. The mistake made by most people who consider raising these crops is that they are inclined to consider them as staple crops, whereas the domestic demand for them is relatively small, and no foreign market has been developed for them by Americans.

At the same time those in charge of the work realize that here and there in our agriculture, where soil and climatic and other conditions are right, there is room for certain small industries. For many years there has been a distinct tendency for agriculturists to direct their energies along limited lines. This is indicated most clearly by certain types of agriculture prevailing in the South, where the farmers have confined their efforts very largely to the cultivation of a single crop. These small crops may therefore offer to a few of our farmers opportunities in highly specialized lines of production which will divert to a certain degree the activities of capital and labor from some of the crowded industries and also supply peculiar products for which the country has been spending money abroad. The

CRANBERRY NOTES

By J. W. FITCH

The Twenty Ninth Summer meeting proved to be a very interesting one. The crop on Mr. M. O. Potter's vines, at which place the meeting was held, looked very good though Mr. Potter said it was not as good as last year. The crop on the experiment station was good and things looked to be in good shape especially since Mr. Malde has had less work done than usual. The meeting after dinner in the Potter warehouse was given largely to the discussion of the future of the experiment station. Most of the leading growers expressing themselves, and all seemed to feel the necessity of continuing the work of the station and while some seemed to think that the fact that large crops had not been raised on the station, was the result of mismanagement. Most of the growers seemed to feel that no one under the same conditions would have done any better or as well as Mr. Malde. Owing to a rather inadequate water supply the vines on the station have been badly winter killed some seasons and the bad effects of this reaches over more than one season, and during frosts Mr. Malde has at times refrained from using water when he thought it was needed by the Gaynor Co. But it remained for Mr. Cranefield to hit the nail on the head when he showed clearly the difference between a station for research and a demonstration station, this one being established for research it was not to be expected to be a profitable one in a commercial sense. In view of the fact that many of the growers favor putting the station on a self supporting

basis as the one on Cape Cod is, the following extract from the Wareham Courier is interesting."

Unless the consent of the Gayner Cranberry Co. to renew the lease can be obtained the station will be moved, and a number of growers at Cranmoor and Mather have offered sites. Andrew Searls, F. J. Hoffman, J. W. Fitch, C. M. Secker, A. B. Roberts were appointed to make the best arrangements possible.

Assistant Dean Morrison of the Agricultural College was present to learn the growers' views as to the value of the station and many growers told how highly they valued Mr. Malde's services. Mr. Cranefield's talk on the value of a cranberry exhibit at the State Fair as an advertising opportunity was very convincing and the committee appointed last January of C. M. Secker, C. R. Treat, O. G. Arpin and J. W. Fitch will have charge of it. The Sales Co. voted \$250.00 towards the expense of same. In addition to the regular exhibit of growing vines festoons and plates of berries, a demonstration of how to cook cranberries and the serving of properly cooked berries will be in charge of Mrs. S. N. Whittlesey. It is earnestly urged that all growers compete for the prizes on cranberries which the fair management has so liberally awarded for this branch of Horticulture. The date for the January meeting was changed to the first Tuesday after the first Monday in January. Funds were voted from this year's state aid to complete the pumping experiment at Mather.

Beneficial Experimentation.

Prof. Franklin at Massachusetts State Bog Doing His Best

When the state of Massachusetts established a state cranberry experiment station at East Wareham, it recognized the importance of the industry to the state and the necessity of scientific investigations of the problems which enter into the growing of cranberries.

When Dr. H. J. Franklin was designated to take charge of it, a wise choice was made for he has proven an earnest investigator with a scientific turn of mind who works hard and laboriously, not only to successfully carry on the work of the experiment station, but also to further the interests everywhere. Dr. Franklin's duties are dual. First and foremost he is expected to conduct experiments and to inform the growers of the results. Second, he is the superintendent of a cranberry bog and as such has charge of its upkeep and has to pick, pack and market the crop. To this extent the state is in the cranberry business. A certain amount of revenue is derived from the product of the bog each year and this amount, be it greater or less, goes to pay the costs of further investigation.

An experimental bog, to be of full benefit to the owners, should not be conducted as a commercial enterprise. Its continuance should not be dependent upon the revenues received from it. It is impossible to conduct some experiments without running the risk of spoiling a portion of the crop. The fear of this should not prevent the experiments from being made. If anything can be learned from such work the fact that there is a certain risk involved should not be permitted to be considered.

Advantages of Legislative control of apple grading and packing standards.

Sherwood W. Shear,
University of Wisconsin,
January 3, 1916.

I am here to-day to advocate a national law compelling all growers and packers of apples in closed packages, such as the barrel and the box, to grade, pack, and mark their apples in accord with a standard established by such a law. Such a law should be similar in principle to those laws which have worked successfully on a small scale in 10 of our states, namely, California, Colorado, Utah, Oregon, Washington, Montana, Idaho, Maine, Vermont, and New York; and similar to that law which has proved so successful on a large scale in the Dominion of Canada since 1901, a period of almost 15 years.

These states and Canada have proved that effective and useful laws can be made which will in no way injure honest commercial apple growers, but will benefit not only the growers, but the apple dealers and the consumers of apples.

An effective national law would be similar to that of Canada but, of course, would apply only to apples for interstate and foreign shipment. The Canadian Fruit Inspection law requires that all growers and packers of apples who use closed packages, such as the barrel and the box, must mark each package plainly with the name and postoffice address of the owner at the time of packing, and with the variety of fruit and its grade as it should be classified according to the standard grades (usually 3 in number) as defined in the law. These

standards, as defined in the Canadian law, are such that the standard of apples packed in Canada is very high, and yet not so high that the growers have objected to the stringency of the law.

You are without doubt interested in knowing how such a law has helped the growers, in order that you may judge of the benefits which a national law would be to the apple growers of the United States in general, and to the Wisconsin apple growers in particular. Wherever operated these laws have benefited the growers in several important ways. The fact that the profits and sales of the apple growers have increased will be of the greatest interest to you. The growers have also learned by the help of the fruit inspectors to raise and pack better fruit at less cost than previously. Growers have been forced to cooperate for more efficient management in packing and selling. Such a law helps to eliminate consignments to commission men and hence tends to eliminate the glutting of markets, and increases the sale of apples at F. O. B. or delivered prices. Growers have also been enabled to increase storage facilities for their fruit, and also to secure more credit on better terms than they had ever done before. The majority of commercial apple growers, wherever an apple grading law has been enforced, have expressed themselves as heartily in favor of it and have attested its good results.

I have the time only to prove to you briefly how the sales and profits of growers have been increased by such a law.

The Fruit Commissioner of Canada writes that before the apple grading law was passed

that "the quantity of fruit which was dishonestly and poorly packed was sufficient to stamp the whole (Canadian) apple industry as unreliable, to the detriment of the honest grower and dealer."

You all know that all good business is permanent and based on confidence existing between the buyer and the seller. Confidence is built on reputation. The reputation of the growers of your country or section of country depends upon the kind of apples you deliver to buyers. The better the reputation of your apples the easier it is to sell the fruit and the easier it is to get better prices for it. The big apple dealers who are honest and pay the best prices for fruit, demand that they know, *not guess*, the quality of the fruit which they buy, in order that there will be no doubt that it will satisfy their customers. Such buyers expect and are willing to pay more for guaranteed fruit than for that of questionable or of unknown reputation. One large dealer writes to an organization located in a section renowned for its excellent and uniformly packed fruit. "We buy of you because we have bought of you *before* and know that your union is a guarantee of excellence and uniformity of pack. We know (not guess) that the output of your union is excellent". There is always competition between buyers for apples of such quality.

Whenever such grade and package laws as I have mentioned have been established, growers have found that the price and sales of their apples increased. Vermont, with an apple crop just about as small as that of Wisconsin has proved the advantage of such a law to its

Wanted, A Tree Preserver

"There is a business opening in Milwaukee for an intelligent young forester willing to apply his learning to the preservation of local trees. A clientele could readily be assembled among people willing to pay for proper care of their trees. Provided, of course, that he brought credentials from some reputable school of forestry and were certified beyond preadventure as an authority to be trusted.

"Plenty of people with two or three fine trees on their holdings would welcome the chance to employ a permanent caretaker to look after the well-being of those cherished possessions which, once destroyed, cannot be replaced in their pristine beauty in much less than a lifetime. Indeed, it may be doubted whether trees, under the adverse conditions that now prevail—their roots pavement-bound from rain and sun, their tops at the mercy of electric companies vested with plenary powers against all foliage that interferes in the least with trolley or telephone wires, dependent on smoky and vitiated air—could ever attain the same magnificent spread as did the elms, poplars and maples whose youth was passed under more kindly auspices.

"Trees, especially well grown ones, need not so much to be fussed over as to be held under strict supervision. A tree in perfect health requires only occasional pruning and little of that; what it does need is the attendance of a tree doctor on the Chinese plan, whose mission is to keep it in good care and to apply the remedy indicated at the first hint of trouble. His experienced eye should note at once a premature yellowing of the leafage, the ravages of in-

sects or other untoward symptoms, whereupon spraying, cultivation, insecticides, excision of decay with cement filling, or whatever the case demanded, could be gone about without delay."

The above article taken from a Milwaukee daily of late date has points of merit. The right kind of man should certainly be able to make more than a living, he should be able to establish a very profitable business. The trouble lies in finding the right man. There are too many quacks and too few regular practitioners. The tree owners of Milwaukee and other cities need to examine very carefully the credentials of any person whatsoever who pretends to be a "tree surgeon."

Control of Apple Grading.

(Continued from page 4)

fruit growers. The Standard Apple Act of California has increased her grower's profits.

The Commissioner of Agriculture of New York writes, "The grading law (of New York State) has increased the demand for New York State apples by improving the grade and established standards. It has widened the distribution and enabled the crop to be marketed at higher prices. The highest price ever paid for New York apples to the farmers was paid this fall, and this result was due in no small measure to the New York grading law."

The Commissioner of Agriculture of Canada writes, "Undoubtedly the result of our fourteen year's experience with the legislative control of our fruit industry has proven to be a great benefit and has been a means of establishing confidence with the trade, that previously did not exist."

In 1910 the United States consul in Edinburgh records the fact that "Canadian apple imports are gaining a very strong position in Scotch markets, in some cases supplanting the United States supplies. The tendency of the British trade is to favor the Canadian grower and packer, chiefly because Canada exercises a supervision over the grading, packing, and branding of its fruit that is entirely lacking in the American product."

Since the passage of the Canadian Fruit Inspection act, trade journals and brokers who furnish market reports distinguish between Canadian and American apples. Canadian apples are quoted on an average of about fifty cents a barrel higher than American, due largely to the uniform packing and marking.

The majority of large commercial apple growers prefer to pack standard fruit, because this is the simplest and most direct way to secure a perfect understanding between the buyer and the seller. Many careless, ignorant, or dishonest packers, however, unless forced by law, insist upon ruining the reputation of and taking hundreds of dollars out of the pockets of the honest and careful growers of the United States every year.

A compulsory grade and package law for the packing of apples does increase the profits and sales of the growers. Every horticultural organ should therefore, for their own profit and welfare support the enactment of a law establishing a uniform Federal and State standard for grading and packing apples.

Cut off all dead flower stalks. They reduce the vigor of the plant and make the garden unsightly.

Controlling Caterpillars That Attack Catalpa Trees

While our native species of catalpa are comparatively free from insect attack, owners of these trees should watch in the summer and even early fall for the appearance on them of large yellow and black caterpillars. If these feed voraciously on the leaves, they are in all likelihood the larvae of the catalpa sphinx, which commonly are the only ones which feed on catalpa foliage. Unless controlled when present in large numbers, these caterpillars may do considerable injury, sometimes completely stripping the leaves from an entire grove.

The parent of this caterpillar is a large, grayish-brown hawk moth, with heavy body and powerful wings measuring 3 inches from tip to tip. This moth commonly lays its eggs in masses, often of 1,000 eggs, on the under side of the leaves. The young caterpillars are lighter in color than the mature ones, being pale yellow, and have a stout, black horn near the hind end of the body. The prevailing colors of the older caterpillars are yellow and black, and there is a light form as well as a dark one.

Hand Picking And Spraying

Farmers' Bulletin No. 705, "The Catalpa Sphinx," by L. O. Howard and F. H. Chittenden, from which this description is taken, suggests several means of controlling this pest. When only a few small trees are attacked the caterpillars can be picked off by hand, their large size making their detection easy. In the case of tall trees or where caterpillars are very abundant and are attacking entire groves, the entomologists recommend spraying with arsenicals, or bet-

ter, with a combination of arsenicals and Bordeaux mixture. The proper arsenical spray would be made with either 1 pound of Paris green or 3 pounds of arsenate of lead to 50 gallons of water. When the combined spray is used the same quantity of arsenical should be mixed with 50 gallons of Bordeaux mixture instead of the water. The danger that free arsenic may burn the foliage is lessened and the Bordeaux mixture may control leaf spot and other similar diseases which affect the catalpa. The

Writers on the subject have from time to time described it as due to a sting and let it go at that. Not knowing any better the people accepted the statement as true gospel and repeated it often enough to keep it from being forgotten.

Adjacent to our raspberries we had hundreds of young cherry trees. Each year the cut worms would girdle some of the young shoots close to the limb, so we had cherry twig wilt. An examination of the raspberries showed the cane wilt to be from



Norway Spruce. **Colorado Blue Spruce**
Two excellent evergreens for parks and large lawns. These specimens, on the University Farm lawn were planted in 1890 and are about 35 ft. in height.

spray may be applied with a small outfit for young trees or with a large high-power machine such as is used in spraying high trees along city avenues.

Raspberry Cane Wilt

A New Discovery

We are not at all sure that raspberry cane wilt began in the Garden of Eden but it started so long ago "that the memory of man runneth not to the contrary."

the same cause. The shoot is girdled where it puts out and wilts quickly, slowly or partially according to whether it is completely or only partially girdled.

G. H. Townsend.

Take cuttings of geranium, coleus and other bedding plants to have in the house this winter. They should be put in sandy soil and kept moist until well rooted.

Cut asparagus tops as soon as dry and burn them; they harbor insects.

Indoor Culture of Hyacinths and Narcissus

Prof. J. G. Moore

Probably no flowering plants are more appreciated during the late winter or early spring months than the so-called Dutch bulbs. Of these bulbs the hyacinths and narcissus are two of the best for indoor culture. While it is a comparatively easy matter to grow these plants successfully, nevertheless a great many meet with failure or only partial success. In this article we shall try to give simple directions as to the best methods for securing good results.

The first factor which must be taken into consideration in the forcing of any bulb is the character of the stock with which we are to start. Inferior bulbs always produce inferior flowers. It is necessary, therefore, if good results are to be obtained, to secure first-class bulbs. This does not necessarily mean that the bulbs must be high priced for the mixed bulbs may be just as good flower producers, and be secured at a much less cost than the named varieties. With hyacinths, however, it is preferable to buy in separate colors as where the bulbs are mixed as to color, unsatisfactory results are likely to occur on account of inharmonious color combinations.

In selecting bulbs, care should be exercised to see that they have not become dried out. A bulb which is soft when pressed between the thumb and finger will not give satisfactory results. Another thing to note is the weight of the bulbs in comparison to their size. The heavier the bulb the more likely it will be to produce large numbers of good flowers.

There are two distinct methods of forcing bulbs in the home,

i. e., soil culture and water culture.

Soil Culture. Soil culture of these plants is usually much more satisfactory than water culture, particularly for the later blooming sorts. The only objection is the increase in amount of work which is necessary. The soil for the growing of good bulbous plants should be a sandy loam which is comparatively rich. If it is impossible to secure such soil, it can readily be prepared by taking the ordinary garden soil and mixing with it a sufficient amount of sand and leaf mould to make it comparatively light.

The size of the receptacle in which the bulbs are to be grown will depend very largely upon the number which it is desired to have together. Mass effects of three to five bulbs in a single receptacle are usually much more effective and require proportionately less work than where only a single bulb is used. Five to six inch flower pots are sufficiently large to carry the bulbs of the hyacinths and most of the narcissus group. If pots are not available, then pans may be used, but these usually give less satisfactory results on account of poor drainage facilities. In making up a six-inch pot of bulbs, the following is indicative of the procedure: Have the soil well mixed and sufficiently damp so that when the index finger is inserted into the pile, the opening will remain fairly distinct. In the bottom of the pot place pieces of broken pots, charcoal or coarse gravel to provide drainage. In putting in the drainage do not close the opening in the bottom. Have the pieces of pots arched over the opening rather than filling it. With the six inch pots, four or five pieces of drainage, or an inch of charcoal or

gravel will be sufficient. Fill the pot about level full of soil without packing. Next take the bulb and with the fingers make an opening into the soil sufficiently large to receive the bulb. Three or four bulbs may be placed in a pot except for large-sized Chinese Sacred Lily. The narcissus should be planted so that just the tip of the neck of the bulb extends above the surface. The hyacinths may be planted in the same way, but are usually planted only to about one-half to three-quarters of their depth in the soil. Settle the soil by jarring the pot. This can be done without exerting other pressure and if there is an insufficient amount of soil after settling, a sufficient amount to fill within one-half to three-quarters of the top of the pot may be added. Do not put in too much soil because over-filled pots are very difficult to water. Do not press the bulbs into the soil. If this is done when the root system begins to develop, the bulbs are very likely to be pushed out of the soil which will necessitate replanting and also check the growth.

The most important period in the production of good flowers from bulbs is that following the planting. This period is one of root development and unless the bulbs make good roots the flowers will be inferior. As soon as the bulbs are planted they should be thoroughly watered and set away in a cool, dark place; a temperature ranging from forty to forty-five degrees being the most desirable. They should be carried at this temperature until a good root system has developed. This can easily be determined by placing the hand over the top of the pot, inverting it, tapping lightly on a board or corner of

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At Geneva Lake

Owing to the very limited time intervening between the summer meeting and "copy" day for this issue of Wisconsin Horticulture no extended account of the summer meeting can be given. Editor Higgins' report clipped from the News appears elsewhere in this number and is most excellent from the standpoint of a newspaper man but it fails to express in any

degree the feelings of those who saw for the first time the beauties of Geneva Lake and for the first time realized, perhaps, what wonders can be accomplished by a happy combination of money and brains when applied to landscape gardening. Verily the lily may sometimes be painted to advantage.

Wednesday Aug. 23, was the biggest, best and most perfect day ever experienced by many if not all of our members, at least as concerns sightseeing. Kindly keep in mind always that it was due to the generosity and good will of the Lake Geneva gardeners that we were able to spend such a perfect day.

Summer Meeting

One of the most successful mid-summer meetings ever held by the State Horticultural Society closed with a banquet to 160 people at Hotel Geneva last night.

The meeting was opened at Horticultural hall at ten o'clock Tuesday morning and a very interesting program occupied the members for the rest of the day. Wednesday was given over to entertainment and the members of the State Society as guests of the Gardeners Association, boarded the steamer Harvard and made the tour of the lake, visiting a number of the shore places and taking noon lunch at Fontana.

The first stop was made at Ceylon Court, the home of Mr. J. J. Mitchell, where the beauties of the grounds and gardens brought forth many exclamations of admiration. The Loreli, Mrs. C. Seipp's home was the next stop and here, after viewing the beauties of the place they were entertained with a light lunch by Mrs. Seipp and Mr. and Mrs. Henry Bartholemay.

On the north shore a stop was made at Jerseyhurst, the home of Mr. and Mrs. F. T. A. Junkin, to see the Grapery which is certainly a sight worth seeing, then the homes of M. A. Ryerson, Mrs. A. Allerton, A. C. Bartlett, S. B. Chapin, Mrs. N. W. Harris, Edw. F. Swift and Charles L. Hutchinson were visited and the party returned to the city and in automobiles supplied by the Lake Geneva Commercial Club, went to Yerkes Observatory and making the drive around the lake, inspected the state orchard. The trip on the steamer Harvard under the careful piloting of Capt C. A. Johnson, was especially enjoyed.

Wednesday evening at 8:30 o'clock visiting members of the State Society and delegates were guests of the Gardeners Association at a banquet served at Hotel Geneva.

The program of toasts was under the direction of F. M. Higgins as toast master and the responses were short and snappy to a degree.

Each of the visitors who spoke, referred to the marvelous beauty of Lake Geneva and its surroundings and to the thorough manner in which they had been entertained, complimenting the Gardeners Association and Commercial Club upon their mode of welcoming the "stranger within their gates," and voiced their desire to have another one of their summer meetings here in the near future. And as the last strains of Mrs. Eames' song died into hushed silence each one felt that "They had found at the close of a perfect day the soul of a friend they'd made."—Lake Geneva News.

Practice seed-selection for tomatoes and beans as you do for corn.

Every Reader May Have One Guess

While browsing thru my desk recently I dug up a letter dated March 17th, 1906 which was sent me by the Editor of a very well known agricultural paper. On the top of the sheet is penciled the following: "Dear Mr. Cranefield, What about this, is he crazy?" It really did not seem worth while to print such letter to say nothing of an answer to it and so it has lain ten years in the bottom of the drawer. During these ten years I have received not less than one hundred "crank" letters similar to this one many of them plainly the product of a diseased brain but many more simply hobby riders. Which is this? Only one guess.

F. C.

The Wisconsin Agriculturist

Dear Sir

I write to You concerning Experment that I know that is all right and I would like to have It advertised In order to help all farmers it willnot cost them much to try I have twenty Six hundred apple trees planted three year old and I can pick out Seeds out of a core of anapple that will reproduce the same kind of fruit without grafting now it will be quite a few Years before mine Will fruit. So that I can prove up to the public now if you wish to put a piece In Your paper that if parties wishes to try to raise Some of the seedlings the Same as I am Doing if they will Send me cores as many as they wish all Expences payed Such as postage I will Send back the seeds and they Shall plant them and when they prove up as I have mentioned and they are Satisfied what can be Done they can send me what they think is fare for my trouble now I am

Doing that in order So my business will get the farmers Inlighten to geting Into Some trees that willnot be a Dieing off In a few years before there Seeds will prove up mine will and I can Show the public what will be a great benefit to the public You need not put the writing or printing in right a way only when you are not crowded in Your cooloms Next fall when apples is plenty So farmers can get plenty of apples So they Can Send cores

Yours,

Picking the Winner

The Manitowoc County Horticultural society held their first annual picnic at the farm of W. J. Ahrens, north of the city, yesterday afternoon, the meeting being attended by about a hundred and fifty members. Lunch was served at noon, coffee, cream and lemonade being furnished on the grounds, while the picnickers brought their own baskets.

N. A. Rasmussen, of Oshkosh, president of the State Horticultural society, delivered an address in the afternoon, touching upon various common difficulties which confront the grower.

A contest was held, the object being to decide upon the best pruned tree in the Ahrens orchard, which is one of the finest in the neighborhood. Mrs. Carl Kiel won first place and Miss Alma Jacobson picked the second best.

The affair was the first of its kind to be held in the county, and the members of the society plan to make it an annual event.

If onions have stopped growing, pull them and lay them on the ground to ripen. When the tops are dry twist them off and store the bulbs.

Salzer's Seeds

are particular seeds for particular planters. Send for Market Gardener's Book.

JOHN A. SALZER SEED CO.
401 South 8th St., La Crosse, Wis.

McKAY NURSERY COMPANY

PARDESVILLE - WISCONSIN

Nursery Stock of Quality for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

**Fruit Trees, Small Fruits,
Vines and Ornamentals.**

Let us suggest what to plant both in Orchard and in the decoration of your grounds.

Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wisconsin

Fall Planting

C. J. Telfer, Ft. Atkinson

The question has been asked several times whether it is advisable and profitable to do fall planting. Shrubs and some of the small bush fruits such as currants and gooseberries do very well when planted in the fall, but they should be planted as soon as it is possible to move them, which is usually soon after a good killing frost. This gives them time enough to send out little rootlets which gather enough moisture to supply the evaporation from the tops. Great care should be taken to firm the dirt well around the roots and then mulch with well rotted stable manure, using enough to cover the ground to a depth of two or three inches.

The one great trouble in planting shade or fruit trees in the fall is that they do not send out enough rootlets to gather the amount of moisture necessary to balance the evaporation and consequently the drain is so heavy on the tree that it does not often start in the spring and if it does may die soon after starting.

Peonies and a great many other perennials may be planted in the fall but should be well protected through the winter.

Strawberries can be planted with success but the question arises as to whether it pays, as the nurserymen charge twice as much for plants sent in the fall. Strawberry beds must be planted one year before bearing and beds planted in the spring and given good care will make a good solid bed of plants before the next fall, therefore nothing is gained by planting the year before.

Transplant iris now.

Wine Not?

It may be of interest to growers of grapes to know if they are not able to dispose of their crop in the regular market, either because of an over-supply or by reason of injury to the fruit by heavy frost, that the loss may be materially reduced by making the grapes into wine.

Wine so made may be sold without payment of a government tax if the regulations prescribed by the law which is given below are observed.

Sec. 3246, U. S. Statutes (as amended by sec. 5, act of Mar. 1, 1879 (20 Stat., 327). Nothing in this chapter shall be construed to impose a special tax upon vintners who sell wine of their own growth, or manufacturers who sell wine produced from grapes grown by others, at the place where the same is made or at the general business office of such vintner or manufacturer: Provided, That no vintner or manufacturer shall have more than one office for the sale of such wine that shall be exempt from special tax under this act; nor shall any special tax be imposed upon apothecaries as to wines or spirituous liquors which they use exclusively in the preparation or making-up of medicines. (Treasury Decision 19410, 1898.) Where grapes are pressed at one place and the juice is then carried to another place and there fermented, the latter is the place of manufacture of the wine, and the manufacturer is there permitted by the provisions of section 3246 to sell it without paying special tax.

H. H. Morgan, Madison, Wis.

Plant spinach in August or early September for fall and early spring use.

PATENTED AUG. 13, 1907




Fig. 1 Fig. 2 Fig. 3

BERRY BOXES

Crates, Bushel Boxes
and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Co.
Dept. D, Cumberland Wis.

FOR SALE

Garden Terrace Truck Farm

Eighteen acres of some of the very best soil in Wisconsin. A gentle south slope, with all very good buildings. Unlimited supply of best water. Small fruit. New apple and plum trees. Together with two horses, jersey cow, chickens, all necessary tools, vehicles, etc. Located on main road, route No. one, half mile from city limits of one of the biggest little cities in the state. The entire property and excellent business with it, can be had for a reasonable sum. If you appreciate a fine home and large returns on investment, apply for other information and photos, direct from owner.

W. T. Snyder,
Tomah, Wis.

Keep the fallen fruit picked up. "Falls" usually contain grubs of insects, and by killing these next year's crop dangers will be lessened.



Arsenate of Lead
Paste or Powder
Lime Sulphur Solution

Recognized as standard in principal fruit growing sections of the country. Convenient source of supply for Wisconsin fruit growers. *Sulphate of Nicotine 40% and free Nicotine 40%*. For further information write

The Grasselli Chemical Co.
 Established 1839
 Main Office, Cleveland, Ohio
 Milwaukee, Wisconsin

The Busy Housewife and Her Garden

J. V. Beyer

There are any number of housekeepers who like raspberries for canning, but on account of the wild way they have of growing together at the time of ripening makes a lot of trouble picking them, as it is unavoidable to come in contact with their thorns, and therefore most women after one trial discard them.

Here is a way to avoid this annoyance: In the spring when the old canes are broken out, select a number of young shoots, say four or five take a binder twine and tie them together three times (nearly solid, not loosely) once near the ground, once in the middle and once about 4 to 6 inches from the top. The bush being tied in this way, the growth will hinder the sun from forming any buds on the inside and you will find your berries all around on the outside. Not alone will the picking be easier for you can walk all around and do not have to trust your hands inside, but the work of cultivation will also be lightened as you can hoe or cultivate clear under each bush.

(Editor's note: While this method may be satisfactory for the amateur the market grower could scarcely afford to lose all the fruiting wood except that on the outside of the outside canes.)

The pithy, pointed and timely little notes on flowers and home decorations tucked away in odd corners of this and past issues are written by Prof. Le Roy Cady of the Minnesota Agricultural College.

**JEWELL
 MINNESOTA
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 Nursery Stock**

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Co.
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Quality Stock
 Strawberries
 Native Plum Apple Small Fruits
 WISCONSIN GROWN
 for Wisconsin Planters. Read our Price List before you buy, and save money.

62nd Year

Kellogg's Nurseries
 Box 77, Janesville, Wis.

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON
 SHEBOGAN, WISCONSIN

The Kickapoo Valley
 Wisconsin's
 Favored Fruit District

Our Specialty: Planting and developing orchards for non-residents.

A few choice tracts for sale. If interested, write us.

The Kickapoo Development Co.
 Gays Mills, Wis.

Caution to Prospective Drug Growers.

(Continued from page 1)

drug specialists point out, however, that prices of these articles prevailing under the present disturbed conditions are abnormal and therefore should not be regarded as a safe basis on which to estimate regular returns from such activities.

Orchard Winter Injuries

Winter injuries to fruit trees may be attributed to various causes but their extent is more largely determined in the system of soil management than probably any other factor. Owing to the prevailing rigorous climate conditions, methods for lessening the injury in its various forms must necessarily have become of vital importance to growers in this and neighboring states with similar conditions. The subject has been studied in its various phases and practical methods for control have been attempted in Wisconsin, Iowa and Minnesota since at least 1870 or earlier. We have thus from time to time heard more or less about hardier varieties that are better adapted, of certain cover crops to be used under certain conditions, of own-rooted and hardy-rooted scions in nursery stock—but not enough of the proper method of soil management. The grower may be dependent on others in the securing of his nursery stock, but the care of the stock is within his control and upon his methods will depend the success of the orchard in the harvest. He should thus become familiar with this problem of winter injuries—and there are many forms of them, and recognize their cause and means of prevention.

We frequently hear of blights and disease in trees that are directly traceable to the effects of a hard summer drouth followed by severe winters and winter killing of the trees. In Wisconsin we usually have dry summers with a long, moist autumn when such injury is most prevalent. Under such conditions conducive to little vigor in growth—a prolonged growing season and wood imperfectly ma-

tured, with severe winters and high, drying winds—even the hardier varieties require the best cultural treatment to come through unharmed.

Winter injuries may be classed for convenience under four main divisions according to the parts of the tree affected as—buds, roots, wood and bark.

Bud injury is chiefly to the fruit buds, caused by extremes of cold, by premature growth induced during winter warm spells and followed by sudden drops in temperature. The effects may be similar to spring frost injury when the whole or part of the crop may be killed, and fruit only slightly injured may even develop in an abnormal or deformed condition. Thus fruits are found on trees with otherwise perfect fruits occasionally seedless and at times coreless.

Root injury occurs usually in very wet soils or where there is no ground cover of vegetation or snow to prevent drying out and deep freezing as on bare hillsides. The trees will at times leaf out in the spring and try to develop their foliage, but, being unable to supply sufficient moisture as the weather grows warmer the leaves gradually die off.

Injury to the wood occurs more or less every season and, evidenced in a darkening in the sapwood, is often difficult to distinguish from the ripening of the sapwood to form heartwood. In severe cases, however, the darkening clear to the bark may be readily distinguished in cutting across the injured limb. Such injury is especially noticed where the wood has been poorly matured. If in nursery stock, the trees may frequently be saved by cutting back to the snowline where the wood is apt to be normal.

Winter injury to the bark usually kills the cambium or growing region in the outer wood and is familiar to us under the types, which we often indefinitely term as Sunscald, Crownrot and Cankers.

Sunscald is shown chiefly in the blistering of the trunks of young trees and scaffold branches as well on larger trees, mainly on the sunny side with characteristic numerous dead and blistered areas. It may frequently be caused by imperfect foliage protection or by the reflection of intense sunlight in winter from the snow surface. Its most usual cause however probably lies in the stimulation to winter sapflow on the sunny side in warm weather with a subsequent rapid freezing of the tissues. The occurrence is found greater where the trees are less protected from sudden changes in air and soil temperatures. An adequate ground cover combined with whitewashing the exposed branches and trunks will usually effectually prevent such injury.

Crown-rot is more prevalent where the union between stock and scion in grafting is not perfect, and thus is to be looked for rather in younger trees. The tissue is more readily affected by severe weather conditions and the entrance of the rot-producing organisms is made doubly easy. As a prevention all nursery stock should be examined well before planting.

Collar-rot and Crotch Cankers are more frequently found, occurring at the base of the trunk and at the junctures with the main limbs. At these parts it is known that the period of growth is continued longer than in the rest of the tree, the wood being less apt to be fully matured and thus more readily injured. The form is easily recognized in its

location and the more or less extensive areas irregular in outline and frequently aggravated by the attacks of disease spores or insects, especially the plant lice. In young trees, perpendicular cracks may run up from the ground line and become so serious as to girdle the tree in the spring growth. Bridge grafting may be resorted to with uncertain results, and the trees are best replaced in severe cases. Snow or other ground covers will usually prevent the occurrence of such injuries.

The Cankers, though due to a possibly wider range of causes, also resemble Collar-rot in being started chiefly by winter injury. The aerial parts of the tree may be injured in many cases where the roots and crown are but little affected. Various theories have been advanced as to the cause, such as: Tensions in wood of vigorous growth which is exposed to high, drying winds, or to strains at the crotches with drying out of tissue and consequent cracking under tension. More recent observations at the Missouri Station conducted by Dr. Whitten have shown a great absorption of heat on the south side of the tree in sunlight with extreme drops in temperature at sundown. From his Records of temperature drops from 70 degrees (Fah.) to atmospheric 30 degrees within very short intervals at sundown, his explanation seems well-founded, especially where the wood is immature.

Hardiness in a plant may be considered essentially as its ability to withstand unfavorable environmental conditions, especially as regards temperature. This is largely determined in the species and the variety of plant but it may be materially affected by those influences which bear directly upon the maturity of

the wood. Recent observations indicate that there is a state of rest in the early period of dormancy during which trees will not in general be affected and this period is much longer in the case of properly matured trees. Alternate freezing and thawing with excessive drying tend to break this rest period with its resultant liability to injury. If then we can increase the moisture holding capacity of the soil, maintain a more uniform soil temperature and aid materially in lessening changes in such conditions, along with an increased maturity of the wood, we can largely prevent an early break in the rest period and thus increase the hardiness of the tree.

In our cultural methods for preventing or lessening these forms of injury we may now understand the conditions that will reduce them to a minimum. As we have seen in nearly every case of injury, the maturity of the wood has played a most important part and our methods should be directed to securing this primarily. We must further provide a protection to the roots in a ground cover, which will prevent deep freezing and desiccation as well as retard growth in the spring or during unseasonable warm spells. The

(Continued on page 15)



Let George Do It

Or Paul or Howard or even Gladys. Any boy or girl can get one or more new members without going far from home.

A Cash Offer

During September only a cash bonus of twenty-five cents will be allowed for each new member secured.

Collect 50c for each membership, send twenty-five to this office and retain balance.

Let the Young Folks Do It.

No renewals. No postage stamps. Send for sample copies, coin cards and self-addressed envelopes.

F. Cranfield, Sec.

SALESMEN WANTED!

We are in want of a few reliable, energetic men to act as agents for the sale of our Northern Grown Trees, Shrubs and Vines from our Nursery. Previous experience not essential; live active men can earn good wages. For our terms address, giving full name, age and reference,

GREAT NORTHERN NURSERY CO.

Baraboo, Wis.

Indoor Culture of Hyacinths and Narcissus.

(Continued from page 7)

the table and removing the earth ball. If the exterior of the earth ball is covered with roots, then the plant has developed sufficiently to be brought in for flower production.

If the proper temperature has been maintained there will be little or no trouble from top growth. If the tops do begin to grow it is not necessary to bring them into the light at once. Tops having considerable extent, which will be white when grown in the dark, will turn their proper color in two or three days after bringing into the light. During the period in which the roots are developing, little water is necessary. Just enough should be given to keep the soil well moistened. It will probably not be necessary to water them more than once a week, and frequently not so often. As soon as the roots have developed the plants may be brought in for forcing. It is well if a number of plants are being grown to bring them in at intervals as this will provide a succession of flowers.

The bulbs should not be brought from the low storage temperatures into the high temperature of a living room in one change. It is better to bring them into high temperatures gradually. Very frequently the buds are blasted by giving too high a temperature. A bulb does not need high temperature, sixty to sixty-five degrees being sufficient and the flowers will last much longer than if higher temperatures are given. The higher temperatures, seventy to seventy-five degrees, give quicker results, but with danger of blasting the buds. The bulb needs little care after being brought into the light save in the matter of water.

Water copiously at long intervals giving water only when the soil indicates that there is a lack of moisture.

Hyacinths may be forced for more than one year, but the narcissus are usually so weakened that it is advisable to throw away the bulbs or to plant them out of doors and buy new ones for forcing the following season. If the bulbs are to be carried over, the leaves should be allowed to remain on the plants after the flowers are off. Remove the flower stalks as soon as the flowers are wilted, then set in the light in a temperature of about sixty to sixty-five degrees, and allow the plant to continue its growth until matured. After the leaves have wilted of their own accord, they may be removed, the bulb taken out and stored during the summer.

Water Culture. Water culture does not materially differ from soil culture save in the medium in which the plants are grown. There are various methods of water culture, the most common being that in which the bowl or hyacinth glass is used. The bowl is preferable for forcing narcissus as it is possible to grow a larger number thereby getting a better effect. However, with the hyacinth a single bulb in a hyacinth glass is very satisfactory. In the bowl culture take a shallow bowl preferably about three to four inches deep. In the bottom of this put one-half inch of granulated charcoal. The purpose of the charcoal is to keep the water "sweet." On this may be placed a shallow layer of one inch of gravel or sand, gravel being preferable. The bulbs are then placed on this material and the dish filled with pebbles or coarse gravel. The object of this is to keep the plants upright. Put in sufficient water so that it just

touches the bottoms of the bulbs. The dish may then be set away and carried the same as for soil culture. The time required for developing, however, will not be so great. Three-fourths of the failures in water culture of narcissus and hyacinths is in trying to carry the plants at too high a temperature. Do not bring in the bulbs and place them in the warmest and brightest portions of the room. There should be plenty of light, but the temperature should be kept low, otherwise there will be a very excessive vegetative growth and few blossoms, very frequently the buds blasting and no blossoms being secured.

Kinds for Forcing. One of the chief bulbs for forcing is the so-called Chinese Sacred Lily. This is an early flowering narcissus. It has the largest bulb of the narcissus group, and each bulb produces a number of flower stalks. It is well adapted for either pot or water culture. Probably the best white narcissus is the Paper White. These two kinds usually give a sufficient number of early flowers. They can then be followed by the Pseudo-narcissus which are more often known as daffodils. Two varieties of daffodils which stand out among the finest for forcing is the Von Sion which is a large, double yellow trumpet, and the Emperor which is a large single trumpet. Of the cup daffodils the *Incomparabilis floriplena* is one of the best. All of these are adapted to both pot and water culture.

Hyacinths. Some of the best named varieties for both water and soil culture are: white, Mount Blanc and L. Grandesse; pink, Lord Macauley, Von Schiller and Robert Steiger; blue, Charles Dickens, Grand Lilas and Mimosa.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.



The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

Orchard Winter Injuries.

(Continued from page 13)

planting of windbreaks may be of some importance, though it is usually of secondary value.

If we briefly review the systems of soil management most prominently advocated in recent years, we find only two of more than general interest. The Definite Mulch and the Tillage-Cover Crop systems with their intermediate variations for special conditions are of greatest promise.

The Definite Mulch System, as outlined by Professor Stewart of the Pennsylvania Station, consists essentially in maintaining sufficient mulch material over the root-feeding area in a sod orchard to prevent sod growth that would compete with the tree roots for plant foods in the soil. For this system great advantages in moisture conser-

vation, fruit size and color, vigor of growth and longer growing season are claimed, and with probably good foundation. It covers our cultural-preventive requirements very well except in one particular—that of wood maturity—for the prolongation of the growing season is very apt to result disastrously in a climate such as this.

In our Tillage-Cover Crop System on the other hand we can secure definite permanent results in tree vigor and size of fruit, with possibly a slight deficiency as to color. But in this system we can practically control the length of the growing season and thus the maturity of the wood as well as secure adequate cover protection in most instances. The practice is now no doubt familiar to most of our growers, it being followed by at least 75% of the larger commercial orchardists under various

climatic conditions throughout the country. The method of thorough early summer cultivation, sowing of a cover crop by the last of July and spring plowing is thus evidently most generally advisable for this State and it becomes more a question of which is the best cover crop to be used under given conditions. This the grower must largely determine for himself by a comparison of their various qualities and the special needs of his orchard. In the intelligent following of such a system the problem of winter injuries in orchards will soon become of much less importance.

J. E. Richardson, Jr.

University of Wisconsin.
January, 1916.

Keep suckers off fruit trees and vegetables, they take the strength of the plant and retard the development of the fruit.

An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin



An Appeal to Members of The W. S. H. S.

Attend the State Fair in Milwaukee, Sept. 11 to 16th. and urge your friends to attend.

The management of this Society works hand in hand at all times with the management of the State Fair.

We spend hundreds of dollars of our funds each year to make a bigger and better Fair and to advertise Wisconsin fruit.

We believe firmly in the Fair. We believe in Hon. C. P. Norgröd, Com. of Agr. who is devoting all his energies and splendid abilities to make the State Fair a great educational institution worthy of the support of every one in the state.

We believe in Secretary Remy and his assistants and the Advisory Board.

We believe in our worthy president N. A. Rasmussen, who is Superintendent of Horticulture.

This Society through its officers has pledged its support to the State Fair and we call on you as loyal members to help us "make good." You can do it by meeting us face to face at the W. S. H. S. Exhibit in the Horticultural building.

Officers and Executive Committee.

By F. Cranefield, Secretary.

See the W. S. H. S. Exhibit at the State Fair.

A Book of Verses underneath the
Bough,
A Jug of Wine, a Loaf of Bread—
and Thou

Beside me singing in the
wilderness—

Oh, Wilderness were Paradise
enow!

I sent my Soul through the In-
visible,
Some letter of that After-life to
spell:

And by and by my Soul re-
turn'd to me,

And answer'd, "I Myself am
Heav'n and Hell;"

Orchard and Garden

The second crop of everbearing strawberries is now beginning to ripen.

Cultivate the strawberries and do not allow the runners to become too thick.

If red spiders appear on evergreens, spray frequently with a good insecticide.

Order bulbs now. They reach this country in September and should be potted in October.

Watch for two-legged marauders in the melon patch. It may be necessary to sit up nights but it pays.

As soon as a vegetable crop is all gathered, clear the ground and plant to clover. It keeps down weeds and can be turned under in the spring, enriching the soil.

If blight appears in the orchard, cut out and burn all affected branches. If scab or codling moth is severe, spray with concentrated lime sulphur, 1 to 40, and arsenate of lead, 3 pounds to 50 gallons of water.

Spray lilac bushes with potassium sulfide—one ounce to two gallons of water—to remove mildew.—University Farm, St. Paul

SUPPLEMENT

Wisconsin Horticulture

Volume VII

Madison, Wisconsin, September, 1916

Number 1

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PACKING APPLES IN BARRELS

J. A. HARLEY, Madison

The purpose of this supplement is to furnish the beginner with a brief guide to the principles and practices of the up-to-date grower and shipper of commercial apples.

Probably the marketing of no form of farm produce has undergone a greater revolution during the past 20 years than the marketing of fruit. After experimenting with every conceivable method, the sentiment became pretty general that certain definite standards should be set up and maintained for the good of the business. Later, the demands of the fruit growers found expression in legislation, state by state. Finally, the National government took action and gave the country the "Sulzer Bill," a law for the improvement of the packing and marketing of apples.

The Sulzer Law

This law clearly defines what constitutes (a) standard quality of apples, (b) standard grades for packing apples, (c) standard barrels, and (d) provides that when "standard apples" shall have been packed in "standard barrels," the grower may use certain "U. S. brands" to designate his "standard grades."

A severe penalty is provided for the deceptive use of the government brands.

Standard Apples

The standard quality of apples as provided in the Sulzer Bill is: Apples of one variety, well grown specimens, hand picked, of good color for the variety, of normal shape, practically free from insect or fungus injury, bruises and other defects, shall be the standard quality.

An allowance of 10 per cent leeway is made to any grower in packing this quality.

Standard Grades

Apples of the above *standard quality* may be packed according to size into three grades:

Grade I. Apples from 2½ inches up.

Grade II. Apples from 2¼ inches up.

Grade III. Apples from 2 inches up.

It should be carefully noted that the Sulzer Law provides for only *one* grade as to *quality* of apples but *three* grades as to *size*.

Standard Barrels

A standard barrel is one whose staves are 28½ inches long, diameter of head 17½ inches, distance between heads 26 inches outside circumference of bulge 64 inches, and volume 7056 cubic inches. Such a barrel holds approximately three bushels.

Standard Brands

Standard quality apples, packed according to standard grades, in standard barrels may be branded according to grades as follows:

Standard Grade No. I, Minimum Size 2½ inches.

Standard Grade No. II, Minimum Size 2¼ inches.

Standard Grade, No. III, Minimum Size 2 inches.

Standardization Spreading.

The chief provisions of the Sulzer bill, with modifications to meet local conditions, are in operation in nearly all of the apple producing states. Wherever high standards of packing and shipping are maintained the results are most beneficial. Only apples of quality find their way to market; the demand for them becomes stronger, and the prices correspondingly higher. The consumer grows confident and buys his apples thereafter upon the reputation of the brand.

Kinds of Containers.

During the past decade great improvement has been made in the methods of packing and marketing fruit. Growers have experimented with this form and that in the hope of discovering the best container for their produce.

There is no "best," no one form superior to all others for all varieties, all markets, and all conditions of fruit. In selecting the proper container for his apples, the grower, or packer, must be governed by circumstances: by the variety; their shipping quality; by the season and the demands of the trade; by the cost of packing and cost of transportation. His object in packing is to obtain for his

Uniformity, so far as possible fruit uniform in size and color.

Honesty, this will include all the other requirements and exclude all objectionable practices.

Temporary Shelter

Since a large part of the apple crop is barreled in the orchard, some kind of temporary shelter should be provided for use in inclement weather. Either a

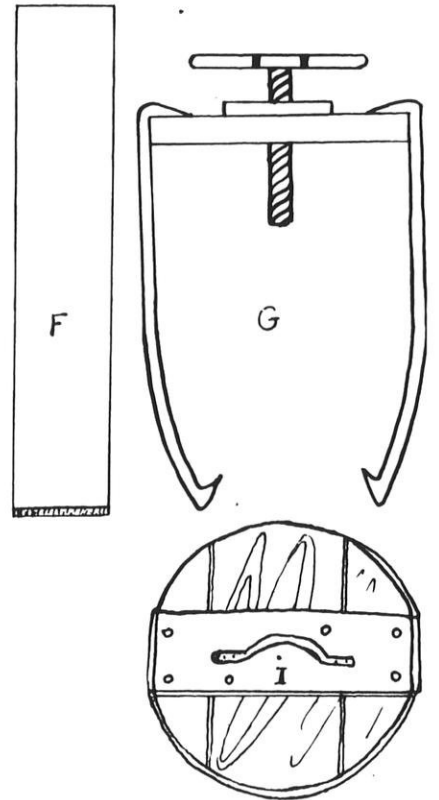
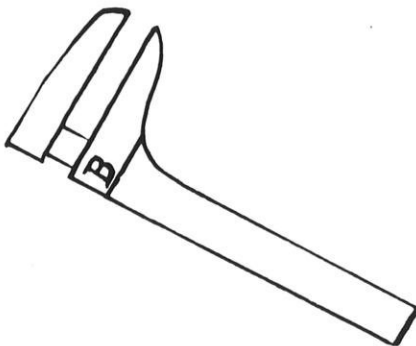
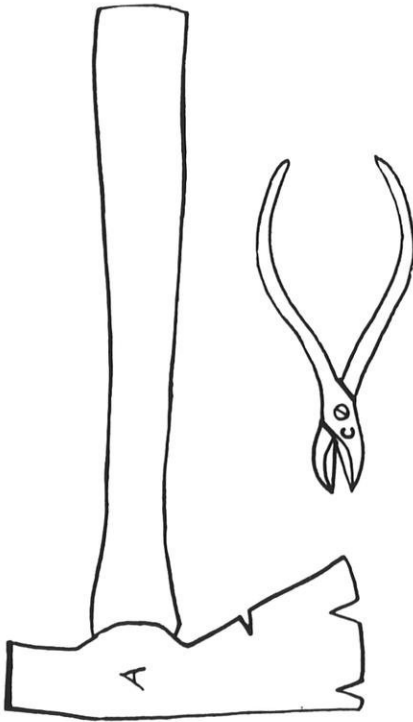
of spirit will be saved the packer, if he is provided with the proper tools. See cuts.

'A' is the packer's indispensable tool. There is no substitute for this hatchet.

'B' is a small caliper rule convenient for measuring apples.

'C' is a side-cutting wire nipper for use in stemming apples.

'D' is a series of rings for grading apples, sizes $1\frac{3}{4}$ to 3.



crop the highest market price; and in determining the price, the kind of container used plays a very important part.

The most popular containers for apples are the "standard box," bushel basket, hamper, crate and "standard barrel."

Whatever the form of container certain requirements always apply:

Appearance, so attractive as to "make the mouth water" and create a desire to buy.

Cleanliness, free from dirt, stains, and foreign substances.

tent or shed should be in readiness so that in case of a storm the work may go on uninterrupted. The temporary shed will also serve as a convenient place for storing barrels.

The Packer's Tools.

A workman is known by his tools. Much delay and vexation

'E' (p. 3) is a gauge board, very convenient for the beginner in grading.

'F' is a racking board, made of plank four feet long.

'G' is a barrel press, known as the screw press type.

'H' (p. 4) is an iron circle press head, considered better than the wooden type.

'I' is a follower, used in tailing up the barrel.

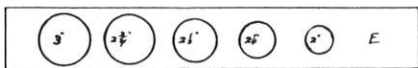
The grower will, of course, provide as many duplicate sets of tools as his work demands,

consistent with economy of time and effort. Some of the tools can be made at home, the others obtained from any dealer in orchard supplies.

The Packing Bench.

There are several types of packing benches. One, in very general use resembles a feed trough with a slat bottom. The railing is padded and sometimes a canvas is thrown over the slats to prevent bruising the apples. Such a table can be used by two packers, one on either side.

A better type for a single packer is shown in the illustration below. Its dimensions are six feet in length, four feet wide



at the head and 18 inches at the foot. The rail is made of 1x6 inch board, padded. At the foot, or mouth, is tacked an apron about five feet long. The legs for the head are made 45 inches long; for the foot 39 inches, giving the table a six inch pitch towards the packer. The floor is made of 1x1 slats.

No baskets are required for grading with this bench; the apron serves the purpose. Upon such a bench four or five orchard crates may be emptied at a time. An occasional jar keeps the apples rolling towards the packer.

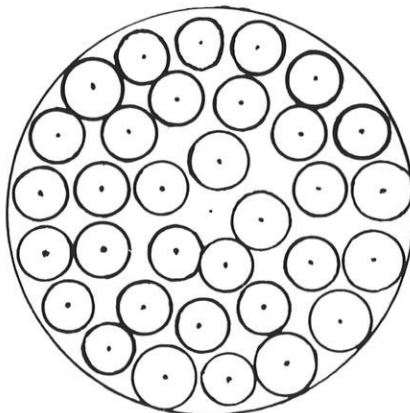
Picking Apples

Since the proper packing of apples really begins with the picking of them, a few words here will not be amiss.

The picker's tools consist of a canvas bag, a step ladder and a pair of rubber soled shoes.

The canvas picking bag is recommended because it is suspended from the shoulders of the picker and, consequently, leaves both of his hands free for picking; nor can it be knocked off the ladder, as often happens with a pail or basket.

The best form of step ladder is the kind with flaring legs and narrow top. The back support consists of a single pole. Such a



Model Face

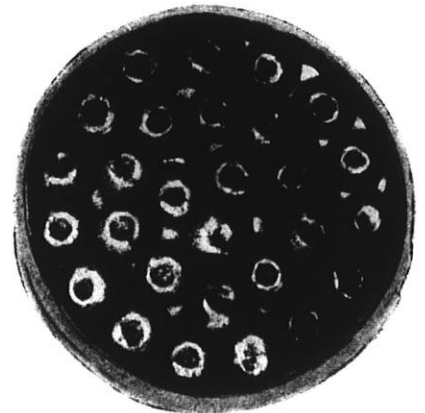
ladder does not easily tip over and can be easily thrust among the branches.

When boys are employed to pick and are allowed to climb the trees, they should be required to wear rubber soled shoes, so as not to bruise the limbs. They should be duly instructed how to pick the apples without pulling out the stems. The trick is done by grasping the apple firmly and giving it a quick pull accompanied with a turn of the wrist.

Orchard Crates.

The use of barrels in the orchard for hauling apples from the trees to the packing house should be discouraged. The apples are apt to become bruised and the barrels soiled, rendering them unfit for market use. Instead of barrels, use bushel crates, such as are commonly used for marketing tomatoes.

The crates are light, of convenient size, and stack compactly on the truck. A 1 1/2 inch slat should be nailed across each end of the crate, on top, so that the



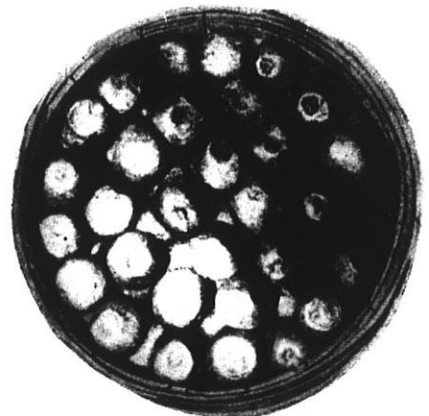
Barrel Properly Faced

apples in the lower crates will not be bruised by the upper crates resting upon them.

Grading Apples.

Until an economical and efficient grading machine has been invented, the bulk of barrel apples will continue to be graded by hand.

In many large orchards the pickers are instructed to leave all of the cull apples on the ground where they may be gathered up later for the cider



Barrel Properly Tailed

mill. This arrangement obviates the necessity of twice handling the culls, and it enables the packer to devote all of his atten-

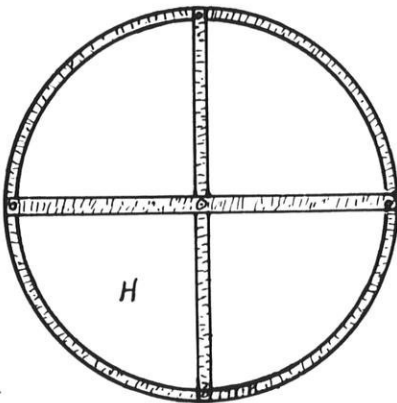
tion, unhampered, to the work of grading and packing.

The experienced packer grades by sight, occasionally applying the caliper or rings to test his grades. For the novice, the gauge board will be most convenient. With a little experience he will learn to do his work very rapidly.

From his position at the foot of the packing bench, the packer scrutinizes every apple, as it rolls towards him, both to discover any blemishes and determine its grade. Standing between two barrels, he fills the apron, with No. I or No. II as the case may be, and then lowers and empties it into the proper barrel.

All Ready

Too much emphasis cannot be laid upon thoro preparation for the packing season. Everything



Iron Circle Press Head

must be in readiness before the work starts. There must be on hand a sufficient number of tools, boxes, barrels, crates, benches, ladders, etc., if the grower is going to make the most economical use of his time and workmen. To fail to make proper preparation is unbusinesslike and expensive. It may mean the difference between success and failure, between profit and loss on the apple crop.

Making Ready the Barrel

Apple barrels are shipped from the cooperage with both heads in unnailed. By use of the hatchet, remove one head. The remaining head becomes the "face" end of the barrel.

Next drive down the quarter hoops and nail them each with four nails driven slanting towards the head. Clinch the nails *smooth*. At the same time nail in the head with six or eight nails. Next nail on the head liners, set at right angles to the



cracks and catching all the boards in the head. Drive the nails slanting into the second hoop. From four to six nails will be sufficient.

Caution: examine the barrel outside and in to make sure that no nails project.

If paper heads are used, one should be laid in the bottom of the barrel at this time. If preferred, the stenciling may be done before the barrels are packed. If deferred, the name of the variety, grade and packers number should be penciled on the barrel, in small letters, near the chine. This will prevent mistakes later.

Making a Face

Having acquainted himself with what constitutes "standard apples" and having provided

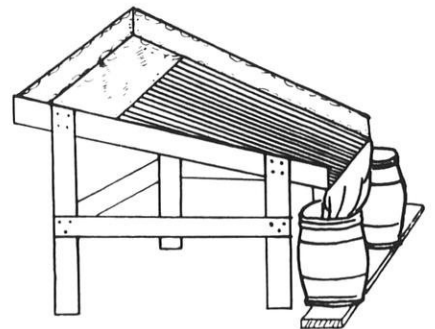
himself with "standard barrels," the packer will proceed to pack his apples according to "standard grades."

Place a racking plank on either side of the foot of the packing bench and place a barrel upon each. One barrel is for No. I apples, the other for No. II. Always place the barrels in the same relative positions, No. I on the left and No. II on the right.

Next select the apples for the face. They should be, as far as possible uniform in size and color, and fairly representative of the contents of the barrel. If there is variation in size, the smaller apples should form the outer circle of the face.

By use of the wire nippers, nip short all of the stems on the face apples.

Begin facing by laying the outer circle first, stems downward. Ordinarily there will be 15 or 16 apples in the outer circle, 10 or 11 in the second, and three or four, as the case may be in the center. See cuts. In no case, finish the center with one large or one small apple.



Packing Bench

The object in facing is to give the barrel a neat, attractive appearance when opened. This cannot be done unless the apples are approximately uniform in size and color.

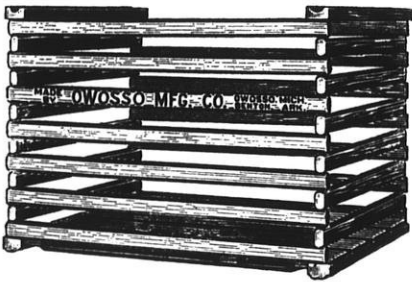
In laying each circle in the face, experience will soon teach

the beginner how, by turning his apples to a longer or shorter diameter, his circles will come out just right.

Having finished each circle of the face and wedged the center, the packer will next cover the interstices of the face with a second layer so placed as to show the color of the apples in the second layer when the barrel is opened.

Filling

Lower and empty the apron gently—as gently as though filled with eggs—into the barrel. As the apples roll out, scrutinize them closely for any defects that may have escaped previous notice. This is the packer's third and last time to inspect the apples. The picker has previ-



No. 23 FIELD OR STORAGE CRATE
Holds Full Bushel

ously inspected them twice. If they are competent, rarely will a defective apple find its way into the barrel.

After each apron of apples has been emptied, seize the barrel by the top and give it two or three sharp jars. This will settle the apples into their most compact form. The process is called "racking" the barrel and should be repeated after every apron full has been emptied. Avoid severe *shaking* and always rack the barrel upon the racking plank, not on the ground.

Tailing

As facing is the foundation to a good barrel, so tailing is the cap stone. It is the last test of a good packer. As much injury may result from too tight packing as from too loose. The aim should be to get the pressure just right. Rules avail little; the packer's surest guides will be his experience and good judgment. He must know his apples, the variety, size, degree of ripeness, and, probable shrinkage, in order to tail the barrel properly.

The apples for the tail should be stemmed, same as for the face. The process requires but a moment with the nippers. Unless the apples are stemmed, there are sure to be some stem bruises, resulting in decay and shrinkage. With long stem varieties, stemming is indispensable.

If the processes of filling and racking have been properly done, the last two or three layers need be so arranged as to project only level with the chine. The "follower" should be applied once or twice and the barrel racked to settle the apples evenly. The trick is done by grasping the barrel with the arms across the top and pressing down the follower with the elbows as the barrel is racked. Just how much room the packer must leave for the last layer, his own judgment must determine.

The best packers finish the tail stems up. Others prefer the calyx end. See cuts. In either case, the apples should be as level as possible so that when the head is pressed down the pressure may be evenly distributed. If one or two project above the rest, they are sure to be bruised. The result will be decayed fruit and a slack barrel.

The skill of the packer is shown in the tailing. The beginner should practice the process diligently, opening a barrel occasionally to test his pack and examine the condition of the apples.

Nailing

By means of the barrel press, press the head into the croze and nail it with six nails, eight nails, if a three piece head. Use $1\frac{1}{2}$ inch wire nails.

Nail on the liners as per face end of the barrel, using six nails, taking care to so place the liners as to catch the ends of all boards securely. If perchance a nail should protrude, withdraw it at once and drive another. Under no circumstances leave a nail point projecting. It is sure to catch some poor fellow's hand, in handling, and tear it seriously.

Stenciling

Having nailed up the barrel properly, it should be inverted. This will bring the face on top, in readiness for stenciling.

One should be particular about his stencil, in order to have it neat and attractive. For this work use a stiff stencil brush and a good quality of stencil ink. A sponge kept in the ink can will keep the brush properly moistened for use. Set the straight lines of the stencil parallel with the cracks in the head.

Apple Brands

The style of brand should be chosen with great care. Once chosen, it becomes the grower's trade mark and his reputation as a grower and packer of good apples will be known and judged by his brand. For this reason, and to prevent false claims, the grower should register his brand and protect it as he does his own good name.

A good style of brand should contain five items: The brand name; the grower's name, address, variety and grade of apples. See below.

Information Cards

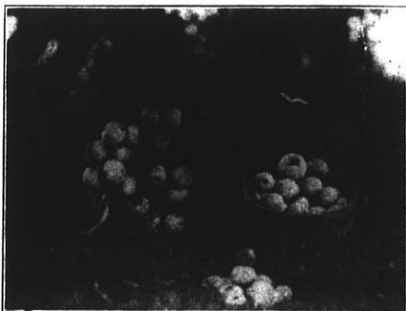
For the information of the consumer and the instruction of the housewife, many growers have adopted the practice of inclosing in the head of the barrel a card similar to the following. Such a card should give the name of the variety, grade, probable season, and use.

No. 25

This barrel contains No. 1 Tolman Sweets. Season, Dec. to Feb. Excellent for baking. Require long baking in moderate heat. Keep in temperature near 32° but not below. Should there be any imperfections return this card with particulars to THE SMITH, JONES & BROWN CO., High Land, Wis.

The Last Step

Rain and sunshine are essential for the growing of apples but they are very bad for packed



apples. As fast as the barrels are packed they should be carted to the ware house or storage. The sooner they are gotten into a cool even temperature, the better for apples and barrels. Under no circumstances, leave the barrels exposed to sun or rain; the grower is sure to pay dearly for his carelessness when the apples arrive in market.

Pointers

1. Have everything in readiness. Plan your work and then work your plan.
2. "Handle with care" is a good motto to follow always in handling apples.



3. The wise man will order his barrels early. They should be kept in a cool shady place until needed.

4. In as much as the packer is handling an article of food, he should take care that his hands are clean and every apple as clean as can be.

5. Avoid the fly nuisance. Trap the flies. Keep packing shed clean.

6. Before beginning to pack, make sure there are no nails projecting outside or in. Otherwise, you may feel the point of this admonition.

7. The iron heading block is to be preferred to the wooden.

8. In nailing on the liners, make sure that the ends of all boards in the head are caught by each liner. Six nails will be sufficient.

9. Use a 16 stave barrel. It is hardly necessary to add that second hand barrels should never be used for shipping apples to market.

10. All barrels should be removed from the orchard as rapidly as packed and stored in a cool place. Under no circumstances allow the packed barrels to stand in the sun or rain.

11. It will seldom be found profitable to pack apples under grade No. 2. Small apples are best made into cider.

12. These instructions are of little use to the grower whose apples are not of *standard quality*. He is wasting time and effort in following them.

13. Practice the fine points of packing; they determine the difference between a good pack and a poor one.



APPENDIX

The following tables are appended for what they are worth. Local conditions will necessarily govern prices of material and labor, but in general the tables are approximately correct.

COMPARATIVE COST OF BARREL AND BOX PACKING

Barrel		Box	
Barrel.....	\$.25 to \$.40	Box.....	\$.10 to \$.15
Paper heads.....	.05	Paper.....	.06
Packing.....	.10	Packing.....	.06
Nailing.....	.01	Box-making.....	.01
Picking.....	.22	Grading.....	.05
Grading.....	.05	Nailing.....	.01
Orchard help.....	.01	Cartage.....	.05
Cartage.....	.05	Orchard help.....	.01
		Packing house help.....	.01
		Picking.....	.07
	-----		-----
Total.....	\$.79 to .89	Total.....	\$.43 to .48

Box or Barrel, Which?

A high authority classifies some of the well known varieties according to the proper containers for shipment as follows:

<i>In Boxes</i>	<i>In Barrels</i>	<i>In Boxes or Barrels</i>
Grimes Golden	Greenings	Rome Beauty
Jonathan	Baldwins	Arkansaw
Winesap	Ben Davis	Baldwin
Delicious	York Imperial	Wealthy
Y. Newtown	Gano	Winter Paradise
Y. Transparent	Willow Twig	Oldenburg
McIntosh	Fall water	N. W. Greening
N. Spy	Roxbury	R. I. Greening
King	Salome	Alexander
Snow	Russets	Gilliflower
Wagener		
Pipins		



SEEING IS BELIEVING

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Volume VII

Madison, Wisconsin, October, 1916

Number 2



Exhibit of the State Horticultural Society at the State Fair, Milwaukee, September 11th to 16th.

The exhibit, 75 ft. in length and 7 ft. deep, was comprised largely of Wealthy, Duchess, Northwestern and Wolf River. Such an exhibit attracts the attention and admiration of the average Fair visitor but is not highly regarded by fruit men. It is likely that the Society will have an exhibit along different lines next year occupying even more space.

The 1916 State Fair

There may have been a better Wisconsin State Fair sometime in the dim past but for thirty years there has been none to equal it. I am sure of that because I have missed none of them in that time.

In speaking of the fair I have in mind only the horticultural building or rather the squatty little brick dump that somebody wished on us two years ago; of that more later.

Quite likely there were other things at the fair, poultry, cheese, pigs and maybe sheep and cattle but none of these count much compared with horticulture. Everybody, without exception visits the fruit and flower building, most of them go to the grand stand and no doubt many get as far down "Main St." as the cattle barns.

We had the whole building to ourselves this year, 80x190 ft., and it was well filled, not a blank space anywhere.

The apple exhibit was very light this year and if we have only an average crop next year an annex will surely be needed. That will answer for next year and then we will have the new \$25,000 building, if everybody boosts for it and it won't need many more boosts like we had this year to convince even an "economy" legislature of our needs.

So far as exhibits are concerned there was nothing new; the show of apples in pecks, barrels, boxes and on plates was not different from last year, the amateur and professional flower shows were just a little bigger than last year but not much better in quality. The county fruit exhibits and the W. S. H. S. show occupied the same floor space with fruit, only fifty per cent as good as last year.

Wherein then did the exhibit excel that of previous years? In arrangement, in order and system, in **management**. This is because we had a superintendent who applied all of his energies and skill in management to the task in hand.

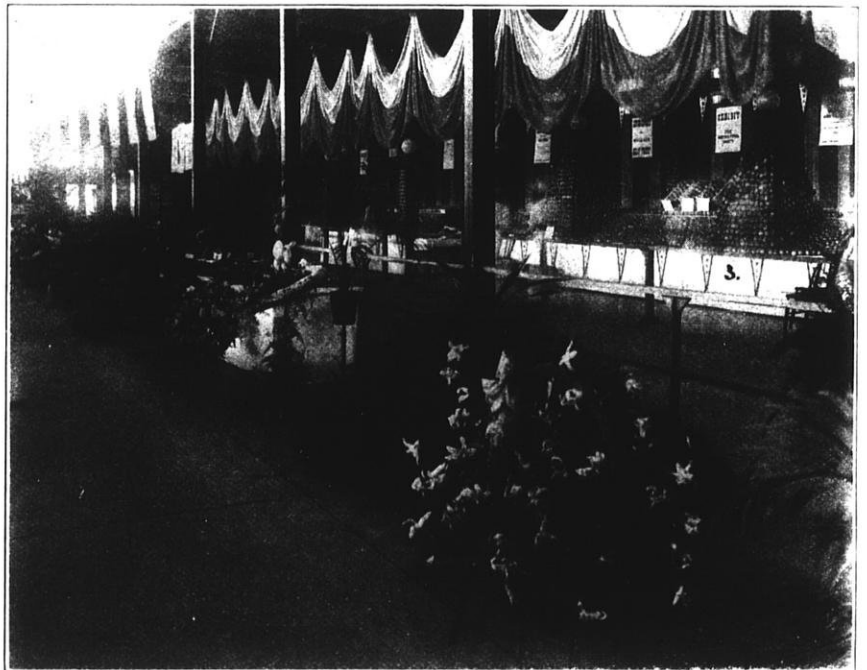
To N. A. Rasmussen, superintendent is due the highest praise for efficiency and for bringing order and system out of what has been merely chaos in past years. On this point all are agreed.

literally on the grounds.

Much space is given in this issue to the fair not so much for the benefit of those who did not go as for a matter of record. Some day some interprising person will write the history of horticulture in Wisconsin and will find the 1916 fair records readily available.

FAKIRS AND BARKERS

Conspicuous by their absence. The only "fair" privilege allowed in the building was a soft



A few of the flowers staged by members of the Milwaukee Florists' Club at the 1916 State Fair.

We had the word of Commissioner Norgord before the fair, months before, that no fakirs or bunco men would be allowed in the building this year and none were there. All of that bunch moved down into the grand stand this year with Mr. Dady and his Indians. We had instead of the fountain pen salesman and the other crooks of like color, shrubs, dahlias, seeds, etc. It was the *cleanest* building both figuratively and

drink stand at each end of the building and the attendants never spoke above a whisper.

THE APPLE STAND

Apple exhibitors at the fair either in the premium class or otherwise owe thanks to the superintendent and A. K. Bassett, who jointly arranged to sell apples to apple hungry visitors. It has been heartbreaking in the past to stand guard over hun-

(Continued on page 21)

CRANBERRY NOTES

By J. W. FITCH

The season of 1916 will long be remembered by those who had cranberries to harvest as one of the most trying in years. A lack of water early in September caused many to begin very early with the result that many small green berries were gathered, the crop being at least two weeks behind the normal stage, then the rains and frosty weather, making it almost impossible to make much headway. The thermometers registered as low as 16 degrees but the loss was slight as most growers had accumulated sufficient water for flooding. Help was also scarce, which added to the troubles of the growers. But with sugar on the down grade and everything else bringing high prices, it looks like very good prices for the berries.

J. W. Fitch.

Eight Useful Suggestions

Try cranberry tapioca prepared like peach or apple tapioca, using cranberries instead of the other fruit.

Cranberry sauce is just as good with roast beef, lamb, or pork, and with steaks or chops, as it is with turkey and chicken. Its tartness counteracts the cloying richness of fatty meats.

Cranberry sauce makes the cheaper cuts of meat more palatable, consequently permitting a considerable saving in one's meat bill.

Some day when the oven is hot, put some cranberries into a baking dish; sprinkle generously with sugar, and bake till they are tender and the skins just broken. They are delicious.

Garnish fruit salads with cubes of bright cranberry jelly. These add immensely to both flavor and appearance.

A delicious pie.—Line a pie plate as for an apple pie. Fill with chopped cranberries, seasoning with spices to taste, and adding a bit of butter and a

cups vinegar, 1 level teaspoon cloves, 4 whole allspice, 1 blade of mace, 2 inches of stick cinnamon, 2 cups of brown sugar. Tie the spices in a piece of muslin and cook them with the cranberries, water and vinegar until the berries are soft. Strain pressing the pulp through a collander. Remove the bag of spices, add 2 cups of brown sugar to the strained mixture and simmer ten minutes longer, cool and seal.



The Cranberry booth at the 1916 State Fair. This exhibit designed and staged by Mr. O. G. Malde was one of the most attractive in the building. The illustration does not do it justice.

pinch of salt if the butter is fresh. Beat up one egg with a cup of sugar, and pour over the berries. Cover with an upper crust and bake.

A good drink.—Cover the cranberries with water; boil until soft; then strain. To one quart of the juice add one cup of sugar; let it come to a boil; add pineapple juice to taste; then bottle. Serve in glass of cracked ice.

Cranberry ketchup.—1 quart cranberries, 2½ cups water, 2

Important Suggestions for the Use of Cranberries

Cranberry sauces should be served cold.

Cook cranberries in earthen, porcelain-lined, or enameled vessels only.

After cooking, place the fruit in glass or earthenware dishes.

Cranberries are an inexpensive and delicious food. There is no waste of material or of time in preparation; no peeling; no cores.

(Continued on page 22)

About This Time of the Year

We all do it. Every one of us. We feel it is our duty to do it. We, the people who write for the papers, about this time every year, remind you, who grow fruit and flowers in Wisconsin, that there is a long winter ahead and that many even of our "hardy" plants must be given protection if we expect them to do their best next year: That many others will do better for a little covering although classed as "fully hardy" in the books and catalogs.

In most cases plants require protection from winter sunshine rather than from winter cold. Two or three warm days in February with bright sunshine cause more damage to unprotected roses and raspberries than six weeks of below zero weather. We cannot expect to prevent any woody plants from freezing but in the case of the hybrid roses and other half hardy kinds we *must* protect them from sudden changes.

So for the amateur and perhaps for some who claim the title professional the following suggestions for winter protection are offered, copied largely from the October 1915 paper.

THE ORCHARD

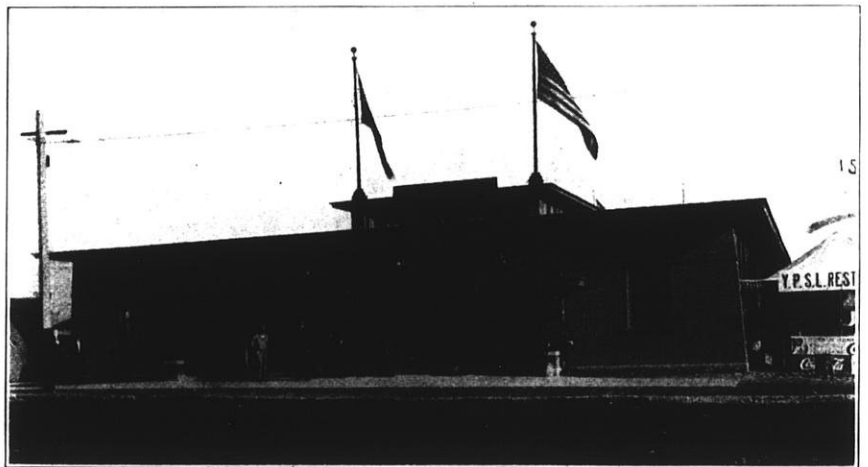
Don't prune. Leave that job until March or April. Pruning leaves wounds and these not only will not heal until growth begins but the wood will check and the bark and underlying tissues die and thus prevent proper healing next spring.

Protect young trees from attacks of rabbits and mice. Wrap the trunks with tarred paper or use veneer strips fastened with string or wire. If paper or veneer is used it should be removed next

spring. Tarred paper will surely injure the trunks if left on during the summer and veneer harbors insects.

For protection against mice mound earth around the trees to form a cone of six or eight inches. This is usually sufficient to turn mice. Tramping the snow around the trunks is sometimes effectual. Mice rarely trouble trees in cultivated orchards. Grass or weeds left around trees in the fall invariably attract mice.

not spades or shovels. Take out a little earth from one side of the clump, shove a fork down close to the canes on the other side and push and pull until the clump lies flat. It can be done. A few roots may crack but there will be plenty left. Anchor the tips with earth and proceed to the next clump. Later cover with 2 to 4 inches of earth. Some growers merely fasten the tips and depend on snow for covering. Sometimes we have plenty of snow.



This squat little red brick dump, 72x192 ft. and 12 ft. from floor to eaves, would serve nicely as an "annex" for an exhibit of spray pumps but is not deserving the name of "Horticultural Hall." The hall needed by horticulture at the State Fair is not like this; for one thing it is four times as large.

BERRIES

Except in the extreme southern part of the state raspberries and blackberries should be given winter protection in order to insure a full crop. Some market growers never cover berry plants and claim they get a satisfactory crop every year. Their claims are not usually well substantiated. Crops from unprotected fields are often light and not infrequently the canes kill to the ground. **It pays to give winter protection.** To the novice it seems an impossibility to bend down and cover with earth a row of six-foot canes and yet it can be done. Use only heavy forks,

GRAPES

Prune and cover the same as raspberries.

CURRENTS AND GOOSEBERRIES

Require no winter protection.

ROSES

The rugosas, the yellow garden roses, Persian and Austrian yellow, Scotch white and a few other hardy garden kinds require no winter protection, but the hybrids known variously as hybrid perpetuals, hybrid teas, etc., and including such varieties as "Jack," Paul Neyron, La France, etc., must be covered;

also the climbers, Dorothy Perkins and Crimson Rambler. By careful work, bending at the roots at the same time pulling down on the tops even large bushes may be laid flat without breaking. Peg down the tops and leave until the ground has frozen, when mice will have picked out winter quarters elsewhere; then cover with straw or leaves. Carpets or sacks laid over the bushes furnish ample protection if fastened securely. It is sunshine that winter-kills roses, not frost.

Roses may also be protected without bending them down by tying the bushes top and bottom and wrapping with carpet or sacks. In this case fasten the covering securely at the bottom. The loss of a few inches of the tips merely saves that much spring pruning but if the wrapping works away from the bottom we may have to prune close to the ground next spring.

PERENNIALS

Phlox, peonies, bleeding heart and other "hardy" herbaceous plants will *live* without winter cover, but if the roots have a winter mulch of leaves or manure the growth will be stronger and better next year.

So much at least we should do in October or November. It seems like a lot of work but it can all be done if the spirit to do it is present. It pays, pays in dollars and cents and in the feeling that we have done our share. We owe it to the trees and plants.

APPLE TREE BULLETIN

Tree Protectors

(1) Rabbits and mice are both very fond of the bark of apple trees and very often "girdle" them.

Protect the trunks of your trees all the way from the ground to the first branches. Use strips of wire (mosquito) screen folded around the trunks and fastened with wire.

(2) Tared paper or even heavy building paper may protect from rabbits but not from mice. If either is used it must be removed next spring.

(3) A cone of earth around the base of tree (6 inches high) will usually turn mice.

(4) A shot-gun is also a good tree protector. The Game Laws permit you to kill rabbits, *on your own land*, at any time of the year even if you have no license. Be careful to observe the *underlined words*.

WINTER PROTECTION FOR STRAWBERRIES

(1) Sometime before winter sets in, the strawberry bed must be covered, not to protect the plants from frost but to protect them from heat.

(2) We want the plants to freeze in the autumn and most of all we want them to remain frozen until spring. Alternate freezing and thawing will seriously injure the plants.

(3) About Nov. 1st or after the ground is frozen and before heavy snow, cover the plants with any material that will keep out sunshine. A light covering is sufficient. The ideal material is marsh hay. Clean straw or cornstalks may be used. Branches of evergreen trees, hemlock, spruce, cedar, etc., furnish excellent material. Leaves are not desirable as these form a covering which is too compact. If stable manure is used it should be light and "strawy." Any material which contains weed or grass seeds is undesirable.

The 1916 State Fair

(Continued from page 18)

dreds of bushels of fragrant juicy apples and deny patrons of the fair the privilege of buying one to eat. This year Mr. Bassett sold apples in lots of two to a dozen with but slight profits we fear, but filled a long, long felt want. If apples are bigger and redder and riper next year A. K. should have a stand in every corner of the building, also one at the front entrance.

CRANBERRIES

For three years the cranberry men have had a place in the building but not until this year have they had an exhibit worthy of their industry. The picture of their booth tells the story.

NURSERY AND FLORISTS EXHIBITS

A new feature and a very satisfactory one. Two nursery firms the McKay Nursery Co., of Pardeeville, and the Coe, Converse & Edwards Co. of Ft. Atkinson each purchased space and installed attractive exhibits of shrubs, evergreens and shade greens. Although these firms paid for the privilege of being in the building they were in fact exhibitors and their displays were an attractive feature. The same is true of the dahlia and gladiolus stands installed by Mr. Ernst Eberhardt of Cedarburg and J. W. Fitchett of Janesville. There is food for thought in this for the fair management.

THE GENERAL EFFECT

Fruits and Flowers! No one who entered the building could be in doubt for a second which department of the fair the building held. No cases of "pottery" greeted him at the entrance as last year nor cake and embroidery on the side lines. Just one harmonious display of the products of garden and orchard.

Cranberry Notes

(Continued from page 19)

Cranberries stimulate the appetite and aid digestion. If served freely at meals, either in the form of sauce, jelly to spread on bread, or in some form of dessert, they will prove extremely beneficial to the general health.

Cranberries can be kept perfectly throughout the summer by sorting, washing, and sealing the raw fruit in glass or earthen jars filled with cold water which has first been boiled. Select sound berries only for this purpose.

MUCH OF INTEREST HERE

(Interesting notes by Irving C. Smith, teacher, gardener and philosopher, living at Ashland, Wis.)

THE DELICIOUS APPLE

It may be of interest to those who are contemplating the setting of Delicious apple trees to know that we set six trees a few years ago and they did very well in growth and lived over a mild winter. Two years ago they killed to the snow line. The roots were strong and they started a new growth, but they killed to the snow line on a cold winter, and we have had two of them in nine years.

APPLES AT ASHLAND

We have been picking a few bushels of apples this season and are very much pleased with the fine clean fruit. Very little scab. Have Duchess, Okabena, Wealthy, Whitney, Yellow Transparent, Tetofsky, Hiberna, Wolf River, Mackintosh Red, and Dudley, and all have some fruit and none have had

any injury by winter killing. Even if there are no more hardy varieties we have some of the very best on the list.

We have seen a good deal in the papers of the very dry and burned up condition of things in the southern part of the state, but up here in the North we are not in a bad way at all. I was out in our little Alfalfa field today and the third crop is coming into bloom and is nearly knee high. That might be worse.

Say! fellow members, do you know it is a relief to me to be off the executive board, (probably you are more glad than I), but now if I am too busy or can not get away because of green house building, or some other reason, I do not feel that I must go to every society meeting. And once there I can enjoy things and do as I please. I know the Lake Geneva meeting must have been fine, but things were too thick here to leave. I have not died or lost interest, just taking a little vacation. You know Mrs. Smith and I went on our honeymoon vacation trip a couple winters back and in all our trip we did not see any better country to live in than Wisconsin. Of course it is fine to go down to Florida in the winter and get all full of grass ticks (chiggers) and eat oranges right fresh from the trees and pick lemons for the pie at the back door, and have grape fruit for breakfast every morning, but, before we got out of the state we saw a few apples and bought four for ten cents. They tasted like more. (They were not Ben Davis).

I went to see a "lovely" garden down there, and I should be ashamed to have any of you come here (of course you don't come any way) if my place

looked no better than that one. Wisconsin is a good place to live in.

FALL SETTING OF STRAWBERRIES

We have been experimenting some with setting strawberry plants in the fall, and feel that there is a point here which should be brought to notice.

Our plants set last fall are a solid mass of plants now—we are afraid they will be too thick, while the spring set plants are doing fairly well with only about 25 per cent of the plants the fall set rows have.

This season we are setting all of our bed this fall, and spacing the plants 3 feet apart in the row. It is not too late to set them now if you have things in good shape. I have set them up to about Oct. 1st, with good results.

By the way, we have a few Progressive (only they look like Superb) and we forget to pick them. That shows how highly we prize them here, in the season of apples, and pears, peaches, and plums, apricots and grapes, melons and tomatoes and all the rest of the lot. It looks to me that is where the fall bearing strawberry will come out. In a few special cases it will be of value at home or on the market. Most of us have so many other fruits in the fall they are not appreciated.

Delphinium, or larkspur, that was cut back when through flowering last spring is making a fine showing in autumn.

Trees and shrubs may be set in autumn, but as a rule it is better to wait till spring. Large trees with a ball of frozen earth about the roots may be moved to advantage late in the autumn.

The Rudbeckias

Gray lists six species, *laciniata*, *subtomentosa*, *triloba*, *speciosa*, *fulgida* and *hirta*.

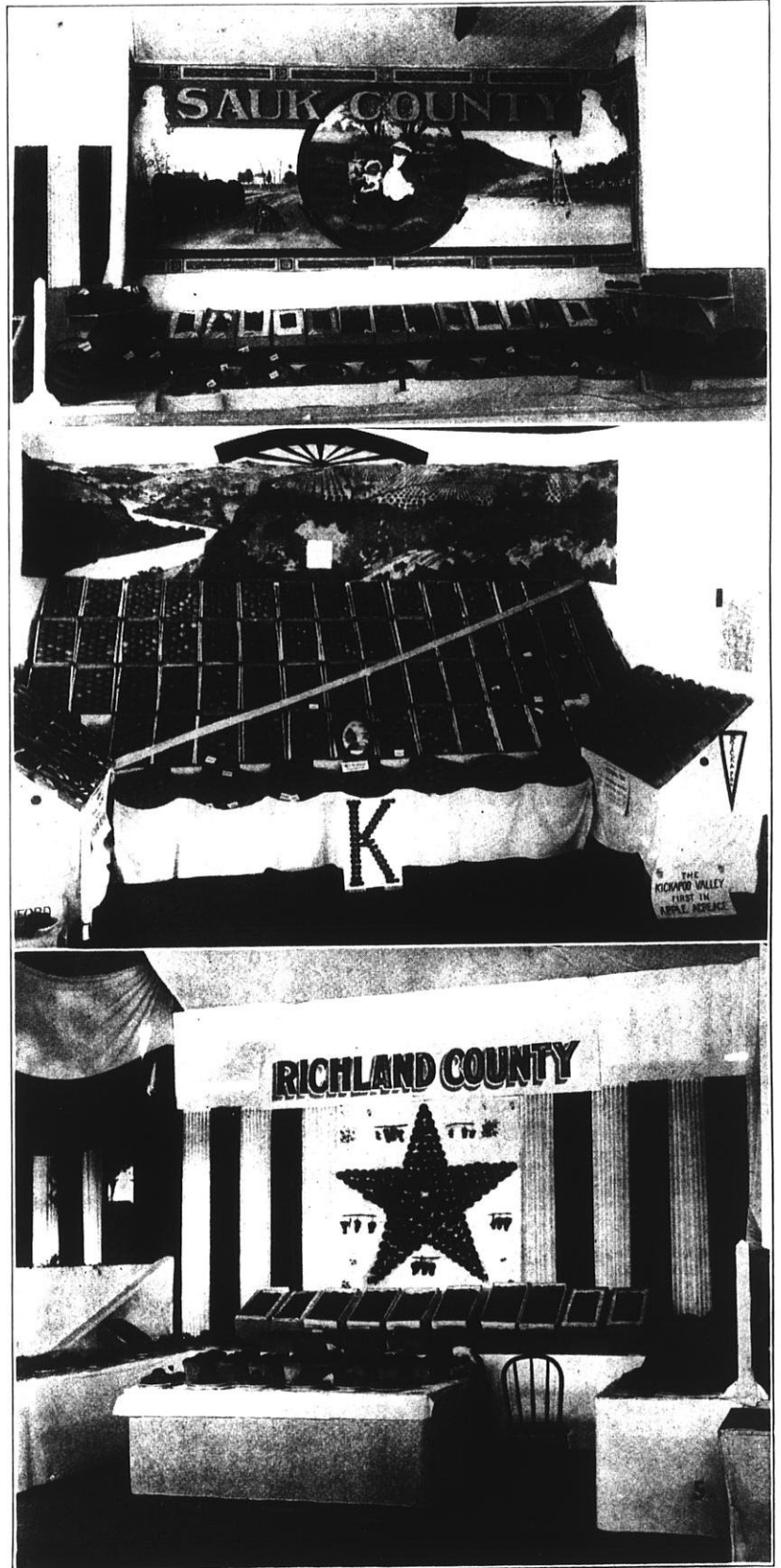
Wilhelm Miller in the *Cyclopedia of Horticulture* adds to these *amplexicaulis* and *maxima*, both southern varieties.

Of Gray's list but two are common in this state. *R. laciniata* and *R. hirta*. The former is found most often in woods and shady places but occasionally in meadows. The plant is tall and slender with rough leaves and greenish yellow flowers with a dull yellow center. Golden Glow is a double flowered offspring. *R. hirta* or the true Black Eyed Susan, sometimes she is brown-eyed, is common in meadows thruout Wisconsin and is in full glory in September and October.

R. triloba occurs occasionally in southern Wisconsin and is distinguished by somewhat smaller flowers than *R. hirta* with less recurved petals and tri-lobed leaves. All are easily grown from seed. October is the month.

Narcissus, Water Grown

For lovely Christmas flowers start a dozen paper white narcissus just six weeks before Christmas using the water culture method. Use shallow dishes, not over two inches deep, fill with small stones, pour in water and set the bulbs on or between the pebbles with the bottoms just touching the water. Under no circumstances use deep jars or dishes nor have more than one third of the bulb immersed. These bulb gardens may be set up once in a window or in any convenient spot. No skill is required nor any attention except to renew the water.



County exhibits of fruits in commercial packages 1916 State Fair.

Wisconsin Horticulture

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Change in Entomologist

Prof. J. G. Sanders, who has been State Entomologist of Wisconsin for the past year and was entomologist of the Experiment Station for five years before that, resigned his position on September 1. He is now Economic Zoologist of Pennsylvania, where he expects to have a somewhat wider field of work in a more thickly populated state. The State Horticultural Society,

THE ANNUAL CONVENTION

“WINTER MEETING”

WILL BE HELD IN

Madison, December 12, 13, 14, 1916

Three Full Days

Both plain and fancy talks by the best fruit and flower growers in Wisconsin, supplemented by any worth while talent we can pick up elsewhere

BETTER THAN AN INSTITUTE

Big Fruit Display

(If you help to make it)

The program is being arranged now. Write to the Secretary at once naming subjects you want presented

through its secretary, expressed to him their regret at his departure and their best wishes for his success in the new field.

During the month of September, Dr. S. B. Fracker, who had been associated with Prof. Sanders, was Acting State Entomologist and took charge of all branches of the work of the office. Just before going to press we learn that Prof. E. D. Ball, has been appointed to the vacancy and will come to Wisconsin on October 1. The new State Entomologist is from Logan, Utah, where he has been Dean of the College of Agriculture and Director of the Experiment Station for a number of years. He is a man of long entomological experience and one who has been a successful executive. *Wisconsin Horticulture* speaks for him the loyal support of the nurserymen and fruit-growers.

Red Spider Work

The common red spider, known to scientists by the imposing name of *Tetranychus telarius* Linn., which is an ever present pest of many of our garden flowers, has come into unusual prominence this summer. Most of the readers of *Wisconsin Horticulture* are unfortunately so familiar with the work of this mite that it is scarcely necessary to describe it. The pest, as the name indicates, is a minute red, eight-legged spider at which we must look closely in order to be able to see it at all.

The injury which it causes is due to the puncturing of the tissues of the leaf from the under side and the withdrawing of the liquid contents of the leaf cells. The mouth parts of the mite are especially adapted for this type

of work, which is not greatly different from that of the less known Greenhouse thrips. The leaf affected shows minute spots or puckering, usually white or yellow.

In greenhouses the red spider is almost always present and its work may also be found on many of our outdoor flowers. Phlox seems to be one of its favorite hosts. The most serious complaints this year have been from the raspberry growers near Lake Winnebago, where a considerable loss has resulted from its work.

While measures of prevention such as clean culture, crop rotation, etc., are of some value in reducing the attacks of the mites, whenever they are numerous it is necessary to use a spray. The materials most commonly employed are either dry sulfur, used with the so-called powder gun, or ordinary commercial lime-sulfur diluted with forty or fifty times its volume of water. "Black Leaf 40" added to the lime-sulfur or used alone is also said to give good results. If a thin flour paste is added to the spray mixture, whether it be sulfur and water or lime-sulfur, the results are improved.

I wish to emphasize the use of water alone, especially where it is available under city pressure, as this forcibly knocks the mites from the plants and injures so many of them that the danger is greatly reduced. Fumigation such as is ordinarily carried on in greenhouses does not seem to be effective, whether tobacco or cyanide is used.

S. B. Fracker,

Acting State Entomologist.

Good cider vinegar may be made from surplus and poor apples.

Parsnips, carrots and other root crops are easily dug if a furrow of soil is thrown away from the plants. They can then be pulled sidewise.

McKAY NURSERY COMPANY

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Nursery Stock of Quality for Particular Buyers

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**Fruit Trees, Small Fruits,
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Let us suggest what to plant both in Orchard and in the decoration of your grounds.

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

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Wauwatosa, Wisconsin

A Cellar Garden for Winter

N. A. RASMUSSEN

While we are planning our summer garden let us also give a thought or two to our next winter's cellar garden, as we may need now to prepare a trifle. Have we any good rhubarb roots? If not let us get some at once. A few roots and a barrel of saw-dust is all that is necessary for the winter garden.

Take three-year old plants, or as much older as you may have them and dig these plants late in the fall just before it freeze; up. Sink your spade full length of blade, cutting a circle close to the hill, then by carefully prying you can lift the hill in a solid clump without loosening the dirt or breaking the roots to any extent. Place these roots on the north side of a building or bush (out of the sun) and let them freeze for about four weeks, this is very essential for if they are not thoroughly frozen the crop will be a failure. Now take an old barrel of any kind put in about four inches of saw-dust or garden soil, even coal ashes will do, but saw-dust is light and clean and holds moisture well. Next place the frozen clump in and pack saw-dust or other material around roots and cover to the depth of about three inches. If you leave the crown exposed you will get too many small stalks. See that the filling is two or three inches higher around the outside of the barrel than in the center, thus preventing the water from running down the outside of the barrel onto the floor. Place in the cellar, water well and cover with carpet, burlap or anything convenient that will entirely exclude the light. Light would develop leaf at the expense of the stalk thereby

lessening the crop; light would also rob the stalk of its rich red color, delicate flavor and tenderness.

Now all you have to do is to keep it watered and watch it grow. The temperature of your cellars may vary from 35 to 70 degrees Fahrenheit. The higher the temperature the faster it will grow, but any cellar will grow rhubarb. A hill of rhubarb handled in this way will produce more pounds of edible plant than if left in the ground as its food



A barrel of pie fruit, cellar grown: photographed January 1916. Grown by N. A. Rasmussen. See article on p. 26.

has all been stored in the root for the coming season and is all transformed into stalk instead of leaf.

Asparagus may be grown in the same way except that it must be kept warmer and must be given some light and it will be found more delicate to handle. Green onions may be grown from sets in flat boxes and may be given plenty of light. If one has plenty of room and a little time

PATENTED AUG. 13, 1907

Fig. 1 Fig. 2 Fig. 3

BERRY BOXES

Crates, Bushel Boxes
and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Co.
Dept. D, Cumberland Wis.

beet greens might also be added to the list, planting the old beets same as onions.

These notes were written March 1916.
Editor.

Fertilizer for Roses

As the result of a series of experiments carried on by Dr. F. W. Muncie of the Department of Floriculture at the University of Illinois, the interesting conclusion has been reached that the use of acid phosphate as a fertilizer increases the rate of production of roses to a remarkable extent, perhaps a hundred times.

Squash and pumpkins keep better if harvested before frost. They should be handled carefully to prevent bruising.

October is the season for planting tulips, hyacinths, and all other Holland bulbs. Read again the excellent article by Prof. Moore in the September number.

A Weevil in Orchids

Early this spring, Prof. J. G. Sanders, while making an inspection of imported nursery stock at one of the larger greenhouses in Milwaukee, had called to his attention an insect which was causing a very great loss among the Cattleya Orchids. The larva which did the damage is large, reaching a length of half an inch and is a fat, fleshy grub. It develops in the stem of the plant, pupates and finally emerges as an attractively marked black and white weevil. The result is a complete destruction of the leaf-stem with a consequent failure to blossom.

The foreman of the greenhouse did not realize the relation between the weevils and the larva at the time and was very much surprised to learn that these attractive "bugs" were the cause of his loss. Prof. Sanders, not recognizing the insect, sent several samples to the entomological division of the United States National Museum for determination. Those who specialize on this group in Washington, in turn sent a sample to a specialist in England and he also failed to recognize the species. It is consequently being described as new in an entomological journal at Washington, D. C.

This insect is rapidly being reduced in numbers by the assiduous work of the foreman of the greenhouse and no Cattleyas are being sent out from the place at the present time.

It is hoped that this sporadic infestation may be entirely eradicated within the next few months. The orchids on which the weevil entered came from South America and it is certain, therefore, that the weevil is a tropical species.

S. B. Fracker,
Acting State Entomologist.

Autumn Wild Flowers

Of these the Rudbeckias, black-eyed Susan or cone flower family, golden rod and asters are most widely distributed in our state. All of these stand transplanting well and all improve in size of flower and depth of coloring under cultivation. While it is not well to rob the woods and roadsides of native flowers quite often small clumps may be spared from meadows and pastures and will add grace and beauty to the flower border. Now is the time to get them, when in bloom, for you will need be expert indeed to select some of them in spring.

A word to our city friends: We country people will gladly grant you the privilege of digging a few wild flowers from the back lot if you *ask permission*, but we don't like you to climb fences and tear across fields as if we were not to be considered even if you are only digging "weeds." Kindly come to us and we will meet you more than half way.

Gladioli are easily kept over winter in the vegetable cellar. After the first frost cut them off a few inches from the ground, dig, and place in a convenient place where they will not get wet. When dry, store in the vegetable cellar.

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**"We have a Fine Lot of
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Retrospection

By H. C. Melcher

Anticipation at last gave way to realization. We are still a little too near to it to do it justice for it looks larger every day.

The Lake Geneva Gardeners Association had promised that when all things were ready we would be their guests at the Summer meeting. To those who knew some of these members personally we thought we knew what that invitation meant, but at the close, while we would plead "not guilty" to the charge of intoxication we were really "too full for utterance."

The whole thing was delightfully planned. The trip on the boat the first day with the banquet at the Golf club house would easily have been the leading event at any other meeting and if the Association had done no more than this they would always be pleasantly remembered.

But the big things really began the next day, when a circuit of the lake was made.

The rugged beauty met at the first place (Mitchells) could not help but impress everyone. The extensive flower gardens under the direction of Mr. Smith forces us to the conclusion that he is the right man in the right place.

No one of the party will ever forget the cordial reception accorded us at the next stop (Seipps). That is was sincere is evidenced by the hospitable way in which we were treated, and the invitation to "come again" would like to be accepted by all. At Moore's we found variety enough to please everyone and we found the horses had many admirers; but horticultural interests have not been neglected, and no one can talk long to Mr.

Martiny without coming to the conclusion that it wouldn't take much remodeling to make an up to date fruit man of him.

To the fruit men of the party the next stop was most interesting, and the fruits grown under glass were a marvel. If there is any one besides Axel Johnson that can do those things we would like to know it.

The last stop of the day was made at Hutchinsons where Mr. Longland is superintendent, and here as in other places we can

By Wm. Toole Sr.

Great improvements have been made in Lake Geneva town since our first meeting and one of the most useful as well as ornamental is the hall and show rooms of the Lake Geneva Gardeners. A limited article is called for so all the words of praise which the gardeners deserve will not be given, but I must say that their club is a fine example of the value of organized getting together.



Some of the pecks and plates of apples at the 1916 State Fair.

see the impress of the man in charge, and who, with his bird-loving wife did so much to make the stay here pleasant.

At the close of the day the remark was made by one of the party that he had lived fifty years in that single day, meaning that the events of the day were more than come to the ordinary mortal in fifty years. It seems to me this is the highest compliment that could be paid the management.

The program of the Horticultural society had not called for any exhibits yet our good friends greeted us with a beautiful display of flowers in profusion and variety. With a wonderful array of garden vegetables such as we farmers could not this season raise, in our dry superheated gardens.

The program as carried out was very interesting, and we chased the red spiders and other harmful garden pests to the end.

that there shall be no rest for them in the future. At noon time the first day, they took us on a two mile trip across one corner of the lake to the country club house, and gave us a feed, which they called a lunch, but it was a banquet with the speaking left out, except the neighborly chats of the participants.

The discussions were so well enjoyed that they were carried into an evening session. I nearly forgot to mention the two fine displays of gladiolus by Mr. Hinkle of Madison and W. J. Moyle of Union Grove. The two collections were fine for any season, but undoubtedly would have been still better if the weather had not been so excessively hot preceding the meeting. On Wednesday we had one of the great times of our lives, visiting many of the estates, each of which showed special features indicating the taste of the owners and skill of the managers. The rides on the big boat to and from the various estates were most enjoyable, and when we returned to Lake Geneva, autos were in waiting to take us around the lake including a visit to the Lick Observatory. We were pleased to be greeted as brother horticulturists by the eminent professors who are members of our state society. This fourteen mile ride also included a visit to the state trial orchard which we found in good order, with a fair showing of fruit for so young an orchard.

About six p. m. we returned to Lake Geneva having been on the go since 8:30 a. m. and we surely went some. The auto ride I think was a treat from the commercial club, members of which we met at the banquet in the evening. The banquet although last, was among the best of the treats given us. There

were no second bests at any time. The more we know them the prouder we are to think that the Lake Geneva Gardeners association is a part of the Wisconsin State Horticultural Society, and if we cannot claim the Lake Geneva Commercial club as brother horticulturists we will always have a fraternal regard for these men who entertained us so handsomely, and have done so much in the last few years for the development of Lake Geneva City.

By W. J. Moyle

Yes I was there—during the Elkhorn Fair this week I again met Judge Lyons of Elkhorn, he was also at the meeting and as we shook hands we both acclaimed as with a single voice, "Say but wasn't that a glorious time we had at the summer meeting at Lake Geneva."

And as I sit at my desk today and recall those two days of panoramic, beauty and pleasure afforded us through the excellent and efficient management of that princely bunch of fellows, "The Lake Geneva Gardeners Association," the muse leads me to exclaim:

"Like little children hand in hand

We Wandered away in fairy land."

The most interesting feature to my idea was the opportunity

to make a study of the extensive plantings of the rare and beautiful flora to be found on many of the charming summer estates that bask in the sunshine on the hills of this charming lake.

With the respective Superintendents as guides; everyone a botanist to his finger tips, what a pleasure!

And the boys, everyone out vieing the other in order to give us a good time. What could we do without Mr. Smith with his ever lasting Rose gardens, the pride of his heart, Mr. Johnson with his affable pleasing ways and marvelous hot houses of Hamburg grapes and Mr. Longland so deferential and unassuming.

Boat rides, banquets, and that auto trip around the Lake when we stopped at the Yerkes Observatory to see the spots on the sun and incidentally to have our own vision multiplied about one million times as to the insignificant, incomparable littleness of our own terrestrial globe and even the doorway on whose threshold we stand and proclaim our greatness.

"What fools we mortals be." But where ignorance is bliss 'tis folly to be wise.

Have you saved seed of fruiting shrubs and nut plants to plant next spring? Put them in sand until spring and then plant.

SALESMEN WANTED!

We are in want of a few reliable, energetic men to act as agents for the sale of our Northern Grown Trees, Shrubs and Vines from our Nursery. Previous experience not essential; live active men can earn good wages. For our terms address, giving full name, age and reference,

GREAT NORTHERN NURSERY CO.

Baraboo, Wis.

STANDARD BASKET LAW**Fixes Standards for Containers for Fruits, Berries, and Vegetables in Interstate Commerce**

Standards for Climax baskets for grapes, other fruits, and vegetables, and other types of baskets and containers used for small fruits, berries, and vegetables in interstate commerce, are fixed by an act approved by the President August 31, 1916. The law will become effective November 1, 1917.

The effect of the act will be to require the use of the standards in manufacturing, sale, or shipment for all interstate commerce, whether the containers are filled or unfilled. A large part of the traffic in fruits and vegetables in this country enters interstate commerce. The law relates only to the containers and will not affect local regulations in regard to heaped measure or other method of filling. A special exemption from the operations of the law is made for all containers manufactured, sold, or shipped, when intended for export to foreign countries, and when such containers accord with the specifications of the foreign purchasers, or comply with the laws of the country to which the shipment is destined.

Standards of three capacities are fixed for Climax baskets—2, 4, and 12 quarts, dry measure. These containers, often known as "grape baskets," have relatively narrow, flat bottoms, rounded at each end, and thin sides flaring slightly from the perpendicular. The handle is hooped over at the middle from side to side. In addition to fixing the capacities of these standard baskets of this type, the law also prescribes their dimensions.

The other standards are for "baskets or other containers for small fruits, berries, and vegetables." They are to have capacities only of one-half pint, 1 pint, 1 quart, or multiples of 1 quart, dry measure. Such containers may be of any shape so long as their capacities accurately accord with the standard requirements.

The examination and test of containers to determine whether they comply with the provisions of the act are made duties of the department, and the Secretary of Agriculture is empowered to establish and promulgate rules and regulations allowing such reasonable tolerances and variations as may be found necessary.

Penalties are provided by the act for the manufacture for shipment, sale for shipment, or shipment in interstate commerce of Climax baskets, and containers for small fruits, berries, and vegetables not in accord with the standards. It is provided, however:

That no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the manufacturer, wholesaler, jobber, or other party residing within the United States from whom such Climax baskets, baskets, or other containers, as defined in this act, were purchased, to the effect that said Climax baskets, baskets, or other containers are correct within the meaning of this act. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of Climax baskets, baskets, or other containers, to such dealer, and in such case said party or parties shall be amendable to the prosecutions, fines, and other penalties which would attach in due course to the dealer under the provisions

of this act.—*Weekly News Letter, U. S. Dept. of Agr.*

Garden Notes

The ripe fruit of the common green elder is often used for pies, sauce, syrup, and wine.

The raspberry patch should be cleaned up. Old canes should be pruned out and burned. Perhaps they contain insects or disease. Fire will help to cure these troubles.

The hard maple, sumac, hazel, and other shrubs and herbs are taking on their fall colors now. These, with the fruits of the wild grape, bittersweet, highbush cranberry, and snowberry, make a trip in the fields a pleasure.

Many new seedling roses of merit are being put out by rose-growers in Ireland.

It is sometimes a good plan to pull tomato vines, when a hard frost is expected, and hang them in a shed to let the fruit ripen.

Follow up the premium won at the state or county fair with a little judicious advertising. It will help make sales.

Now is a good time to get together the horticultural books, bulletins, and papers for use this winter.

The motor car is fast becoming a necessity in marketing fruits and vegetables. Not only is time saved which can be used profitably otherwise but the products of the orchard and garden reach the market in much better condition than if several hours on the way.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.



The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

Tile Trap for Rabbits

An inexpensive and permanent sewer tile trap for cottontail rabbits, which has proved very effective in Kansas, is described in Farmers' Bulletin 702, "Cottontail Rabbits in Relation to Trees and Farm Crops." Details of this trap were supplied by Mr. J. M. Walmsley, who has used it successfully on his and other farms in that state. To make the trap, proceed as follows:

Set a 12 by 6-inch "tee" sewer tile with the long end downward, and bury it so that the 6-inch opening at the side is below the surface of the ground. Connect two lengths of 6-inch sewer pipe horizontally with the side opening. Second grade or even broken tile will do. Cover the joints with soil so as to exclude light. Provide a tight removable cover, such as an old

harrow disk, for the top of the large tile. The projecting end of the small tile is then surrounded with rocks, brush, or wood, so as to make the hole look inviting to rabbits and encourage them to frequent the den. Rabbits, of course, are free to go in or out of these dens, which should be constructed in promising spots on the farm and in the orchard. A trained dog will locate inhabited dens. The outlet is closed with a disk of wood on a stake, or the dog guards the opening. The cover is lifted and the rabbits captured by hand.

These traps are especially suitable for open lands and prairies, where rabbits can not find natural hiding places. They are permanent and cost nothing for repairs from year to year. If it is desired to poison rabbits, the baits may be placed inside these traps, out of the way of domestic animals or birds. This trap also

furnishes an excellent means of obtaining rabbits for the table, or even for market.

Sweet russet crabs make good sweet pickles, and, although small, are also good baked.

Protect Your Trees

Hawkeye Tree Protectors

Don't take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using.

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—½ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets—get our prices.

Burlington Basket Company
520 Main St., Burlington, Iowa



An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.
Oconomowoc, Wisconsin

FLOWERS

MILWAUKEE FLORIST CLUB.

By Eug. Oestreicher Sec.

It is with a feeling of satisfaction that we recall the flower and plant exhibits displayed at the State Fair from September 11 to 16. Considering the adverse weather conditions which prevailed during the summer months the quality of the outdoor grown cut flowers while not quite up to the standard still made a good showing and were admired by many; weather conditions plus the early date of the Fair also were responsible for the lack of green house grown stock, which always give the finishing touches and arouse special attention.

In the Palm and Fern line there never was such a display of variety as this year; the design and basket work was of a better quality than usual and last but not least the exhibit of perennials was large and of good quality. The arrangement too, as practiced this year was a very great improvement over

former years displaying the stock to better advantage and making it easier for the public to get a better view of any particular exhibit.

In regard to quality and quantity the showing made in the amateur class also deserves a word of praise. This display could, if properly arranged, have covered at least three times more space; too bad that it had to be all crowded on that one table, thus hiding many a good point which ought to have come to the front. We trust that some time in the near future we will get a much larger Horticultural Building which will be a credit to the Fair and the whole State of Wisconsin.

The frost on the night of September 15 to 16th, which by the way was about four weeks ahead of time, did considerable damage to all soft wooded plants,

such as Geraniums, Begonias, Salvias, Cannas, Dahlias, etc. on the outskirts of Milwaukee, with a lengthy period of favorable weather a good many of the plants which were only nipped, will continue to grow and grow again, affording great pleasure, so don't be in a hurry to pull them up and consign them to the rubbish pile.

While it is a good time to plan just what kind of bulbs you intend to plant in this or that place, any time after the 15th of October is plenty early enough to do planting.

Don't dig up those Canna roots until the foliage is frozen to the ground; then cut the old foliage back to within 6 inches from the ground and put the roots in a frost proof cellar until early spring; try to keep some soil on the roots as it will be a great benefit to help tide them over.

In order to have nice large Geranium plants in the spring, now is the time to take cuttings or "slips" as mother used to say.

Fix the dates in your mind, Dec. 12, 13, 14.

SUPPLEMENT

Wisconsin Horticulture

Volume VII

Madison, Wisconsin, October, 1916

Number 2

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Winners

It requires lots of typesetting and much printers ink to give the complete list of prize winners at the State Fair but the editor believes it will be worth while. It will be of especial interest to the exhibitors and, we hope of some interest to many others.

Prof. J. G. Moore and L. G. Kellogg judged fruit, Nic Zweifel and J. G. Heitman of Milwaukee and J. E. Mathewson of Sheboygan professional flowers and Wm. Longland of Lake Geneva, amateur flowers.

Assistant superintendents: Arthur Leidiger, florists, W. J. Moyle, amateur flowers and Herman Christensen, fruits.

DEPARTMENT H HORTICULTURE*

N. A. Rasmussen, Supt.

PLANTS AND FLOWERS.

Collection of greenhouse plants not less than 25 varieties to cover not less than 50 square feet.

1st Holton & Hunkle.....	\$25.00
2nd Killner, Aug. B. Co.....	20.00
3rd Pollworth C. C. Co.....	15.00
4th Klokner, A.....	10.00

Display of palms covering not less than 50 sq. ft.

1st Pollworth C. C. Co.....	\$25.00
2nd Holton & Hunkle Co.....	20.00
3rd Killner, Aug. B. Co.....	15.00
4th Klokner, A.....	10.00

Display of ferns covering not less than 50 sq. ft.

1st Holton & Hunkle Co.....	\$25.00
2nd Killner, Aug. R. Co.....	20.00
3rd Pollworth, C. C. Co.....	15.00
4th No award	

Display of foliage plants covering not less than 50 sq. ft.

1st Holton & Hunkle Co.....	\$25.00
2nd Pollworth, C. C. Co.....	20.00
3rd Klokner, A.....	15.00
4th No award	

Specimen—Nephrolepis.

1st Holton & Hunkle Co.....	\$5.00
2nd Eberhardt, Ernst.....	1.00
3rd Pollworth, C. C. Co.....	3.00

Specimen—Palm.

1st Pollworth, C. C. Co.....	\$5.00
2nd Holton & Hunkle Co.....	1.00
3rd Klokner, A.....	3.00

Most artistically arranged floral wreath not less than 21 inch frame.

1st Arnold, J. C.....	\$15.00
2nd Edlefsen, Liedeger Co.....	12.00
3rd Eberhardt, Ernst.....	10.00
4th Preuss, Rudolph.....	5.00

Most artistically arranged basket of cut flowers

1st Edlefsen, Liedeger Co.....	\$12.00
2nd Eberhardt, Ernst.....	10.00
3rd Klokner, A.....	8.00
4th Arnold, J. C.....	5.00

Display of asters.

1st No award	
2nd Eberhardt, Ernst.....	\$5.00
3rd No award	

Display of not less than 200 gladioli blooms.

1st Lowe, E. C.....	\$8.00
2nd Eberhardt, Ernst.....	6.00
3rd Klokner, A.....	1.00

Display of not less than 150 dahlia blooms.

1st Eberhardt, Ernst.....	\$8.00
2nd Fitchett, J. F.....	6.00
3rd No award	

Best 25 red carnations.

1st Pollworth, C. C. Co.....	\$1.50
2nd No award	
3rd No award	

Best 25 light pink carnations.

1st Pollworth, C. C. Co.....	\$1.50
2nd No award	
3rd No award	

Best 25 pink roses.

1st Pollworth, C. C. Co.....	\$3.00
2nd Holton & Hunkle Co.....	2.50
3rd No award	

Best 25 white roses.

1st Pollworth, C. C. Co.....	\$3.00
2nd Holton & Hunkle Co.....	2.50
3rd No award	

Best 25 red roses.

1st Holton & Hunkle Co.....	\$3.00
2nd Pollworth, C. C. Co.....	2.50
3rd No award	

Best 25 any other color roses.

1st Holton & Hunkle Co.....	\$3.00
2nd Pollworth, C. C. Co.....	2.50
3rd No award	

Best 25 easter lilies.

1st Pollworth, C. C. Co.....	\$3.00
2nd Holton & Hunkle Co.....	2.50
3rd No award	

Best 12 chrysanthemums.

1st Pollworth, C. C. Co.....	\$1.00
2nd No award	
3rd No award	

Best display of perennial phlox not less than 5 named varieties.

1st Lowe, E. C.....	\$5.00
2nd Eberhardt, Ernst.....	3.00
3rd Klokner, A.....	2.00

Best display perennial helianthus, named varieties.

1st Klokner, A.....	\$3.00
2nd Lowe, E. C.....	2.00
3rd No award	

Best display perennial delphiniums, named.

1st Lowe, E. C.....	\$3.00
2nd Klokner, A.....	2.00
3rd No award	

Best display hardy gaillardias.

1st Vogel, Fred., Jr.....	\$3.00
2nd Eberhardt, Ernst.....	2.00
3rd Lowe, E. C.....	1.00

Best display hardy perennials correctly named.

1st Vogel, Fred, Jr.....	\$10.00
2nd Lowe, E. C.....	8.00
3rd Klokner, A.....	6.00

For amateurs only.**Best specimen palm.**

1st Wegner, Mrs. W. P.....	\$5.00
2nd Strong, Mrs. C. E.....	3.00
3rd Frank, Mrs. A.....	2.00

Display of ferns.

1st Ringrose, G. W.....	\$5.00
2nd Poppe, S. W.....	3.00
3rd Frank, Mrs. A.....	2.00

Ten varieties of plants in bloom.

1st Strong, Mrs. C. E.....	\$5.00
2nd Landwehr, Mrs. G.....	3.00
3rd Frank, Mrs. A.....	2.00

Display of foliage plants not less than 10 varieties.

1st Strong, Mrs. C. E.....	\$5.00
2nd Ringrose, G. W.....	3.00
3rd Frank, Mrs. A.....	2.00

Five named geraniums in bloom.

1st Strong, Mrs. C. E.....	\$5.00
2nd Ringrose, G. W.....	3.00
3rd Frank, Mrs. A.....	2.00

Most artistically arranged basket of flowers.

1st Strong, Mrs. C. E.....	\$5.00
2nd Goelzer, Miss E. M.....	3.00
3rd La Freher, Mrs. A.....	2.00

Most artistically arranged bouquet of flowers.

1st Ringrose, G. W.....	\$3.00
2nd Goelzer, Miss E. M.....	2.00
3rd Wegner, Mrs. M. P.....	1.00

Collection of wild flowers not less than 10 named varieties.

1st White, A. F.....	\$1.00
2nd La Feber, Mrs. A.....	3.00
3rd Paull, Mrs. J. R.....	2.00

Display of cut flowers, annual.

1st Poppe, S. W.....	\$5.00
2nd Strong, Mrs. C. E.....	3.00
3rd Ringrose, G. W.....	2.00

Display of cut flowers, perennial.

1st Strong, Mrs. C. E.....	\$5.00
2nd Ringrose, G. W.....	3.00
3rd Wegner, Mrs. W. P.....	2.00

Display of decorative grasses.

1st Frank, Mrs. A.....	\$2.00
2nd White, A. F.....	1.00
3rd No award	

Display of cosmos.

1st Strong, Mrs. C. E.....	\$2.00
2nd Goelzer, Miss E. M.....	1.00
3rd White, A. F.....	.50

Display of celosia.

1st Strong, Mrs. C. E.....	\$2.00
2nd Wegner, Mrs. W. P.....	1.00
3rd Frank, Mrs. A.....	.50

Display of gaillardias.

1st Goelzer, Miss E. M.....	\$2.00
2nd Ringrose, G. W.....	1.00
3rd Strong, Mrs. C. E.....	.50

Display of centaurea.

1st Goelzer, Miss E. M.....	\$2.00
2nd Strong, Mrs. C. E.....	1.00
3rd White, A. F.....	.50

Display of zinnias.

1st Goelzer, Miss E. M.....	\$2.00
2nd Ringrose, G. W.....	1.00
3rd White, A. F.....	.50

Display of nasturtiums.

1st White, A. F.....	\$2.00
2nd Goelzer, Miss E. M.....	1.00
3rd Frank, Mrs. A.....	.50

Best six hydrangeas.

1st White, A. F.....	\$2.00
2nd No award	
3rd No award	

APPLES.**Display not to exceed 20 varieties.**

1st Kickapoo Development Co.....	\$20.00
2nd Townsend, G. H.....	15.00
3rd Cooper, J. H.....	12.00
4th Toole, Wm., & Son.....	8.00
5th Palmer, J. S.....	6.00
6th Baer, J. E.....	4.00

Display of 10 varieties.

1st Kickapoo Development Co.....	\$15.00
2nd Toole, Wm., and Son.....	10.00
3rd Meyer, A.....	8.00
4th Townsend, G. H.....	6.00
5th Cooper, J. H.....	4.00
6th Brown, S. L. & Son.....	2.00

Display of following 5 varieties.**Northwestern Greening, Gano, Windsor, Golden Russet and Tolman.**

1st Bassett, A. K.....	\$8.00
2nd Townsend, G. H.....	6.00
3rd Barnes, A. D.....	4.00
4th Baer, J. E.....	2.00

Display Best Exhibit unnamed varieties from orchard of 25 trees or less.

No Awards.

Best Fall Seedling.

No Awards.

Best Winter Seedling.

1st Cooper, J. H.....	\$5.00
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Largest Apple.

1st Severson, Elmer.....	\$3.00
2nd Baer, J. E.....	2.00
3rd Brown, S. L. & Son.....	1.00

Single Plates—Anisim

1st Brown, S. L. & Son.....	\$1.50
2nd Toole, Wm. & Son.....	1.25
3rd Irish, L. B.....	1.00
4th Severson, Elmer.....	.75
5th Kickapoo Development Co.....	.50

Alexander.

1st Bassett, A. K.....	\$1.50
2nd Cooper, J. H.....	1.25
3rd Meyer, A.....	1.00
4th Barnes, A. D.....	.75
5th Brown & Son S. L.....	.50

Beautiful Arcade.

1st Barnes, A. D.....	\$1.50
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Ben Davis.

1st Baer, J. E.....	\$1.50
2nd Kickapoo Development Co.....	1.25
3rd Brown & Son, S. L.....	1.00
4th Cooper, J. H.....	.75
5th Bassett, A. K.....	.50

Boiken.

1st Palmer, J. S.....	\$1.50
2nd Platt, H. R.....	1.25

Charlamoff.

1st Kickapoo Development Co.....	\$1.50
2nd Brown & Son, S. L.....	1.25
3rd Severson, Elmer.....	1.00
4th Barnes, A. D.....	.75

Delicious.

No Awards.

Dudley.

1st Hauser, John F.....	\$1.50
2nd Severson, Elmer.....	1.25
3rd Toole & Son, Wm.....	1.00
4th Barnes, A. D.....	.75
5th Palmer, J. S.....	.50

Fameuse.

1st Palmer, J. S.....	\$1.50
2nd Townsend, G. H.....	1.25
3rd Irish, L. B.....	1.00
4th Brown & Son, S. L.....	.75
5th Toole & Son, Wm.....	.50

Fall Orange.

1st Barnes, A. D.....	\$1.50
2nd Bassett, A. K.....	1.25
3rd Palmer, J. S.....	1.00

Forest.

1st Tans, Mrs. John.....	\$1.50
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Gano.

1st Baer, J. E.....	\$1.50
2nd Kickapoo Development Co.....	1.25
3rd Brown & Son, S. L.....	1.00
4th Barnes, A. D.....	.75

Gem City.

1st Irish, L. B.....	\$1.50
2nd Bassett, A. K.....	1.25
3rd Toole & Son, Wm.....	1.00

Grimes' Golden.

1st Meyer, A.....	\$1.50
2nd Kickapoo Development Co.....	1.25
3rd Barnes, A. D.....	1.00

Gideon.

1st Severson, Elmer.....	\$1.50
2nd Brown & Son, S. L.....	1.25
3rd Barnes, A. D.....	1.00
4th Kickapoo Development Co.....	.75

Golden Russet.

1st Palmer, J. S.....	\$1.50
2nd Bassett, A. K.....	1.25
3rd Baer, J. E.....	1.00
4th Meyer, A.....	.75
5th Severson, Elmer.....	.50

Iowa Beauty.

1st Kickapoo Development Co.....	\$1.50
2nd No Award.....	
3rd Toole & Son, Wm.....	1.00

Jonathan.

1st Toole & Son, Wm.....	\$1.50
2nd Townsend, G. H.....	1.25
3rd Bassett, A. K.....	1.00
4th Cooper, J. H.....	.75
5th Tans, Mrs. John.....	.50

King.

1st Townsend, G. H.....	\$1.50
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Longfield.

1st Hauser, John F.....	\$1.50
2nd Bassett, A. K.....	1.25
3rd Barnes, A. D.....	\$1.00
4th Irish, L. B.....	.75
5th Brown & Son, S. L.....	.50

Lily

1st Learned, S. T.....	\$1.50
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Lubsk Queen

1st Learned, S. T.....	\$1.50
2nd No award.....	
3rd No award.....	
4th Barnes, A. D.....	.75

Lowland Raspberry

1st Barnes, A. D.....	\$1.50
2nd No award.....	
3rd Toole & Son, Wm.....	1.00
4th No award.....	
5th Irish, L. B.....	.50

Malinda

1st Bassett, A. K.....	\$1.50
2nd Kickapoo Development Co.....	1.25
3rd Brown & Son, S. L.....	1.00
4th Barnes, A. D.....	.75

McIntosh

1st Bassett, A. K.....	\$1.50
2nd Palmer, J. S.....	1.25
3rd Brown & Son, S. L.....	1.00
4th Goelzer, Miss E. M.....	.75
5th Severson, Elmer.....	.50

McMahon

1st Townsend, G. H.....	\$1.50
2nd Kickapoo Development Co.....	1.25
3rd Palmer, J. S.....	1.00
4th Severson, Elmer.....	.75
5th Learned, S. T.....	.50

Newell

1st Kickapoo Development Co.....	\$1.50
2nd Brown & Son, S. L.....	1.25
3rd Townsend, G. H.....	1.00
4th Learned, S. T.....	.75
5th Irish, L. B.....	.50

Northern Spy

1st Palmer, J. S.....	\$1.50
2nd Cooper, J. H.....	1.25
3rd Meyer, A.....	1.00
4th Brown & Son, S. L.....	.75
5th Townsend, G. H.....	.50

Northwestern Greening

1st Toole & Son, Wm.....	\$1.50
2nd Bassett, A. K.....	1.25
3rd Brown & Son, S. L.....	1.00
4th Kickapoo Development Co.....	.75
5th Harding, J. H.....	.50

Oldenberg (Duchess)

1st Baer, J. E.....	\$1.50
2nd Severson, Elmer.....	1.25
3rd Barnes, A. D.....	1.00
4th Townsend, G. H.....	.75
5th Palmer, J. S.....	.50

Patten Greening

1st Harding, J. H.....	\$1.50
2nd Brown & Son, S. L.....	1.25
3rd Kickapoo Development Co.....	1.00
4th Palmer, J. S.....	.75
5th Severson, Elmer.....	.50

Pewaukee

1st Bassett, A. K.....	\$1.50
2nd Severson, Elmer.....	1.25
3rd Townsend, G. H.....	1.00
4th Cooper, J. H.....	.75
5th Barnes, A. D.....	.50

Plumb Cider

1st Bassett, A. K.....	\$1.50
2nd Severson, Elmer.....	1.25
3rd Cooper, J. H.....	1.00
4th Palmer, J. S.....	.75
5th Toole & Son, Wm.....	.50

St. Lawrence

1st Barnes, A. D.....	\$1.50
2nd Severson, Elmer.....	1.25
3rd Baer, J. E.....	1.00
4th Lowe, E. C.....	.75

Salome

1st Brown & Son, S. L.....	\$1.50
2nd Platt, H. R.....	1.25
3rd Hauser, John F.....	1.00

Westfield Seek-no-further.

1st Meyer, A.....	\$1.50
2nd Bassett, A. K.....	1.25
3rd Goelzer, Miss E. M.....	1.00
4th Toole & Son, Wm.....	.75
5th Palmer, J. S.....	.50

Scott's Winter

1st Townsend, G. H.....	\$1.50
2nd Palmer, J. S.....	1.25
3rd Baer, J. E.....	1.00
4th Irish, L. B.....	.75
5th Bassett, A. K.....	.50

Tolman

1st Bassett, A. K.....	\$1.50
2nd Brown & Son, S. L.....	1.25
3rd Baer, J. E.....	1.00
4th Kickapoo Development Co.....	.75
5th Meyer, A.....	.50

Twenty Ounce

1st Meyer, A.....	\$1.50
2nd Cooper, J. M.....	1.25

Utter.

1st Bassett, A. K.....	\$1.50
2nd Barnes, A. D.....	1.25
3rd Cooper, J. H.....	1.00
4th White, A. F.....	.75

Yellow Transparent.

1st Learned, S. L.....	\$1.50
2nd Barnes, A. D.....	1.25
3rd Townsend, G. H.....	1.00

Yellow Bellflower.

1st Townsend, G. H.....	\$1.50
2nd Palmer, J. S.....	1.25

York Imperial.

1st Kickapoo Development Co.....	\$1.50
2nd Brown & Son, S. L.....	1.25
3rd Bassett, A. K.....	1.00

Wealthy

1st Hauser, John F.....	\$1.50
2nd Kickapoo Development Co.....	1.25
3rd Palmer, J. S.....	1.00
4th Meyer, A.....	.75
5th Brown & Son, S. L.....	.50

Willow Twig.

1st Townsend, G. H.....	\$1.50
2nd Meyer, A.....	1.25
3rd Palmer, J. S.....	1.00

Windsor.

1st Townsend, G. H.....	\$1.50
2nd Bassett, A. K.....	1.25
3rd Palmer, J. S.....	1.00
4th Tans, Mrs. John.....	.75
5th Platt, H. R.....	.50

Wolf River.

1st Learned, S. T.....	\$1.50
2nd Severson, Elmer.....	1.25
3rd Baer, J. E.....	1.00
4th Hauser, John E.....	.75
5th Kickapoo Development Co.....	.50

Zettle's Bellflower.

No Awards.

Peck of Apples—Dudley.

No Awards.

Fameuse.

1st Townsend, G. H.....	\$1.00
2nd Palmer, J. S.....	3.00
3rd Meyer, A.....	2.00
4th Baer, J. E.....	1.00

Golden Russet.

1st Baer, J. E.....	\$1.00
2nd Palmer, J. S.....	3.00
3rd Cooper, J. H.....	2.00
4th Bassett, A. K.....	1.00

Duchess.

1st Severson, Elmer.....	\$4.00
2nd Townsend, G. H.....	3.00
3rd Baer, J. E.....	2.00
4th Bassett, A. K.....	1.00

King.

No Awards.

MacMahon.

1st Kickapoo Development Co.	\$4.00
2nd Townsend, G. H.	3.00
3rd Learned, S. T.	2.00
4th Palmer, J. S.	1.00

McIntosh.

1st Kickapoo Development Co.	\$4.00
2nd Palmer, J. S.	3.00
3rd Brown & Son, S. L.	2.00
4th Severson, Elmer	1.00

Newell.

1st Kickapoo Development Co.	\$4.00
2nd Brown & Son, S. L.	3.00
3rd Townsend, G. H.	2.00
4th Toole & Son, Wm	1.00

Northwestern.

1st Kickapoo Development Co.	\$4.00
2nd Baer, J. E.	3.00
3rd Toole & Son, Wm	2.00
4th Bassett, A. K.	1.00

Patten.

1st Brown & Son, S. L.	\$4.00
2nd Kickapoo Development Co.	3.00
3rd Hearing, J. H.	2.00
4th Palmer, J. S.	1.00

Pewaukee.

1st Townsend, G. H.	\$4.00
2nd Severson, Elmer	3.00
3rd Bassett, A. K.	2.00
4th Palmer, J. S.	1.00

Plumb Cider.

1st Severson, Elmer	\$4.00
2nd Palmer, J. S.	3.00
3rd Toole & Son, Wm	2.00
4th Bassett, A. K.	1.00

Salome.

1st Bassett, A. K.	\$4.00
2nd Platt, H. R.	3.00

Westfield Seek-no-further.

1st Meyer, A.	\$4.00
2nd Palmer, J. S.	3.00
3rd Bassett, A. K.	2.00

Tolman.

1st Meyer, A.	\$4.00
2nd Baer, J. E.	3.00
3rd Palmer, J. S.	2.00
4th Cooper, J. H.	1.00

Utter.

1st Bassett, A. K.	\$4.00
2nd Cooper, J. H.	3.00

Wealthy.

1st Toole & Son, Wm	\$4.00
2nd Kickapoo Development Co.	3.00
3rd Townsend, G. H.	2.00
4th Hearing, J. H.	1.00

Windsor.

1st Bassett, A. K.	\$4.00
2nd Palmer, J. S.	3.00
3rd Townsend, G. H.	2.00
4th Platt, H. R.	1.00

Wolf River.

1st Baer, J. E.	\$4.00
2nd Severson, Elmer	3.00
3rd Palmer, J. S.	2.00

Class 281 Box Apples.**Best Bu. Box Dudley.**

1st No Award.	
2nd Bamford, L.	\$3.00

Best Bu. Box Fameuse.

1st Toole & Son, Wm	\$4.00
2nd Bassett, A. K.	3.00
3rd Baer, J. E.	2.00

Best Bu. Box McIntosh.

1st Kickapoo Development Co.	\$4.00
2nd Palmer, J. S.	3.00

Best Bu. Box McMahon.

1st Kickapoo Development Co.	\$4.00
2nd Townsend, G. H.	3.00

Best Bu. Box Wealthy.

1st Toole & Son, Wm	\$4.00
2nd Kickapoo Development Co.	3.00
3rd Baer, J. E.	2.00

Best Bu. Box Wolf.

1st Baer, J. E.	\$4.00
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BARRELS APPLES**Best Barrel Dudley**

No awards

Best Barrel Fameuse

1st Baer, J. E.	\$4.00
2nd Toole & Son, Wm	3.00

Best Barrel McIntosh

1st Kickapoo Development Co.	\$4.00
2nd J. S. Palmer	3.00

Best Barrel McMahon

1st Kickapoo Development Co.	\$4.00
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Best Barrel Northwestern Greening

1st Baer, J. E.	\$4.00
2nd Kickapoo Development Co.	3.00
3rd Bassett, A. K.	2.00

Best Barrel Oldenberg (Duchess)

1st Baer, J. E.	\$4.00
2nd Bassett, A. K.	3.00

Best Barrel Patten Greening

1st Kickapoo Development Co.	\$4.00
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Best Barrel Utter

1st Bassett, A. K.	\$4.00
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Best Barrel Wealthy.

1st Toole & Son, Wm	\$4.00
2nd Kickapoo Development Co.	3.00
3rd Palmer, J. S.	2.00
4th Baer, J. E.	1.00

Best Barrel Wolf River.

1st Palmer, J. S.	\$4.00
2nd Baer, J. E.	3.00

Best Barrel Plumb Cider

No awards

Class 282. Crab Apples.**Hyslop.**

1st Goelzer, Miss E. M.	\$1.50
2nd Kickapoo Development Co.	1.25
3rd Hauser, John F.	1.00
4th Bassett, A. K.	.75

Martha.

No awards

Sweet Russet.

1st Irish, L. B.	\$1.50
2nd Barnes, A. D.	1.25
3rd Brown & Son, S. L.	1.00
4th Toole & Son, Wm	.75

Transcendent.

1st Kickapoo Development Co.	\$1.50
2nd Barnes, A. D.	1.25
3rd Bassett, A. K.	1.00
4th Severson, Elmer	.75

Virginia.

1st Hauser, John F.	\$1.50
2nd Barnes, A. D.	1.25

Whitney.

1st Arpin Cranberry Co.	\$1.50
2nd Kickapoo Development Co.	1.25
3rd Brown & Son, S. L.	1.00
4th Irish, L. B.	.75

PEARS.**Collection not to exceed 15 varieties.**

1st Cooper, J. H.	\$6.00
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Single Plates.**Anjou.**

No awards

Bartlett.

1st Cooper, J. H.	\$1.00
2nd Rintelman, Wm	.50

Clapp's Favorite.

No awards

Flemish Beauty.

1st Palmer, J. S.	\$1.00
2nd Cooper, J. H.	.50

Kieffer.

1st White, A. F.	\$1.00
2nd Goelzer, Miss E. M.	.50

Lawrence.

1st Cooper, J. H.	\$1.00
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No awards

Louise.**Seckel.**

1st Hauser, John F.	\$1.00
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No awards

Sheldon.**Vermont Beauty.**

No awards

PLUMS.

Best collection, ten specimens native varieties.

1st Barnes, A. D.....	\$3.00
2nd Baer, J. E.....	2.00

Best collection, 10 specimens Japanese varieties.

No awards

Best collection, 10 specimens European varieties.

No awards

Grapes—Class 285.

Display not more than 15 varieties.

1st Reis, John.....	\$15.00
2nd Platt, H. R.....	12.00
3rd Bassett, A. K.....	10.00

Display of 10 varieties adapted to Wis.

1st Reis, John.....	\$8.00
2nd Kickapoo Development Co.....	6.00
3rd Platt, H. R.....	4.00

Display of 5 varieties adapted to Wis.

1st Kickapoo Development Co.....	\$5.00
2nd Brown & Son, S. L.....	4.00
3rd Reis, John.....	3.00
4th Platt, H. R.....	2.00

Canes.

Largest Quantity of Fruit, following varieties on one cane.

Brighton.

1st Kickapoo Development Co.....	\$3.00
2nd Brown & Co., S. L.....	2.50
3rd Reis, John.....	2.00
4th Platt, H. R.....	1.50

Concord.

1st Bassett, A. K.....	\$3.00
2nd Brown & Son, Wm.....	2.50
3rd Kickapoo Development Co.....	2.00
4th Reis, John.....	1.50

Delaware.

1st Brown & Son, S. L.....	\$3.00
2nd Kickapoo Development Co.....	2.50
3rd Reis, John.....	2.00
4th Platt, H. R.....	1.50

Moore's Diamond.

1st Reis, John.....	\$3.00
2nd Platt, H. R.....	2.50

Worden.

1st Kickapoo Development Co.....	\$3.00
2nd Brown & Son, S. L.....	2.50
3rd Bassett, A. K.....	2.00
4th Reis, John.....	1.50

Single Plate.

Agawam.

1st Irish, L. B.....	\$1.50
2nd Platt, H. R.....	1.00
3rd Reis, John.....	.75
4th Bassett, A. K.....	.50

Brighton.

1st Kickapoo Development Co.....	\$1.50
2nd Brown & Son, S. L.....	1.00
3rd Reis, John.....	.75
4th Platt, H. R.....	.50

Concord.

1st Kickapoo Development Co.....	\$1.50
2nd Brown & Son, S. L.....	1.00
3rd Platt, H. R.....	.75
4th Bassett, A. K.....	.50

Campbell Early.

1st Reis, John.....	\$1.50
2nd Bassett, A. K.....	1.00
3rd Kickapoo Development Co.....	.75

Delaware.

1st Kickapoo Development Co.....	\$1.50
2nd Brown & Son, S. L.....	1.00
3rd Reis, John.....	.75
4th Platt, H. R.....	.50

Green Mountain.

1st Reis, John.....	\$1.50
2nd Kickapoo Development Co.....	1.00
3rd Brown & Son, S. L.....	.75

Lindley.

1st Platt, H. R.....	\$1.50
2nd Reis, John.....	1.00
3rd Bassett, A. K.....	.75

Martha.

1st Reis, John.....	\$1.50
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Moore's Diamond.

1st Reis, John.....	\$1.50
2nd Platt, H. R.....	1.00
3rd Brown & Son, S. L.....	.75
4th Kickapoo Development Co.....	.50

Moore's Early.

1st Platt, H. R.....	\$1.50
2nd Brown & Son, S. L.....	1.00
3rd Kickapoo Development Co.....	.75
4th Reis, John.....	.50

Niagara.

1st Kickapoo Development Co.....	\$1.50
2nd Reis, John.....	1.00
3rd Brown & Son, S. L.....	.75
4th Platt, H. R.....	.50

Pocklington.

1st Platt, H. R.....	\$1.50
2nd Reis, John.....	1.00

Salem.

1st Reis, John.....	\$1.50
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Wilder.

No Awards.

Worden.

1st Kickapoo Development Co.....	\$1.50
2nd Platt, H. R.....	1.00
3rd Bassett, A. K.....	.75
4th Brown & Son, S. L.....	.50

Wyoming Red.

1st Bassett, A. K.....	\$1.50
2nd Brown & Son, S. L.....	1.00
3rd Kickapoo Development Co.....	.75
4th Reis, John.....	.50

Class 286—Everbearing Strawberries

Best Collection Plants in Fruit.

No Awards.

Best 3 Pint Boxes Fruit.

No awards

CLASS 287.

CRANBERRIES.

Best Plate Bennett

1st Butter, Arthur C.....	\$2.00
2nd Secker, C. M.....	1.00
3rd Arpin Cranberry Co.....	.50

Best Plate Favorite.

1st Secker, C. M.....	\$2.00
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Best Plate Daisy.

1st Secker, C. M.....	\$2.00
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Best Plate Bell and Cherry.

1st Arpin Cranberry Co.....	\$2.00
2nd Secker, C. M.....	1.00
3rd Fitch, J. W.....	.50

Best Plate Badger.

1st Secker, C. M.....	\$2.00
2nd Fitch, J. W.....	1.00

Best Plate McFarlin.

1st Secker, C. M.....	\$2.00
2nd Arpin Cranberry Co.....	1.00

Best Plate Fox.

1st Secker, C. M.....	\$2.00
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Best Plate Banner.

1st Secker, C. M.....	\$2.00
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Best Plate Metallic Bell.

1st Arpin Cranberry Co.....	\$2.00
2nd Bennett, A. E.....	1.00

Best Plate Beaver.

No awards

Best Plate Monogram.

1st Arpin Cranberry Co.....	\$2.00
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Best Plate Prolific.

1st Bennett, A. E.....	\$2.00
2nd Arpin Cranberry Co.....	1.00
3rd Gaynor Cranberry Co.....	.50

Best Plate Chief.

1st Gaynor Cranberry Co.....	\$2.00
2nd Bennett, A. E.....	1.00

Best Plate Daisy.

1st Bennett, A. E.....	\$2.00
2nd Gaynor Cranberry Co.....	1.00

Best Plate Searles Jumbo.

1st Searles A. & Son\$2.00

Best Plate Bell and Bugle.1st Arpin Cranberry Co.....\$2.00
2nd Fitch, J. W. 1.00**Best Plate Pennant.**

1st Secker, C. M.\$2.00

Best Five Commercial Varieties.1st Secker, C. M\$6.00
2nd Arpin Cranberry Co..... 1.00**Best Collection Cranberries.**1st C. M. Secker.....\$8.00
2nd Arpin Cranberry Co..... 6.00
3rd Bennett, A. E..... 5.00
4th Gaynor Cranberry Co..... 1.00**CLASS 288.****Grand Sweepstakes on Fruits of all kinds.****No. 157 Best and Largest Exhibit of Named Fruits.**

Exhibitor's No.	Amount.	Name.
728	\$33.50	Kickapoo Development Company
107	21.25	A. K. Bassett
90	18.75	J. E. Baer
1095	18.25	J. S. Palmer
1367	15.25	G. H. Townsend
1368	13.75	Wm. Toole & Son
219	11.25	J. H. Cooper
1163	11.00	John Reis
110	10.50	S. L. Brown & Son
1111	9.05	H. R. Platt
118	6.45	A. D. Barnes
1274	6.40	Elmer Severson
869	5.25	A. Meyer
1288	2.60	C. M. Secker
1187	2.25	S. T. Learned
15	2.20	Arpin Cranberry Company
573	1.80	John F. Hauser
623	1.75	L. B. Irish
577	1.10	A. E. Bennett

CLASS 289**COMMERCIAL FRUIT EXHIBITS BY COUNTIES.**

194	1st	\$100.00	J. A. Hays
1247	2nd	\$100.00	A. K. Bassett
1162	3rd	\$100.00	John Reis

Home Storage of Apples for Commercial PurposesR. A. Simpson, Vincennes,
Indiana

There is a demand and need for the home storage. There is a feeling among many of the practical orchard men that under certain conditions, which I mention below, that there is a great need of a good cool storage in the orchard and one of the great questions at present is, "Is it possible to construct a cool storage that will keep the fruit in proper condition, economically until the holidays or through February if necessary?"

A cool storage is most profitable under the following conditions:—

First, where one is catering to the home trade or an early sale for a part of his crop or where he wants to sell all he can at home and by disposing of the rest to other towns during a period not later than the last of February. It is understood that should you have large acreage only a part should be handled in this way and that the rest put in cold storage; thus allowing a longer period in which to dispose of your crop.

Second, when the orchard is located near a large town or small city.

Third, where one has good keeping varieties, especially those which are harvested late in the Fall. If the crop is more than you want for cool storage, always keep your last pickings for cool storage and the early pickings for cold storage.

There are many advantages in the use of a successful cool storage. First, it increases home consumption by giving a longer period in which to dispose of the various varieties without adding additional cost such as packing, freight to cold storage, cold storage charges and commission. This enables the home grocer-man to handle your fruit for a much longer period, at a lower price to the consumer. At the same time he is able to pay the grower better prices for his fruit than he could have gotten had they all been sold during picking time. Second, it enables the grower to dispose of a great quantity of his fruit at a good profit which may not be quite good enough to barrel and store. Third, you can supply the farmers during the winter, who, as a rule, never buy cold storage apples. Fourth, it helps to harvest your fruit more economically. Fifth, it enables you when you are shipping, to have your fruit cooled before being loaded. Sixth, you have a market with less competition, as it is after the harvest glut and before the storage apples can be moved at a profit. There are many other advantages which might be mentioned.

The successful home storage so far as keeping the fruit is concerned depends largely upon the location and the construction of the building. It must be well planned, properly constructed and made of proper material. It must have the best insulation and ventilation with proper light

and moisture. If possible it should be located on a side hill which slopes to the north where the underground storage is used, though this is not absolutely necessary as the same kind of building could be constructed on level ground or above the ground if necessary.

At Vincennes, Indiana, we have constructed a combination packing house and cool storage, which works very successfully and which we find is very practical. This building is built on the north slope of a clay hill at the edge of our orchard which is located four miles from the city. It is a three story building and is made of hard burnt hollow tile. The tile measures 8-8-12 and has three openings in each, which, when constructed makes three dead air spaces in the walls. We have an elevator running from the basement to the top floor. The basement, which is our cool storage proper, is all underground except three feet of the north wall which is provided with windows for light and extra ventilation when needed. The walls of this basement are the same as above except that the tiles are burnt a little harder and that between the clay and the outside of the walls we run in four inches of concrete, thus making a stronger wall and better insulation. The ceiling of this basement is thoroughly insulated in the following way:—Shiplap, water-proof paper, eight inches of mill shavings, water-proof paper, shiplap, water-proof paper and then the flooring. The basement floor proper is clay with an open slatted floor eighteen inches above, made of two by six inch timbers laid one-half inch apart. Fresh air is drawn in at night or cool days from the outside, through three fifteen inch air ducts, which are made of drain

tile. These air ducts are 60 ft. long and placed under the clay floor and each one has three openings twelve feet apart on the inside of the cellar; thus allowing the fresh air to enter the cellar from these openings and pass through the slatted floor to all parts of the basement. From the ceiling of the basement to the top of the roof we have two galvanized iron pipe ventilators which are supplied with a damper on the first floor and a self-adjusting, revolving suction elbow at the top. This elbow is so constructed that the outlet is always pointing the same way the wind is blowing. In the lower part of the elbow is provided an opening in such a manner that the breeze enters the elbow and passes out at the opening and thus creates an additional draft, which insures better ventilation in the basement.

We find that this basement holds a very even temperature throughout the day. We find that at certain times of the year it may be necessary to add additional moisture. This can readily be done by raising a few slats and spraying the clay floor with moisture. We find it is very necessary to have plenty of moisture but usually we have been able to get enough moisture by capillary attraction from the ground. There are times that it might be very practical to use some ice in this storage.

The fruit should be brought into the packing shed, sorted as to quality, taken to the basement the following morning and stored in slatted crates, open headed barrels or in bulk, so as to receive the best ventilation. We know that in our cellar we can keep good winter apples until the first of March with practically no loss. We can also keep Number 2 apples until the

holidays or longer. We can keep Grimes Golden until Xmas. We always open air ducts at night or cool days and shut them when the air outside is warmer than inside.

The two upper stories of this building which are used for packing, are very cool, indeed, and may also be used for storing a few carloads of the very last pickings for a short period, if so desired. (Read at Convention National Apple Growers Association, St. Louis, Aug. 2, 1916).

AUTUMN ORCHARD WORK

Fall Measures to Control Pear Blight of Pear, Apple, and Quince Trees and Apple Cankers

In the management of the orchard, especially the apple and pear orchard, there is a period in the autumn after the fruit is gathered, and perhaps after other crops have been safely harvested, that is most convenient for doing some of the careful work in the control of certain diseases and pests. There are certain fungous and bacterial diseases, particularly pear blight and apple canker, which are best worked upon at this time. These diseases are principally controlled by the eradication methods rather than by spraying. With both these diseases it is not only a matter of convenience but it is a fortunate thing that some of the most important work of the season can be best accomplished at the time when it is most convenient. The mild autumn days before the snow flies or disagreeable, rainy, or cold weather comes give the very best opportunity for careful work and close inspection.

Pear Blight

Pear blight is a bacterial disease which works mostly in the

fleshy, growing, tender parts of the tree, including the blossom clusters, young twigs, and the bark of larger branches, and even on the body, collar, and root system of the tree. Under certain conditions the bacteria spread into the wood to a considerable extent. The disease attacks the pear, apple, quince, and other related fruits of the pome family. While the leaves are attacked to some extent, particularly the leaf stems and midribs of the younger leaves, the main killing of the foliage results from the death of the twigs and branches on which the leaves are located. The dead branches and other parts give no evidence to the naked eye of the cause of their death and thus resemble somewhat limbs killed by fire; hence the name fire blight, particularly with blight on the apple, is often applied.

How the Tree is Infected

The germs get into the tree in several ways. First and most important is the blossom blight. Flies and other insects carry the germs from the gummy exudate on the hold-over blight to the opening blossoms and infect the nectaries of the flower. Bees and other insects carry the germs from blossom to blossom and tree to tree and even to adjacent orchards and spread the disease rapidly during the blooming period. During the present season pear blight has been particularly bad, especially the blossom blight on both pears and apples. The outbreak of 1915 stands out as one of the worst in history, particularly on account of the unusual amount of blossom blight on the apple.

Next in importance after the blossom blight, and in some

cases the most serious phase of the disease, is the infection of the tender tips of growing twigs. Thousands of these young twigs may be killed on a single large apple or pear tree. The blight may extend from the infections on the blossoms or from twigs down on to the larger branches, thence to the body of the tree. The branches, bodies, and more particularly the collar and even the root system of the tree, may be infected directly by the germs. The infection may come from a fruit spur, water sprout, or even a sprout from the root, or the germs may be introduced by punctures by insects, birds, implements, or other means, directly into the fleshy bark, or even may enter, in certain cases, through growth cracks. Ordinarily the cuticle of the tree protects it from the entrance of the germs, otherwise there would be much more destruction of trees than actually occurs.

Each infection, no matter where it occurs, should be looked upon as an individual case of pear blight. The diseases resulting from the various modes of attack for convenience are given various names, such as blossom blight, twig blight, body blight, collar blight, and root blight. The lower down on the tree, as a rule, the more dangerous is the blight. The tree may have a thousand or more twigs and blossoms killed in the top and not be seriously or permanently injured, while a single case of body blight or collar blight may result in its death. Each infection is to be looked upon as a definite, limited, diseased area. The part attacked is usually destroyed, though the disease may occur in the outer fleshy bark of the limbs and branches without always penetrating to the cambium. When

the cambium or vital layer between the wood and bark is killed, death of that particular area, of course, results.

Secondary Control Measures

For various reasons spraying has not been practically successful in controlling the disease. The eradication method, or actually cutting out the diseased area, is the principal way of controlling pear blight. Other methods, such as withholding stable manure and nitrogenous fertilizers, moderate cultivation or withholding it completely, seeding the orchard down to grass or clover, or sowing rank-growing cover crops after the blight appears in the spring, such as cowpeas and sorghum in the Middle States, oats, millet, or similar crops in the Northern States, all help in a secondary way in reducing the severity of the blight.

Direct Eradication

The main method of controlling pear blight, however, consists in cutting out the diseased tissue wherever found and disinfecting the wound and the instruments to avoid spreading the disease. In the great majority of cases fortunately the blight comes to a definite standstill in the bark, after killing a certain distance, and stops. The germs die out in the dead bark, a crack or crevice forms between the live and the dead bark, and the case ends itself naturally and heals out. In many cases, however, the disease, while drying out in the older parts, keeps on spreading on the margin, the germs renewing themselves by multiplication and infecting new areas of fresh bark.

(To be continued in an early issue.)

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Volume VII

Madison, Wisconsin, November, 1916

Number 3

Perennials or Herbaceous Plants

Axel Johnson, Lake Geneva, Wis.

Perennials or herbaceous plants are gaining more and more favor justly so because they are some of our most beautiful plants both for perennial beds and mixed borders; also for edging up shrubberies. They are easily handled. The soil should be prepared and enriched with a good fertilizer before they are planted. Most of them can be undisturbed three or four years and some of them much longer. Most of them can be increased by division planted early in the fall. For the winter is required a light mulching of leaves which will serve to keep the action of the sun off the plants, preventing the plants from lifting, or as we call it, heaving out of the ground which would kill the roots of the plants. It will also serve to keep the plants dormant longer in the spring which is desirable on account of the late frost we sometimes have. The list of perennials is so great that I shall only attempt to mention a few:

- Aquilegia Hybrida
- Baptisia Australis
- Campanula Persicifolia & Carpatica
- Dianthus Plumaris

- almost as pretty as orchids, such as
- Madam Cherau
- Pallida Delmatica, King of Iris
- Rheine Nix, Queen of May.



Wisconsin ferns are the most beautiful of all ferns. Kilbourn, Wis.

- Dictamnus Fraxinella
 - Dielytra Spectabilis.
- Then we have the German Iris. Of this class of plants we have many beautiful varieties that are

Then we have the peony which ranks a close second to the rose. They are most beautiful when in bloom and when they are through blooming they are still

good on account of their beautiful foliage which keeps its glossy color throughout the summer and in the fall they change to a bronze shade which when planted along the edge of shrubbery is very effective. They are absolutely free from insects and disease. The number of varieties among the peonies is so great and varied in color that I shall only mention a few of the old "stand-bys":

Festiva Maxima
Delicatissima
Madam Furtado
Felix Crousse.

Thermopsis Caroliniana is a plant that is not grown very extensively but should be grown more. They are absolutely hardy, come early in the spring with their beautiful foliage and yellow pea-shaped flowers in long racemes. Then we have the well known *Anthemis Tinctoria*, also:

Delphinium Chinensis and
Formosum
Gailardia grfl.
Gypsophila paniculata
Japanese Iris
Lysimachia Fraserii
Monarda Didyma.

The phlox ranks a close second to the peonies, and by some growers are considered better than the peonies on account of their longer season. There are some beautiful varieties among them and should be grown more extensively. Such varieties as

Pantheon
Bridesmaid
Cocquillicot
Frau Buckner
Mrs. Lingard

are well worth a place in any garden. *Pladycodon Jap.* also claims our attention as well as *Spirea Palmata*, *S. Aruncens*, *S. Venusta*, and our old fashioned *Hollyhock*.

Thalictrum Deptorocarpus is

one of the newer ones, but has proved perfectly hardy and free blooming and should be grown extensively.

Yucca Filamentosa and *Veronica Spicata* and *V. Longifolia Subsessilis* are well worth having. *Aconitum Napellus*, *A. Bicolor*, and *Fisheri* follow each other, *Fisheri* being very late. *Artemesia Lactiflora* is very good to cut as well as for ornament. *Helianthus Multiflora*, *H. Miss Mellish*, *Hibiscus Crimson Eye*, and *Mallow Marvels* are very showy. *Lobelia Cardinalis* the well known cardinal flower, *Rudbeckia Newmania*, *R. Laciniata* and *Purpurea*, *Boltonia latisquama*, *Helenium Autumnale superba* are very showy and good for cutting, being that they come quite late in the season.

All the varieties here mentioned are perfectly hardy and easily handled and all can be propagated by divisions.

Marketing Ideas

The following letter from Mr. F. Kern well known in this state as a successful market man will, we are certain, be read with interest by all of our members who are directly or indirectly interested in marketing fruit.

Traverse City, Mich.,
Oct. 19, 1916.

My Dear Cranefield:

Just received your letter this morning and note date of meeting and what you say about the Illinois apple crop, and it set me thinking how that crop ought to be marketed. My suggestions are, as follows:

Marketing is the one topic occupying the attention of the Department of Agriculture at Washington and many of the State Agricultural Departments. There's a reason. On the successful marketing of the crops of

these United States depends the prosperity of the Agricultural and Horticultural interests, which are really the foundation for all prosperity; for, if these interests prosper, the United States prospers accordingly.

New York has made a tremendous effort to aid the growers in the way of marketing. Michigan is making an effort in the grape sections. Wisconsin has done little as a State, but the Wisconsin State Horticultural Society has made an effort, and, in every instance, it has developed that little can be done without first organizing the state or community.

Wisconsin has more successful co-operative organizations than any other State in the Union; these principally creamery and cheese organizations, and, through organization, a market has been established for Wisconsin cheese that has put it at the head of the list. Wisconsin is known the world over as the greatest dairy state in the United States. The State has natural advantages, but the wonderful progress of these two industries has not been the result of individual effort.

One of the first successful fruit districts in the Middle West was that at Sparta, but it was not successful as long as each individual attempted to do his own marketing. That district organized one of the first Fruit Growers' Associations in the Middle West, and, when the Pacific slope began to develop the fruit industry, Mr. Paulhamus, of Puyallup, Washington, went to Sparta to study co-operative organization, and from the information gained, he organized the greatest organization of growers of small fruits in the United States, an organization

CRANBERRY NOTES

By J. W. FITCH

Berries Small but Quality High

Cranberry cleaning shows that the berries are generally running quite small, some crops showing as high as 38 per cent "pies." One of the lessons of the season seems to be that the vines the best drained had the least blight, also that the vines which were sanded and drained well had larger berries than last year, at least that is the result apparent to the writer. A very extensive campaign for increasing the consumption of cranberries, is being conducted by the American Cranberry Exchange in Chicago. About twenty thousand dollars will be spent and it is hoped to increase the consumption of cranberries from forty to eighty thousand barrels in that city. If successful the work will be extended to other places next year and a much larger sum will be expended.

IMPORTANT COMMITTEE MEETING

A very interesting and important meeting of the committee appointed at the August meeting to consider the future continuance of the experiment station was held at Mather, Oct. 23d, the meeting being postponed from Oct. 20th. The members of the committee present were Mr. F. J. Hoffman, C. M. Secker, and J. W. Fitch. Mr. Andrew Searls and A. B. Roberts absent. Mr. O. G. Malde, superintendent of the station, was there to help the committee in their decisions.

The committee was unanimous as to the value and necessity not only of continuing the station along the present lines but of enlarging its scope to include demonstration, commercially as well as research though recognizing that the work of research was the most necessary for the industry and that such investigations should not be sacrificed in order to make the station self-supporting, which Mr. Malde thought entirely practical. Looking as well as it was able into the future and considering carefully the present conditions of the station, and the refusal of the present management of the Gaynor Cranberry Co. to renew the lease, the committee resolved that the location of the station should be changed. First to obtain more suitable soil conditions, second, for a sufficient water supply, third, that there should be at least forty acres for developing purposes, outside of reservoir requirements. Also it was felt that a much more accessible site could be obtained. Several offers of land with good water privileges were presented; also the possibility of getting a bog already planted were considered and will be duly forwarded to Dean Russell to present to the regents for their consideration. The matter of the premium list for the next state fair, was arranged and a systematic effort will be made to have all growers compete. Mr. C. M. Secker of Mather and Mrs. S. W. Whittlesey of Cranmoor were appointed to represent the association at the winter meeting of the Horticultural Society, where an exhibit also will be made.

SCORING THE APPLES.

A new feature in judging the apple display at the recent State Fair was the systematic scoring system introduced by the judges Professors Moore and Roberts, of the Agricultural College of Madison. Being in a position to observe carefully its operation, I take this opportunity to pronounce it a howling success. Never were the apples gone over more carefully and never were the awards more conscientiously given. Every exhibitor got just what he had coming, no more, no less. And of course this tickled the Kickapoo crowd who won the Grand Sweepstakes thus walloping one over the Baraboo boys who as a rule are the winners.

They certainly can grow some apples on those old bluffs in Crawford County. But watch next year, the Baraboo tribe will be out on the war path, and the Kickapoos will have to swing their tomahawks if they succeed in carrying off the ribbons.

When considering improvements for the Horticultural department at the State Fair for the coming year, we trust the management will see to it that the valuable feature is continued and let us hope that the competent service of these same judges can be secured again.

W. J. Moyle.

Autumn-bearing strawberries have done well this year only where they have had plenty of moisture. Nevertheless they are worth growing in the home garden.

Don't be discouraged because the dahlias were a failure this year. Try them again next season. It is best not to plant until June.

Apple Forecast By Varieties

The September 1 forecast of total apple production this year in the United States, as reported by the Bureau of Crop Estimates, U. S. Department of Agriculture, is 67,679,000 barrels of 3 bushels each (agricultural and not commercial basis), as compared with 76,670,000 estimated produced last year, of which not quite 65 per cent were sold. In the past ten years estimated production has exceeded the present forecast five times. Taking the country as a whole, it thus appears that the apple crop will be nearly an average, but 12 per cent smaller than last year's large crop. The crop is larger than last year in the Atlantic Coast States, including New York and Pennsylvania, and in the Pacific Coast States, but smaller in practically all the interior States except Michigan, which has about 34 per cent more than last year. For the first time this year an attempt has been made to forecast the crop by important varieties.

The following estimates are based upon reports from special lists of apple correspondents to the Bureau of Crop Estimates:

Baldwin appears to be the leading crop this year, with a forecast of 9,302,000 barrels, an increase of 12 per cent over last year's production. Ben Davis, which was the leading variety as to quantity last year, falls to second this year, with a forecast production of 9,245,000 barrels, which is 17 per cent less than the production estimated last year.

The Winesap forecasts a production of 3,794,000 barrels, a decrease of 32 per cent from last year.

Greening forecast is 3,739,000 barrels, an increase of 4 per cent

over the estimated production last year.

Northern Spy forecast is 3,602,000 barrels, an increase of 25 per cent over last year's estimated production.

The Wealthy forecasts a production of 2,863,000 barrels, a decrease of 13 per cent from last year's crop. Michigan forecasts a production of 495,000 barrels, an increase of 33 per cent over last year's estimated production; New York 389,000, an increase of 57 per cent; Iowa 290,000, a decrease of 48 per cent; Wisconsin 215,000, a decrease of 43 per cent; Pennsylvania 177,000, an increase of 39 per cent; Minnesota 140,000, an increase of 1 per cent; Ohio 124,000, a decrease of 17 per cent; Illinois 85,000, a decrease of 63 per cent; all other States 948,000, a decrease of 13 per cent.

The Rome Beauty, with a forecast of 2,770,000 barrels, is 21 per cent short of last year's estimated production.

Oldenburg variety forecasts a production of 2,001,000 barrels, which is 8 per cent less than last year. Michigan forecasts 505,000 barrels, an increase of 30 per cent; New York 395,000; an increase of 144 per cent; Iowa 218,000, a decrease of 47 per cent; Wisconsin 195,000, a decrease of 39 per cent; Pennsylvania 140,000, an increase of 52 per cent; Illinois 60,000, a decrease of 68 per cent; Ohio 53,000, a decrease of 51 per cent; all other States 435,000 barrels, a decrease of 16 per cent.

McIntosh forecasts a production of 1,012,000 barrels, an increase of 31 per cent over last year. New York forecasts 357,000 barrels, an increase of 55 per cent; Maine, New Hampshire, Vermont, and Massachusetts combined, 194,000 barrels,

an increase of 109 per cent; all other states 461,000 barrels, an increase of 2 per cent.

Fameuse (Snow) forecasts a production of 1,005,000 barrels, an increase of 1 per cent.

Geraniums.

In all but semitropical portions of the United States geraniums must be taken indoors for winter. Florists usually make cuttings in the fall to grow new plants in greenhouses for spring use. This practice is, of course, impracticable for the average householder. The latter may take up growing plants and hold them in a dormant condition by storing upright in boxes of dry soil in a cellar having a temperature of from 40° to 50° Fahrenheit. The plants may be placed close together with only a little dry soil among the roots.

Preparing Shrubs for Winter

While a number of the shrubs commonly grown in the garden will go through the winter without injury if let alone, others must be given varying degrees of special attention. Among the shrubs which need no unusual fall and winter care are snowball, spirea, mock orange, and lilacs.

The highbush cranberry is a decided addition to a shrubbery planting at this time of year. The fruit is showy.

Fruiting branches of the Euonymus or "Burning Bush" cut before hard freezing make good bouquets for a porch vase. They will last until quite late in winter.

Apples picked carefully from the tree and wrapped in paper keep well. Do not store apples in a potato cellar as they take up odors.

FLOWERS

MILWAUKEE FLORIST CLUB.

By Eug. Oestreicher, Sec.

Now that the heating apparatus is in operation night and day, plants in pots dry out more rapidly than heretofore. No matter how healthy a plant, how good a soil and how ideal the location, nothing will spell ruin quicker than continued dryness.

Often have we heard people say "I water my plants every day and still they don't seem to do right".

And right here we might say that a little water everyday is *not* the thing.

The following method has been recommended by the writer to many a purchaser of palms, ferns and other house plants and has always proven satisfactory.

Let a plant get good and dry, then put into a larger receptacle which contains enough water to more than cover the pot with water and let it stand there for at least half an hour.

In this way the whole ball of soil in which the plant is growing becomes thoroughly saturated and will then need no watering for several days. If the room is very warm two such soakings in a week will suffice.

By watering a little every day the center of the soil around the plant does not get wet, gradually getting powder dry which in time will lessen the action of those roots and thus fail to produce a healthy growth. Another great mistake made by most amateurs is that they mostly use pots which are too large in order to obtain the best results.

Start your plants in small pots and not until this pot is full of healthy active roots is it ad-

visable to transfer them into the next larger size. It may seem to many that it hardly seems profitable, but as plant life is not any too active during the winter months the new soil added by shifting will greatly benefit them.

To wash the leaves of plants with luke-warm soap water once a week will firstly rid and keep away red spider, scale and all the other kinds of insects and secondly give the plant a better chance to breathe through the clean leaves; for to keep the leaves clean is identical with keeping the skin on a person's body in a sanitary condition.

Should you have one or more plants which you think a great deal of which do not seem to grow just right it is advisable to have a practical florist look them over; that's his line of business and just by looking at them he can usually tell you the trouble at once.

There is still time to plant various kinds of bulbs out doors. Ask questions.

WINDOW BOXES

If an indoor window box is decided upon, a good depth for it is about 8 inches. The bottom of the box should be covered with stones and broken pottery for drainage. This should be covered with a layer of moss to prevent the soil from working down and clogging the drainage spaces. The drainage and moss should take up together about 2 inches. The greater the body of soil above the moss the more uniformly moist it may be kept. The soil should fail to fill the box by from 1½ to 2 inches.

The indoor window box should be as long as the window is wide, and to get as much light as possible it should be level with the window sill. It may be placed either on brackets, a table, or legs permanently fastened to it. A hole or holes should be provided in the bottom of the box and a drip pan should be placed beneath to catch drainage water.

The top of the soil should be allowed to become dry occasionally. The results of watering should be closely observed and the supply regulated according to needs. Watering may be necessary in sunshiny weather, especially toward spring, every day or at least every other day. In cloudy and midwinter weather it will not be necessary to water more often than once a week. In general it is better to water lightly and frequently than heavily and infrequently, although just the reverse is considered best when watering is done out of doors in summer.

PLANTS FOR THE WINDOW BOXES

Only plants of the same general character should be placed in window boxes, since plants of different kinds require different treatment. Begonias are about the only plants that may be expected to flower in a window box. For the most part foliage alone must be depended upon as the contribution of the indoor plants to the attractiveness of the room. Among the plants which may be grown for foliage for window boxes are ferns, geraniums, Kenilworth ivy, smilax, and aspidistra. The latter plant is especially valuable as a window box plant as it will thrive in spite of considerable neglect, drought, and dust. Direct sunlight also is not required by this adaptable plant.

Marketing Ideas

(Continued from page 34)

that in 1914 paid its members one and one-fourth millions of dollars.

From this splendid example, immense organizations have sprung up and prospered all over the Pacific Coast. They are today, and have been for years, teaching the world lessons in marketing. The result of what? Production? No! Salesmanship? No; the direct result of organization, which made it possible to hire competent salesmen to market all that could be produced and at a profit to the grower.

The Department of Agriculture at Washington may spend its entire appropriation annually for the next ten years, and without organization, will accomplish nothing for the fruit grower, and they are coming to realize this fact keenly. The State of Michigan can produce a greater variety of good fruit than any state in the Middle West, and they get the lowest average price. There's a reason. It is not a lack of markets, for markets, and good markets too, surround it. The reason is this:

There is not a solid co-operative Fruit Association in the State, never has been, and I question if there ever will be. The Department of Markets, of the Michigan Agricultural College, undertook to furnish state inspection this year, and, after scores of sleepless nights, they learned the first requisite was *organization*. They found one at Paw Paw that showed signs of living through the season, and the Department was permitted to practice on it and did furnish a certificate of inspection on twenty-four cars that sold at practically the same price as the

uninspected, but the point is in favor of Organization.

Why don't Fruit Growers organize? Sometimes they do, but more often they do not; especially in the Middle West and in the East. *Why?* Are they fully satisfied with their own efforts? No; usually, no.

In my opinion the lack of organization is on account of one of the two following reasons: For the right material, with which to build a good co-operative Fruit Growers Organization, you must have either growers who do not know enough to market their crops, (who know it themselves and are not too proud to admit that they do not know how to market successfully), or, you must have growers who know enough to realize that their crops can be marketed better by some specialist than they can market it themselves; growers who are not too proud to admit it. If you have both classes, you might succeed.

Successful marketing does not consist, as is insanely imagined too often, in eliminating the middleman. You *can not* dispense with his services unless you are able to supply his place with your own agent, but, through organization, you can regulate the middleman and get the benefit of his selling agency and his capital in distributing your crops. But, to interest these middlemen, you must have an organization worthy of their attention. Then, if you can put up an honest pack of quality fruit, your middleman will gladly invest his funds in your crop.

There are two ordinary words "ORGANIZE" and "STANDARDIZE" that will solve the marketing problem, and without the former you can stand little show of accomplishing the latter. When you have done all

this, you will be ready for the next chapter.

Earnestly yours,
F. Kern, Mgr.

Home Gardening Hints

It may not be too late when this paper reaches our readers to take advantages of these very useful suggestions sent out by the office of information of the U. S. Dept. of Agriculture.

Preparing Flowers and Shrubs for Winter

Steps to be taken at this season (fall) for placing the flower garden in shape for winter will vary with the kinds of plants grown and the latitude, say specialists of the U. S. Department of Agriculture. In the case of perennials, which die down to the ground but which should live through the-winter and send up shoots again on the advent of warm weather, the roots should be well mulched with manure 3 or 4 inches deep as soon as the ground freezes. In this group are included such plants as peonies, larkspur, hollyhock, columbines, iris, paltycodones, and perennial poppies.

Leaves raked off the lawn now may be piled in some out-of-the-way place and will give a supply of leaf mold for next year or the year after. They may be used to cover plants in the garden, although clean straw is better.

Onions that are exposed to the weather after pulling become rough and unclean in appearance and do not bring as much on the market as those that are kept dry.

Trees and shrubs may be set in autumn, but do better if set in the spring.

Propagating Roses by Fall Cuttings

Climbing roses are propagated mostly by hardwood cuttings made in the fall, many cut flower roses may be propagated in the same way.

Hardwood cuttings are taken from the dormant wood of winter, while softwood, or greenwood, cuttings are taken when the plants are in active growth. To make a hardwood cutting, good strong, well-ripened shoots of the past summer's growth should be selected. These are better if cut between the time the leaves fall and freezing weather. If left until after cold weather there is danger of injury from freezing. They should be cut into pieces of 5 or 6 inches, with the upper cut just above a bud, and should be tied in bundles with raffia or with string that does not rot easily if exposed to dampness. After labeling plainly they should be buried in moist sand, tops down, and placed in a cool cellar or buried in the open ground below danger of frost. They should be planted in the open ground in the spring about or a little before corn-planting time, so that one or two eyes, or not over one inch of the cutting is above ground, which will leave 4 or 5 inches in the ground. Care must be taken not to injure the calluses that have formed while the cuttings were buried. Sometimes better results are obtained by planting in partial shade.

Frequently cuttings made in winter or early spring do nearly as well as those made in the fall, but in the North there is always danger of the wood being injured during the winter.

U. S. Dept. of Agriculture.

We answer questions.

Fall Measures to Combat Rose Diseases

Rose gardeners should take advantage of the fall season, say specialists of the U. S. Department of Agriculture, to make their plants as free as possible from disease by methods that can not well be followed during the growing season. It is true in general that whatever the disease, the affected portions of the plants should be cut out in the fall and the shortened bushes sprayed. It is assumed, however, that spraying will not have been delayed until fall, but will have been carried on as a control measure at frequent intervals since spring. The diseased wood removed in the fall, together with the old leaves and debris under bushes, should be burned. In case of attacks by rusts, canker, and leaf spots, the diseased wood or leaves should be removed and burned even during the growing season.

For powdery mildew, the control sprays for the summer spores should be with lime-sulphur or potassium sulphide. After cutting back in the fall, the plants should be sprayed with lime-sulphur or strong Bordeaux mixture. The control sprays for rusts should be ammoniacal copper carbonate. The fall spraying should be with a strong Bordeaux mixture. For leaf-spot, leaf-blight, and anthracnose, the control sprays may be either Bordeaux mixture or ammoniacal copper carbonate, and the fall spraying should be with the former.

Leaf Blotch

Leaf blotch, also known as black-spot, is a common and very injurious disease. The first symptoms are the appearance

of irregularly shaped blackish spots on the upper surface of nearly full-grown leaves. In this stage the trouble may be controlled by several sprayings with ammoniacal copper carbonate or Bordeaux mixture, but if these precautions are not taken another stage of the fungus develops in the same spots. The fungus in this later stage lives over the winter on fallen leaves and sets up a new infection in the spring which can only be prevented by raking up and burning the fallen leaves and spraying the dormant bushes with strong Bordeaux mixture.

Another disease to which roses are subject is canker, which starts with the appearance of small reddish patches on the green parts, generally of 1-year-old growth. Such infected areas may increase until the entire stem is surrounded and may extend for several inches along the branch. The only advice to be given is to cut away rigorously all diseased branches, and it may be necessary to cut back entire bushes if badly infected. Cover the exposed surfaces made by this cutting with paint or tar. This diseased material must be burned and the dormant bushes sprayed with strong Bordeaux mixture in both the autumn and early spring.

U. S. Dept. of Agriculture

A Riddle?

The following extract from a letter recently received is not clear, perhaps it is a riddle. Who can tell us?

"O say, you remember the Tail End I was to get at the State Fair? O say, that Tail End was so long that I cut off two pieces and gave a piece to each of the others to make the tail ends all the same."

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 Remit to Secretary W. S. H. S.,
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Come

A preliminary program for the Annual Convention appears in this issue. It has been impossible to complete the program but be assured the final announcement which will be published in the December number will be full and complete. The finished program will provide something for everyone and a great deal for most everyone! Amateur and professional horticulture hold equal places. The convention is for you. Come.

ANNOUNCEMENT

Annual Convention, Assembly Chamber
 State Capitol, Madison
 Tue., Wed., & Thur., Dec. 12, 13 & 14, 1916

While it is impracticable to present a complete program at this time the following descriptive outline, which will be followed closely in the final program, will give an idea of what may be expected. In the final round-up there will be more rather than less than is here given.

Tuesday Forenoon, December 12th

10 o'clock

Opening Address—By somebody big enough for the job.

Reception of delegates from Minnesota, Iowa, Northern Illinois, Illinois State and probably Indiana Societies.

At this stage we introduce our guests, bid them welcome and enroll them as honorary members.

PESTS

(Meaning the discussion of insects and diseases that affect plants.)

Prof. R. H. Roberts, G. W. Kiett or R. A. Vaughn, H. F. Wilson and probably S. B. Fracker.

Mr. Roberts ought to tell us about his very successful spraying demonstrations for the control of scab; Mr. Kiett has been studying shot-hole fungus for two years and has no doubt learned something that we ought to know; Prof. Wilson, Chief of the Department of Entomology at the Agricultural College has a message for us about "Wormy Apples."

Tuesday Afternoon

2:00 o'clock

Remarks by Dr. E. D. Ball, State Entomologist who succeeds Prof. J. G. Sanders

(Just a chance to get acquainted.)

Frank Merle Edwards, Madison Landscape Architect will present the topic, How to Beautify Your Home Grounds, a subject of interest to every home owner or prospective home owner.

Mr. Edwards will have a full hour and his remarks will be illustrated.

TAKING AN ORCHARD CENSUS, A. A. ASBAHR.

Many of our members will recall a khaki-colored streak on a motor-cycle flashing across the land-scape last summer, stopping here and there at an orchard, like, and yet unlike, a humming bird sipping honey. That was Asbahr taking an orchard census. He will tell us about it.

Tuesday Evening

Students Speaking Contest: An Annual Event

Competition open to all students in the long courses in agriculture. From all who enter Prof. J. G. Moore will select ten who will compete for prizes of \$25.00, \$15.00 & \$10.00

Papers limited to ten minutes.

Wednesday Forenoon

9:30 o'clock

Business Session from 9:30 to 10:30 including reports by different officers and committees and the election of officers and Executive Committee. We will then discuss:—

Dust Control, Sometimes called the Dust Spray. This will be a "Round" Table discussion led by some member who has had experience.

Wednesday Afternoon

2:00 o'clock

Up to this point the preparation of the preliminary program has been easy, for all whose names appear have "accepted service," but from this point it begins to get hazy. Some who have been asked to serve have accepted gracefully, some answer faintly, some balk, some pull back and some refuse point blank. Out of all of it will come something like this:

Four or more papers by professional florists each presenting some topic of practical value to amateurs.

Mrs. C. O. Strong of West Allis and Mrs. G. W. Moore of East Milwaukee will each tell about Community Work in gardening in small communities.

Mr. F. Kern will talk on Marketing the Michigan Fruit Crop.

Prof. J. G. Moore has a message the subject of which he will announce later.

Wm. Toole Sr. will also bring a message.

C. M. Secker of Mather and Mrs. S. H. Whittlesey of Cranmoor will talk about Cranberries.

Papers by the four visiting delegates; a "Round Table" discussion of State Fair matters and discussions on several other topics of interest to all both amateur and professional members.

All in all it will be somewhat difficult to find time for all the good things but in some way it will be done. **BE PREPARED.**

PREMIUM LIST

The following cash premiums are offered for exhibits at the annual convention Madison, Dec. 12, 13, 14, 1916.

	1st	2d	3d	4th
	Pre.	Pre.	Pre.	Pre.
1. Best collection of apples, not less than 15 varieties.....	\$10 00	\$6 00	\$4 00	\$2 00
2. Best 5 plates (5 varieties) commercial apples for Wisconsin.....	5 00	3 00	2 00	1 00

Who in Wisconsin makes the best apple pies? After Wednesday of Convention week we will know for the judge will have awarded the prize by that time.

McKAY NURSERY
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PARDELVILLE - WISCONSIN

Nursery Stock of Quality

for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds.

Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

The Hawks
Nursery
Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wisconsin

3.	Best Plate Ben Davis.....	1 00	75	50	25
4.	Best Plate Dudley.....	1 00	75	50	25
5.	Best Plate Fameuse.....	1 00	75	50	25
6.	Best Plate Gano.....	1 00	75	50	25
7.	Best Plate Gem.....	1 00	75	50	25
8.	Best Plate Gideon.....	1 00	75	50	25
9.	Best Plate Golden Russett.....	1 00	75	50	25
10.	Best Plate Grimes Golden.....	1 00	75	50	25
11.	Best Plate Jonathan.....	1 00	75	50	25
12.	Best Plate King.....	1 00	75	50	25
13.	Best Plate Maiden Blush.....	1 00	75	50	25
14.	Best Plate Malinda.....	1 00	75	50	25
15.	Best Plate McIntosh.....	1 00	75	50	25
16.	Best Plate McMahan.....	1 00	75	50	25
17.	Best Plate Newell.....	1 00	75	50	25
18.	Best Plate Northern Spy.....	1 00	75	50	25
19.	Best Plate Northwestern Greening.....	1 00	75	50	25
20.	Best Plate Patten.....	1 00	75	50	25
21.	Best Plate Pewaukee.....	1 00	75	50	25
22.	Best Plate Plumb Cider.....	1 00	75	50	25
23.	Best Plate Salome.....	1 00	75	50	25
24.	Best Plate Seek-no-Further.....	1 00	75	50	25
25.	Best Plate Scott Winter.....	1 00	75	50	25
26.	Best Plate Tolman.....	1 00	75	50	25
27.	Best Plate Twenty Ounce.....	1 00	75	50	25
28.	Best Plate Utter.....	1 00	75	50	25
29.	Best Plate Wagener.....	1 00	75	50	25
30.	Best Plate Wealthy.....	1 00	75	50	25
31.	Best Plate Windsor.....	1 00	75	50	25
32.	Best Plate Wolf River.....	1 00	75	50	25
33.	Best Plate York Imperial.....	1 00	75	50	25
34.	Best peck of each of the following varieties: Dudley, Fameuse Gano, Golden Russet, Grimes Golden, Jonathan, King, McIntosh, McMahan, N. W. Greening, Tolman, Wealthy, Windsor and Wolf River.....	\$2 00	\$1 00	\$0 75	
35.	Best bushel of each of the following varieties to be shown in trays: McIntosh, Northwestern, Wealthy, Tolman, Wolf River.....	\$4 00	\$3 00	\$2 00	
36.	Best Exhibit Pears.....	1 00	75	50	
37.	Best Exhibit Crabs.....	1 00	75	50	
38.	Best Seedling Apple.....	2 00	1 00	50	

VEGETABLES.

		1st	2d	3d
		Pre.	Pre.	Pre.
Best collection, not less than 10 entries.....	\$5 00	\$3 00	\$2 00	
1. Best 6 Blood Turnip Beets.....	1 00	75	50	
2. Best 3 Round Turnips.....	1 00	75	50	
3. Best 3 Rutabagas.....	1 00	75	50	

PATENTED AUG. 13, 1907





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We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Co.

Dept. D, Cumberland Wis.

Growing Miscellaneous Plants in the House

Throughout the winter the housewife, if she cares to take the necessary trouble, may have compensation for the lack of her outdoor garden by growing various plant in window boxes or pots in the house. For the most part she will have to content herself with foliage, though she may be able to coax a few flowers to bloom. The following suggestions for preparations for the indoor garden and for caring for it later are made by specialists of the U. S. Department of Agriculture.

Arrangements are being made for an extensive exhibit of apple products at the Convention, probably more than "57" varieties.

Meet me at the Convention.

4. Best 6 Chantenay Carrots.....	1 00	75	50
5. Best 6 Shorn Horn Carrots.....	1 00	75	50
6. Best 6 Salsify.....	1 00	75	50
7. Best 3 Winter Cabbage.....	1 00	75	50
8. Best 3 Red Cabbage.....	1 00	75	50
9. Best 6 Ears Pop Corn.....	1 00	75	50
10. Best 6 Red Onions.....	1 00	75	50
11. Best 6 Yellow Danvers Onions.....	1 00	75	50
12. Best 6 White Onions.....	1 00	75	50
13. Best 6 Gibraltar Onions.....	1 00	75	50
14. Best 6 Winter Radishes.....	1 00	75	50
15. Best 6 Parsnips.....	1 00	75	50
16. Best 6 Peppers.....	1 00	75	50

Cranberries.

Twenty-five dollars in premiums will be awarded for exhibits of Cranberries. The premium list is being arranged by the Cranberry Growers Association and will be published in December WISCONSIN HORTICULTURE. For particulars write J. W. Fitch, Sec., Cranmoor, Wis.

APPLE PIE!

For the best apple pie.....\$5 00

RULES OF ENTRY.

1. All entries must be filed with the secretary before 5 P. M., Tues, December 12th.
2. Exhibits must be arranged ready for judges by 9 A. M., Wednesday, December 13th.
3. Four apples constitute a plate, no more, no less.
4. Separate samples must be furnished for each entry, except for No. 1, which may include all entries.
5. Competition open to all residents of Wisconsin, but premiums paid only to members. Successful exhibitors, if not members, must forward fee for membership before receiving check for premium; fee for annual membership, fifty cents.

Members or others unable to attend the meeting may send fruit to the secretary, who will make entries and place fruit on exhibition. Transportation charges must be prepaid.

All entries must be made on regular entry blanks which will be furnished by the secretary on application.

F. Cranefield, *Secretary* W. S. H. S., Madison, Wisconsin.

STUDENTS' JUDGING CONTEST:

Twenty dollars in prizes will be awarded to students in the long and middle courses, Horticultural Department, College of Agriculture, for the best scores in identifying and judging varieties of fruit on exhibit.

Under rules prepared by Prof. J. G. Moore.

Final awards to be decided by a judge appointed by the president.

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Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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Native Plum Apple Small Fruits

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PLANTS FROM CHINA

The third expedition into China to discover new plants suitable for introduction into the United States has been completed by F. N. Meyer, plant explorer of the U. S. Department of Agriculture, who has just returned to Washington after a three-year trip in the Far East. As a result of this expedition through the center of China, and two previous explorations of similar duration covering extremely cold Manchurian regions and the arid regions of Chinese Turkestan, there have been sent to America for planting and testing for commercial adaptability, seeds, roots, or cuttings of some 3,000 food and forage plants, flowers, ornamental shrubs and vines, shade and timber trees. The previous expeditions brought to America specimens of many cold-resistant and dry-land grains, sorghums, soy beans, alfalfas, and forage plants, and also certain semitropical plants, such as the bamboo, which are now under experimentation to determine their usefulness for the extreme South.

Of the many specimens forwarded to this country during the last expedition, the specialists regard as most significant the jujube, a fruit new to this country, which may be suitable for use in the Southwest; a wild peach resistant to alkali, cold, and drought, the root system of which offers great possibilities as a grafting host; certain Chinese persimmons larger than any hitherto known in this country; a number of aquatic food roots and vegetables which offer promising possibilities for the utilization of swamp land; some thirty varieties of vegetable and timber bamboos; and a number of Chinese vege-

tables, bush and climber roses, shrubs and trees.

Of scientific rather than commercial interest is the discovery on this expedition, near Hang-chau, of a hickory tree, the first found in China. The existence of this tree, together with the facts that the saffron and tulip trees are common in both countries and the Chinese tea box tree is closely related to the sweet gum of the South, confirms the fact that the flora of the southeastern United States and that of sections of China are closely related. Another discovery of botanical interest was the finding in a remote and hitherto unvisited valley in Tibet of a hazel tree 100 feet high—a surprising departure from the hazel bush. Elsewhere English walnuts were discovered in a wild state; and the discovery of the wild peach is regarded as significant because it seems to establish that the peach may have been a native of China rather than of Persia, to which its origin has been ascribed. The discoveries of native and hardy oranges and other citrus fruits, a number of which have been brought to this country for breeding work, give added evidence that China was the home of the orange, which was introduced into other countries probably by early Portuguese travelers. Similarly many plants commonly ascribed to other countries, such as the wistaria, chrysanthemum, lilac, azalea, and certain peonies and rambler roses, have been developed by the Chinese, although, because they reach Caucasian use through other nearby nations, their Chinese origin often has been overlooked.

The first or experimental exploration for new plants in China in 1905 was undertaken by the Department because the wide

range of climate, rainfall, elevation, and soil conditions in that immense country gave promise that the Chinese, who had been farming successfully in some sections for about 4,000 years, might have found solutions for special difficulties which confronted American farmers in regions of excessive cold, or drought, or alkaline or swampy soils.

The investigators quickly found that China also offered a particularly fertile for plant introduction work because for many centuries the Chinese farmers, in a crude way, had been selecting seeds and developing improved varieties now ready for commercial use in the United States. In many cases all that is needed is to bring the seed or plant to this country and use it, although in other cases, inasmuch as Chinese methods rarely produce pure strains, some further seed or plant selection is necessary to obtain constant varieties.

To locate these special varieties, however, it is necessary for the explorers to visit not merely individual villages but even to study single farms. There are no seed stores in China and no mechanism for extending the use of improved varieties. Superior varieties grown on one farm often are not used on adjoining farms, and are unheard of ten miles away. The farmer who develops an improved variety guards it jealously and gives seeds or cuttings or scions only to his immediate relatives. In the case of fruits, the Chinese farmer is averse to spraying or other treatment for diseases, largely because his ancestors have never done this, and the adoption of modern methods would be considered irreverent. As a result, excellent varieties

which are traditional or mentioned in Chinese literature have either disappeared completely, or are to be found only on isolated farms. A striking example of this is the fact that the section around Shanghai even forty years ago was famous for a special kind of peach, although today this variety has completely disappeared.

In the last trip the explorer penetrated through the center of China 1,500 miles on foot to the borders of Tibet and returned to the coast by a different route. On this expedition he covered territory the agricultural conditions of which are very similar to those of the southern Rocky Mountain regions and portions of the Great Plains.

In this territory, the most important discovery probably was the jujube tree, which bears a heavy crop of a brownish fruit, which is delicious when fresh and when dried offers a confection very similar in taste to the Persian date. This tree is of particular interest to the department because it can withstand cold and drought and neglect. The section in which it is productive in China is a semiarid belt where winter temperatures do not go much below zero Fahrenheit. This indicates that it would be of particular value to Texas, California, New Mexico, Arizona, southern Utah, and perhaps even farther north. Already, several thousand seedlings have been grown at the Plant Introduction Garden at Chico, California, from the specimens

Do not go into the business of growing drug herbs hurriedly. While there is a good demand for some of these, it is not likely that this demand will be permanent, and besides the cost of preparing many of the herbs is prohibitive.

sent to this country, and some of these have borne desirable fruit, which confirms the experimenters in their belief that this tree may contribute a new fruit industry to the sections indicated.

The wild peach discovered in China, and now brought to this country for the first time, is considered of great interest although its fruit is not desirable. Investigation in its native habitat showed that the roots of this plant are not as susceptible as our native peach to alkali in the soil, while it will withstand cold and does not require much moisture. Experiments are under way, therefore, to determine the usefulness of the rootstock of this peach for grafting with different hardy American varieties. If success is achieved, the specialists believe that they can develop peach trees which will make possible the raising of peaches in the Southwestern or alkaline sections, and at the same time offer possibilities of peach cultivation in many droughty and cold regions, and possibly even into portions of Iowa beyond the northern edge of our present peach region.

Of special interest also are the collections of aquatic food plants secured in the recent expeditions. These include water chestnuts, water nuts, and a number of aquatic bulbs, as well as the water bamboo. The Chinese, the explorer found, have mastered through centuries of experiments the process of using swamp lands for the raising of food crops, and their success is believed to point to commercial possibilities for some of our swamp regions where reclamation by drainage is not practicable. Whether the American farmer would ever be willing, however, as a commercial enter-

prise, to grow crops which call for cultivation in water waist-deep is, the specialists admit, open to question.

The kauba, sometimes called wild rice or water bamboo, now to be made the subject of experiment, is a vegetable in taste somewhat between grass and asparagus. The swollen stalks of the plant are eaten much like our asparagus. The ordinary bamboo, contrary to the prevailing opinion, is not an aquatic plant, and for successful cultivation calls for fertile and well-drained soil.

In selecting Chinese vegetables for introduction the explorer was greatly limited by the fact that many articles favored by Mongolian palates would be unpleasant to Caucasians. He has sent over, therefore, only those things which promise to add valuable vegetables or fruits to the American table, and also which fit in with a general plan for the introduction of certain food crops which will find a ready market among our Chinese populations. The Chinese, in many cases, are importing large quantities of favorite native foods in canned or dried form from China because they find difficulty in getting them in a fresh state in our larger cities. Some of the vegetables brought over which promise to find a dual market are a number of varieties of vegetable bamboo and improved varieties of pe tsai, the odorless Chinese cabbage, some kinds of which already are on sale as "celery cabbage" in American markets. This cabbage is suitable for cooking or for cold slaw and can be grown wherever ordinary cabbage is raised. A vegetable novelty now under experiment is a Chinese radish with a root as large as a child's head. This is somewhat

coarser and inferior in flavor to the small radish, though the Chinese cook it much like turnips, and also pickle it in strips in brine for use as a relish.

This and other explorations have given to this country a Chinese cherry, very successful in California because of its early maturity; and a number of varieties of wild pears and apples, wild almonds, and hardy citrus fruits which offer possibilities for hybridization with American varieties.

The explorer also brought over specimens of the Chinese pistache tree, which it is hoped will give the United States a new and valuable tree for the adornment of city avenues in Georgia, Alabama, the Carolinas, Florida, Texas, California, Arizona, and Oregon. Plantings were also secured on this trip of a Chinese white pine tree remarkable for its white bark. One of these specimens which Mr. Meyer brought has been planted on the grave of the late Minister to China, W. W. Rockhill, who once expressed in the explorer's hearing a wish that this be done. Because of its drought-resisting qualities, this strikingly ornamental tree offers possibilities for the beautification of parks and grounds in Arizona, Texas, New Mexico and California.

Especial attention was given on this trip to investigations of chestnut blight, which was found by the explorer first in China and later on in Japan. In the eastern United States this blight appears in virulent form and is exterminating our beloved chestnut. The explorer, however, found Chinese chestnut trees which were to

Cabbage keeps best in a cool cellar. A good plan is to hang the heads face down so all surplus water will drain off.

some degree blight resistant. Many of these trees had suffered from the disease but had apparently recovered from severe attacks and succeeded in covering the old scars with new wood.

To lovers of flowers the new Chinese rose known as the *Rosa xanthina* should be of special interest, particularly in view of the fact that there is at present a great demand for yellow roses. This bush has small, light yellow flowers, but its great quality is its hardiness which will enable it to flourish in the North even as far as Canada. The chief promise of this rose, however, lies in the fact that it will in all probability lead to the production of new hardy types of yellow roses adapted to cultivation in America. It may produce varieties which will not drop their leaves like our Persian yellow roses do and yield varieties with larger and more showy flowers. In addition, the explorer found a number of new rambler roses, particularly certain yellow rambler roses which, if locally successful, will meet a demand for a climbing rose with a flower differing in shade from the crimson and pink flowers of the well-known rambler varieties.

Onions should be stored in a cool, airy place. They are best put on flat shelves not over six or eight inches deep. Do not allow them to freeze.

PLANTING BULBS OUT-DOORS.

The first frost which will put an end to the development of many of the flowers in the home garden should be the signal, say specialists of the U. S. Department of Agriculture, for the planting of bulbs of the tulip, hyacinth, and narcissus, which

are to furnish the first touch of color for the outdoor garden in the spring. The bulbs may be put in even before the appearance of the first frost, but better not until after.

Tulips and hyacinths should be placed in beds in light, rich soil that has been dug to a depth of at least 10 inches. They should be set 4 inches deep and 5 inches apart. If the narcissus and its variants—jonquils and daffodils—are to be planted in beds, the soil should be prepared similarly and the bulbs should be set 10 inches apart and 5 inches deep.

A pleasing variation from planting the narcissus type of early spring-blooming bulbs formally in beds is to plant them in scattered groups on the open lawn or in the edge of shrubbery. A good plan in arranging for the location of the flowers on the lawn is to broadcast the bulbs and plant them where they fall. A small hole 5 or 6 inches deep should be made and the bulb inserted, pointed end up. The hole should then be pressed full of soil. Often the narcissus, planted in this way, will become naturalized on the lawn and will continue to grow there indefinitely, coming up year after year, if the tops are left uncut until near the first of June. Where the lawn is kept cut the tops of the plants are cut off before the bulb has a chance to develop for the next year's blooming, though may survive a year or two but become weak and poor after the first or second year. Crocus bulbs may be planted in the lawn in the same way, but the top should not be deeper than twice the length of the bulb.

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Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000— $\frac{3}{4}$ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets—get our prices.

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We are in want of a few reliable, energetic men to act as agents for the sale of our Northern Grown Trees, Shrubs and Vines from our Nursery. Previous experience not essential; live active men can earn good wages. For our terms address, giving full name, age and reference,
GREAT NORTHERN NURSERY CO.

Baraboo, Wis.

A Brief Communication from Rusk County

"We had a very fine crop of strawberries this year, two hundred 16 qt. crates from one-half acre, Warfield and Dunlap."

"Lost two fine N. W. Greenings, tops froze all dead this spring; they were out three years. Dig them up.

B. T. D.

Cannas and Kindred Plants

Plants such as cannas, dahlias, gladiolas, and Caladiums should have their roots dug up and stored in a cellar where the temperature will not rise above 60° nor fall below 50° Fahrenheit.

The root clumps of cannas and dahlias should not be shaken free of soil. These plants with the soil naturally adhering to them should be placed on racks or in slat boxes so that air may circulate among them. It is important that the roots do not become too warm or dry and that no frost shall reach them. The bulbs of gladiolas, Caladiums and tuberose, on the other hand, should be carefully cleaned of soil and dried in the open air for a day or two. They may then be stored in the cellar.

There is still plenty of time to plant hyacinths, daffodils, etc., for forcing in the living-room this winter.

The Kickapoo Valley

Wisconsin's
Favored Fruit District

Our Specialty: Planting and developing orchards for non-residents.

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WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII

Madison, Wisconsin, December, 1916

Number 4

The National Congress of Horticulture

Prof. Hansen of South Dakota is responsible for the name. It's a high sounding name, euphonious, and should lend much to the success of the enterprise.

The responsibility for the meeting which led to the founding of the Congress rests with Prof. W. H. Hutt of North Carolina and E. R. Lake of the Division of Pomology at Washington, president and secretary respectively of the American Pomological Society.

The object of the meeting as expressed in the call and later in the talks and discussions was the co-ordination of all the various forces now working for the advancement and uplift of horticulture in this country.

The meeting was held in Washington, D. C., Nov. 16th to 18th and was attended by delegates from twelve states including three from the middle west, Secretary A. W. Latham, of the Minnesota Society, Prof. N. E. Hansen of South Dakota,

and the secretary of the Wisconsin society. In addition, our President, N. A. Rasmussen of Oshkosh who has taken a keen

liberations and discussion and all were agreed that such a movement as here indicated would mean as much or more to horti-



The city gardener must economize on space. Tomatoes grown like these require much time in training but give the maximum of yield for the minimum of space. A corner of Mr. H. N. Hobart's garden Oshkosh, Sept. 1916.

interest in the movement attended on his own account and at his own expense.

Two days were spent in de-

cultural interests than does the National Farmer's Congress to general farming.

ANNUAL CONVENTION DEC. 12-14

The third day was devoted to framing a Constitution and By-Laws which will be submitted to all who were present at the meeting and possibly published in different horticultural journals. A tentative organization was formed and officers elected as follows: President, W. N. Hutt, North Carolina, Professor of Horticulture in the College of Agriculture; Vice President, A. W. Latham, Minnesota, Secretary Minnesota Horticultural Society; Secretary, E. R. Lake, Washington, Secretary American Pomological Society, and L. B. Magid, Orchardist, Atlanta, Ga., Treasurer. These officers will serve only until the first regular meeting is called and the Constitution and By-Laws adopted. Under the proposed constitution membership in the Congress will consist of members of all national, district and state horticultural societies and associations that apply for membership as well as individuals who may not be connected with any such organization.

The voting power rests with delegates selected by the various societies. The fee for individual membership will probably be fixed at one dollar and the association membership at \$25 to \$100, which fee will make all the members of such association, automatically, members of the Congress.

Primarily the Congress will be commercial in spirit.

The promotion of legislation in the interests of horticulture was the foremost thought in the minds of the majority of those participating in the movement. It was shown by Prof. Hutt, who has compiled statistics on the subject, that there are above

fifty thousand persons in this country who are members of state horticultural societies. Another fifty thousand may easily be counted as members of national organizations such as the Florists, Nurserymen, Nut Growers, etc.

If the strictly commercial organizations such as the Pacific Coast Apple Growers and the Citrus Fruit Associations unite, it will mean at least fifty thousand more. Leaving out of account individual members this means one hundred thousand members all interested in a common cause and united for a common purpose. A high moral standard is assured by the character of the organizations which will be affiliated.

One of the prominent men of Washington, whose vocation is law and avocation horticulture said: "I can conceive of no movement holding greater possibilities for the advancement of horticultural interests than this one."

The movement is inaugurated under most favorable circumstances and the writer believes it will succeed.

Appetizers for the Winter Months

J. T. Raine

Many of the people living on the farm or in the small village are content to go without "green stuff" on their table from the middle of Nov. or the 1st of Dec. until March, when with a very little trouble plenty of fresh vegetables might be had. How often the housewife sighs for a little of some fresh vegetable to

break the monotony of the meal of canned vegetables and cured meat? They think that fresh vegetables are only for the people near at hand to the great forcing houses or the large cities, when a veritable garden could be maintained within their own houses supplying the table with many a dish usually considered utterly impossible at that season. The house cellar or any other cellar can, if properly handled, be made to supply plenty of the highest quality rhubarb, asparagus, chicory, seakale, and other greens.

How welcome in the spring is the first rhubarb pie, especially if the apple crop the preceding year has been a failure and the store of fresh fruit long been depleted? The wise man of the house sees to it that he may be served with this delicacy from Christmas time on until the outdoor crop is over. Ask the lover of the tender asparagus shoots and he will tell you that the season is entirely too short. You say canned asparagus but the canned material cannot compare in any way with the fresh vegetable. Yet with a little judicious use of the cellar the asparagus season can be lengthened by several months and obtained at a time when other fresh goods are hard to get.

In the forcing of most of these materials light is not an essential, but in fact quite a detriment to the production of crisp juicy stalks. The essentials for forcing rhubarb are a dark place with little or no light, a temperature of 40 to 65 degrees although a variation of 40 to 85 may occur, and moisture in not too large an amount. The cellar is almost an ideal place for the

(Continued on page 60)

CRANBERRY NOTES

By J. W. FITCH

The sum of \$25.00 having been appropriated by the Horticultural Society for premiums on cranberry exhibits it seemed proper for the association to supplement this somewhat in order to make a more complete award and make it worth while for growers to compete. In view of the fact that it may be necessary to go before the legislature and ask for help in putting the cranberry experiment station on a more substantial and permanent basis, it is hoped that growers generally will make an extra endeavor to make the exhibit a good one, that the members of the legislature who may attend the meeting can see the possibilities of the business, for people generally are used to the smaller berries, and when the larger ones are seen a great deal of surprise is always manifested. It should take advantage of every possible chance to educate the public as to the importance of the industry, and a good display of the cooked fruit will have far-reaching effect since there are no more appetizing cooking desserts than well served cranberries.

The past season should be quite a satisfactory one to growers, since the prices obtained are very good, especially so since for quite a time it seemed as if prices were bound to be the lowest in years, but as a matter of fact if the general average be noted it will be seen that cranberry prices keep up as well or better than most other products. The keeping quality of the Wisconsin crop seems to be very fine this year, which would seem to indicate that dry weather during the

growing season make for sound keepers; also it is known that it produces more fruit buds for the next year's crop, so we may look for a good crop next year. President Searls' remarks at the August meeting as to winter flooding and early drainage in the spring, should be recalled by growers. Mr. Searls said that the longer we could keep them out of water the better, meaning, to postpone the winter flood as long as possible, and to take it off as soon as possible in April, only reflooding in case of extremely warm weather in April which might start growth. The cranberry vine must be covered in the winter either with ice or snow to prevent winter killing, which spoils the crop for two years. Vines which stick out of the ice seem to kill invariably more than those not flooded at all. Cranberry growing possesses a great advantage over all other fruit growing from the fact that with a good water supply the crop is a sure one.

The 30th annual meeting of the W. S. C. G. Assn. will be held in Grand Rapids Tuesday, Jan. 2nd, and a cordial invitation is extended to all interested to attend.

MAKE CRANBERRY JELLY.

That cranberries may be disposed of in wholesale quantities in the form of jellies and jams, is an idea which has occurred to many people in the past and which has been tried to some extent, but never on a large scale.

It would be very desirable if a quantity of the cheaper, early

fruit could be utilized in this way and the idea is worth thinking about—and is being thought of.

There are numerous jelly and marmalade factories engaged in putting up other fruits which find a ready sale throughout the year. Cranberries make an excellent jelly and in the marmalade form are exceedingly appetizing. The great difficulty in the past in preparing cranberries in this way has been the expensive quantity of sugar required to make them keep, but this can be obviated by putting the berries through a chemical process, which will remove a large part of the acid and needing only enough sugar to sweeten.

There is no reason why such a process is not commercially practical. It only requires capital and commercial experience to establish a business which will not only prove profitable, but which will help the cranberry market.

It seems to us that there is a better chance in this line than in the evaporating and canning experiments which have been tried in the past.

There is a market waiting for such a product. It will not have to be created as is the case with evaporated cranberries. Good salesmanship and some advertising is all that is needed for the disposal of considerable quantities of fruit when prepared in this manner. The manufacture is simple and no difficulty will be experienced in making the jellies and marmalades keep if the acid is first removed from the cranberries and enough sugar used to sweeten. It will not be necessary to resort to the use of benzoate of soda, which fact would have to be printed on the label and is objectionable to the purchaser. Sound, ripe cranberries,

(Continued on page 55)

BUY YOUR TICKET FOR

Some Common Pests of Greenhouses

By S. B. Fracker at Summer Meeting

Professor Sanders has asked me to express to you his great regrets that he could not take part in this meeting and to tell you of the pleasure he has had in his work with you during the last six years, as well as his appreciation of your co-operation in his work. He requested me yesterday evening to talk in his place and to discuss the insects affecting ornamental plants and those found in greenhouses. I shall consider only those which the greenhouse men have actually asked about in our inspection trips and those which we know are occasionally troubling them in their greenhouse or on their ornamental shrubbery.

First, it seems advisable to go briefly into the primary principles of insect control. As most of you know, insects from the control standpoint are divided into two groups,—those with chewing mouth parts and those with sucking mouth parts. The former include caterpillars, beetles, grubworms, insects which chew the leaf tissue and which take into their stomachs the leaf material in some solid form. The other group consists of plant lice, scale insects and a few others of less importance. These insects do not eat the surface of the leaf tissue but take into their stomachs only the liquid food which consists of the sap of the plant.

On account of the difference of these two groups, it is necessary to use different control measures, and sprays are therefore divided into two kinds, the first consisting of arsenicals or stomach poisons which operate

through the digestion, and the second including contact poisons which operate through the exterior of the insect.

It happens that the injurious insects with sucking mouth parts are in almost all cases smaller insects which can readily be combatted through the exterior. It is impossible, regardless of the mouth parts, to control caterpillars and beetles, as well as insects with a harder covering, with any kind of a contact insecticide. Stomach poisons are mainly forms of arsenic, or arsenicals, as these are the cheapest poisons which we can use for this purpose. The common arsenicals, as you know, are Paris green and arsenate of lead.

Arsenate of lead comes in two forms,—the powder form and the paste form, the latter consisting of water and powdered arsenate, half and half. Twice as much of the paste must be used as is needed of the powder. At the present time we are advising the use of the powder form almost entirely, both in sprays and in dry applications. The reason for this is merely a climatic one, as it is almost impossible under ordinary circumstances to keep the paste over winter. If it has an opportunity to freeze it will crystalize, and its further usefulness will be gone.

The contact insecticides in most common use are Black Leaf "40," or some other 40 per cent nicotine sulfate, and kerosene emulsion. The former is mixed with 800 to 1200 times its bulk of water and is very simple to apply. Kerosene emulsion is made with hot soapsuds and necessi-

tates mixing the kerosene with the soap suds very carefully. Mixing kerosene and tobacco solutions together, as is sometimes done, is not necessary and it is not desirable to invest in commercial preparations of this nature.

Fumigation may also be considered as a form of contact insecticide because in this case we are using a gas which operates on the exterior of the insect, in place of a liquid. Fumigation is carried on in almost every greenhouse, in fact, in almost every commercial greenhouse in the state with which I am familiar.

Publications describing the preparation and use of these spray materials will be sent, on request, by the State Entomologist's office.

* *

INSECTS AFFECTING SHRUBBERY.

Fortunately, there are few chewing insects on the ornamental shrubs which we are commonly using in the state at present. It is seldom that any arsenical spray is needed on such shrubs as Spiraea, Dogwood, Viburnums, and others of the same nature. An exception is in the case of roses which have a full supply of slugs and caterpillars. These may be controlled by the ordinary lead arsenate spray.

White hellebore may be used in place of arsenic when one does not wish to put poison on the plant. It is not recommended more often because of the greater expense. Hellebore should be used fresh and it is sometimes

MADISON DECEMBER 12-14

Plants and Ornamental Shrubbery

Lake Geneva, August 22, 1916.

difficult to secure packages of it which have not been lying around the shelves of the drug-store for considerable periods of time.

Plant lice, on the other hand, and scale insects are rather severe on ornamental shrubs. You are all familiar with the effect of aphids on snowball, curling the tips of the leaves and badly disfiguring the plant. They also disfigure several other ornamental shrubs and are common on almost all of them, though on Spiraea and most of our shrubs they do not injure the appearance as they do on the Viburnums.

In the case of Spirea and in all cases where aphids appear on the stem of the plants and on the surface of the leaves without curling them, you can use the sprays which I have mentioned (kerosene or Black Leaf "40") in their ordinary dilutions without any difficulty. Where the leaves are curled, however, it is necessary to either dip the tip of the plant or else to spray before the leaves begin to curl. The actual and practical result of this is the fact that the snowball is not being planted as much as it has been in the past and such seems to be a desirable change. Those who grow ornamental shrubs on small city lots seldom wish to take the trouble of spraying in order to keep the insects off.

Among the flowers, asters seem to be most commonly attacked by root lice. Where it is practicable, the most satisfactory method of controlling root aphids on a plant which is not already

too weakened to live is to dig out the soil around the plant and put in tobacco dust. This may be secured from most seed concerns and a great many drug-stores. Pouring nicotine in liquid form around the base of the plant will kill the lice that are there at the time but it will not remain in the soil the way tobacco dust will. The latter will allow the rain to wash the nicotine out and keep washing it down on the roots.

In addition to plant lice, we

trolled by a concentrated solution of lime-sulfur in the dormant season such as is used in the control of scale insects and of plant diseases in orchards.

One scale which has received a great deal of advertising the past thirty years is the so-called San José scale. For those who are not familiar with it and mistake it for more conspicuous insects, I might say that this is the smallest scale insect which is common or of economic importance. The insect, itself, is much



Not all Illinois apples are good apples. There are discards from one orchard. Photographed somewhere in Illinois Oct. 1916.

have scale insects to combat on ornamental shrubbery. A "scale" consists not only of the insect but of a waxy covering which the insect secretes. You are probably familiar with oyster shell and scurfy scales on our common shrubs. Lilacs perhaps are especially likely to have oyster shell, and dogwood very commonly has a white scurfy scale. These are not particularly injurious but if they become too numerous they may be con-

smaller than the head of a pin and the scale is just about that size. In the winter stage it is black and these scales pile up on the bark until they are very numerous. The dead ones peeling off often give the bark an ashy appearance.

San José scale has not yet been found at Lake Geneva although it may be discovered here at any time. The most serious infestation in the history of the state is at Kenosha where

TUESDAY, WEDNESDAY,

the staff of the State Entomologist's office has been working for a couple of years. There every infested tree discovered was thoroughly sprayed this last spring and it is probable that a large percentage of the scale was entirely killed in that vicinity. The scale has also been found in Milwaukee and other cities but if as much is done in the coming years as has been accomplished during the past year, it is probable that we shall greatly reduce the infestation of this very serious pest.

The host plants include all our fruit trees except the cherry, and in addition roses, Japanese Quince, dogwood, sumac and certain other shrubs. Barberry and spiraea are not attacked. Wherever this insect is suspected a sample should be sent to the State Entomologist's office and the situation will be given immediate attention.

* *

GREENHOUSE INSECTS

The most common insects affecting greenhouse plants are aphids or plant lice, and white flies. The latter are not true flies but are closely related to plant lice; they fly, however, much more freely and instead of being green in color are covered with a white mealy powder as the name indicates. Greenhouse men are all familiar with them. Greenhouses, as was said a few moments ago, however, are fumigated, especially throughout the summer season, at intervals of a week to ten days. Consequently florists have little trouble with these two groups of insects. They are kept under control by fumigation at this interval. In

unfumigated greenhouses white flies often cause, on the other hand, considerable injury.

The insects which are not controlled by fumigation are caterpillars and scale insects, on palms, rubber plants and ferns. For these it is desirable to use whale oil soap in the proportion of one pound to a gallon, except with ferns which are too tender to endure soap in this strength. Almost all palms have a few scale insects but they should not be allowed to pile up in several layers on these plants and on *Ficus*. We have received leaves of the latter plant completely covered by two or three layers of the scale insects.

The common chewing insects in greenhouses are the rose leaf rollers and various other leaf rollers and leaf tiers. With one exception these may be easily controlled by lead arsenate sprays by using one pound of the powder to 50 gallons of water. This will not injure the rose foliage as Paris green may do. One caterpillar against which florists should be on their guard is what is known as the Florida fern caterpillar. It is the only insect which eats the leaves of ferns and an epidemic in the greenhouse is a difficult one to handle. So far as I know, it has entered the state but once, and I believe is not now present in that greenhouse but should it come in, as it is likely to come in on ferns at any time, the greatest care should be used to prevent its multiplication and breeding in those surroundings. The nature of the fern is such that lead arsenate colors the foliage to an undesirable extent and also the deposit of the poison on the foliage of a plant handled as

much as a fern sometimes is, is somewhat dangerous. Hand-picking of the caterpillars is the most successful control measure now known.

One cause of great trouble in the greenhouse is the red spider which will injure almost every plant. Lime-sulfur spray is a help in combatting it. Powdered sulfur has also been found very satisfactory. Water under pressure is often used with success.

This covers the principal insects injuring shrubbery and greenhouse plants in this state. There are many others of lesser importance but none which seem to require special measures for control.

Orchard and Garden

Some varieties of dahlias may be forced in the greenhouse with success.

An inch or so of sand over the root crops stored in the cellar will keep them from drying out.

Gladioli and dahlias may be stored in an ordinary potato cellar. Cannas require a warmer place. They should not be dry enough in any case to shrivel the roots.

Rose bushes may be laid down, if the ground is frozen hard, and covered with straw and boards. Cover so that no moisture can reach the foliage.

It is worth while to save a few bundles of grain to put in the yard for the birds during the winter. Birds also like suet.

It will be well to order flower and vegetable seed this year as soon as the catalogs appear, since it will be hard to get the varieties commonly grown in Europe.

THURSDAY, DECEMBER, 12--13--14

Cranberry Jelly

(Continued from page 51)

sugar and water are all the ingredients necessary and all that should be used in any case. As an expedient for using up unsound fruit, it would not prove a success, as has been demonstrated by past experiments, but if good quality fruit be used the product should prove popular and have a ready sale.

There is an astonishingly large business carried on in the making of jellies and marmalades. Some of the large manufacturers have used cranberries with good results, but no exclusive cranberry jelly plant of any size has ever been established to our knowledge. In order to be a success, it would probably be necessary to put up other fruits in connection with it to keep the plant running through the year, and in this connection we call attention to the success of local individuals who have established quite large businesses by selling "home-made" products of this kind. We have in mind one in particular, who puts up over seventy-five varieties of jellies, marmalades, preserves, pickles, etc., and finds a ready sale to the retail trade without advertising of any kind. The reputation behind the goods brings in mail orders to the capacity of the establishment, which has become known wholly through customers who have called the attention of their friends to it.

The commercial value of the phrase "made on Cape Cod from native fruits" is great and commands attention among housekeepers. The summer people carry away large quantities when

they leave the Cape in the fall, and mail orders rapidly deplete the stock.

We know of another person who is experimenting with cranberries in this way, who, by putting up apple and grape jellies and marmalades, which are sold to the wholesale trade, and thus establishing a reputation for his brand, expects to be able to sell great quantities of cranberry jelly when he puts it on the market.

Cranberry growers should seek out and encourage such persons who are trying to develop a demand for cranberries other than in their raw state, as success will mean an added market and consequently better prices.

Relating to Fraudulent Exhibits

The following item from the *Rural New Yorker* of Nov. 11th came in the mail to the editor recently. The clipping was enclosed in a sealed envelope with nothing to indicate the name or purpose of the sender. While it is contrary to the principles and practices of editors to encourage anonymous correspondents, an exception is made in this case as the subject matter of the clipping is timely.

"Any exhibitor who enters as his own, fruit grown by another will be debarred from all premiums."

"That statement heads the premium list of the New Jersey Horticultural Society, and it should be enforced at every fruit show by promptly firing anyone who tries to win prizes with "hired goods." There has been

too much work by "ringers" who buy up fine specimens of fruit or of stock and travel from one fair to another capturing the prizes. The managers of shows where prizes are offered should go after such people with a club. They discourage the actual growers and especially the young people who are most important to any society. When these young growers see "ringers" coming in with fruit which only represents money they rightly conclude there is little use competing with a skin game and a jockey shop, and they give up exhibiting. That is the worst thing that can happen to a fair or a horticultural society, for above all things such an exhibition should be free, honest and useful. When a jockey comes in with purchased fruit and walks off with the prizes, fraud and discontent walk off with him. Our old friend Clark Allis dug out such a fraud at the fair in Batavia, N. Y. This fraud bought the fruit which he exhibited, and then had the face to swear that he produced it—when there was practically no fruit growing on his own place! That man should be shut out from all fruit shows, and sentenced to a long diet on Ben Davis apples. A fruit show should be a contest between men—not between dollars."

R. N. Y.

Farmers' Bulletin 750, Department of Agriculture, Washington, D. C., is a thirty-six page bulletin on roses for the home. This may be obtained by writing to the Division of Publications, Washington, D. C.

Wisconsin Horticulture

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Postage stamps not accepted.

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Madison, Wis.

About the Convention

The program which appears elsewhere in this issue is the only one which will be distributed to members prior to the convention, therefore read and preserve.

The Capital Hotel will be headquarters for officers, delegates and members generally. The best part of a convention is the getting together at the hotel between sessions and after the evening sessions.

PROGRAM.

Annual Convention, Assembly Chamber, State Capitol, Madison.
Tuesday, Wednesday and Thursday, Dec. 12-13-14, 1916.
Capital Hotel, Headquarters for Officers and Delegates.

The following program may be changed in minor ways but will be offered substantially as here given:

Tuesday Forenoon, Dec. 12th

10.00 o'clock

- Opening Address *Gov. Philipp*
- Reception of Delegates from Minnesota, Iowa, Northern Illinois and Illinois State Societies.
- Fruits for Loam and Prairie Soils . *C. L. Richardson, Chippewa Falls*
- Why do Strawberry Varieties "run out?" . . *Five minute answers*
By M. S. Kellogg, H. C. Christensen, Robt. J. Sampson and
President Rasmussen.
- Paper *Eugene Oestricher*
Secretary, Milwaukee Florists Club.
- The Failure of Test Controls in Spraying . . *G. H. Townsend*

Tuesday Afternoon

2.00 o'clock

- Cooking Cranberries . . *Mrs. S. H. Whittlesey, Cranmoor, Wis.*
- The Cranberry Industry in Wisconsin . *C. M. Secker, Mather*
- Rational Home Economics . . *Mrs. N. A. Rasmussen, Oshkosh*
- Herbaceous Perennials *Wm. Toole, Sr., Baraboo*
- How to Beautify the Home Grounds, Illustrated
. *Frank Merle Edwards*
Landscape Architect, Madison, Wis.

Tuesday Evening

8.00 o'clock

Students Speaking Contest: An Annual Event
Competition open to all students in the long courses in agriculture.
From all who enter Prof. J. G. Moore will select ten who will compete for prizes of \$25.00, \$15.00 and \$10.00.
Papers limited to ten minutes.

Wednesday Forenoon

9.00 o'clock

- Business Session from 9.00 to 10.00 o'clock.
- President's Address, Reports of Secretary, Trial Orchard Committee, etc.
- Election of Officers and Executive Committee.

Program.

- Marketing The Michigan Fruit Crop . *F. Kern, A Wisconsin Man*
- Strawberry Growing in Bayfield Co. . *T. J. Turner, Bayfield*

Spraying the Small Orchard . . . *H. G. Street, Hebron, Ill.*
 Apple Scab Control *Prof. R. H. Roberts*
Instructor in Horticulture, College of Agriculture

Wednesday Afternoon
2.00 o'clock

Home Adornment *Charles Hey, Dixon Ill.,*
 A Village Fair *Mrs. Geo. W. Moore, East Milwaukee*
 Sweet Peas *Robert Blackwood, Lake Geneva*
 Paper *Nic. Zweifel, Milwaukee.*
 Some Things Wisconsin Horticulture Needs . *Prof. J. G. Moore*
 What Killed Our Red Raspberries in 1916? These experts will answer
H. C. Christensen and Wm. Nelson of Oshkosh, S. B. Fracker
 and *Prof. Moore, five minutes each.*

The State Fair: A Round Table Discussion following the regular session.

Wednesday Evening

No definite program has been prepared for Wednesday evening. An informal dinner like the one given last year has been proposed And will no doubt be carried out. The dinner last year, while lacking many of the features of a formal banquet, was a very enjoyable affair.

Thursday Forenoon
9.00 o'clock

The Farm Orchard *J. F. Harrison, Excelsior, Minn.*
 How to Make the Home Orchard Pay . *Victor Feller, Des Moines, Ia.*
 The West Allis Gardener's Club . *Mrs. C. E. Strong, West Allis*
 Growing Chrysanthemums . . *Robt. J. Sampson, Lake Geneva*
 A City Garden *Mrs. John Geiger, Oshkosh*
 Taking An Orchard Census *A. A. Ashahr, Madison*
 Dust Control: Round Table Discussion: after adjournment of regular session.

Thursday Afternoon
2.00 o'clock

Wormy Apples *Prof. H. F. Wilson*
Entomologist, Agricultural College.
 The Year's Work in Insect Control . . . *Prof. S. B. Fracker*
State Department of Entomology
 Getting Acquainted *Prof. E. D. Ball*
State Entomologist
 Breeding Disease Resistant Cabbage . . . *Prof. L. R. Jones*
Plant Pathologist, Agricultural College
 Report of Progress on Control of The Cherry Leaf Spot . . .
 *Prof. G. W. Kiett*

The Capital Hotel is under new management this year and while some of our "regulars" may miss genial "Billy" Nichols, our former host, no doubt the newcomers will aim to please.

The rates and service at the Capital have both proven satisfactory in the past.

Those who prefer a hotel on the European plan somewhat cheaper than the Capital will be

pleased with the Belmont, corner of Pinckney and Mifflin Sts. "On the Square." This was once known as the Madison Hotel but has been entirely refurnished and an excellent cafe added.

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

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PREMIUM LIST

The following cash premiums are offered for exhibits at the annual convention Madison, Dec. 12, 13, 14, 1916.

	1st Pre.	2d Pre.	3d Pre.	4th Pre.
1. Best collection of apples, not less than 15 varieties.....	\$10 00	\$6 00	\$4 00	\$2 00
2. Best 5 plates (5 varieties) commercial apples for Wisconsin.....	5 00	3 00	2 00	1 00
3. Best Plate Ben Davis.....	1 00	75	50	25
4. Best Plate Dudley.....	1 00	75	50	25
5. Best Plate Fameuse.....	1 00	75	50	25
6. Best Plate Gano.....	1 00	75	50	25
7. Best Plate Gem.....	1 00	75	50	25
8. Best Plate Gideon.....	1 00	75	50	25
9. Best Plate Golden Russett.....	1 00	75	50	25
10. Best Plate Grimes Golden.....	1 00	75	50	25
11. Best Plate Jonathan.....	1 00	75	50	25
12. Best Plate King.....	1 00	75	50	25
13. Best Plate Maiden Blush.....	1 00	75	50	25
14. Best Plate Malinda.....	1 00	75	50	25
15. Best Plate McIntosh.....	1 00	75	50	25
16. Best Plate McMahan.....	1 00	75	50	25
17. Best Plate Newell.....	1 00	75	50	25
18. Best Plate Northern Spy.....	1 00	75	50	25
19. Best Plate Northwestern Greening.....	1 00	75	50	25
20. Best Plate Patten.....	1 00	75	50	25
21. Best Plate Pewaukee.....	1 00	75	50	25
22. Best Plate Plumb Cider.....	1 00	75	50	25
23. Best Plate Salome.....	1 00	75	50	25
24. Best Plate Seek-no-Further.....	1 00	75	50	25
25. Best Plate Scott Winter.....	1 00	75	50	25
26. Best Plate Tolman.....	1 00	75	50	25
27. Best Plate Twenty Ounce.....	1 00	75	50	25
28. Best Plate Utter.....	1 00	75	50	25
29. Best Plate Wagener.....	1 00	75	50	25
30. Best Plate Wealthy.....	1 00	75	50	25
31. Best Plate Windsor.....	1 00	75	50	25
32. Best Plate Wolf River.....	1 00	75	50	25
33. Best Plate York Imperial.....	1 00	75	50	25
34. Best peck of each of the following varieties: Dudley, Fameuse Gano, Golden Russet, Grimes Golden, Jonathan, King, McIntosh, McMahan, N. W. Greening, Tolman, Wealthy, Windsor and Wolf River.....	\$2 00	\$1 00	\$0 75	
35. Best bushel of each of the following varieties to be shown in trays: McIntosh, Northwestern, Wealthy, Tolman, Wolf River..	\$4 00	\$3 00	\$2 00	
36. Best Exhibit Pears.....	1 00	75	50	

PATENTED AUG. 13, 1909



BERRY BOXES
Crates, Bushel Boxes and Climax Baskets
As You Like Them
We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.
Cumberland Fruit Package Co.
Dept. D, Cumberland Wis.

If no tradition is violated there will be politics in the air this year for tradition says that a president should retire after two years' service unless extraordinary circumstances exist. Fortunately our political campaigns are always conducted in a friendly spirit and with courtesy to all.

The program carries thirty topics in addition to the student contest and of these fifteen relate directly to the home orchard and garden and home surroundings. The remaining fifteen while intended primarily for the market grower cannot fail to be helpful to the amateur.

The sessions will begin on time and especially will the opening session begin at the hour indicated. The exhibit rooms will be ready Monday afternoon for all who desire to set up displays at that time.

37. Best Exhibit Crabs.....	1 00	75	50
38. Best Seedling Apple.....	2 00	1 00	50

VEGETABLES.

	1st Pre.	2d Pre.	3d Pre.
Best collection, not less than 10 entries.....	\$5 00	\$3 00	\$2 00
1. Best 6 Blood Turnip Beets.....	1 00	75	50
2. Best 3 Round Turnips.....	1 00	75	50
3. Best 3 Rutabagas.....	1 00	75	50
4. Best 6 Chantenay Carrots.....	1 00	75	50
5. Best 6 Shorn Horn Carrots.....	1 00	75	50
6. Best 6 Salsify.....	1 00	75	50
7. Best 3 Winter Cabbage.....	1 00	75	50
8. Best 3 Red Cabbage.....	1 00	75	50
9. Best 6 Ears Pop Corn.....	1 00	75	50
10. Best 6 Red Onions.....	1 00	75	50
11. Best 6 Yellow Danvers Onions.....	1 00	75	50
12. Best 6 White Onions.....	1 00	75	50
13. Best 6 Gibraltar Onions.....	1 00	57	50
14. Best 6 Winter Radishes.....	1 00	75	50
15. Best 6 Parsnips.....	1 00	75	50
16. Best 6 Peppers.....	1 00	75	50

Cranberries.

Thirty-four dollars in premiums will be awarded for exhibits of Cranberries. Premium list by the Cranberry Growers' Association as follows:

Variety	1st Pre.	2d Pre.	3d Pre.
1. Bennett Jumbo.....	\$2 00	\$1 00	\$0 50
2. Searls Jumbo.....	2 00	1 00	50
3. Bell and Bugle.....	2 00	1 00	50
4. McFarlin.....	2 00	1 00	50
5. Metallic Bell.....	2 00	1 00	50
6. Bell and Cherry.....	2 00	1 00	50

One pint is sufficient for an entry. Send all entries to Frederic Cranefield, Secretary, Madison, Wis., charges prepaid.

Cooked Cranberries.

	1st Pre.	2d Pre.	3d Pre.
Cranberry Pie.....	\$3 00	\$2 00	\$1 00
Cranberry Sauce, 1 pint.....	3 00	2 00	1 00

APPLE PIES!

For the best apple pies: three premiums, \$5.00, \$3.00, \$2.00. Competition open to all except professional pastry cooks.

RULES OF ENTRY.

1. All entries must be filed with the secretary before 5 P. M., Tues., December 12th.

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Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Windbreak Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

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Native Plum Apple Small Fruits

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**“We have a Fine Lot of
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Meet The People Who Are Doing Things At

2. Exhibits must be arranged ready for judges by 9 A. M., Wednesday, December 13th.

3. Four apples constitute a plate, no more, no less.

4. Separate samples must be furnished for each entry, except for No. 1, which may include all entries.

5. Competition open to all residents of Wisconsin, but premiums paid only to members. Successful exhibitors, if not members, must forward fee for membership before receiving check for premium; fee for annual membership, fifty cents.

Members or others unable to attend the meeting may send fruit to the secretary, who will make entries and place fruit on exhibition. Transportation charges must be prepaid.

All entries must be made on regular entry blanks which will be furnished by the secretary on application.

F. Cranefield, *Secretary W. S. H. S.*, Madison, Wisconsin.

STUDENTS' JUDGING CONTEST.

Twenty dollars in prizes will be awarded to students in the long and middle courses, Horticultural Department, College of Agriculture, for the best scores in identifying and judging varieties of fruit on exhibit.

Under rules prepared by Prof. J. G. Moore.

Final awards to be decided by a judge appointed by the president.

A feature of the convention will be an exhibit of apple products 57 varieties or as nearly that number as may be, prepared by Mrs. H. H. Morgan of Madison who believes in the apple and volunteered the preparation of this exhibit to prove that Eve exercised good judgment.

Appetizers for the Winter Months

(Continued from page 50)

combination of all of the above. It is dark and generally moist, at least the atmosphere is humid, and the temperature can be kept sufficiently high with a small gasoline stove or even just a kerosene lamp if the cellar is not too large.

Take for forcing roots of rhubarb that are at least 2 years old and allow them to freeze; then pack them tightly in a corner of the cellar in such a manner that the product can be conveniently

picked. Cover them over with a little loose, mellow earth just so that the crowns of the plants are at the surface of the soil and water them down well. It is absolutely essential that the roots have been frozen before they are brought in to force as the nature of the plant seems to demand either this or else a long rest period before it will begin to grow rapidly again. From now on the control of light, temperature, and moisture determine the time of maturity. If the product is desired in a short time, keep it quite dark and run the temperature at about 60-65°. This

will hasten the crop about a week but the stalks are apt to be small and spindly instead of the thick stocky stalks produced at a temperature of 40° Fahr. The temperature can be easily maintained either with kerosene lamps or with a small gasoline stove. Mr. J. E. Morse says that some of the best and finest rhubarb he had ever seen was forced in a house cellar 36 x 54 feet in which the only heat was that of two large kerosene lamps. If the lamps are used it is a good plan to smoke the globes as otherwise the light is usually sufficient to cause a curving of the stalks and a slight toughening of those nearest to it. In the darkness the leaf develops little or none and the stalk is formed from the food stored in the root, while in the light the leaf grows at the expense of the stalk and the crop takes a long time to mature. Several waterings may be necessary if the atmosphere is not very humid. The ventilation is of very little importance; that caused by entering the room is sufficient to bring the plants along all right. A single root will bear from 18 to 50 stalks ranging over a period of from 4 to 5 weeks or possibly more. If a succession of produce is desired, it is necessary to plant some roots at a later date. In this manner rhubarb may be had from Christmas on until the outdoor crop is ready.

The forcing is very hard on the roots and they cannot be used again until they have been left in the field to recuperate for several years. Hence it is necessary to either plant seed to secure new plants or divide the plants already present. If seed is used, almost a whole year can

The Annual Convention, Madison, Dec. 12-14

be gained by planting it in August and then transplanting it the next spring; the roots are then ready to force a year from that fall.

In forcing asparagus many of the same conditions are essential as for forcing rhubarb except that the temperature cannot vary as much as in the case of rhubarb and still produce good thick shoots. Pick out good three year old asparagus roots or older if they are available and store them, before the ground freezes, where they will not dry out. It is not essential that they be frozen although it is conceded that freezing increases the size and the quality of the crop. In placing the roots in the cellar they are not placed like rhubarb directly on the floor but upon a layer of 4 to 6 inches of a light soil. The roots are then packed in tightly and covered with about 3 inches of good mellow, light soil. If the shoots are desired blanched, this top covering of earth may be increased to 6 or 8 inches. Many consider that asparagus growing is hard, but as a forcing plant it is the easiest and most reliable plant to force that is known. In some cases it may be necessary to lay some tile drains in the bottom layer of soil as the crops requires plenty of water but it should never stand in the soil. Never use cold water; always tepid or warm water.

The temperature of the asparagus seed bed should run a trifle higher than that of the rhubarb bed being about a constant 50-55°. This can be accomplished by placing on top of the bed a layer of decaying leaves that not only impart but also conserve the heat. The heat

for the asparagus bed should always be gentle and never strong bottom heat as the latter produces weak spindly growths. The shoots usually start to grow about a week after they are set and soon the first cutting is ready. The shoots of cutting size last for about two months or beginning in December last to February. Hence, with a second planting in January the season is prolonged until the outdoor season is reached. The biggest question is the keeping up of the asparagus plants for forcing. However, generally enough 3 year old plants can be set aside each year to supply all of the asparagus needed by the family.

Seakale and chicory are forced under much the same conditions as asparagus, blanching the leaves with either straw or leaves. The leaves to make a good tender salad or green should be cut when 6 to 8 inches high and when used at this time make a salad considered far superior to any lettuce salad. For the lover of beet greens this product can easily be produced by placing the beet bulbs gathered the previous fall in a layer of light earth and watering quite freely. Soon the leaves will grow and several cutting of fine greens can be obtained.

If the entire cellar is not available for forcing due to storage of fruits or vegetables, wall off a portion of it as the pleasure of "green stuff" in the bill of fare will amply repay the work of fixing up the place. Besides the pleasure there may be some profit as any extra material will bring a fancy price due to its being out of season.

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dinner is late due to the house wife stopping a while down cellar to gaze at the growing vegetables while the snow blows and the wind whistles outside, for the pie and fresh asparagus on toast will only taste all the better.

Cover the strawberry bed lightly with straw as soon as the ground freezes. When it is frozen solid put on four or five inches of clean straw or light hay.

Examine the bulbs planted and see if they are drying. If the soil is dry water it well.

Fruit and Garden Institutes

Beginning Dec. 19th twenty-two two-day special fruit and garden institutes will be conducted jointly by the Department of Farmer's Institutes and the State Horticultural Society. The speakers will be D. E. Bingham of Sturgeon Bay and N. A. Rasmussen of Oshkosh.

The institutes will be held as follows:

Baraboo, December 19th and 20th.

Reedsburg December 21st and 22nd.

Mt. Horeb, January, 2nd and 3rd.

Dodgeville, January 4th and 5th.

Lake Geneva, January 9th and 10th.

Janesville, January 11th and 12th.

East Milwaukee, January 16th and 17th.

West Allis, January 18th and 19th.

Bayfield, January 23rd and 24th.

Washburn, January 25th and 26th.

Beaver Dam, January 30th and 31st.

Fox Lake, February 1st and 2nd.

La Farge, February 6th and 7th.

Richland Center, February 8th and 9th.

West Bend, February 13th and 14th.

Kewunee, February 15th and 16th.

Waupaca, February 20th and 21st.

Weyauwega, February 22nd and 23rd.

Marinette, February 27th and 28th.

Green Bay, March 1st and 2nd.

Eau Claire, March 6th and 7th.

Sparta, March 8th and 9th.

These institutes have been arranged jointly by the Dept. of Farmer's Institutes and this Society. One or more of our members have been asked by Supt. Luther to act as a local committee to arrange for hall, etc., but every member in or near any of the towns named is hereby appointed a committee of one on publicity for his particular institute.

This splendid recognition of horticulture, twenty-two special institutes, by the Institute Department, places us under an obligation and every member of the Society within reach of these institutes should attend and urge his neighbors to attend. The men who will conduct them are splendidly fitted for the work. Mr. Bingham who was selected by this Society eight years ago as special worker in horticulture was a pioneer in this field for until that time an occasional talk on the farm garden by some member of the institute force whose main specialties were live stock, poultry and dairying, constituted all of horticultural science and practice taught at the seventy or more farmer's institutes. During his eight years of service Mr. Bingham has attended hundreds of institutes generally making four a week through out the season. He is said to be the only fruit grower in the state who has never been engaged in any other line of work.

Mr. Rasmussen who will handle the gardening topics both from the home and market standpoint is well known to all of our members and to thousands of others who have heard his thoroughly practical talks at institutes and horticultural gatherings.

The two-day institute with only two speakers is somewhat of an innovation but holds promise of success. The institutes are primarily for the farmer with special attention given to commercial fruit growing and market gardening in sections where the conditions of soil and markets are favorable for these lines of work. These are some of the subjects which will be discussed:

Trees for the Farm Orchard

The Farmer and the Nursery Agent

Planting Trees

When and How to Prune

Fertility and the Farm Orchard.

Pests of the Farm Orchard and How to Control Them.

Soil Handling in the Orchard.

Picking and Storing Farm Fruits.

How to Exhibit Fruit at Fairs

The Wisconsin State Horticultural Society

How to Succeed with Small Fruits on the Farm

Commercial Fruit Growing.

Marketing Fruit

Farm Gardens

How to Store Vegetables for Winter.

Vegetable Gardens for City and Town.

Small Fruits for Village & City Gardens

Garden Tillage

Hot Beds and Cold Frames

Diseases and Insects of the Garden and Their Treatment.

Growing Vegetables for Market.

Marketing Vegetables.

Improvement of the Home Grounds.

How to Exhibit Vegetables at Fairs.

In addition practical demonstrations in pruning will be conducted whenever the weather permits.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

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You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.



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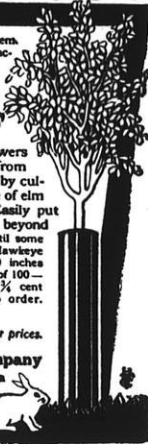
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A few choice tracts for sale. If interested, write us.

The Kickapoo Development Co.

Gays Mills, Wis.

Watch the potato bin carefully for decaying tubers. Some fields contained a good many decaying tubers this autumn.

Have you made any provision for the birds this winter? They should have grain and seeds after snow flies.

Do not let the squash freeze.

It is safer to cover raspberries and blackberries than to leave them unprotected. Good crops are often raised without covering, but there is danger of the tops dying to the ground or killing out entirely.

Have you made and put up that bird-feeding shelter for the winter? Do it now.

WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Madison, Wisconsin, January, 1917

Number 5



An altogether pretty picture. The flowers are Sweet William, the pretty miss we can say is Sweet Marjorie and the other Sweet Eleanor.

SWEET PEAS

And How To Grow Them for Exhibition

Robert J. Sampson,
Lake Geneva

The cultivation of sweet peas for exhibition purposes has now become so popular that it is necessary to give the matter really serious consideration, if anything like success is to be achieved.

Though the sweet pea will flower profusely under almost any conditions, yet, if good flowers are required, that are fit to compete against one's neighbors, a more liberal mode of treatment must be adopted.

The preparation of the soil is probably the chief essential towards success, and if this can be dug or trenched to a depth of from 2 to 3 feet in the Fall, and a liberal dressing of manure and bone meal given during the operation, and left fallow for the winter months, much less labor will be required during the summer with the watering pot, etc.

The nature of the manure does not matter very much, but if growers have their choice, I would advise the use of cow manure on light soils, whilst for soils of a heavier nature, good long, strawy horse or stable manure will be found equally satisfactory.

Soot, old lime or mortar, rubble, leaf soil, road scrapings, etc. may also be incorporated with the soil. The former (soot) will help to check grub pests, whilst the other materials will help to make the soil, in many instances, more porous and easily worked at planting time; the less sticky the soil the more likely are the plants to grow away freely in it.

Sowing In Pots

For early exhibition purposes, it is best to sow in pots or boxes in the autumn and winter, in the cold frame or greenhouse from the middle to the end of October being the best time; when this is not convenient, they may be sown very early in February, this time also in pots or boxes, giving just a slight amount of heat to germinate the seeds, after which they must be treated as hardy as possible. This applies equally well to the autumn as to the spring sown plants.

Air must be given on all fine days, in fact the lights may be entirely removed except when it is raining, or the weather is real cold. Precautions must be taken against the ravages of birds, mice, etc.

Sowing Outside

Sowing may also be made in the open ground from the beginning of March to the middle of April, according to the district and conditions of the soil, which should have been prepared, as advised. A dry day should be chosen for sowing and the surface soil broken up very fine, where the drills are to be made; these should be from 1½ to 2 inches deep, and the seed placed about 3 inches apart in them, and these may be thinned to about one foot apart, after the plants become strong.

Planting Out

Plants raised in pots may be planted out any time after the beginning of April, providing the weather is favorable, and the soil in good workable condition.

Previous to planting out, the plants should have been made as hardy as possible, by standing quite out in the open for a few

days, with just a little shelter from the winds. In planting, the roots should be shaken fairly free from the soil, and a good hole made to receive them, spreading the roots carefully, filling with fine soil, and making quite firm especially round the collar of the plant. It is a good plan to plant in double rows, allowing a foot apart each way between plants. A few small twigs should be put around the plants to keep them upright, and a little soot sprinkled among them to keep off slugs. The hoe should be kept going among the plants whenever the soil is dry enough, and apart from keeping an eye on them to see they are not injured by birds, slugs, or wire-worms, etc., this is all that should be necessary till they are tall enough for permanent staking.

Staking

This should be done as soon as possible after planting out and before they by any chance get broken down by the wind. Staking should be carefully done, and good straight maple brush is probably the best, and if that can be procured from 6 to 8 feet high, so much the better as in a favorable season under good cultivation, they will attain this height. A little extra neatness and security is obtained if a wire or two is run from end to end of the rows, from posts, to which the tops of the brush may be tied here and there and in really windy and exposed districts this is quite necessary when growing for exhibition.

Tying, Etc.

To secure really high-class flowers, a little thinning of the shoots is almost a necessity, but it should not be carried too far—3 or 4 shoots to each

plant is quite enough, and if these are allowed plenty of light and air, they will give flowers quite large enough for any purpose. This thinning should be done as soon as the shoots have become really strong, and those that are to be retained, should be given a tie wherever necessary—afterwards removing all side growths as they appear.

Mulching, Watering, Feeding

If the ground has been well manured, very little water or feeding should be necessary till after the plants have commenced blooming, though during a very hot season, a little light mulch may be necessary earlier than this to somewhat conserve the moisture, or on very light soils, it may be necessary to water.

After the plants get well into bloom, both watering and feeding must be regularly attended to, especially if a good, long season of bloom is desired. Weekly or twice weekly waterings of liquid manure may be given with advantage, and an occasional dressing of artificial manure will help to keep up the vigor of the plants, as also will a fairly thick mulch of light manure—stable manure is probably the best for this purpose, it being much cleaner for getting about on than cow or pig manure.

The removal of the bloom is an important matter, as under no circumstances must they be allowed to seed and when the plants are intended for exhibition the blooms not so required should be removed before they attain maturity, thus lessening the strain on the plants. Under exceptional weather conditions, it might be advisable to remove some of the buds also, to give the plants an entire rest, though if this is done, ample time must

be allowed for the flower to develop before a show.

Shading

A little shading is sometimes necessary to be able to exhibit some varieties in the best possible condition, but fortunately there are not many that require it, but such varieties as Earl Spencer, Edrom Beauty, and one or two other of that color, must at least be shaded in the south for them to retain their color; also there are a few varieties that require a cooler position than others, but this must be decided by actual experiment, as what will do well in one district and stand the sun, might burn and lose the color, in another.

The varieties to grow are quite a matter of personal taste as to color, or whether they are for exhibition purposes or for garden decoration only.

If this treatment is followed out you can have stems 15 inches long as I have often had them that length. Bone meal and blood is the artificial fertilizer that I have always used to advantage.

Dark Colors—Warrior, Nubian, Othello Spencer.

White—Constance Hinton, King White

Blue or Lavender—Wedge-wood, Afterglow, Blue Gem.

Crimson—Maude Holmes, King Edward Spencer.

Pink—Countess Spencer, Elfrida Pearson, Peace

Cream and Yellow—Clara Curtis, Dobbies Cream.

Orange Scarlet—Thomas Stevenson, Edrom Beauty, Robert Sydenham.

Warning to Mushroom Growers

As the result of a serious case of mushroom poisoning in a mush-

room grower's family recently, the mushroom specialists of the U. S. Department of Agriculture have issued a warning to commercial and other growers of mushrooms to regard with suspicion any abnormal mushrooms which appear in their beds. It seems that occasionally sporadic forms appear in mushroom beds, persist for a day or two, and then disappear. These are generally manure-inhabiting species and may be observed shortly after the beds have been cased. In the instance cited, however, these fungi appeared in considerable numbers at the time the edible *Agaricus campestris* should have been ready for the market, and the dealer supposed it was probably a new brown variety and tried it in his own family. As a result, five persons were rendered absolutely helpless and were saved after several hours only through the assistance of a second physician who had had experience with this type of poisoning.

In the opinion of the Department, this case is peculiarly significant and demonstrates that the grower must be able to distinguish *Agaricus campestris* from any of the wild forms of mushrooms that may appear in the beds. Under the circumstances, the Department strongly urges every grower to make himself thoroughly familiar with the cultivated species. Complete descriptions, with pictures of poisonous and cultivated species, are contained in Department Bulletin 175, "Mushrooms and Other Common Fungi," which can be purchased for 30 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. (The Department of Agriculture has no copies of this bulletin for free distribution).

CRANBERRY NOTES

By J. W. FITCH

The thirtieth annual meeting of the W. S. C. G. Assn. will be held in Grand Rapids, Tuesday, Jan. 16th in the G. A. R. Hall at 9:30 a. m. While it was voted at the August meeting to have the meeting the first Tuesday after the first of January it developed that this year, the meeting coming the day after New Years made it impossible or very inconvenient for many to attend so, at the request of President Searls and after consultation with the members of the executive committee that could be reached the date was changed to the one set at the meeting in January.

The meeting promises to be very interesting. Data in regard to the pumping experiments which were successful will be presented. It is hoped to have Dr. Ball, state entomologist and Mr. A. W. Chaney present. Mr. Chaney can give a very interesting talk on the Advertising Campaign as well as his usual summary of the seasons marketing operations.

Mrs. S. N. Whittlesey, who is an expert on the cooking of cranberries, will demonstrate that they are a most economical fruit. She can also tell of her experience as a delegate to the Horticultural meeting. Mr. Geo. Arpin who took charge of the exhibit at the State Fair will give us some ideas as to improvements in that direction. Mr. Malde's summary of the work at the Station is always interesting and brings out much valuable discussion. President Searls, who is taking a most active part in the development of several new bogs along the most

approved and progressive lines, will tell of the progress being made. Mr. C. M. Secker, who has been assisting the selling agency at Chicago, will give an account of how this end of the business appeals to a grower. The progress of the work of the committee appointed to confer with the University authorities in regard to the change of the Experiment Station will call for a general discussion of the question. The past season was generally a very satisfactory one to the growers. While blight and frost reduced the crop somewhat and the frost made cleaning the berries more difficult, the most complaints from dealers was on account of lack of size. To increase the size of the Badger brand on Bell & Cherry should be the endeavor of every grower, and this can only be accomplished by renewing the vines either by sanding, with which must go better drainage, or by mowing, fertilizing and pruning. A newly planted bog always bears fruit of better size. Hence the endeavor must be to keep the vines young. There is much room for work in this direction. All growers should make a New Year's resolution that they will send some berries to the State Fair and the Horticultural meeting in 1917, and this will be brought to their attention in sufficient time for them to save berries for this purpose. There is plenty of room for a better knowledge of the cranberry right in Wisconsin, both as to its cultivation and value as a fruit, and by taking advantage of every opportunity offered, especially the State and County Fairs,

the consumption could be greatly increased right at home. A little help from each grower will make a big showing and let the public know that cranberries are a notable product of Wisconsin's fertile soil.

Cranberries

MRS. S. N. WHITTLESEY.

Ever since the creation of Man, thoughtful Eves have given consideration to the palates of their adored Adams.

We do not know whether Mother Eve stewed, fried, or baked the much talked-of apple, but we feel confident it must have presented a very attractive and appetizing appearance to have caused Father Adam's great fall.

Time and experience have made many changes in the culinary art, and though we read of the Romans using much the same recipes as ours of today improvements must have been made and wisdom gained.

Among the fruits that are demanding and receiving attention at the present time, is the one of which I have been scheduled to speak—the Cranberry. The much-abused, often maligned cranberry—the berry whose merits and possibilities are only beginning to be known.

From childhood to young womanhood I regarded the cranberry as much a part of and necessity for the Turkey as the dressing. That they could be used in any other way or time was not thought of, so some 40 years ago when I heard of a young man embarking in the raising of cranberries for a livelihood it struck me as laughable and lamentable. Who could ever make a living in that business? Would there be de-

mand enough to support any one?

Three years later this same young man convinced me there was bread and butter enough in it for two—and since that time out fate and family have been largely dependent on the growth and sale of the cranberry. Instead of the annual two or three quarts of berries as turkey accessories, a barrel of them went into the cellar. How to use that many berries was a problem which from that and subsequent years has developed many ways and better ways to prepare them.

Their keeping qualities were then unknown to me and may be to most of you. It is not necessary to can cranberries as you do all other berries to save them. If you put them in a cool, dry place as you do apples, they will keep just as long and just as well as apples.

The cranberry is one of the acid fruits. Do not deery or destroy that acid. God put it there for our benefit just as He did in the currant—the strawberry—the lemon. Don't try to defeat His purpose by neutralizing that acid with soda. Who would think of par-boiling the strawberry in soda water or offering lemonade first sweetened with soda? Be as just to the cranberry and save its valuable qualities, clean flavor and beautiful color. Mr. Schlosser says:

"The chemical analysis of cranberries shows that they contain mild acid combinations which are by nature converted into alkaline carbonates in the blood which help to purify it and have a tendency to ward off bilious and rheumatic tendencies. They also aid digestion, clear the complexion and are perfectly harmless to the most delicate stomach."

Because of their acid properties cranberries should always be cooked in granite or porcelain-lined dishes, also, after cooking, should be turned into glass, china or earthenware. Like the apple, they can be cooked as needed—but unlike the apple—the sauce will keep for weeks in an open or uncovered dish without deterioration if kept in a cool, dry place, in fact, we have never lost by fermentation where other fruits would have spoiled.

The reputation of cranberries has suffered to a disastrous extent in the past through the injurious treatment they have received in the methods of cooking, and I fear it will take years to overcome the prevailing opinion that they require so much more sugar than other fruits. Cranberries are *not* sugar consumers compared with most other fruits.

I am pleased to be able to show you what an amount of sauce can be made from one quart of cranberries and one pound of sugar, provided the water supply is not restricted.

Cranberries can be used with toothsome results in a great many ways other than sauce or jelly. While we do not wish to detract from the good use of the apple, we would like our lady friends to try for a change—substituting cranberries for apple in a suet dumpling, or steamed pudding—just stir them into the dough as you would raisins in a cake. They are also an addition to mince meat—cooking them first as for sauce—and when apples are scarce can be used generously to take the place of the apple.

A fine short-cake can be had with a good biscuit crust and cranberry sauce for spread or filler. A delicious conserve is

now made with cranberries for base and addition of some raisins and orange juice—sweetened to taste and cooked just long enough to solidify. A refreshing drink can be made from the strained juice—prepared similar to grape juice.

Two cups of chopped berries, 1 cup of sugar, 1 tablespoon of flour mixed together and baked between two crusts make an excellent pie. I put the berries through the meat chopper.

Perhaps nowhere is the berry more abused than in the making of sauce. I do not approve of long, slow stewing or simmering, or cooking water and sugar together before adding berries, but I do earnestly urge the use of *boiling* water, the putting together at once the berries, sugar and water, and cooking rapidly over a brisk fire. My formula is frequently given but as the method of procedure never has, I am going to state it here in detail, hoping some of you ladies will at least give it a trial.

First be sure of a hot stove and boiling water. Place 1 quart of washed berries in granite kettle or sauce pan. Pour over these some boiling water—a quart perhaps—and turn immediately into colander. This warms the kettle and takes chill from berries, facilitating speedy cooking. Return berries at once to kettle, add 1 pint of sugar, then 1 pint boiling water, stirring just enough to coat all berries with this sweetened water. Cover when berries begin to swell and "pop" stand right by and mash with spoon against side of kettle till every berry is broken, keeping sauce cooking rapidly during this time. Remove from fire and turn into glass, china or earthenware dish. If conditions are right ten minutes will do the work and you will

have tender skins, fine flavor, and rich color with all the virtue of the berry retained.

I wait for the day when by proper treatment and judicious methods, the cranberry will come into its own rightful place in usefulness and appreciation by the inhabitants of America.

The Care of My Orchard

J. F. Harrison, Delegate from
Minnesota Society

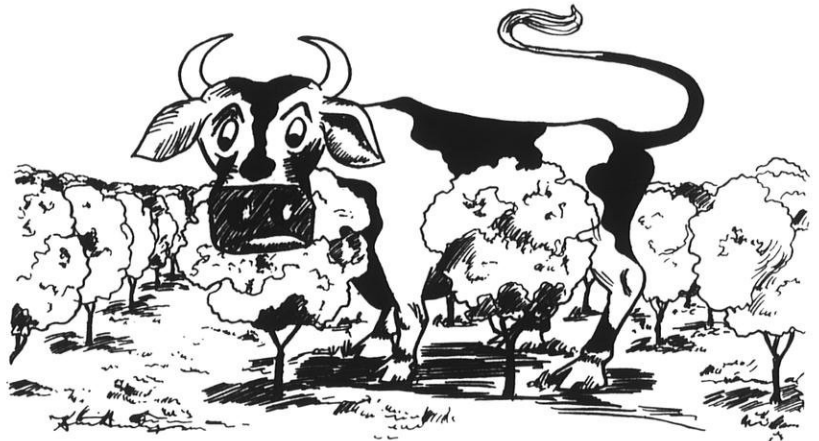
About twenty years ago I set out my first orchard and of course like many others made some mistakes. One serious mistake was that I got too many varieties, another I tried to cultivate them and grow corn, potatoes, strawberries and other garden crops between the rows. This was a bad thing in my case as my orchard was set out on a north east slope, which was quite steep. The cultivating of the crop caused the good soil to wash down to the foot of the hill and left the tree on a ridge. I did not set the whole slope out to trees when I set out the first orchard but set out enough to give me some experience for I then realized cultivation on a side hill was not the thing.

A few years later I set out the rest of the piece but this I set out in clover and timothy sod but I kept them mulched with good barn yard manure and I found they did just as well if not better than the ones I cultivated and now I am convinced that this is a better way to start an orchard in this extreme hot and cold climate.

I have always sprayed at least once a year since the orchard has been bearing and last season I sprayed four times. I generally white washed the trees early in



This is supposed to be a composite likeness of all the cows in Wisconsin 10 years ago. Dozing contentedly, confident of her supremacy she gives no heed to the little apple trees growing all around her nor senses in them a formidable rival.



This is another picture of the same cow—but now somewhat agitated as she finds these apple trees so big as to cast her majesty somewhat into the shade. Time 5 years ago.

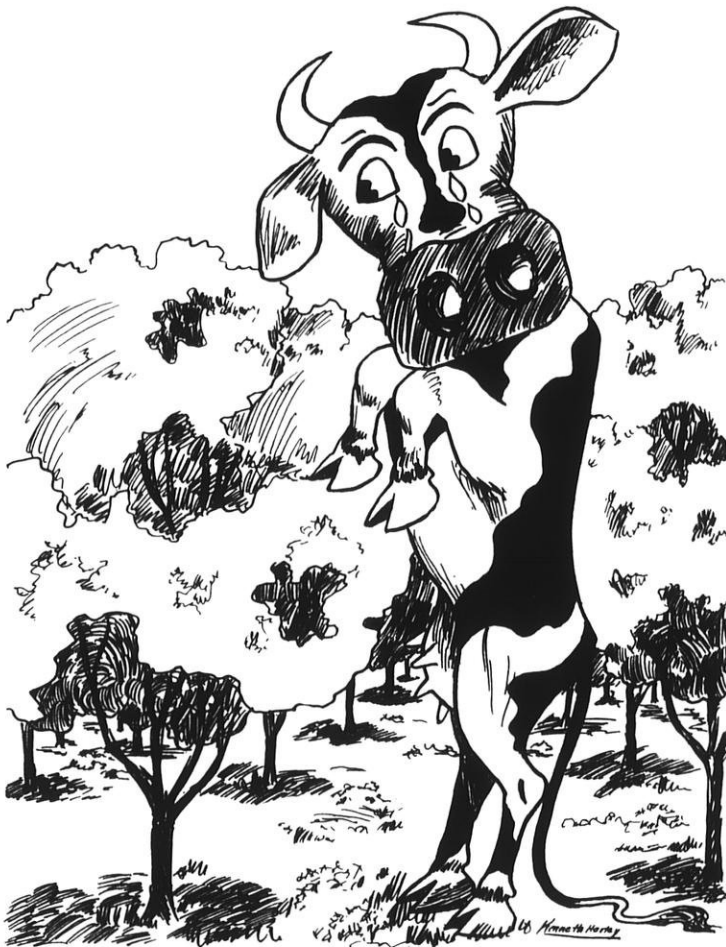
See next page

the spring as far up as a man can reach. This I consider takes the place of a dormant spray, in fact this is a dormant wash. I think this has helped to keep the insects down in the orchard.

I have raised calves in my orchard every year after the trees have grown so large that we cannot cut the hay and cure it. I think we have had calves in the orchard for the last twelve years. We have raised a crop of calves as well as a crop of apples every year since the trees started to bear,—some years more apples than others but generally the same number of calves. We realize on an average over a hundred dollars an acre every year since the orchard has started to bear well besides the crop of calves which I have spoke of. I believe the calves help to keep down insects in the orchard be-

cause they eat all the apples that fall off early which are generally wormy. I mulch every other year with manure right from the barn. I keep the orchard pruned, generally do a little every year. I believe in lots of air and sunlight. An orchard to do well needs air drainage as well as soil drainage.

You must have plenty of air and sunlight if you want nice and well ripened fruit. This fruit always brings the best price. By keeping young growth in an old orchard you will have just as nice fruit and just as well colored up fruit in an old orchard as you do in the young orchard. this is done by pruning when done right. Do not let the tree have its crop on old wood all the time, cut some of it out each year. For a young orchard I would not prune very much.



Here we see the once mighty Queen in a state of great alarm tinged with sorrow at her almost total eclipse by the rapidly growing apple orchards of Wisconsin and standing on her hind legs in order to be seen at all. Time 1927.

The first two years after the orchard is set out I never use a knife; I just break off such new growth as ought not to be there with my hands and then after the tree has been out two years to make it spread out and give it a good top and so that it will not grow too tall, I cut off all the third year growth that is inclined to shoot straight up. This will cause the tree to spread out and in a few years it will have a well shaped top and not too tall. We do not like to pick apples from a twenty foot ladder. This is about all I have had time to write about my experience in orcharding but I am ready for questions if any one has any to ask.

Still King

So far as history reveals, the apple was one of the earliest fruits cultivated by mankind.

According to Brand's Popular Antiquities, the apple was king of fruits in the early days of Merry England and was one of the chief means by which our English forebears dispensed hospitality. Some curious customs were in vogue in those early days, as may be seen from the following account:

"On Christmas eve the farmers and their men in Devonshire take a large bowl of cider, with a toast in it, and carrying it in state to the orchard, they salute the apple trees with much ceremony,

in order to make them bear well the next season."

The ceremony consists in "throwing some of the cider about the roots of the tree, placing bits of the toast on the branches," and, finally, "encircling one of the best bearing trees in the orchard, they drink the following toast three several times:

'Here's to thee, old apple tree,
Whence thou mayest bud, and whence
thou mayest blow,
And whence thou mayest bear apples
enow!
Hats full! Caps full!
Bushel, bushel, sacks-full!
And my pockets full, too! Hurra!'"

On New Year's eve, it was the custom for the boys to organize "apple-howling" parties and go from orchard to orchard, merry-making, in order to show their gratitude for past bounties and to court a continuance of the favors of the goddess bountiful. One of the songs runs:

"Stand fast, root! bear well, top!
Pray God send us a good howling crop:
Every twig, apples big;
Every bow, apples enow!"

"Then they shout in chorus, one of the boys accompanying them on a cow's horn. During this ceremony, they rap the trees with their sticks." This is known as "wassailing" the trees. The ceremony was concluded by a kind of dance in which the boys hopped about the tree singing:

"Wassaile the trees that they may beare
You many a plum and many a pear;
For more or less fruits they will bring
As you so give them wassailing."

They say the Lion and the Lizard
keep
The Courts where Jamshyd glori-
ed and drank deep:
And Braham, that great Hunter—
the Wild Ass
Stamps o'er his Head, but cannot
break his Sleep.

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The Annual Convention

The report of a convention is dry stuff, dry to write and dry to read. You say, "very fine," "best we ever had" etc., etc., on to the end and you have said just what you said last time. That's all there is to be said about it. The only way to get anything out of a convention is *to be there*.

It was a good convention. The program was full and it was *intense* every hour and every minute.

Some of the high lights: The five papers by women, Mrs.

Whittlesey's paper on cranberries which was only incidentally about cranberries after all but contained much besides, the philosophy of content of a peaceful, happy home life; Mrs. Rasmussen's clear thinking and descriptions of sane and rational house keeping helps; Mrs. Geiger's delightful story of the garden; Mrs. Strong's tale of a garden that yielded not only flowers and vegetables but best of all regained health; Mrs. Moore's story of a village fair; all these taught us that our convention is a stale and unprofitable affair without woman's help.

Prof. Robert's talk on apple scab control which provoked discussion that persisted until the president shoved the whole bunch of disputants out of the meeting into the corridor where they talked until the following day.

Prof. J. G. Moore's forceful address on the needs of Wisconsin horticulture was one of the most striking and helpful talks that our members have listened to since Prof. Bailey's visit fourteen years ago. This will be reviewed in a later issue.

These are some of the bright spots but all of the rest was good.

The fruit exhibit was exceptionally high in quality; no better fruit has been shown in recent years and no other fruit exhibit in the wide world was ever staged in a more beautiful place, the grand rotunda of the Capitol. Under the great dome which is rivaled by but two others in the world, with massive columns of Italian marble for a background surely Wisconsin apples were for once well staged.

The "57 varieties" of apple products in glass prepared by Mrs. H. H. Morgan attracted universal attention. A complete

list of these and recipes for all important ones will be given through these columns.

So ends the story.

Your Good Will, Please!

If you are a paid member of this Society you are certainly satisfied with the investment.

The bigger the membership the more you will get for your money. The membership fees are applied exclusively to the support of the magazine and pay for it *in part*, the balance being derived from advertisers. Advertising rates are based almost wholly on circulation. If the circulation of this paper could be doubled the advertising rates could be advanced fifty per cent and still give the advertiser better value for his money.

With the increased revenue Wisconsin Horticulture could be increased to twenty-four pages or more. It's clearly up to you, my dear reader. You are the one and the only one who can turn the trick. The paper is sent *only* to members. Will you do your share?

We are Not Highbrows

A lady who attended the Convention for the first time this year expressed her great surprise and pleasure at meeting so many people eager to learn about gardens and the simple things about gardening. "I had heard about the Horticultural Society but had always thought of it as composed of people of much learning and that everything would be way above my head but instead I found just 'common folks' like myself with an over powering love of gardening and all eager to learn and to tell others their own experience."

A mighty fine compliment to everybody concerned in making the convention. We are just "common folks" united for our common good and the welfare and uplift of all the people of the state. If each of the host of members who have attended conventions and in other ways derived benefits from their membership would induce just one other person to join the society what a boost we would get in membership! It's just a little bit selfish if you don't do it. Don't you think so?

Head Off Rabbits and Mice

Among the absurdities of the game laws may be mentioned the protection of rabbits which annually destroy thousands of fruit trees worth many times more than all the rabbits killed for food.

Although not in the game laws the statutes in other places condemn the hawks, which destroy mice and moles.

Be that as it may the young apple trees should be protected. If not attended to in the proper season it may still be done if snow is not too deep. Wrap the trunks with tar paper.

In this connection Mr. J. A. Hays of Gays Mills who has annually protected several thousand trees offers the following valuable testimony.

Use only tar paper; the tar odor alone repels mice. A grain bin lined with tar paper is mouse proof. Use slack tar paper No. 3 which is neither so heavy as to break nor so light as to tear in the wind if loosened.

After thoroughly testing the "spiral" method of wrapping, the paper cut in strips 4 to 6 inches wide and wound spirally around

the trunk, Mr. Hays has abandoned it in favor of a section of the roll 18 inches long and wide enough to fit around the trunk with a liberal lap. These wrappers may be conveniently made by sawing the roll transversely.

Most important of all Mr. Hays testifies to serious injury in the spring of 1914 resulting from leaving the wrappers on too late in the spring.

Where wrappers were not removed until after two or more weeks of warm April weather some trees were killed outright and others badly injured mostly on the south side.

Six of the Fifty-Seven

The following recipes for six of the apple products shown at the convention were submitted by Mrs. Morgan on request by the editor.

APPLE CONSERVE OR CANDIED APPLE

Make syrup of 2 cups sugar to $\frac{1}{2}$ cup water, use N. W. Greening, or Jonathan apples, pare, core and cut in slices, simmer apples in syrup until clear, turning often. Take out carefully and dry in sun for 12 hours. Roll in gran. sugar each day until they will not absorb more sugar, pack in glass jars. May be used in fruit cake or as a confection.

APPLE DELIGHT

2 cups chopped apple cooked in double boiler with 2 cups sugar, juice and chopped rind of 1 orange and 1 lemon, 1 cup chopped raisins, cook 1 hour adding 1 cup chopped walnuts 5 min. before done. Seal in jelly glasses.

APPLE SYRUP

1 doz. Northern Spy apples, cut in pieces and cook in water to cover, strain and to each qt. juice add juice of 4 oranges and

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2 lemons. Boil 10 min., add $\frac{2}{3}$ as much sugar as juice, boil 5 min. longer, skim and seal.

APPLES WITH PINEAPPLE

Make a syrup of $1\frac{1}{4}$ lbs. sugar and 1 qt. boiling water, add to this 1 good sized pineapple, grated, and bring to boiling point. Pare, core and quarter 4 lbs. apples and cover with boiling water, simmer 5 min. Lift carefully, drain and slide into syrup. Simmer until apples are tender, then seal. These are delicious.

HONEY APPLES

Pare and core 1 doz. apples, place in granite kettle with syrup made of $1\frac{1}{2}$ pts. water and 2 large cups sugar. Simmer until tender turning often. When done apples should be clear and juice like honey. An attractive pink color may be given to this by cooking skins in water before making syrup. Northern Spy or Jonathan apples best for this.

MAPLE APPLE SAUCE

Stew 2 qts. pared and quartered apples in enough water to keep from burning, adding 1 cup of maple syrup when partly cooked. When apples become soft sprinkle with granulated sugar and remove from fire.

The Prize Winners

Best collection of apples—First, A. K. Bassett, Baraboo; second, G. H. Townsend, Madison.

Best five plates, commercial—First, Great Northern Nursery, Baraboo; second, H. H. Harris, Warrens; third, G. H. Townsend; fourth, J. E. Baer.

Plate Ben Davis—First, Theodore Kurtz, Jr., Cedarburg; sec-

ond, A. K. Bassett; third, N. A. Rasmussen, Oshkosh.

Plate Fameuse—First, H. H. Harris; second, A. K. Bassett; third, L. B. Irish; fourth, N. A. Rasmussen.

Plate Gano—First, J. E. Baer; second, N. A. Rasmussen; third, A. K. Bassett.

Plate Gem—First, L. B. Irish; second, A. K. Bassett.

Plate Golden Russett—First, Theodore Kurtz; second, Henry Simon, Baraboo; third, A. K. Bassett; fourth, N. A. Rasmussen.

Plate Grimes Golden—First, D. F. Bingham, Sturgeon Bay; second, J. V. Beyer, North Milwaukee.

Plate Jonathan—First, G. H. Townsend; second, A. K. Bassett.

Plate King—First, G. H. Townsend.

Plate Maiden Blush—First, N. A. Rasmussen.

Plate McIntosh—First, Great Northern Nursery; second, N. A. Rasmussen; third, D. F. Bingham; fourth, William Nelson, Oshkosh.

Plate McMahon—First, H. H. Harris; second, G. A. Freeman, Sparta; third, L. B. Irish; fourth, G. H. Townsend.

Plate Newell—First, J. E. Baer; second, L. B. Irish; third, D. E. Bingham; fourth, H. G. Townsend.

Plate N. W. Greening—First, Great Northern Nursery; second, G. A. Freeman; third, A. K. Bassett; fourth, Henry Simon.



Plate Northern Spy—First, G. H. Townsend; second, Theodore Kurtz.

Plate Patten—First, L. B. Irish.

Plate Pewaukee—First, A. K. Bassett; second, G. H. Townsend; third, Theodore Kurtz; fourth, N. A. Rasmussen.

Plate Plumb Cider—First, N. A. Rasmussen.

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Plate Salome—First, Great Northern Nursery; second, Henry Simon; third, A. K. Bassett.

Plate Seeknofurther—First, D. E. Bingham; second, A. K. Bassett.

Plate Scott Winter—First, J. E. Baer; second, G. H. Townsend; third, A. K. Bassett; fourth, H. H. Harris.

Plate Tolman Sweet—First, J. E. Baer; second, Theodore Kurtz; third, Henry Simon; fourth, G. A. Freeman.

Plate Utter—First, A. K. Bassett.

Plate Wagner—First, Richard Gilbert, Sturgeon Bay.

Plate Wealthy—First, H. H. Harris; second, A. K. Bassett; third, A. C. Boutin, Bayfield; fourth, L. B. Irish.

Plate Windsor—D. E. Bingham, second, Great Northern Nursery; third, A. K. Bassett.

Plate Wolf River—First, H. H. Harris; second, G. A. Freeman; third, N. A. Rasmussen; fourth, J. E. Baer.

Plate York Imperial—First, N. A. Rasmussen.

Peck Fameuse—First, H. H. Harris; second, A. K. Bassett; third, J. E. Baer.

Peck Gano—First, J. E. Baer.

Peck Golden Russett—First, Henry Simon; second, Theodore Kurtz; third, N. A. Rasmussen.

Peck Jonathan—First, G. H. Townsend.

Peck King—First, G. H. Townsend.

Peck McIntosh—First, Great Northern Nursery; second, N. A. Rasmussen.

Peck McMahan—First, G. A. Freeman.

Peck N. W. Greening—First, Great Northern Nursery; second, J. E. Baer; third, G. H. Townsend.

Peck Tolman—First, Theodore Kurtz; second, J. E. Baer; third, Henry Simon.

Peck Wealthy—First, N. A. Rasmussen; second, Great Northern Nursery; third, G. H. Townsend.

Peck Windsor—First, Great Northern Nursery.

Peck Wolf River—First, J. E. Baer; second, G. A. Freeman; third, N. A. Rasmussen.

Bushel McIntosh—First, Great Northern Nursery.

Bushel N. W. Greening—First, Great Northern Nursery; second, J. E. Baer.

Exhibit Crabs

First, A. C. Boutin; second, N. A. Rasmussen; third, L. B. Irish.

Seedling Apple—L. B. Irish.

Cranberries

Bennett Jumbo—First, Mrs. S. N. Whittlesey, Cranmoor.

Bell & Bugle—First, J. W. Fitch, Cranmoor.

Metallic Bell—First, Mrs. S. N. Whittlesey, Cranmoor.

Bell & Cherry—First, J. W. Fitch.

Cranberry Sauce, 1 pt.—First, Mrs. O. G. Malde, Grand Rapids; second, Mrs. S. N. Whittlesey.

Pies

Apple Pie—First, Mrs. Geo. Johnson, Madison; second, Mrs. E. S. Cooper, Madison; third, Mrs. T. E. Holley, Madison.

Cranberry Pie—First, Mrs. Geo. Johnson; second, Mrs. Joseph Skelton, Madison; third, Mrs. Ed. Larsen, Madison.

Students Speaking Contest—First, C. B. Blosser; second, H. W. Albertz; third, M. W. Sergeant.

Students Judging Contest—First, A. R. Hargrave; second, J. I. Etheridge; third, J. W. Campbell.

Vegetables

Best collection, not less than 10 entries—First, N. A. Rasmussen, Oshkosh; second, John F. Hauser, Bayfield; third, E. L. Roloff, Madison.

Six Blood Turnip Beets—First, John F. Hauser; second, N. A. Rasmussen; third, John Hagberg, Bayfield.

Three Round Turnips—First, John F. Hauser; second, N. A. Rasmussen.

Three Rutabagas—First, John F. Hauser; second, John Hagberg; third, N. A. Rasmussen.

Six Chantenay Carrots—First, John F. Hauser; second, N. A. Rasmussen; third, John Hagberg.

Six Short Horn Carrots—First, John Hagberg; second, John F. Hauser.

Six Salsify—First, N. A. Rasmussen; second, E. L. Roloff; third, Christensen & Davis, Oshkosh.

Three Winter Cabbage—First, N. A. Rasmussen; second, John F. Hauser.

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Three Red Cabbage—First, N. A. Rasmussen.

Six Ears Pop Corn—First, N. A. Rasmussen; second, E. L. Roloff.

Six Red Onions—First, N. A. Rasmussen; second, John F. Hauser.

Six Yellow Danvers Onions—First, N. A. Rasmussen.

Six White Onions—First, N. A. Rasmussen; second, Christensen & Davis; third, John F. Hauser.

Six Gibraltar Onions—First, Walter Franey, Madison; second, N. A. Rasmussen.

Six Winter Radishes—First, John F. Hauser; second, Christensen & Davis; third, N. A. Rasmussen.

Six Parsnips—First, E. L. Roloff; second, N. A. Rasmussen; third, John Hagberg.

Six Peppers—First, N. A. Rasmussen; second, E. L. Roloff.

THE FRUIT BUD.

By R. H. Roberts, at Summer Meeting, Lake Geneva, Aug. 22, 1916.

It is important to know the fruiting habit of a tree when de-

termining upon the pruning that it should receive. The number, location and position of the fruit buds have an important bearing upon the amount of cutting as well as the place to make the cuts.

Fruit buds belong to three general classes, (1) those which are produced as side or lateral buds along the new terminal limb growths of the tree, (2) as lateral buds on the shorter side limbs or spurs and (3) as terminal buds on limbs and spurs.

They are normally formed in July when there is an abundance of elaborated food present. With apples, should there be an overload of fruit which has used up the surplus food in developing blossoms and small fruit, unless accompanied by early season conditions which tend to develop starches, no blossom bud formation takes place, with the result that an "off" year follows the heavy crop.

In external appearance the fruit bud is thicker or plumper and in plums it is lighter colored than the vegetative or wood bud. When sectioned vertically in late fall or spring, the fruit bud may

be readily distinguished by the rounded or nobby appearance of the core or growing point. The vegetative bud has narrow sharp points, or the undeveloped leaves.

American plum buds belong to classes one and two, as this tree bears its blossom buds laterally on spurs and with some varieties of plums a large proportion of its fruits are borne on the one-year-old wood, there being one or two blossom buds formed beside the smaller vegetative bud which is produced in the axis of each leaf stem. Because of the nearness of the young fruit the new lateral growths are greatly limited by this close competition, resulting in trees of few main branches, giving a "feathered out" appearance. This is especially common among Japanese plums, as this species has many blossom buds instead of one or two which are clustered about each vegetative bud.

Plums which have few or no lateral blossom buds on the limbs produce more branches because of the stronger lateral growths on the second year wood and consequently become

more dense or matted trees. Such trees bear their fruit on the spurs which arise from the second-year wood. These spurs usually produce few vegetative buds and as the plum fruit bud develops only blossoms and fruit, the spurs perish after fruiting. Even when the end bud on the spur is a shoot bud, it has little chance to make much growth because of the many blossoms which are being produced on the same short spur. As a result of this habit very few plums are borne on wood more than two years old.

From these facts, it is apparent that plum trees should be pruned heavily to produce strong new wood which bears fruit buds or at least strong new spurs. The aim in pruning should be to cut heavily enough to produce a long new growth of at least two feet which would require heading back. Then each annual cutting

gives strong fruiting wood and prepares for the next year's renewal.

The cherry has a less vigorous fruiting habit than the plum, although its buds belong to the same classes. Generally not over half of the lateral buds on the new limb growth are fruit buds. The fruit spurs have a terminal shoot bud and may persist and fruit for several years. They seldom live longer than three years, however, so practically no fruit is borne on wood which is more than four years old. Consequently on old trees that make a small annual growth of but three to four inches, the total fruiting area is a layer approximately a foot deep about the outside of the tree.

A lighter pruning will keep the fruiting wood of the cherry in a stronger, more vigorous condition than with the plum, because of the cherry's better spur habit

and its tendency to produce better annual growths. Its stronger growing habit is probably due to the fewer fruit buds on the new wood, which would have a lesser tendency to check subsequent growths by excessive fruit production.

The apple is the most difficult of the tree fruits to keep in regular bearing. Its blossom buds are formed as terminal spur buds and in some instances as terminal and lateral buds on limbs. The apple fruit spur, which normally arises from two-year-wood, has a biennial fruiting habit instead of being annual as with the cherry. The spurs are, however, much longer lived as it is very common to find them to be fifteen to twenty years old. The apple fruit bud, which is usually a terminal bud on a spur, produces both blossoms and a vegetative growth. This growth, which is produced at the same

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time as the fruit, continues to grow during the next season and normally develops a terminal fruit bud. This blossoms and bears again the second year, giving the apple a biennial fruiting habit. Although some spurs may fruit every other year for twelve to fifteen years, it is more common for them to fruit only every three, four, or five years. Again, in some cases they fruit in successive years.

The pruning of old bearing apple trees is as much a problem of keeping the old fruiting wood in a vigorous condition as it is one of the production of new fruiting wood. The effects of pruning are very local, i. e., the response to pruning as indicated by the increase in vigor of the new growth takes place close to where the cut was made. The removal of a large limb has a very limited effect on the spur growth on a nearby large limb, although the terminal growth along the main channels of the sap flow may be considerably increased by the pruning. The proper pruning then, as indicated by the fruiting habit of the apple, would be a thinning out and

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heading back of the smaller fruiting limbs and old fruit spurs. This style of pruning reduces excess fruiting wood, invigorates the old spurs, and permits an even distribution of light and air throughout the tree, whereas the removal of larger limbs makes holes in the top and only slightly benefits other dense portions of the tree top.

Thus it can be seen how important it is to know the fruiting habit of the trees when determining upon the kind and amount of pruning to give the older bearing trees. If the new

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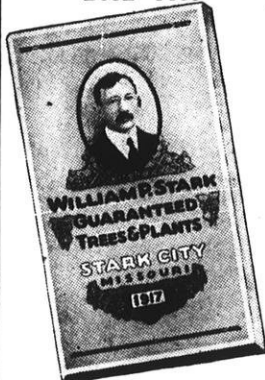
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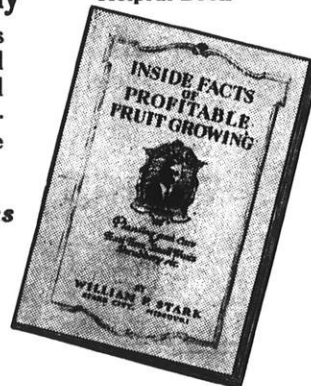
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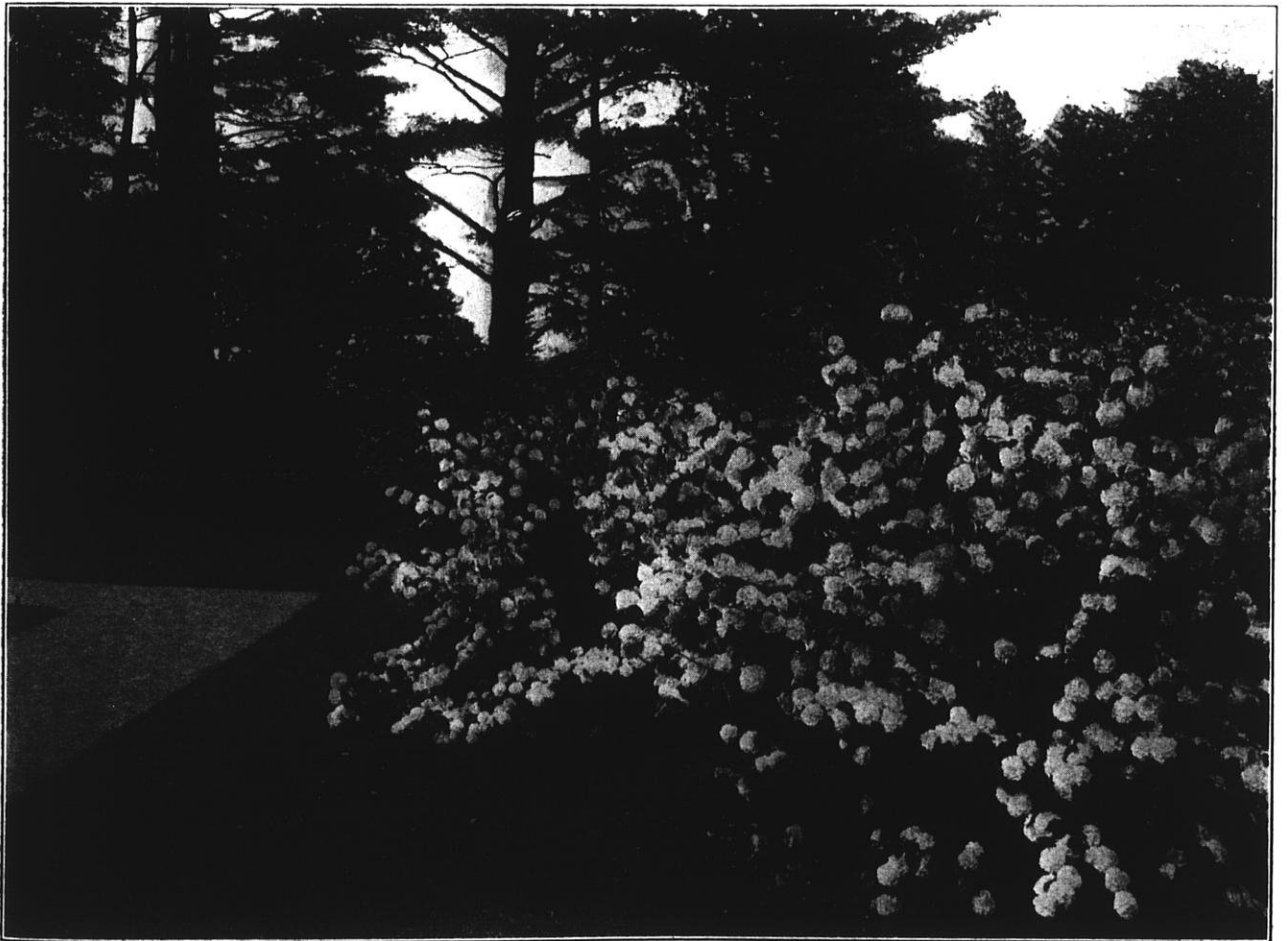
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Volume VII

Madison, Wisconsin, February, 1917

Number 6



Viburnum plicatum, sometimes called Japan Snowball. It's "snowballs" are not quite as large nor so nearly globular as those of the old-fashioned snowball but the Japan variety is almost immune against insect attacks.

A Few Words About Grafting

FOR BEGINNERS

Note (The following notes on grafting were first published in the Dec. 1912 issue of Wisconsin Horticulture, and periodically since that time requests have come for copies of the paper. To supply that need as well as to forestall further inquiries the article is reprinted).

The art of grafting is a simple one although often invested with mystery by the uninitiated.

Simply stated, the possibilities of grafting are about as follows:

You can go into your orchard next spring, saw off a few limbs from the old Hibernian apple tree, stick on some twigs of Wealthy and in a couple of years have a new top in the old Hibernian tree bearing Wealthy apples.

If you have a pet seedling apple and want fifty or one hundred trees, get some straight one-year apple roots, these are grown especially for nurserymen from any old kind of apple seed, cut the roots into three-inch sections, splice to each a twig from your seedling tree and you have root grafts that will produce orchard size trees in two years. There are many other possibilities, but these two are the most practical.

All orchard trees are grafted or budded and budding is one form of grafting, because there is no other way to get trees true to kind or name. The nurseryman knows the whole story and so do many of our readers, but for the benefit of any others who would like to try the trick an attempt is here made to tell how in simple words.

A part of it is written, a part told by pictures and the remainder left to the intelligence of our readers.

In the language of Goff, "Graft-

ing consists in placing together two portions of a plant or of different plants, containing living cambium in such a way that their cambium parts are maintained in intimate contact. If the operation is successful growth will unite the two parts," * * *

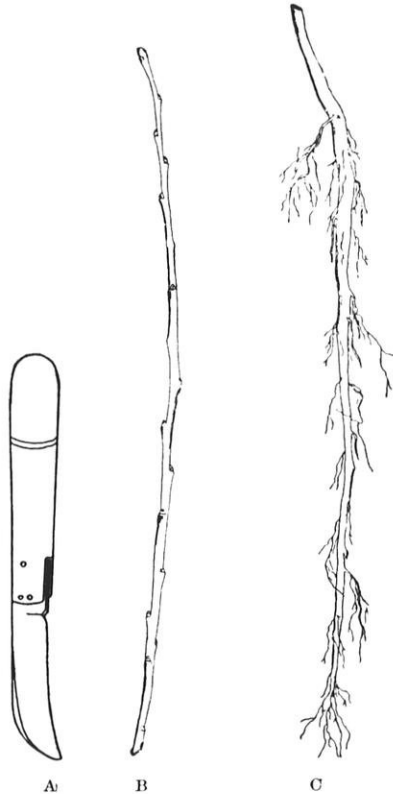


Fig. 1. (A) A good grafting knife; (B) Cion used in root grafting, must be new, current season, growth; (C) Root used in root grafting, the larger rootlets should be removed.

Root grafting: The materials for root grafting consists of twigs of new (1916) growth which should be cut early in December and kept from drying until wanted and seedlings or stocks which may no doubt be had in limited quantities from any nurseryman. (These grew from seeds planted last spring.) The tools: a sharp knife and some twine or candle wicking soaked in grafting wax. Cut the roots into pieces of about three inches and the twigs (cions) five to six inches. Make sloping cut or cleft on both root and cion as shown in the picture (Fig. 2) and

in such a way that the two can be united smoothly in a dove-tailed joint. The final operation consists in tying the parts with the waxed cord.

One very important point not mentioned so far is to have the cambium or inner bark of the cion in contact with the inner bark of the root when the two are fitted together. Make the joint so that it is smooth and even on *one side*, for in only one case in about seven thousand will it be possible to make root and cion fit on *both* sides. The very thin layer, called cambium, lying between the bark and wood, is the only active growing portion of either cion or root and the only part where growth can start, therefore these *must* be in contact. Don't try to find this cambium layer, because you can't, but just see to it that you have a good fit on one side of the joint and let it go at that.

When the root grafts are finished, pack in damp sawdust or sand

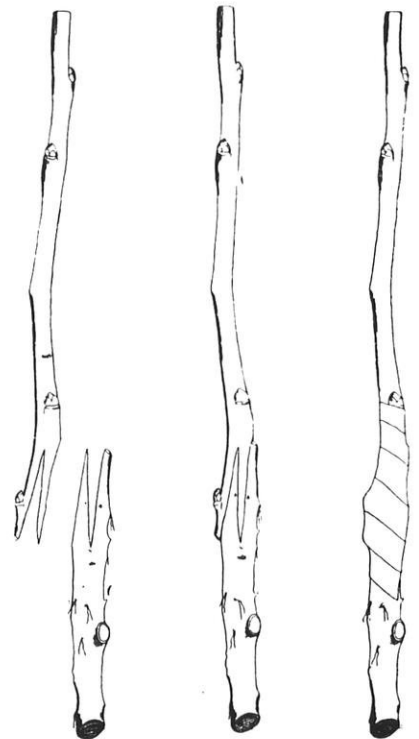


Fig. 2. Showing method of making root graft. All illustrations on this and following page from Principles of Plant Culture by E. S. Goff.

in the cellar until next spring and as soon as the ground can be worked plant in deep mellow soil, down to the top bud of the cion. Don't stick the root only in the soil, leaving most of the graft in the air, but bury until only an inch is visible.

Cleft grafting: For materials you will need a saw, butcher knife and mallet and cions of the same kind described in root grafting, but no roots. For cleft grafting any limbs from one to six inches in diameter may be used: saw these

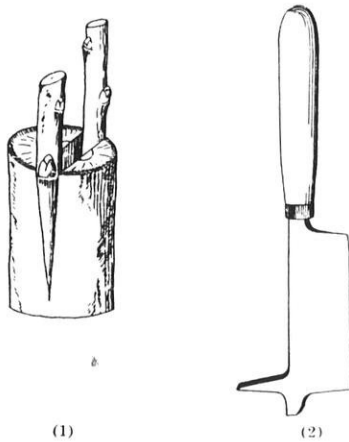


Fig. 3. (1) Showing methods of inserting cleft grafts. (2) A good type of grafting chisel.

off at least a foot from the trunk and split as shown in Fig. 3; cut two cions, each of about three inches and cut the lower ends wedge shaped, but much thicker on one side. Insert these as shown herewith, keeping in mind the cambium story, and *cover the cleft and tips of cions with grafting wax*. This is not shown in the picture, but unless it is done failure will result.

Now this is about all we need to say, the principles are here, the details can be worked out. The grafting wax mentioned is made by melting together four parts resin, two parts beeswax and one part tallow. When melted, pour into a pail of water, grease your hands and have an old-fashioned candy-pull.

Grafting is lots of fun; try it.

A Spraying Problem

A member writes: "I have an orchard of five acres about ten years old. It is quite hard work to spray with hand power for some of the trees are quite large. Will you please give me names and addresses of reliable makers of power sprayers."

The names were furnished as requested and some suggestions added about as follows: A good power spray rig, one operated by gasoline engine, will cost at least one hundred and fifty dollars and it is doubtful if it is a good business proposition to buy one for that sum. A really efficient outfit costs two hundred dollars or more. The engine *might* be disconnected and used for other purposes but usually it is not advisable.

The interest and depreciation on the outfit would amount to about forty dollars a year. This is too much "overhead" for merely one part of the care a five acre orchard. Further, it is unnecessary.

There is a type of hand power rig with double-action pump, horizontal stroke, which may be used in connection with a 200 gallon tank that costs less than fifty dollars for both pump and tank. A pressure of seventy-five to one hundred pounds can be maintained with little difficulty with this pump.

Experts tell us that a very high pressure is required for best results, 200 to 250 lbs., and this no doubt is true but in actual practice it is found that very good results can be obtained with a hand power pump. The higher pressure results in economy rather than efficiency.

Cherry growers should read carefully the article on cherry leaf spot by Prof. Keitt in this number.

Sensible Remarks

The following letter to the Rural New Yorker and Editor Collingwood's reply show that "there are others" when it comes to taking a slam at farm orchards.

As to the future of the apple business you may get any opinion you like, all honest and all based on practical experience. Many people forget that both apples and potatoes are crops for a series of years and not crops to be estimated for one year. Most of us forget that two years ago potato growers were in despair over their prices. The crop was so large that it could hardly be given away, and some growers abandoned it in disgust. Had they kept on the prices for the past two years would have made a fine average, and that is what we must work for in both potatoes and apples. One year with another, potatoes will prove profitable anywhere within reasonable distance of a good market.

We think much the same is true of apples. Millions of trees have been planted and millions will follow. A large proportion of them will never pay expenses. They are planted on unsuitable soil. Baldwin and McIntosh planted on heavy wet land suitable for Spy, would never pay. Then many trees are planted off in faraway places where the cost of hauling and shipping eat up all the profits. Small orchards off in such places will not pay. The owner cannot make carload shipments, and must depend on buyers and commission men to handle his fruit. There will not be much profit on farms where the orchard is a sort of side issue. There may be several hundred trees, but some other farming is the main business and the trees do not get full care. There are usually too many varieties, and the fruit cannot be sold to advantage.

(Continued on page 89).

CRANBERRY NOTES

J. W. FITCH, Secretary

The 30th Annual meeting of the W. S. C. G. A. proved to be one of the most interesting and promises to be one of the most important ever held. The members seemed to be thoroughly awakened to the advantage of a more active interest and cooperation with the work of the experiment station. It is now felt the station will not have to be moved but can be continued and perhaps expanded if thought best. A sufficient supply of water for it can be secured from neighboring ponds, there seemed to be some decided opposition to moving it and while the lease cannot be at this time renewed, it appeared that by the time the lease expires, 1918, satisfactory arrangements can be made.

Dr. E. D. Ball state entomologist who was present gave the growers many valuable ideas as to the functions of an experiment station as well as the most practical methods of making experiments. Dr. Ball was unanimously made an honorary member of the association and chairman of a committee including President Searls and Mr. C. R. Treat who are to visit the station and assist in laying out work, in fact to give as much assistance as possible to the management of the station. Dr. Ball's hearty interest in the discussions was a great inspiration to the growers and all feel that in him we have secured a very great help in the solving of some of our hardest problems, those in the insect line.

The address of Mrs. S. N. Whittlesey, who was the delegate to the Horticultural meeting was also of the greatest interest to all and was a very well aimed rebuke to the growers for not taking advantage

of the opportunity offered at the Horticultural meeting for a splendid exhibit of this fruit. There is no question as to the deep impression made by Mrs. Whittlesey as after she was through many growers said that they would see to it that they sent something for this display. A most beautiful exhibit can be made both of the fresh and cooked fruit and we will prove it at the next meeting of the Horticultural Society. President Searls address was as usual one of the very best given and contained many valuable suggestions as to growing methods, which will be reviewed in a later number. Mr. C. M. Seeker, who was in Chicago helping sell canberries told the growers that he wished everyone could go through his experience then they would really see the necessity of the utmost care in packing the fruit. Very fine reports were received from the northern bogs. Miss Ida M. Huyck, of Winona reported a crop of about 80 barrels to the acre which is a remarkably high average, the general average being 20 barrels or below. There is no question but that the business is going to boom and that in the near future the cranberry crop will again be a notable one of Wisconsin's wonderful products.

In the evening the officers and directors of the Wood Co., National Bank of Grand Rapids tendered the growers a splendid banquet at the Hotel Witter which certainly was enjoyed to the utmost as also the theatre party afterwards also given by the same gentlemen. It is safe to say that the meeting will long be remembered by all who attended.

The Front Yard the Show Window of the Farm

The following clever story has been sent out to state papers recently, probably by someone at the Agricultural College. It's good dope and is given here for the benefit of horticulturists. Many of them need the gentle dig under the ribs contained in this skit.

"Say, Perkins! Why did you plant all these bushes and trees in your front yard? They must be a lot of bother when it comes to mowing the grass." This is what a Wisconsin farmer said to his neighbor one morning when he found him busy trimming the shrubs.

"Well, I tell you, Jones, it's like this," replied Mr. Perkins. "Five years ago, I got to thinking that the farmstead was the farmer's show window. The storekeeper spends a lot of money in fixing up his store window. Why wouldn't it pay the farmer to spend a little money on his?"

"I have spent on an average of \$10 a year for the last five years. First I graded and seeded the lawn and kept the grass cut. The next year, I planted a few bushes around the foundation of the house, and made the house seem more like our old home back east. Next, I planted these trees which you see here. I dug them up in the woodlot. The oaks and elms I used in the lawn, and the white and Norway pine, willows and basswoods I use as a windbreak. A man from the university helped me to select the trees and showed me how to arrange them. He also gave suggestions in regard to the planting of shrubbery. He showed me how a few red willows, thorn apples and vines would hide the old shed and the pig pen from the dining room window and from the road.

"The third year, I placed those hardy roses along the garden fence.

and planted the bushes on each side of the driveway gate.

"Last year I took out the straight path from the house to the main road, and put in the short concrete walk to the drive, and fixed the drive so that I could use that for a walk. That gave me this nice, big lawn in front of the house, and made it much easier when it came to the mowing. This spring I set out the lilacs, mock oranges, honey suckles and arrowwoods along the west yard fence, and put the flowers in front of the bushes by the house. Now my little show window is nearly complete, and all it will cost is the upkeep.

"I have told you, Jones, why I planted the trees and shrubs, and now I will let you be the judge whether it pays to spend \$10 a year, for five years, in fixing up this farmer's show window."

Girls and Strawberries

A young lady who lives in Oconto County wants to earn some money and being a sensible person she is asking questions. Here are six of the questions. The answers to them furnished by Pres. Rasmussen.

Q. Is strawberry growing a profitable occupation for an individual? A. Yes.

Q. Is it a sure crop? A. We have not had a failure since irrigation was put into practice.

Q. How do you dispose of your berries? A. They are all sold at wholesale, locally or shipped to other markets.

Q. Do you realize a quart of berries on the average per plant? A. We grow only in matted rows so have no way of ascertaining. We picked last year at the rate of 800 16 qt. crates per acre.

Q. Have you had many failures and what as a rule was the cause of such? A. No. I think a large per cent of failures is due to

droughts and leaf rollers. These leaf rollers usually work in the dry period and irrigation will control both.

Q. Is it possible for a girl to handle an acre of strawberries? A. Yes—outside the picking which of course she must superintend.

Q. What variety of berries do you prefer? A. We grow mostly Dunlap. In some localities the



This charming little view is entitled The Man With the Spade. Our skilled and versatile Vice Pres. is demonstrating the setting of strawberry plants. He is *not* listening to the Angelus but to some inoffensive remark by the camera man, made to attract his attention.

Warfield fertilized with the Dunlap produce larger crops but this good satisfaction. However it is an exception rather than a rule. Where a very large fancy berry is wanted the Bubach gives very too soft for shipping and too light colored for canning.

In closing I will say I would give the same advice to a girl as to a young man. If possible work on a fruit farm for one season at least where you can get experience in grading, picking, packing, etc. This will give you a far better knowledge of the business and you will then know whether or not you care to embark in this business.

Have you read the Gentle Countryman this week?

For the Man Who Loves His Trees

J. V. Beyer

The man who loves his trees, not only plants them for the money he expects the fruit will bring him but he also cares for the appearance of his orchard.

It certainly is not a pleasing sight to see a lot of trees bend in all four directions of the hemisphere, particularly S. East as most of them do if no care is taken when young.

This has been the case with my own trees, for when I first started fifteen years ago had the same foolish idea that a great many men have, all I had to do was to plant them and leave the balance to the Almighty and he would tend to the rest.

Six or seven years ago after reading a good deal about fruit trees, of their care regarding cultivation, fertilization, moisture, pruning and the army of insects and diseases I had to fight I came to realize that I was utterly mistaken as far as the Lord was concerned, but that He gave us the tree, like everything else we have in this world, with the express understanding not only to plant it, but we to care and protect otherwise we would not get any fruit.

As I said before, about six or seven years ago I began to look after my trees and found also a great many of them leaning towards East and S. East on account of the strong pressure of the N. West winds. I tried various ways to bring them back in a straight position, but with little or no result.

In the fall of 1912 there was one tree which had not borne any fruit yet, which was planted 1905 leaned so much with two of its main branches toward East that I decided to cut them away, all it had left

(Continued on page 89).

Clean Cultivation and Thorough Spraying Promise Most Relief from Cherry Leaf Spot

Sturgeon Bay, Jan. 17—At a meeting of Door county fruit growers held on Wednesday, January 17, C. W. Keitt, of the department of plant pathology of the University of Wisconsin, reported upon investigations looking toward the control of cherry leaf spot which have been in progress here and at the Experiment Station for the past two years.

Leaf spot (also called "shot-hole" or "yellow leaf") is one of the most serious pests of the cherry in Wisconsin, and, unless controlled, makes the profitable culture of this fruit impossible in our more important cherry producing sections. For many years Wisconsin cherry growers have been able to control this disease by persistent spraying with Bordeaux mixture. However, the time and number of applications and the concentration of the spray necessary for best and most economical results have not been determined, and in certain years the foliage of many Bordeaux sprayed orchards has failed to go through the season satisfactorily. Furthermore, the high price of copper sulphate and the scarcity of labor have made it very important that the expense of the treatment be reduced. Consequently, there has been legitimate call from the cherry growers of the state for investigation of this disease with the aim of determining the most economical methods by which it can be efficiently controlled under Wisconsin conditions. Laboratory and field studies have been conducted at Madison, and for two seasons a field station has been maintained here at Sturgeon Bay. Mr. Keith expressed his appreciation to the people of Sturgeon Bay for having greatly aided

the work by placing the laboratories of the high school at the disposal of the investigators during the summer months, and by cooperating individually in various lines of experimental work.

ATTACKS FOLIAGE AND FRUIT

"The leaf spot disease," said Mr. Keitt, "affects not only the foliage, but also the fruit. On the leaves, it appears as small roundish brown spots which often occur so abundantly that they run together and form large irregular dead patches. Under certain conditions, the dead spots drop out and on account of the resulting appearance of the leaves the disease has often been called shot-hole. Badly affected leaves ordinarily turn yellow and drop. This has led many to call the disease yellow leaf. It should be borne in mind, however, that certain other troubles may have very similar symptoms, and that there is danger of confusing leaf spot with other foliage injuries. In cases of doubt, specimens should be sent to the department of plant pathology of the university for identification. On the fruit or the pedicels (stems of the fruit,) the disease may appear as small brownish or reddish spots. The chief injury to the fruit, however, results from the loss of vitality of the tree, due to the effect of the disease on the leaves. In case of severe attacks, the fruit may fail to mature, and wood and bud formation are seriously hindered. Repeated severe attacks may kill the tree.

DEAD LEAVES HARBOR THE DISEASE

"Leaf spot is caused by a fungus (a low form of plant) which lives in the diseased parts of the cherry in the summer and passes the winter in the dead leaves on the ground. In the spring, it produces spores (winter spores), like

the seeds of higher plants, but too small to be seen with the unaided eye, which are carried in the air and lodge on the leaves. Here they germinate, grow into the leaf, and produce the disease. On the under surfaces of the resulting spots small "blisters" usually develop. These break open and a whitish material oozes out. This is made up of thousands of spores of another type (summer spores) which serve to spread the disease very rapidly.

INTIMATE ACQUAINTANCE NECESSARY

"In order to fight the disease to best advantage, it is necessary to know not only its cause, but also a great many facts concerning its development. It is necessary to know the condition of the fungus throughout the year, when and where it produces spores, how these are scattered, how they produce infection, what plants harbor the disease, what conditions favor or hinder its development, and the like. Many of these matters have already been determined and others are being studied further. The information thus obtained not only promises to be of much value in working out the most economical and efficient spray treatments but in developing a further method of fighting the disease, as follows:

EARLY CLEAN CULTIVATION HELPFUL

"The studies of the leaf spot fungus have shown that the weakest point in its life history occurs when it passes the winter in the dead leaves on the ground. If all these dead leaves would be destroyed, and if the disease harbored on no other plants, spraying would not be necessary. While it is not practicable to dispose of the dead leaves in such a way as to make spraying unnecessary, it is possible greatly to strengthen the spray schedule, and probably eventually to cut down the number of appli-

ations, by turning under as many as possible by clean cultivation in the spring before the spores or seeds of the fungus are set free. Our studies of the fungus have shown that under Wisconsin conditions spores begin to be discharged into the air at about the time the blossom buds of the cherry break open; so cultivation should precede this. Most Wisconsin growers cultivate at about this time anyway. Therefore, much may be gained, with little additional expense, by making the cultivation as clean as possible, instead of leaving unturned strips or large blocks about the bases of trees.

CONDUCTING SPRAYING EXPERIMENTS

"During the past season spraying experiments were conducted with the following aims: (1) to find the time and number of applications and the concentration of Bordeaux mixture necessary for most economical and efficient control, and (2) to develop, if possible, a spray treatment which may be satisfactorily substituted for the Bordeaux treatment, should high prices of copper sulphate or other reasons make this desirable. While it is not possible to draw final conclusions from this work until it can be repeated under the conditions of other seasons, the control of this disease is of such practical importance that the following brief statement of the more important results to date seem desirable:

"In connection with these results, it is important to remember that leaf spot ("yellow leaf") was unusually severe in its outbreak early in the season, but made little progress, even on unsprayed trees, after the hot dry weather came on in late July. At this time unsprayed check trees in the same orchard with the experimentally sprayed trees had lost more than 60% of their leaves, and the remaining

foliage was badly diseased. Counts made on one unsprayed tree on July 14 showed that it had already lost over 95% of its leaves. Such trees failed to mature their fruit and went into the winter in very bad condition. While infection was heavy throughout the section during early summer it was unusually severe in this experimental orchard, because the heavily infested leaves of the year before were purposely left undisturbed to furnish an abundant source of infection, and to make the test of the sprays as severe as possible.

"*Time and Number of Treatments.* Bordeaux mixture, 4-4-50 (4 lbs. copper sulphate and 4 lbs. of lime in 50 gals.), was applied: (1) just before the blossoms opened, (2) just after the petals fell, (3) about two weeks later, and (4) just after the fruit was picked. In these and all other applications arsenate of lead powder, at the rate of 3/4 lbs. in 50 gallons was added to the fungicide. On the trees which received all four treatments the disease was controlled excellently. Where the treatment before the blossoms opened was left off, the control was as satisfactory as where the full four treatments were given. Where the second or third treatment was omitted, the disease was not controlled, and much foliage was lost. Where the last treatment was omitted, the results were about as good as where it was applied. It should be remembered, however, that the disease was checked by hot weather before this treatment was applied, and made little further progress even on unsprayed trees.

"These results show that, under the conditions of these experiments, the treatment before the blossoms opened was of little, if any, value for leaf spot control, and that the disease was well controlled by two applications of Bor-

deaux, 4-4-50, (1) just after the petals fell, and (2) about two weeks later. There is every probability, however, that an additional application after harvest would have been needed, but for the checking of the fungus by the hot dry weather.

"In timing the first treatment, it is very desirable to wait as long as safety permits, in order to cover as much of the rapidly increasing leaf surface as possible. To test the effect of delayed applications, a plot was sprayed only twice with Bordeaux mixture, 4-4-50, (1) about 8 days after the petals fell, and (2) about three weeks later. At the time of the first spray, therefore, the trees were in practically full foliage. The disease was controlled as well on this plot as where the four treatments were given. Again, however, it should be remembered that a treatment after harvest might have been necessary under other seasonal conditions.

"*The Concentration of the Spray.* Plots were sprayed comparatively with Bordeaux, 4-4-50, 3-3-50, 2-2-50 and 1-1-50. The 3-3-50 formula gave as good results as did the 4-4-50, and the 2-2-50 was only very slightly less effective. The 1-1-50 formula was too weak for satisfactory results, but even that strength gave a fair control. It seems highly probable, therefore, that growers may be able to save spray material, without loss of efficiency of the treatment. The 3-3-50 formula appears to be safe to recommend, but weaker formulas should be used only experimentally until further evidence is at hand.

TRY SUBSTITUTES FOR BORDEAUX

"In the attempt to find a treatment that might be substituted for

(Continued on page 90).

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ison, Wis.

Remit by Postal or Express Money Or-
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for two years. Personal checks accepted.

Postage stamps not accepted.

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The Institutes

The Fruit and Garden institutes conducted by Pres. Rasmussen and Mr. Bingham are proving a big success. Twelve of the special institutes have been held and all were well attended. These two practical men are preaching the gospel of horticulture in Wisconsin as it was never preached before. We have had fruit men at the regular farm institutes for years but usually the fruit man would drop in for a half hour talk sandwiched between poultry and alfalfa and dodge quickly out of town in order to

make the next institute and repeat the performance.

This was very good in a way but not good enough.

By the present plan a smaller audience, men and women who are interested in the home orchard and garden or perhaps in the market side of fruit growing, gather for a two-day study of problems of pruning, spraying, cultivation, garden-
ing etc.

What we started to say is this:

From Feb. 8th to March 8th the nine remaining institutes of the original list published in the December number of Wisconsin Horticulture will be held as follows: La Farge, Feb. 6th and 7th; Richland Center, Feb. 8th and 9th; West Bend, Feb. 13th and 14th; Egg Harbor, Feb. 15th and 16th; Waupaca, Feb. 20th and 21st; Weyauwega, Feb. 22nd and 23d; Harmony Corners, Feb. 27th and 28th; Green Bay, March 1st and 2nd; Eau Claire, March 6th and 7th.

Every member of this society who lives within a radius of five miles of any of these points has a two-fold duty to perform; first to attend the institute; second to take along some one who does not believe that it pays to plant fruit trees or make a garden. Don't wait for an invitation, you have one already.

Let's Hear From You

Now is the time to write something for Wisconsin Horticulture; next spring you will be too busy.

There *must* be something of past experience stored up in your mind that will be of interest and value to our readers. Remember, but few readers of Wisconsin Horticulture care for philosophy, prophecy or fine-spun theories but they *do* want plain, simple directions for doing the essential things in garden and orchard. What variety of

garden peas do you plant? Why? How do you get them so early? What are your favorite varieties of all the garden vegetables you grow? You have finer asters or sweet peas than your neighbors, how do you manage to do it? Did you spray the apple trees last year? What results? Do you know of any handier and easier way to do things than the ordinary way?

These and a thousand other questions that amateur gardeners and fruit growers delight to read. It will help you to write them and it will help others. Try it once. Don't feel that you must frame finely polished sentences, that you must be a skilled writer, that part counts least of all. The best contribution ever sent to this office and one that caused much favorable comment was the first attempt by a practical man who sent with it a letter of apology; that's the kind that are worth their weight in gold.

The Best Horticultural Paper

A person way up in Rusk county where the effulgence of Wisconsin Horticulture (effulgence is defined by Webster as, "extreme brilliancy, radiant splendor"); has not yet penetrated asks us to name the best horticultural paper published in the United States. Modesty, that diffidence that has always been our chiefest charm, compelled us to be content with the statement that there is no other journal of horticulture that can compete, in some ways, with Wisconsin Horticulture. That and a copy of the paper was as far as we cared to go. Then later, when in a more trivial mood, the following comments on other papers were added: From the standpoint of journalism Better Fruit, monthly, published at Hood River Oregon is the best horticultural paper in the country. It is

high class in every particular but is devoted wholly to the Pacific coast fruit belt and therefore of little interest to Wisconsin fruit growers. Green's Fruit Grower, monthly, edited and published by Charles A. Greene is a nice fireside journal containing much fatherly advice and much of reminiscence but deals too much with the past and not enough with the present and the future.

The Fruit Grower, twice a month, of Saint Joseph, Mo., started out bravely ten or twelve years ago and for a time was the best fruit growers paper in the country, full of practical ideas and up-to-date in every particular. It is still an excellent paper for the commercial apple grower and is well worth the price asked, 50 cents a year.

All things considered the paper that contains the most of practical information on horticulture, fruit, flower and vegetable growing both for the amateur and the professional is the Rural New Yorker published at 333 West 30th St., New York City. It is supposed to be a general farm paper but is really a horticultural paper.

It is published weekly at \$1.00 a year.

Sensible Remarks

Continued from page 83).

The future will make it more and more clear that the profit in the apple business will go to men who make a regular business of it. It must be a special business well located near markets, well handled and large enough to supply a full trade through the season. The apple market in the large cities has never been half developed. It seems to us that the apple business is just about the reverse of the poultry prospect. The large, special hen farms rarely pay as well as the smaller, well kept flocks

on general farms or gardens. The side issue orchard rarely pays, nor does the great orchard company. The orchard of medium size, well located and handled as a special business, will pay a fair profit through a term of years."

For the Man Who Loves His Trees

Continued from page 85).

was one branch toward N. West and one S. West.

To my utmost surprise this tree in the following season not only came back, but the branches from the other sides closed in the vacant space and after pruning it twice since that time, looks as normal as any of them, besides which it has borne fruit ever since.

I set to work at once after noticing this and cut branches away on all the rest which were leaning toward one side and found trees planted from 1908 to 1910 came back straight and others planted earlier held their position as near as I could see.

If anybody is interested in this and should try it, I would be glad to hear of results therefrom.

The Boy Scouts have a motto; "do a good turn every day." This might well be adopted by W. S. H. S. members with slight modifications: "Get a new member every week."

Be loyal to your state and to your trade, ask for baked apple at hotels and restaurants instead of grape fruit.

If your orchard trees are unprotected you must expect to lose some of them. Rabbits and mice prey alike on the just and the unjust.

Applicants for life membership must be recommended by a member in good standing. Blanks will be sent on application to the secretary.

McKAY NURSERY COMPANY

PARDEEVILLE, WISCONSIN

Nursery Stock of Quality

for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

Clean Cultivation and Thorough Spraying Promise Most Relief from Cherry Leaf Spot

Continued from page 87).

Bordeaux, should high prices or other reasons make this desirable, the following sprays were tried, four applications being made at the same time as the Bordeaux treatments: lime-sulphur 1-40 (1 gal. commercial concentrate, 33° Baume in 40 gals.) and 1-30, self-boiled lime-sulphur 8-8-50 (8 lbs. lime and 8 lbs. sulphur in 50 gals.), "atomic sulphur," 5-50 (5 lbs. in 50 gals.), and "barium sulphur," 3-50 (3 lbs. in 50 gals.). Self-boiled lime-sulphur, "atomic sulphur," and "barium sulphur" failed to control the disease satisfactorily. Lime-sulphur, 1-40 and 1-30, controlled the disease satisfactorily (about equally well), though not quite so thoroughly as Bordeaux. At the end of the season, however, the foliage on the lime-sulphur plat was quite as good as on the Bordeaux sprayed trees, due to the fact that some Bordeaux injury appeared in the latter part of the season, whereas practically no injury resulted from the lime-sulphur. Lime sulphur is a distinctly weaker fungicide than Bordeaux, and to control cherry leaf spot successfully under Wisconsin conditions, it must be applied very thoroughly and at the right time. Also lime-sulphur with arsenate of lead appears to be a stronger fungicide than lime-sulphur alone. These facts may account in a large part for the conflicting results of growers who used lime-sulphur last year.

"These results indicate that lime-sulphur is worthy of further trials, particularly in connection with early clean culture.

RECOMMENDS SANITATION AND
SPRAYING

"Final recommendations will

not be possible until the experimental work is completed. Even then it is unlikely that a single recommendation can be made to meet the needs of all growers. However, in the meanwhile, the following treatments appear most promising:

1. *Sanitation.* Where practicable, turn under the dead leaves in the spring as completely as possible by clean cultivation before the blossoming period of the cherry. This will destroy the greater portion of the spores or "seeds" of the fungus.



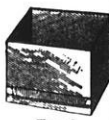
"2. *Spray* with Bordeaux mixture, 3-30-50, or 4-4-50, or lime-sulphur, 1-40 or 1-30: (1) when petals fall, (2) two to two and a half weeks later, and (3) just after the fruit is picked. Arsenate of lead (powder, $\frac{3}{4}$ to 1 lb. or paste 1- $\frac{1}{2}$ to 2 lbs. in 50 gals.) is added in each application for insect control. In the case of lime-sulphur, omission of the arsenate of lead appears to lessen the value of the spray for leaf spot control. The applications should be *very thorough, especially in the case of lime-sulphur*, and care should be taken to cover the *under* as well as the upper surfaces of the leaves. If the dead leaves are very thoroughly turned under before the blooming period, it is likely that the first treatment may profitably be delayed until several days or a week after the petals are off, in order that more foliage may be covered."

Making the Home Orchard Pay Its Way

Victor Felter, Iowa.

The home orchard has fallen into dis-regard and dis-repute on the average corn belt farm. The small orchard is usually as unsightly as it is unprofitable. Many a farmer argues that he can grow corn and

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We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in earload lots our speciality. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

buy what few apples they need cheaper than they can be grown at home.

There are many reasons why most of the small orchards do not pay. Many times a poor selection of varieties is the reason. An over supply of summer sorts supplies plenty of cider and pig feed but not much profit. The surplus should be turned into cash. The home orchard should be planted to varieties that will, as nearly as possible, supply the family with fresh fruit the greater part of the year.

The most common cause for lack of profit is the common neglect. The trees are not properly pruned if pruned at all, and the ground is not cultivated. Spraying, the most important of all, is not practiced except in the larger commercial orchard.

The apple crop in Iowa for 1916 was estimated to be only 32% of a full crop, yet I made a net profit of \$448.83 on one acre of apple

trees on the new farm recently purchased near Des Moines. The method employed was so simple that it is really worth telling.

The trees were uneven in size but most of them were about fifteen years old and had been neglected like they often are. There was a good heavy blue-grass sod and the live stock that had eaten the grass had broken many limbs off. The trees had not been pruned except to cut off some of the broken lower limbs.

Pruning was done in March and April, while other work was not pressing. A good many of the taller limbs were cut back to a good sized side limb. Other limbs were removed where they were too thick or were growing across each other. The limbs were cut off very close to the larger limb or trunk, so that they would grow over more rapidly.

A coat of barn yard manure was plowed under early in April. The ground was disced or harrowed frequently all summer and no crop grown between the rows of trees.

A thorough job of spraying was done when most of the petals had fallen and a second spray given two weeks later. A third spray in June would have been beneficial but was not applied. Two and one-half lbs. of lead arsenate and 1¼ gal. of lime-sulphur solution to each 50 gal. of water was the formula used both times. The lead-arsenate is a strong insecticide and its chief mission is to destroy the coddling moth, or common apple worm. The lime sulphur is a fungicide and combats the apple scab very successfully.

Eighty dollars worth of summer apples were sold, the Red Astrachan and Duchess being the first to ripen, followed closely by Sweet June and Cole's Quince. These were taken to the store in

20 lb. baskets. These early varieties were followed by Early Joe, Maiden Blush, Snow, Rambo, Grimes Golden, Pewaukee, Jonathan, Ben Davis, Mo. Pippin, Willow Twig, and Red Romanite. The first apple sauce was ripe the latter part of June and some of the longer keepers will still be on hand next May or possibly in June.

Every one of the ninety six trees bore enough fruit so that the tree could be identified by its produce. The Jonathan, Grimes and Ben Davis bore very full crops which brought splendid prices. Some of the choicest brought \$2.00 per bushel box. A total of \$465.83 has been received from fruit sold from this acre. The spraying cost \$8.00, baskets, \$9.00, leaving a net profit of \$448.83. Apples used and on hand for family use will easily pay the interest on the two hundred dollar land, labor of harvesting and marketing the entire crop.

The writer is not familiar enough with Wisconsin conditions to make recommendations as to varieties. It is usually safe to stick pretty closely to standard sorts and let the other fellow do the experimenting.

STRAWBERRY PLANTS

100,000 choice Strawberry Plants. Also Red and Black Raspberry. Asparagus and Rhubarb Roots.

These plants will not be dug more than twenty-four hours before shipping. All stock guaranteed. Hot bed plants in season. Write for prices.

Rasmussen's Fruit Farm
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JEWELL MINNESOTA GROWN

Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Wind-break Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company

Lake City, Minnesota

"We have a Fine Lot
of Plants for the
Garden"

SEND FOR LIST

J. E. MATHEWSON

SHEBOYGAN, WISCONSIN

Quality Stock

Strawberries
Native Plum Small Fruits
Apple

WISCONSIN GROWN
for Wisconsin Planters. Read
our Price List before you
buy, and save money.

62nd Year

Kellogg's Nurseries
Box 77, Janesville, Wis.

High Priced Raspberry Plants

A little incident came to observation a few days ago which is only one of the many which comes to me from time to time.

A friend came to me with a bill for nursery stock that he had ordered of a nursery agent asking my opinion in regard to the varieties, prices, etc. This bill is as follows:

18 Blowers Blackberry plants
107 Rathbun Blackberry plants
75 Gregg blackcap
50 St. Regis red raspberry

250 total. Price \$11.25.

I might have overlooked the exorbitant price charged for this stock if it had not been for the fact that most of the varieties recommended by the agent are not reliable and prove a disappointment to say the least. My experience with the Rathbun blackberry is that it has proved a failure here in Wisconsin and from most of the fruit growers I gather they have had about the same experience.

The Blowers is a better variety but I would not prefer it to the Eldorado, Stone's Hardy or Ancient Briton as it is not as hardy and more difficult to handle than the above named standards.

The Gregg blackcap is not a success here. Plum Farmer, Cumberland or the Columbia Purple Cap I find are far more profitable and reliable.

The St. Regis was the only variety I could recommend in the list and I advised two varieties of red raspberries instead of one, St. Regis and King.

My opinion was that \$5.00 would buy direct this same stock from most any of the nurserymen advertising in WISCONSIN HORTICULTURE.

Now in regard to the farm

orchard I find about the same conditions prevail. The nursery agent knowing nothing of fruit growing advising the setting of a lot of novelties and untried varieties at an exorbitant price which in nearly every case proves worthless.

I do not object to selling novelties and untried varieties if they are sold as such but to sell and recommend these in place of good standard varieties (which is being done all over the country) I think it is almost equal to a crime.

Usually the nursery agent is so bigoted that it is a waste of time to try to advise him.

Henry Blackman.

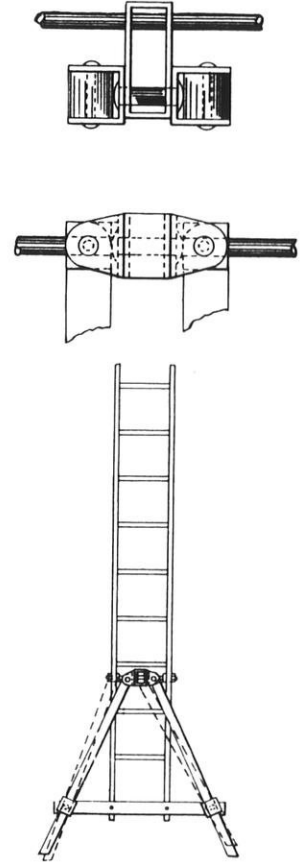
Something New to Meet Ladder Difficulties

G. H. Townsend

The writer has tried many things to meet the loss of time adjusting ladders to uneven ground, and to prevent pickers from knocking down apples putting ladders up into the trees, and has met the difficulty by inventing a ladder with adjustable legs pivoted to clips that are pivoted to a band link which swings up and down and also slides back and forth on a cross rod between the sides of the ladder.

The general plan of the link, clips and mounting is shown in the upper drawing. A back view—elevation—is shown in the middle drawing. The adjustable legs may be spread as widely at the bottom as desired to brace the ladder, and are held by passing through a link pivoted to a cross bar attached to the base of the ladder. The band link on the cross rod swings so that when the ladder is lifted the legs drop enough to loosen the legs in the links on the cross bar, when the ladder is set on the adjustable legs and raised to a vertical posi-

tion the legs automatically adjust themselves by pushing the band link on the cross rod enough to shorten the leg on the high side and let the leg down on the low side, so that the ladder automatically adjusts itself to level ground, bumps, holes or side hill and locks by slid-



ing the leg holders down the adjustable legs.

A back view is shown of an ordinary straight ladder. For short ladders—ten or twelve feet—a third leg is added. It contributes to safety and saves its cost in time and fruit in a few days use. The views are from part of patent drawings.

The hardy gaillardia is among the best perennials to furnish cut flowers. It blooms well about the last of June and the flowers stand up well.

Report of Delegate to Northern Illinois

The Fiftieth Annual Convention of the Horticultural Society of Northern Illinois was held at Princeton, Ill., December 5th and 6th, 1916, under as favorable weather conditions as could be imagined. The attendance, while not large, was of the class which represents large interests, several of those present owning orchards of one hundred acres and over. Their arrangement of program differs from ours in that but two or

at most, three papers are presented during a session, permitting a large amount of time for questions and discussion but of necessity narrowing the range and variety of the program.

Vice-President Bryant is known to most of our elder members and President Brayton will be remembered as the genial Illinois delegate at our last convention. He did all in his power to make pleasant the stay of the various delegates from the other states.

A good exhibit of fruits and

vegetables was shown in connection with the convention, the apple show comprising Northwestern Greening, Salome, Senator, Delicious, Black Ben, Ben Davis, Winter Banana, King David and others. The larger part of the exhibit came from the farms in the immediate vicinity, rather than from the large commercial orchards, and while comparatively free from defects, nevertheless showed some signs of curculio and other blemishes.

A very enjoyable interlude to the regular program was furnished by the citizens of Princeton, who took the visitors and delegates for an automobile excursion through the surrounding country. Several miles of the new state concrete roads were traversed. A stop was made at the L. R. Bryant home and the cider press, cider vats, vinegar vats and barrels were inspected.

The Progressive League of Princeton tendered a banquet to the conventionists. Thursday evening, thus completing in a most delightful manner, the two days semi-centennial of the Northern Illinois Horticultural Society.

Independently of Wisconsin Michigan has worked out in similar manner and to similar conclusions the life history and control methods of potato blight.

Among other points of interest which cropped out at the convention were the following:

(Continued on page 94).

WISCONSIN HORTICULTURE

A WISCONSIN MAGAZINE published by the WISCONSIN STATE HORTICULTURAL SOCIETY containing each month articles on fruit, flower and vegetable growing written by WISCONSIN growers for WISCONSIN conditions.

WISCONSIN HORTICULTURE is not published for the purpose of making money but exclusively for the benefit of members of the STATE HORTICULTURAL SOCIETY.

It is better,—for WISCONSIN people, than any other horticultural paper published. It tells the best varieties to plant in WISCONSIN, the best methods of cultivation for WISCONSIN. It's a paper for the home gardener and fruit grower as well as for the big grower.

"WE ANSWER QUESTIONS" is the slogan of the Society. Every question answered, first by personal letter and then in the paper.

Every dollar received for fees (subscriptions) and advertising is put into the paper.

Honest dealers advertise in WISCONSIN HORTICULTURE and only that kind. The other kind cannot buy space.

The price, 50 cents, includes membership in the STATE HORTICULTURAL SOCIETY.

A dollar bill pays for two years.

Send Fifty Cents, coin, money order or check to Frederic Crane-field, Secretary, Madison, Wis., and get a receipt for Annual Membership and Subscription to WISCONSIN HORTICULTURE for one full year.

A DOLLAR BILL PAYS FOR TWO YEARS

Is This Paper Worth Twenty-Five Cents A Year To You?

Is Membership in the State Horticultural Society Worth Twenty-Five Cents a Year?

It will cost you just Fifty Cents a Year for both; neither is sold separate.

A cloth bound copy of the Annual Report is also sent Free to every member.

You may also ask questions, which will be answered by personal letter.

What more do you want for that Half Dollar?

Send It to the Secretary at Madison or hand it to Pres. Rasmussen or Mr. Bingham at the Institute.



An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

The Kickapoo Valley

WISCONSIN'S
FAVORED FRUIT DISTRICT

Our Specialty: Planting and developing orchards for non-residents.

A few choice tracts for sale. If interested, write us.

The Kickapoo Development Co.
Gays Mills, Wis.

Report of Delegate to Northern Illinois

(Continued from page 93).

The Illinois orchards are planted much farther apart—30 to 40 feet—than here in Wisconsin, and seem to be longer lived.

In spite of the fact that they can raise the domestics it seemed to be the general opinion that the Wyant and Terry were better market plums as well as the Surprise and some others.

An investigation of the apple scab in Illinois leads to the conclusion that the destruction of the leaves is not feasible but that its prevention is by spraying, preferably with the lime sulphur solution.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry and Raspberry Plants, and Strawberry Plants

Both Everbearing and common varieties

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES. All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

HARDY PERENNIALS AND PANSIES

Grown for

Nurserymen	Florists
Landscape Planters	Gardeners

Send us your want list for prices. Questions gladly answered.

WILLIAM TOOLE & SON

(Garry-nee-Dule) BARABOO, WIS.

Steps have been taken to secure the passage of legislation, whereby the owners of all Illinois orchard shall be obliged to spray them, and to use other recognized means of preventing or restricting insect

pests and plant diseases. If done this promises to have a far reaching effect upon Illinois Horticulture.

C. L. Richardson,
Delegate.

Buy from our advertisers.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.



The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

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Lime Sulphur

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WRITE FOR CIRCULARS AND INFORMATION

How to Grow Good Fruit for Your Table or Market

The farsighted, thoughtful man plans ahead and finds out what are the best varieties for his locality; how to choose a good tree to start with; how, when and where to plant; how to prune, care for and cultivate. All these facts are told clearly and concisely in our reliable books.

Wm. P. Stark's 1917 Catalog Free

It tells you how to choose the best varieties for your section; how to know good trees; the right age and size to plant; what distance apart, number to acre, ripening dates, etc.; why the best investment is in healthy, vigorous trees with heavy roots and trained tops; why we can and do grow such first-class trees which bear younger and thrive everywhere any of its kind will grow.

"Inside Facts of Profitable Fruit Growing"

It tells how to plant, prune, spray, cultivate, dynamite, fertilize; how to pay for the orchard with fillers, etc. 88 pages. Many pictures, drawings, diagrams. Contains no advertising. Sent free with orders of \$2.00 or more. Price 10c. Money refunded, if not satisfied. "Worth its weight in gold." "I saved those two trees just from reading your book."

Choice Apples for Wisconsin Growers

Our Ozark Mountain grown hardy trees have unusually heavy, wide-spreading roots. We grow one and two year apple trees only. We offer such tested, dependable varieties as Delicious, Duchess, Dudley, Gravenstein, Livland, Raspberry, McIntosh, Red Astrachan, Wealthy, Yellow Transparent.

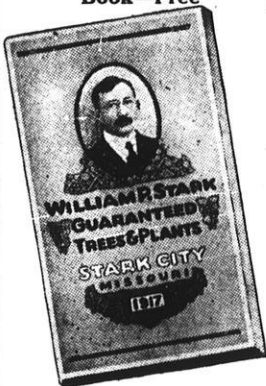
"The trees purchased from you arrived in first-class condition, and were all fine trees."—O. E. Westerfield, Port Atkinson, Wisconsin.

"We were very much pleased with the nursery stock received from you last spring, all of which did well."—Vance Bros., Lima Center, Wisconsin.

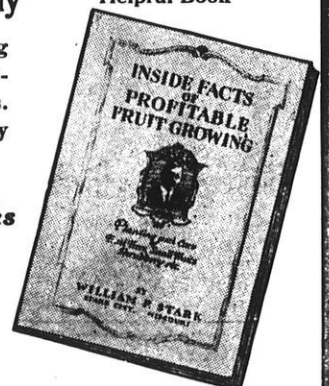
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Send 10c for This Helpful Book



We thus avoid such causes for dissatisfaction as wrong advice, mixing labels, delays in delivery and indirect responsibility. We help you both before and after you buy our trees. To secure reliable information, high quality and safe delivery at reasonable prices, buy direct from our free catalog.



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Wm. P. Stark Nurseries

Box 23D *Stark City Mo.*



To Wm. P. Stark Nurseries, Box 23 Stark City, Mo.
Please send me your new catalog free. I enclose 10c for your "Inside Facts of Profitable Fruit Growing." I am interested in the following number of trees and plants-----

Name-----
(Write address, giving County and Street or R. F. D. No. on margin below.)

- Delicious Apple
- Dudley Apple
- Apples
- Cherries
- Plums
- Pears
- Crapes
- Bush Fruits
- Roses and Shrubs

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Volume VII

Madison, Wisconsin, March, 1917

Number 7



American Linden or Basswood, *Tilia Americana*, one of the choicest of street trees for this climate. It is equalled only by two others, the White Elm and Norway Maple, and excelled by none.

A Village Fair

MRS. GEO. MOORE, EAST MILWAUKEE.

When the East Milwaukee Civic Association was considering how it might best serve the Community, it was suggested that a "Village Fair" was one of the ways in which a community spirit might be developed. We had had a very happy Christmas and were eager to follow up the impression made at that time. We read with interest of "flower shows", "fruit shows", and all sorts of "shows", and we felt that we too, could make a contribution to the great movement of "getting together in the interest of all that helps the cause of democracy." Does this seem a very ambitious ideal for a village fair? I am very sure that in the early stages we did not consciously formulate so large a program. Organized in the right spirit for the common welfare, those enterprising men who called us together, we who responded, did build a society that has within itself such a possibility. It is an example of what the coming together of ordinary folk may mean. The individual ineffectual, united in purpose with his kind, mighty. So much energy goes astray for the lack of co-operation in districts where one's next door neighbor is a stranger. Does it seem too much to hope that as people group themselves more and more, as they are doing in country and suburban centers, they will come to feel themselves united in a common cause.

There still remained an unoccupied strip with waving cornfields to isolate us from the city and its stifling mass. This was our chance to develop a community consciousness. For a whole year "the fair" was the objective point toward which we all worked. At first it was just one of the topics of conversation, sometimes taking

precedence over the eternal "heating question."

On February 11th and 12th we held a Community Institute, through the kindness of the Extension Department of the University of Wisconsin, and of the Horticultural Society. The latter generously sent Messrs. Rasmussen and Cranfield, upon whom we are glad to place a large share of the responsibility of the success of our plans.

The project was officially launched with the following announcement, which appeared upon the program,

"The Institute is the first step towards a 'VILLAGE FAIR'. This will be held early in fall, and amateur gardeners will have "an opportunity to exhibit their cabbages, turnips, etc. the women, "their baking and canning, and children their school work, and vegetables and flowers from their gardens," together with announcements of lectures, which crowded the days with information and inspiration. This prelude is to make it clear that the Fair of September 9th and 10th did not spring into being fully equipped, but the outgrowth of months of preparation. I think I have never seen so much included in two short days. When I picked up the program among the exhibits at the State Fair, I had a little thrill of pride that we had really carried it through.

But if we learned how to plant a "show" carrot—and by the way—the Chairman of the Fair, upon being congratulated upon the "blue ribbon" attached to his carrots, confessed that he had followed Mr. Rasmussen's directions exactly. We did not learn only how to plant, but, better still, we learned to know our neighbors and to cooperate with them and the

"community spirit". Why, you just see it grow!

One of the best things we did at the Institute, was to have a "Community Cafeteria" in a near-by church. It seemed necessary, in order to have everybody's husband on hand in time for the lectures, to serve supper, and out of this need, grew a really indispensable part of our Institute. This was managed by a host of women who had never worked together before. Many had never even seen each other, but they made a success of it and paid the expenses of the Institute. The greatest result, however, was the good-fellowship that developed in the kitchen and at the tables. You can't help speaking to your neighbor when you are standing in line with him, with a tray under your arm, or sitting opposite to him at a small table. Those who couldn't be on hand to share the kitchen fun, in their own homes concocted the most beautiful baked beans from famous family recipes, until a bushel of beans, and many formulas, were transformed into savory dishes that stood on the tables and relieved the anxiety lest some one go hungry. Indeed they were so numerous that the thrifty cooks bought them for the Sunday night luncheon that nothing should go to waste. They live in memory and bring a smile, to this day. The lectures were preceded by "Community Singing" and Prof. Dykema assured us we were a "very musical company", but then, as everybody knows, he can make even the tuneless sing. We ought to have organized a Choral Society. We will, some day, but we did form Home Economics and Gardeners' Clubs.

Mr. Rasmussen and Mr. Cranfield came again and our plans went on. Incidentally, we learned some "cellar gardening". Then

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An Apple Packing and Grading Bill.

Delegates from eight states met at St. Louis Jan. 26th to agree, if possible, on a uniform bill regulating the packing and grading of apples. The following measure drawn by W. M. Scott of the Federal Bureau of Markets was approved by every member of the conference. This bill has also been approved by the Board of Managers of this Society and introduced in the Senate of Wisconsin by Senator C. E. Everett.

Standardization is essential to the successful conduct of any business, fruit growing no less than the making of machinery. Congress thru the Bureau of Markets has fixed standards for barley and corn and will extend this to other grains.

We *must* have some fixed standards for apples if we ever hope to establish a reputation for Wisconsin fruit. There are many perfectly good arguments in favor of this bill, in fact it is rather difficult to see where there can be any serious objection to it. The bill has been introduced in several states and at the recent meeting of the Eastern Fruit Growers Association in Washington a committee was appointed to take the measure to Congress.

Members who are interested in this bill will be kept informed of its progress by the secretary on request.

AN ACT TO FIX STANDARDS FOR APPLES WHEN PACKED IN CLOSED PACKAGES, AND FOR OTHER PURPOSES.

Sec. 1. The standard grades for apples grown in this State when packed in closed packages shall be as follows:

First: "Wisconsin Standard Fancy" shall consist of hand-picked, properly packed apples of one

variety, which are well grown specimens, normal in shape, uniform in size, of good color for the variety, and which are free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing. "Uniform in Size" shall be construed to mean that apples contained in any one package shall not vary in size more than one-half inch in diameter.

Second: "Wisconsin Standard A" shall consist of hand-picked properly packed apples of one variety, which are well grown specimens, normal in shape, of not less than fifty per centum of good color for the variety, and which are practically free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing.

Third: "Wisconsin Standard B" shall consist of hand-picked properly packed apples of one variety, which are well grown, and practically free from insect injury and fungous disease; provided that apples having healed over insect punctures, small scab or blotch infections, fruit spots, or other defects which, taken singly or collectively, do not materially deform or discolor the fruit or injure its keeping quality, shall be admitted to this grade.

Fourth: "Wisconsin Unclassified" shall consist of apples which do not conform to the foregoing specifications of grade, or which though conforming are not branded in accordance therewith; provided, that if more than 10 per centum of the apples are badly deformed or badly discolored by scab, blotch, insect injury or other defects, the package containing them shall be marked "Culls" in addition to the other marks or brands required by this Act.

Sec. 2. In the interpretation of this Act a tolerance of 5 per centum below the standard shall be allowed in the Standard Fancy grade, 10 per centum in the Standard A grade, and 15 per centum in the Standard B grade; provided that not more than half the foregoing tolerance values shall be allowed on any single grade specification or defect. Such tolerance shall apply to size, color, and other grade specifications and shall be computed by counting or weighing the specimens which are judged to be below the standard for the grade in any respect, and those which are found to be smaller than the minimum size marked on the package. If specified in this Act, the apples included in the face or shown sur-package.

Sec. 3. In all of the grades specified shall fairly represent the size and quality of the apples in the

Sec. 4. Every closed package containing apples grown in the State of Wisconsin which is sold, offered or exposed for sale, packed for sale, or shipped for sale, shall bear upon the outside of one end in plain letters or figures, or both, the name and address of the person by whose authority the apples were packed, the true name of the variety, the grade of the apples therein contained when packed or repacked, and the minimum size or the numerical count of the fruit in the package, provided that apples packed in boxes may be branded Extra Fancy in lieu of Standard Fancy; Fancy in lieu of Standard A; "C" in lieu of Standard B. If the true name of the variety is not known to the packer or the person by whose authority the apples are packed or branded, then such variety shall be designated as "unknown". Every package of apples which is repacked shall bear the name and address of the person

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CRANBERRY NOTES

There will be no "Cranberry notes" this month, nor ever again any notes by "J. W. Fitch, Sec." For nearly two years newsy, practical notes from the cranberry district of Wisconsin were received at this office regularly.

A very small percentage of our members grow cranberries or know anything of cranberry culture but a surprising number of members have read the cranberry page from month to month. Just as the editor was preparing to turn in copy for the March number the following letter was received.

"Fire destroyed the home of J. W. Fitch and his invalid father, W. H. Fitch at Cranmoor on Saturday night. Both of these parties have been Secretaries of the Wisconsin State Cranberry Growers Association for the past 25 years, and I believe you are acquainted with both. The exertion in trying to extinguish the fire and also rescuing the household goods kept Mr. J. W. Fitch and his housekeeper, Miss Pearl Sawin exposed to the smoke, and also the gas from the chemical fire extinguisher to such an extent that Miss Sawin died about three or four hours later and Mr. J. W. Fitch died about twenty hours later.

W. H. Fitch, the invalid, died about twelve hours after the fire, but evidently from excitement caused by his being moved about as he was very feeble.

The bodies of the two Mr. Fitch's will be shipped to Madison Tuesday afternoon and will be buried at the Madison cemetery Wednesday forenoon. There will, however, be no services at Madison.

O. G. Malde.

Mr. J. W. Fitch was an extremely likeable man, quiet but earnest in all his efforts and unselfish to a fault. The cranberry growers will now realize for the first time how much was done for them by Mr. Fitch. It is no insignificant task to provide copy for a full page, even so small a page as this one, every month of the year, and yet that is merely one of the things J. W. Fitch did for the cranberry growers, and like his work as secretary, done without pay or any expectation of reward.

F. C.

AN ACT TO FIX STANDARDS FOR APPLES WHEN PACKED IN CLOSED PACKAGES, AND FOR OTHER PURPOSES.

(Continued from Page 99)

by whose authority it is repacked. The letters and figures used in marking or branding closed packages of apples under the provisions of this Act shall be of a size not less than twenty-four point Gothic.

Sec. 5. The marks and brands prescribed in this Act may be accompanied by any additional marks or brands which are not inconsistent with or do not in any way obscure the marks and brands required by this Act. Apples packed and branded in accordance with the United States Apple Grading Law approved August third, nineteen hundred and twelve, shall be exempt from the provisions of this Act.

Sec. 6. The minimum size of the fruit in all grades, shall be determined by taking the transverse diameter of the smallest fruit in the packages. Minimum sizes shall be

stated in variations of one-half of an inch, as two inches, two and one-half inches, three inches, three and one-half inches, and so on, in accordance with the facts. Minimum sizes may be designated by either figures or words and the word "minimum" may be designated by the use of the abbreviation "min."

Sec. 7. It shall be unlawful for any person to pack for sale, ship for sale, offer or consign for sale, or sell, in closed packages, any apples grown in this State which are not graded, packed and marked or branded in accordance with the provisions of this Act and the regulations made hereunder, or closed packages of apples bearing any false statement, design, or device regarding such apples within the meaning of this Act.

Sec. 8. Any person who violates any of the provisions of this Act, or of the regulations promulgated hereunder, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine of not more than fifty dollars for the first offense and not more than one hundred dollars for each subsequent offense; provided, that no person shall be prosecuted under this Act who can establish by satisfactory evidence that no part of the packing or branding of the apples concerned was done by him or under his authority and that he had no knowledge that they were not packed and branded in accordance with said provisions and said regulations.

Sec. 9. The provisions of this act shall not apply to apples in closed packages which are held, stored or shipped to storage within the state, until the same are packed for sale, offered or consigned for sale, or shipped for sale.

Sec. 10. The word "person" as used herein shall be construed to include individuals, corporations,

partnerships and associations. The act, omission or failure of any official or employee of any person, when such official or employee is acting within the scope of his employment or office, shall, in every case, be deemed also the act, omission or failure of the person, as well as of the official or employee. The words "closed package" shall mean a box, barrel or other package, the contents of which cannot be easily inspected when such package is closed.

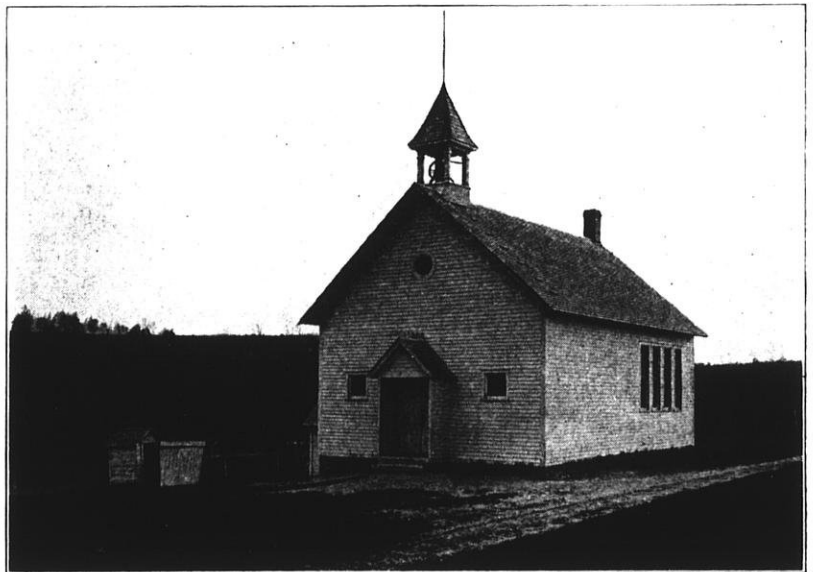
Sec. 11. The enforcement of this act shall be vested in the Dairy and Food Commission and its officers, employees and agents are authorized to enter upon the premises of any person within this state for the purpose of inspecting packages of apples and securing evidence of violation of this act, and the said Dairy and Food Commission, is hereby authorized and empowered to make, promulgate, and enforce such regulations as may be necessary for interpreting the grade specifications prescribed in this act, and for otherwise enforcing its provisions; provided, however, that any grades or classes of apples packed in closed packages, or any requirements for marking closed packages containing apples, mandatory as applying to interstate commerce which may hereafter be established by the authority of the Congress of the United States shall forthwith, as far as applicable, be established and promulgated by the Dairy and Food Commission, as the official grades, classes and marks for apples packed in closed packages in the state of Wisconsin.

The bill introduced is substantially as above, although it may vary in slight particulars.

Delegates Present at Conference to Consider Proposed Legislation Regarding Grading and Packing of Apples, Planters Hotel, St. Louis, Mo., Jan 25-26, 1917.

- Hon. H. N. Dunlap, Savoy, Ill., Pres. National Apple Growers.
- Ill. State Hort. Society.
- J. W. Stanton, Richview, Ill., W. S. Perrine, Centralia, Ill.
- W. M. Scott, Washington, D. C., Bureau of Markets, U. S. Dept. of Agri.
- E. H. Favor, St. Joseph, Mo., Editor, The Fruit Grower, Mo. State Hort. Society.

- Fred. Cranefield, Madison, Wis., Sec. Wis. Hort. Society.
- R. A. Simpson, Vincennes, Ind.
- W. C. Reed, Vincennes, Ind.
- Hon. B. F. Stuart, Rushville, Mo., Mo. State Hort. Society.
- H. C. Irish, St. Louis, Mo., Sec. National Apple Gro.
- Prof. W. H. Lawrence, Columbia, Mo., Mo. College of Agri.
- F. A. Weber, St. Louis, Mo.
- J. T. Stinson, St. Louis, Mo.
- W. L. English, A. P. Boles, C. B. Michelson, W. W. Wooden, Dept. of Development, Frisco Lines.



Is this your school? If it is, please take interest enough in your children, or other people's children, to remedy some of the existing disgraceful conditions which are obvious. If it is not your school perhaps yours is as bad. Better investigate.

- Laurenz Greene, Ames, Ia., Asst. Chf. Pom., Ia. Agri. College, Ia. State Hort. Society.
- B. T. Stilwell, Kansas City, Mo., Kansas City Packer.
- W. F. D. Batjar, Rogers, Ark., Rogers F. G. Ass'n, Ozark F. G. Ass'n, Ark. State Hort. Society.
- D. E. Eicher, Springdale, Ark., Ozark F. G. Ass'n, Springdale Hort. Society.
- U. T. Cox, Proctorville, Ohio, Ohio State Hort. Society.
- O. F. Whitney, Topeka, Kas., Kas. State Hort. Society.

Do not put too much dependence in the novelties offered by seedsmen. Many of them are excellent. Some are no better than the common grade. Better stick to an established strain of seed until the new one has shown its superiority.

When ordering seed for the garden try some vegetables you have not used before. Salsify, swiss chard, and endive are good sorts to try.

Some Things Wisconsin Horticulture Needs.

By Professor J. G. Moore
(At Annual Convention)

The first thing Wisconsin horticulture needs is better fruit. We have been saying for some little time that Wisconsin can produce good fruit. At every convention, we hear it said, "Wisconsin can produce good fruit." Do you suppose that if you were to ask the people who have been buying Wisconsin apples on the Madison market that they would agree with that statement? They would not, at least if they had been buying the kind of Wisconsin apples that I have seen on the market, for by no means could such apples be classified as good fruit. Yet our people thoroughly believe that Wisconsin can produce good fruit and I thoroughly believe it, and because we produce so much poor fruit, I say the first thing Wisconsin horticulture needs is better fruit than the majority of Wisconsin fruit produced at the present time.

We have heard a great deal about marketing fruit. I will agree that marketing is a big problem, a very important problem, probably the most important problem of fruit growing. At least many people are inclined to say that the marketing problem is the greatest problem we have in horticulture today. We are criticised more or less for spending our time in talking about how to produce a crop. Certain people tell us, "You have told us how to produce crops for years and you have not said a thing on marketing. Now it is time to quit talking about how to produce and tell us how to market." But I want to call your attention to one fact, namely, that the first factor in marketing is to have something to market. If you expect to market

successfully any commodity, you have to have a commodity which the market wants and I do not care how many organizations you have, how fine your system of marketing is, if you do not have the commodity desired, you will not have a market, at least you will not have one very long. I have said that the first thing that Wisconsin horticulture needs is better fruit. I do not mean to insinuate that there is no good fruit produced in Wisconsin. There are a number of men in Wisconsin who are not producing good fruit, and who are attempting to market that kind of fruit.

The second thing which I think Wisconsin horticulture needs is more honesty. I have come to that point in my teaching, and I am coming to it more and more when I appear before the public, of saying things straight from the shoulder, of saying what I think, and it is because I believe it that I say we need more honesty in Wisconsin horticulture. Of course, that does not apply to any one here. It is the fellow that is at home who should be more honest, for generally speaking, the man who has a sufficient interest in horticulture to attend conventions, has enough interest to be honest, at least, reasonably honest. Possibly I am not using the right term, perhaps I should say he should use better judgment and more discrimination. That would be a little more pleasant, but I have not been able to bring myself to use any other term for that method which we see in practice so much of putting good apples on the top of the barrels and putting culls in the center, except the word "dishonesty."

Now, why do we need more honesty? We need honesty first because in the marketing of fruit,

a great many people put the best on top. I am not criticising putting the good fruit on top, at least put as good on top as you put in the center. What I am criticising is filling in the center with culls. I do not need to tell any of you who have watched the markets that this is done, and that it is done by men who are growing fruit in Wisconsin. We know it is being done in Michigan, I have heard other people say so. I have heard it said in our conventions about New York growers, but I have not heard it said there about Wisconsin growers. Wisconsin growers are doing it, however, not the best growers, but there are too many growers doing it. Therefore we need more honesty.

Now, you say, what is the use of talking to us about these things. What is the use of preaching to people who are not practicing certain things, telling them this or that is the thing to do? You know it is very often said that the trouble with the churches today is that the preaching is done to the folks that do not need it. The folks that do need it stay at home. I am talking to people who do not need it. The people who need it are not here. But I am going to try to convince you that I am justified in saying it to you. How are we to secure these two things, better fruit and greater honesty in marketing?

The first means of which I think of accomplishing this result is by education. Education, but how are we to educate? I will say first that at least a part of the education should fall upon two organizations. It should fall upon the State Horticultural Society and it should fall upon the Department of Horticulture of the University. That gets both Cranfield and myself. Education is the purpose of

those organizations and most certainly education along these two lines, better fruit and more honesty in fruit marketing. We have been at the job in a more or less enthusiastic manner. We possibly have accomplished something, at least, I hope we have, for we have tried to, but I want to tell you that we will never have a very appreciable increase in better fruit in Wisconsin, or a very great increase in honesty with which it is put upon the market, if we leave all this education to the State Horticultural Society and the Department of Horticulture of the University. Why? Because it is a physical impossibility for those two organizations, manned as they are, to reach enough people. We can do something, but we cannot do it all. We will have to depend then on some other means of education if we are to accomplish this result.

The second means that I think of helping accomplish this result is our fruit growers' associations. Those that we have are doing much to educate the people of their communities as to how to produce better fruit and how to pack honestly, and how to put the right kind of commodity upon the market in an honest manner. We hear very little complaint about fruit that comes from these sections of the state where we have local co-operative associations. But in Wisconsin, where probably three-fourths or more of the fruit that reaches the local markets and to some extent the wholesale markets, is produced in communities where there is not enough commercial orchardists for an organization, even if all these organizations are at the job educating the people as regards these things, we will not even then succeed if we stop at that point.

I confess that I believe that the greatest force in educating men who are selling fruit in Wisconsin from commercial orchards and from home orchards, at any rate the semi-commercial orchard, is the individual fruit growers, because the individual fruit growers can come in contact with the greatest number of people. They can come in contact with them in a way in which the officials of the state departments, or even the officials of co-operative associations cannot, and I believe to a very great extent that whether we make improvement or not in these matters depends upon individual education by example. We are trying to teach this in our work in the demonstration orchards and I believe people learn more quickly by example than in any other way.

Did you ever stop to think that a great deal of the produce we market is marketed upon a wrong hypothesis. Did you ever stop to question a man's reason for attempting to sell all the wormy, scabby and gnarly fruit which he produces along with the good fruit? I dare say you have and you have arrived at this conclusion, namely, the man does it because he wants to get the greatest possible returns from the crop he produces. Well, let us consider it one step farther. Is the man who practices the marketing of poor fruit, or the man who practices putting culls in the center of the barrel, really working upon the right hypothesis to accomplish the result which he wants to accomplish, namely, getting dollars and cents? I believe if we follow such a practice to its conclusion, we will find that he is doing just exactly the opposite. He is practicing a method which will reduce in the end the amount which he would obtain, because first of all,

those organizations and most certainly commodity. Any man who is producing good fruit is obliged to market at the present time in competition with the kind of fruit we have been having on the Madison market, and you will find that the buyer is constantly pushing the price down. He is buying something he calls apples and as buyers have not differentiated between cull stock and good stock to the extent that they should, he buys at the lowest possible price in order that he may make something on the deal after sustaining the losses which necessarily occur in handling an inferior grade of fruit. The result is that the lower price paid for a poor grade has a depressing effect even on the good grade. A poor commodity tends to lessen demand and thus the man who puts such fruit on the market lessens his chance of disposing of the crop and establishes a lower price for his commodity.

The condition we have just cited may be more or less temporary, but the injury the grower is doing himself does not stop here. He is doing himself a permanent injury by ruining his reputation for the production of a good grade of that commodity. Why do you patronize a certain tailor, or a certain concern that manufactures a given product? Why do you buy a certain brand of goods? Because the manufacturer, or the man from whom you purchase it has established a reputation for his commodity. We buy most commodities very largely on reputation. Fruit, however, we buy largely on lack of reputation, because there has been no reputation established. So, a man, I care not whether he is going to market individually or co-operatively, must establish a reputation for good products if he ex-

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Without Money and Without Price.

"I am especially anxious to receive a report of the Horticultural Society containing a list of fruits recommended for Wisconsin. I have been fleeced by tree agents too often. If you will write me the price of this book I will cheerfully remit."

* * *

This party, who was not at the time of writing a member, somehow discovered this great and un-failing fount of information and received a copy of the Planter's

Guide, a pamphlet but recently issued, giving lists of fruits recommended for culture in Wisconsin with a few kinds marked as adapted to his particular section of the state; also a copy of Wisconsin Horticulture containing advertisements of reliable nurserymen, those who sell by catalog and those who sell thru agents. This with the added advice to go slow on novelties and highly advertised new varieties is all that any one can do for him or for any one else. If with this information he is "fleeced by the tree agents" it's his own fault.

Of the Making of Books There is No End.

A member asks for a list of books "treating of horticulture and suitable for Wisconsin." The writer has books on horticulture which cost over five hundred dollars in addition to as many more on allied subjects. Of these about a dozen have been studied, a dozen more read often and one-half of the remainder used occasionally for reference. The remaining portion, comprising at least one hundred volumes, are never opened, worthless for any purpose whatever except junk. There are altogether too many poor books on horticulture and all too few good ones.

The first great horticultural book to appear in the last half century was Peter Henderson's Gardening for Profit, for Henderson was the first of 19th century writers on horticulture to teach principles. Following Henderson with a big gap between came Bailey, who fortunately is still at work, and he too taught principles. Henderson's Gardening for Profit and his Gardening for Pleasure are worth reading.

Baileys Principles of Fruit Growing and Principles of Vege-

table Gardening are classics in horticulture. To these add The Principles of Plant Culture by Goff and Art Out of Doors by Mrs. Schuyler Van Rensselear and you have the nucleus and the essential part of a library on horticulture. Around these may be built groups of books on special subjects, The Apple, Wilkinson; Productive Gardening, Sears; Vegetable Gardening, Greene; a manual of garden practice, and dozens of others, but the heart of the whole should be books on principles, for the foundations must be well laid. Principles of plant growth and nurture are the same in Wisconsin as in California and are for all time. Cultural directions vary from year to year, almost from day to day.

A Specific Example.

It is now universally acknowledged that a fool and his money are soon parted. Not so the farmer and his orchard; it is with him spring, summer and fall. Does he take care of it? He does not. A prosperous farmer of central Wisconsin writes:

I have an orchard of 8 acres and a neighbor has one of 3½ acres, all fair commercial varieties. The trees are just right age for good bearing but are not doing anything at all practically for need of proper spraying and care.

We are both busy farmers and have no time to do the work ourselves even if we knew how. I have been thinking that perhaps we could lease the orchards to some individual or company.

Can you put me on track of some such individual or company?

S. W.

There is a chance here for somebody to get into the apple business without investing much money. The owners of these or-

chards should be content with an annual cash rental of somewhere between five and ten dollars an acre and fruit enough for family use, or a certain specified amount.

Some college graduate in horticulture ought to tackle this proposition just to show that he has grit. And, yet, notwithstanding, this letter was first addressed to the college and referred to the editor.

Apples Baked.

In the February number the editor dropped into an odd corner a little appeal to readers to call for baked apples at restaurants and hotels rather than grape fruit.

Soon a letter came from a member as follows:

Dear Sir:—

After reading—Call for a baked apple at the hotels and restaurants, in place of grape fruit—I would like to ask if any of the readers can tell us how to bake apples and turn them out as well as Thompson's and some of the other restaurants do.

When we have baked apples at home they shrivel up and are not in it with Thompson's (Chicago).

Yours truly,

C. M. H.

This was a challenge that could not go unheeded and a copy of the letter was sent to four ladies known to be experts in cooking apples in any form, including the "Cranberry Lady" of Cranmoor, for it was assumed that anyone who could prepare cranberries so divinely as does Mrs. Whittlesey could also bake apples better than Thompson."

Thompson, be it said for the benefit of any who do not often visit the big smudge at the south

end of Lake Michigan, conducts high class restaurants in Chicago, very many of them, at least two dozen, possibly two hundred, and serves delicious baked apples practically every day in the year. Mrs. Rasmussen is dead right on one point, Thompson uses Wisconsin apples! In September, 1915, he spent thousands of dollars advertising Wisconsin baked apples. Large display ads., one-third to one-half page each in all the Chicago dailies called attention to "Baked Apples, Wisconsin Wolf River," etc.

The four recipes follow and others are solicited.

BY THE "CRANBERRY LADY."

I am sorry I cannot take up the apple gauntlet you have thrown down. I preach the gospel of cranberries—the apple is not my province. I do not know how to bake a tart apple tender enough to blend nicely with sugar and cream—the way we like them, without the inside shrinking more or less from the skin. This I do know. If apples are pricked in a number of places with a fork, and at least half an inch of hot water is poured into well filled but not crowded baking dish—they will not readily burst open, and never "shrivel." Any water that remains—and some is desirable,—should be poured over the baked apples, which they will absorb if left to get cold, and which tends to plump them.

Mrs. S. N. Wittlesey.

USE WISCONSIN APPLES.

In reply to your letter of the 7th regarding baked apples, I will say that undoubtedly Thompsons (Chicago) use Wisconsin grown apples.

Many of our Wisconsin people

contend that the eastern and western apples excel our own in quality; merely perhaps on account of the higher prices asked.

If you want a baked apple that not only equals Thompsons but has also that "Home Sweet Home" flavor use Wisconsin Greenings (Northwestern Greenings) or Wolf Rivers. Talmans are good but we prefer a tart apple which requires some sugar. Core the apples, place in a granite pan, fill the cavities with sugar and add water to the depth of about three-eighths of an inch, bake in a very moderate oven until tender.—Mrs. N. A. Rasmussen.

TO BAKE APPLES WITH QUALITY.

To have a good baked apple select one of good quality before it is baked. Baking a poor quality apple won't put quality into it.

The apple can be peeled or not as one chooses. If not to be peeled then select an apple with a thin skin as baking will make a thick tough skin leathery.

Select 10 even sized apples, take out the blossom leaving a slight cavity. Fill this with a small piece of butter and place the apples in a deep cake pan or tin. Sprinkle with a cup full of sugar and pour hot water into the pan to the depth of three-fourths of an inch.

Bake very slowly. Slow baking is the secret of keeping the shape. Sugar will help to keep the shape of fruit if put on while cooking. It will also require more sugar.

Such apples as the Talman Sweet, and Newell's Winter are improved by boiling instead of baking.

For the Talman drop into clear boiling water and boil till nearly done, then put in the sugar and

(Continued on p. 106, col. 3)

A Village Fair.

(Continued from Page 98)

we sent out lists of flowers and vegetables that were to be entered in competitions, but we did not get them out early enough and they were crude and indefinite. The whole list of all departments should have been sent, and the "classes" more clearly defined. In some, at least "named varieties" should have been called for. I think we ought to accustom ourselves to labeling carefully. It really seems to me that it is only showing a proper respect to our flowers and vegetables to address them by their proper names. Aside from a sentimental consideration, this care would lead to a better knowledge and discrimination in selecting varieties best suited to ones own conditions. Think of the way we tuck our dahlias and gladioli, and other bulbs, away, until the poor things lose their identity and dignity, and our rudeness to our roses, those queenly souls. How seldom can we properly introduce them! They might respond to a more sympathetic and polite treatment.

Our plans were very faulty and showed our inexperience, but we did interest the people and we did have a fair, and next year we shall have a better one. One man, who had never had a garden, went home and dug up his whole back yard. Everyone you meet tells you what he is going to do next year, and the people who had "just as fine" at home, will all exhibit next year. One very wise decision we made in the beginning, was to have ribbons as the only prizes. They proved all the incentive that was required. We were fortunate in being able to hold the fair in our beautiful new school house. On the main floor, in the corridor, were the vegetables and flowers, and the display

of the former was very creditable. One could not suppress an exclamation of surprise that one's neighbors could grow such mammoth and such perfect tomatoes and beans, and that the children could bring such fine specimens. The flowers were handicapped by the hot, dry season and the Dahlias and Gladioli, upon which we had counted, were very scarce. The Roses, Asters, Marigolds, Nasturtiums, were an agreeable surprise. There was a dear little bunch of sweet grass, which some day will be made into a basket for next year's Fair. The "arrangements of flowers" (a class by itself), were interesting. Grouped by themselves, were a few fine exhibits of professional gardening. Among them, that of Mr. Livingstone, whom you all know, and whom we are glad to number among our neighbors, and to whose kindness in judging we are much indebted. In one of the large rooms, the Arts and Crafts Exhibit was full and varied, ranging from wood carving, metal work, basketry, beautiful needle work, to cleverly designed children's clothes. It is always a surprise and delight to find how much genius there is in a community. The Domestic Science Department, with its cake and bread and candy, and its canned fruits and vegetables, afforded an opportunity for discovering another set of interests. One energetic woman exhibited seventeen jars of vegetables, all from her own garden. One cake showed wonderful modeling and coloring of flowers for decoration. There was honey from East Milwaukee bees. Who ever suspected that one's flowers were contributing to this nectar? The children's work, with all sorts of surprises, and the Architectural Exhibit—we discovered five architects within our borders—occupied the third floor.

"Made in East Milwaukee" was the absolute rule for exhibition, and one butcher used the opportunity to display real art in his work. Each turn was a surprise that one small town could carry all they knew!

In the basement were the "fun-makers", and a few "fakirs", that seem to belong to a Village Fair. The young and old danced to their heart's content, in a room decorated with cornstalks. "Farmers" wandered about, causing much amusement, and the unwary fell a prey to "policemen". Refreshments were served in the Domestic Science room, and were a means to friendliness.

We may say, with confidence, that the Fair was a success, so far as the actual results were concerned, but greatest assets are the intangible ones. All during the Summer we leaned over our neighbor's fence, learning how he grew his tomatoes, and with it, a new knowledge of him and the possibility of working together for those things which shall make our community the healthiest, happiest place for us and our children, and that it may be a power in the larger community of our state and nation.

TO BAKE APPLES WITH QUALITY.

(Continued from Page 105)

let cook very slowly till a rich brown.

The Newell's can be peeled and dropped into a hot syrup, cover and boil slowly until tender. The amount of sugar used may suit one's taste. The syrup should nearly cover the apples.

M. G. B.

BAKED APPLES WITHOUT WRINKLES.

The chief reason that the baked apples of large restaurants are not wrinkled is that so many apples

are baked at one time that the oven is filled with moisture.

In baking a few apples, shallow pans of water should be placed in the bottom of the oven and the apples baked on the rack above.

Select only firm apples of a variety that does not go to pieces easily such as N. W. Greenings, Imperial, Northern Spy, etc.

Prick the skin many times around the middle with a fork; remove the core, place in baking dish, fill cavities with sugar with a piece of butter on top, put about three-fourths inch water around apples.

Bake in moderate oven, basting frequently until apples are tender when pierced with fork in center.

Mrs. H. H. Morgan.

Treat Cabbage Seed.

R. E. Vaughan.

Treat cabbage seed for black rot and black leg diseases. These troubles do a large amount of damage to gardeners and truck growers in Wisconsin, but fortunately can be held in check by seed treatment. Seed treatment or disinfection for grain smut and potato scab is a common practice on many Wisconsin farms and is known to give big returns on the amount of money invested and time spent. The disinfection of cabbage seed is equally important. It must be remembered, however, that seed disinfection cannot eliminate the diseases which come to the plants from the soil, neighboring fields, being carried by farm machinery, tramping feet and insects. Formaldehyde or formalin is the best disinfectant to use in treating cabbage seed.

Take 1 ounce of the strong (40%) solution and mix in 2 gallons of water in any ordinary tub or pail. Then take the seed to be

treated and put it loosely in a cloth sack which should be tied up and placed in the diluted solution of formalin for 20 minutes. The seed should be stirred around in the solution so as to make sure that all the seeds are entirely wet.

When the 20 minutes are over rinse the seed in clear water to remove the formaldehyde and dry at once by spreading on clean papers, canvas, on floor. After drying the seed is already to be put in the seeder or when thoroughly dry can be stored for future use.

Some Cautions

1. Don't freeze the wet seed.
2. Don't return the treated seed to the original packages, because of danger of re-infection.
3. Don't leave the seed in the solution more than 20 minutes.
4. Don't make the solution too strong.

Over-treatment injures the vitality of the seed.

Department of Plant Pathology, University of Wisconsin, Madison, Wis.

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Wisconsin Horticulture.

(Continued from Page 103)

peets to get the greatest returns in the end from his endeavors along any line of production. The trouble is, we get to looking so close to the end of our noses in these things that we forget to see what lies beyond. We seem to think that because we are getting money now by selling a lot of cull fruit, that we are making a good deal and we forget that we are going to lose a great deal more a little later on because we have sold cull fruit, and destroyed our reputation as a producer of the kind of fruit the consumer wants. It is a penny wise and pound foolish way of doing things and we cannot afford to do it as fruit growers and we must educate the man who is doing it so that he too will recognize that it is the wrong policy.

When I said greater honesty was one of the needs of Wisconsin fruit growing, I did not mean to intimate that the grower who sells you fruit would cheat you on measure or "short change" you. He would clearly recognize that such things were dishonest, but mixing in a few worthless apples when you are supposed to be getting good ones is simply a "trick of the trade" and not dishonest to his way of thinking. If he is dishonest then, it is because he has not developed the right standard upon which to operate. But ignorance of the law does not excuse anyone and because he has not developed the right standard by which to judge his act when he does that sort of thing, he needs education so as to form right standards. He should learn that he is operating on the wrong standard both from the standpoint of what other folks regard as the proper attitude in the matter, and also in regard to the best methods

of gaining the greatest remuneration from his productive efforts. He should be shown that at all times that he is the loser and not the gainer by such practices.

So it behooves us all, organizations and individuals, to do all in our power to educate the growers of fruit in Wisconsin, (those who are commercial growers, if they need education; and those who are not commercial growers, who mostly need education if they are to produce fruit) to the higher and in the end more profitable standards of fruit production and marketing.

We cannot, however, stop with education if we are to attain these objects. There are some people who refuse to be educated. You have all seen men who after a given point had been conclusively proved would say, "Well, I don't believe it anyway." It reminds me of the old saying, "A man convinced against his will is of the same opinion still." Yes, there are certain people who will not be educated. What are we going to do with that sort of people as regards better fruit and greater honesty? We are going to do with that sort of people just like we do with that sort of people in every other phase of life. We will compel them to be good whether they want to or not. We will compel them by legislation, as far as possible, to meet these standards. I will not attempt to tell what laws we shall have, but merely throw out a few suggestions. We will legislate first, I believe, in such a way as to discriminate against the producer of poor fruit. That may be unconstitutional, you know, but that is what we are going to do. How are we to do it? We will discriminate against the producer of poor fruit by passing legislation which will compel a man to pack

according to certain standards and to pack honestly within those standards. This is not a new thing. It has been done, in fact is being done, all the time.

We have two types of legislation along the line of discrimination against the man who produces poor fruit, which are being tried out. We have a national law, as you all know, which is called the Sulzer Bill, which says that a man, if he is going to sell certain commodities and label them in a certain way, must maintain a certain standard. This is an optional law regulating standards and may be a very good thing. It does not amount to a pieayune, however, when it comes to this man who refused to be educated. The only way you can get that fellow is to say to him, "When you sell this commodity, you will pack it according to certain standards, and you will mark on the package the standard of the lowest grade you have in the package. If you want to pack good apples at the end of your barrel and fill the center with culls, all right, but when you label that barrel, you shall say that this is a barrel of *culls*, because it has culls in it." We need, then, not so much an optional grading and labelling law, as we need a compulsory grading and labelling law.

We have this type of law in operation. New York has a law of this type. I have heard it said that it is not working out satisfactorily. I am not here to controvert that statement, because I have not investigated, but I can point you to a case of a similar law that I know is working and has been working for fifteen or twenty years. It is the Ontario Compulsory Grading and Labelling Law. We should not condemn too soon the New York law, because it may not be working up to the highest standard, because they have not had

time there to put it in operation, that is, to work it out to its fullest efficiency and then too, we must consider that this law in New York is helping to educate the man who does not want to be educated along this line.

The second type of legislation which I have in mind is to compel delinquents to use proper methods in producing their commodities or else get out of the business. Now, I know that it will be immediately said, "Why, that is radical. To think that we should say to a farmer, 'You will either have to take care of this orchard, or you will have to get rid of it.' That is radical." It is not radical at all. We think that it is radical because we have set a different standard for fruit growing than for other farming. We, the fruit growers, have allowed the people to set a different standard as regards our business than as regards other business. You all know that we have a law that says to a man in a community, "You shall not keep a sheep dog on your farm to destroy the sheep of your neighbors." We have a law more or less effective, on our statute books that says to a man, "You shall not, on your farm, allow noxious weeds to develop and infest the community." But you say to the farm orchardist, "You go on, you can grow just as many apple scab spores and just as many codling moth and just as many eucreulio to curse your neighbour as you want to and we will not say a word about it."

I do not know, in fact I doubt if we are at the present time in a place where it would be wise to enact such legislation in Wisconsin, although they have it in some states. I want to bring this fact to your attention, however, that even in fruit growing in Wisconsin we are saying that very thing,

only in a very restricted way. We have on the statute books of Wisconsin today a law, and it is in effect in all the states which grow fruit, which gives the state authorities the right to go to a man who has his trees infested with a certain insect pest, the San Jose scale, and say to him, "You take care of that tree or we will take care of it for you." You see it is not so big an innovation as you thought. Codling moth in its relation to fruit growing is not so very different from San Jose scale. We are coming to the point where in self defense we are looking at it in that light. They have come to it in certain western states. The state of Montana has come to it as regards the fire blight situation and they are saying that orchardists cannot maintain a popular nuisance as regards the fruit industry by maintaining trees which are badly infested with fire blight. We of Wisconsin, as our fruit industry develops, if it is to develop, will come sooner or later to that same basis of operation, or else it will be a sorry day for the man who attempts to produce fruit commercially in this state.

I had an ex-student come into my office the other day to talk about the advisability of planting an orchard in a certain section in the state. He presented this situation:—"Here is my proposition. Is it worth while for me to plant an orchard and compete with the kind of stuff that is put upon my market when the buyer does not seem to discriminate between poor and good fruit?" What is the use of better fruit if we do not have a better market? What shall we do about marketing? It is evident that one of the needs of Wisconsin fruit growing is better marketing methods. The day of

individual marketing is largely past, except where a man is a very large grower, or where he is marketing locally. In order to obviate that difficulty in certain sections, we have co-operative fruit growers' associations like those at Sturgeon Bay and Bayfield, a group of fruit growers who handle their fruit more or less as a unit. It is a fine thing and absolutely necessary. It is quite easy to organize such associations in communities where fruit growing has become an important commercial industry, but we have some other communities that are nearly as important, if not as important from the standpoint of development of horticulture in Wisconsin, as Bayfield and Sturgeon Bay. Yet, the growers in some of those sections do not happen to be numerous enough to make possible a co-operative organization. Neither do they grow sufficient fruit to make it possible for them to handle their commodity most advantageously as individuals.

In this improvement of our marketing conditions, we need some sort of an organization, possibly not an organization in the sense in which we usually use the term, but we need some method by which we can have what we might practically term a fruit clearing house. Now a fruit clearing house is not possible until we have that better fruit which I have already suggested. A fruit clearing house, if it is to be operated, necessitates that these growers who are scattered, who cannot co-operate successfully, produce such fruit and so pack it that those in charge of the clearing house know that when they recommend a grower or a community, that the buyer is going to be able to get in that locality the kind of commodity the clear-



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WRITE FOR CIRCULARS AND INFORMATION

Wisconsin Horticulture.

(Continued from Page 109)

ing house says he can get. Here is a place where the proposition of reputation comes in. Very frequently we get letters from buyers located in various sections of the country, which read about as follows: "Can you put us in touch with a locality in your state where we can get certain quantities, (stating the quantities), of desirable fruit?" These quantities are usually so large that we are unable to write to those buyers and say, "You go to such a point and you can get it." We may know of two or three men possibly in a section who are producing the right kind of fruit, but not enough to make a good shipment. Both Cranefield and myself are trying to maintain the reputation of the fruit produced in the state and we do not like to say to a buyer outside of the state, "You go to this section and you can get this fruit," and then have him get there and find that he cannot get it or have him order shipments from that section and when he gets them, find the fruit not up to grade and dishonestly packed. We must have then a considerable body of men in the state who can be absolutely depended upon to produce good fruit and pack it honestly, if we hope to establish a clearing house.

The clearing house is simply to gather and distribute information regarding the market to those growers who cannot afford, because of their relatively small acreages, to gather the information for themselves.

Why this clearing house? Let me illustrate. I have a ten acre orchard. I cannot afford, financially, to get in touch with the various markets and find out where to place my fruit to the best advan-

tage. If I can co-operate, however, with a large number of other growers of similar condition and have the information gathered for us, and I can avail myself of that information, then I can advantageously contribute my share to the support of the proposition.

Probably we have not reached the proper point in the development of our fruit industry to warrant such an undertaking, and it may be even possible that we will not be ready for it within the next few years. The thing I have been trying to do this morning is not to give you something which you simply listen to and then straightway forget, but rather I have been trying to outline some problems which are going to take the very best thought of every member of the Wisconsin Horticultural Society for the next two, three, five, or possibly ten years to solve correctly; problems which we are running up against and will continue to run up against, and which, sooner or later, if not correctly solved, will ruin our fruit industry. Are we going to be prepared when we meet those problems? We are not going to be prepared, we are not going to be able to meet them successfully, unless we begin to plan, unless we begin to work out a solution in advance. I do not mean to even indicate that what I have said is the solution. I have only been throwing out a few suggestions in order to set you all thinking about these problems so that when the time comes to act, we will be ready.

Bulletin 766, United States Department of Agriculture, is entitled "The Common Cabbage Worm." Send to the Division of Publications, Washington, D. C., for it.

It is said that sphagnum moss in the bottom of a vase used for cut flowers will keep the water fresh for some time.

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**Cumberland Fruit Package
Company**

Dept. D., Cumberland, Wis.

SUPPLEMENT

Wisconsin Horticulture

Volume VII

Madison, Wisconsin, March, 1917

Number 7

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REMEDIES FOR CONTROL OF INSECTS AND DISEASES

INSECTS

For biting insects, such as the tent caterpillar, canker worm, potato beetle, apple worm (codling moth) curculio, spray the foliage with a poison. For the potato beetle use Paris green.

Paris Green

Formula

Paris green -----	1 to 2 lbs.
Fresh (unslaked) lime -----	1 lb.
Water -----	200 gallons

Paris green is heavier than water and the mixture must be kept in constant motion during spraying operations to prevent settling.

Never buy Paris green or other insecticides in bulk; always demand the original package with the manufacturer's guarantee of purity.

Paris green if used on growing plants greatly in excess of the above formula may injure the foliage. The addition of the lime overcomes the caustic properties and renders it safe under all conditions.

Dry Paris green may be used pure if applied in small quantities with plaster of paris or finely slaked lime as a carrier. Different "dry powder guns" have been invented for this purpose.

While Paris green if pure, is a valuable insecticide, it has been displaced in orchard spraying by ARSENATE OF LEAD.

Arsenate of Lead

(A poison for biting insects.)

Formula (1)

Arsenate of lead—paste -----	2 to 3 lbs.
Water -----	50 gallons

Formula (2)

Arsenate of lead—dry or powdered -----	1½ to 2 lbs.
Water -----	50 gallons

Arsenate of lead may be used in any reasonable quantity without danger of injury to foliage.

It remains in suspension longer than Paris green.

It adheres better to foliage.

It may be used for any purpose for which Paris green is employed in liquid sprays.

Spraying

By Senator H. M. Dunlap, of Illinois, at 1916 Annual Convention. (From reporter's transcript.)

In spraying, three principal items are to be considered. One is material to be used, another is time of application and the third is method of application. We will consider materials and divide them into three classes for this discussion.

Bordeaux has been known for a long time as the great fungicide. It was discovered along some time in the 80's, in France, and I have often said that in spraying matters we have more credit to give to ignorance, accidents, necessities and other causes than we have to scientific discoveries, although the scientific man in working out these different problems to a fine point, is of very great assistance, but in this case the discovery of Bordeaux as a remedy for fungous diseases was made by accident. In Bordeaux, France, they raise a great many grapes, and they have factories of which one of the by-products is blue vitrol. In passing to and from these factories the workmen were in the habit of pilfering from the vineyards alongside the roadway. They have no fences over in France, and so, in order

White Hellebore

(For biting insects.)

Powdered white hellebore is commonly employed to destroy currant and cabbage worms and on fruits and vegetables where more poisonous substances cannot be used with safety.

Formula (Hellebore)

White hellebore ----- 1 oz.
Water ----- 2 to 3 gallons

It may also be used dry either alone or mixed with flour, land plaster, soot, etc.

White hellebore is scarcely poisonous to the higher animals and may be used freely on fruits and vegetables when these are at any stage of maturity.

In addition to the above various poisons are employed such as Scheele's green, London purple, slugshot, arsenite of lime, arsenate of soda, etc., but the fruit grower will do well to pin his faith to arsenate of lead for the control of biting insects.

Sucking Insects

Sucking insects such as apple aphis, plum aphis, oyster shell scale and San Jose scale do not consume either bark or foliage but suck the sap of the plant. These insects cannot, therefore, be destroyed by spraying poison on the bark or foliage. We must attack the insect itself. Spray the insects not the leaves or bark. For this purpose use either kerosene emulsion, a nicotine solution, or lime sulphur solution.

Kerosene Emulsion

Used only to destroy sucking insects. It must be applied to the insects and cannot be used as a preventive.

Formula for Stock Solution

Dissolve $\frac{1}{2}$ lb. hard soap in 1 gallon of boiling water.

While hot add 2 gals. kerosene.

Churn the mixture violently while hot for 5 to 10 minutes or until it assumes a creamy consistency.

Dilution for Spraying. Before spraying add 10 gallons of water to each gallon of stock solution, thus reducing it to six per cent of oil, which can be safely used on all plants.

Lime Sulphur

(For Sucking Insects)

While kerosene emulsion is effective for soft bodied plant lice it is not sufficiently caustic to destroy the armored scale insects such as San Jose and oyster shell scales. For this purpose a combination of lime and sulphur is used. While lime sulphur may be made at home by boiling together lime and sulphur it is a disagreeable job and owing to the high magnesium content of most Wisconsin lime the home-made product is not apt to be as good as commercial lime sulphur. Very good lime sulphur solution may now be purchased in any quantity from a half-pint pkg. to a barrel.

to discourage that, one of the owners of the vineyards conceived the idea of scaring them a little bit, so he got a little of this blue vitrol and with a whisk broom sprinkled it onto the vines and fruit, and then put up a notice that these grapes were poisoned. It had of course the desired effect of keeping thieves out, but to the great surprise of the growers they found that the grapes on these vines that were treated in this way escaped the brown rot, while those that were not so treated, were badly injured. So that led to the discovery of Bordeaux, and it is called Bordeaux because it was discovered in that part of France.

So you see the depredations of thieves brought that about, and the appreciation of these men and these farmers of these vineyards in seeing the application that could be made of it, made it a world-wide fungicide. But there are objections to Bordeaux.

As time has progressed we find that notwithstanding the fact that it cures a great many fungous diseases and is a good fungicide, it also is a corrosive in many ways, that it will injure the fruit and also the foliage.

The russetting of apples is sometimes due to the injurious effects of Bordeaux, if the weather conditions are not just right.

With proper weather conditions and the foliage in good condition, Bordeaux is all right, but—I do not know whether you have it up here or not—we have had for the last few years in Illinois quite a good deal of foliage injury from what is called the flea weevil, a little black beetle that eats on the under side of the leaf and wherever we spray with Bordeaux there has been a great deal of injury. It burns the foliage, it enters these places that

Formula

For San Jose and oyster shell scales apply the following strength to *dormant trees only*.

Lime sulphur -----	1 part
Water -----	8 parts

Lime sulphur at this dilution *must not be used on growing plants*.

Arsenate of lead may be combined with lime sulphur.

Nicotine Solutions

A decoction of tobacco made by steeping, not boiling, tobacco stems or leaves in water in a covered vessel is an efficient remedy for plant lice. One gallon of boiling water may be poured over a pound of tobacco stems and allowed to stand over night. This decoction may be used without dilution but will be effective if diluted with 1 or 2 parts of water, and will be more efficient if used with soap-suds.

For orchard spraying use one of the numerous nicotine compounds offered for sale, but do not pay more than \$10.50 gallon and this price should procure a 40 per cent nicotine solution. Look for the manufacturer's guarantee or statement of ingredients.

REMEDIES FOR THE CONTROL OF PLANT DISEASES

Bordeaux Mixture

The control of fungous diseases is accomplished by the use of some form of copper salts, usually copper sulfate, known also as blue-stone, blue vitrol etc.

Copper sulphate in combination with fresh lime forms the standard and well known fungicide, Bordeaux mixture.

Various formulas are quoted, but the following is now accepted as safe and reliable:

Copper sulfate -----	4 lbs.
Fresh lime -----	5 lbs.
Water -----	50 gallons

In general terms, the copper sulfate should be dissolved in one-half of the water, the lime slaked in the remainder and the two solutions poured together. This results in a chemical action giving rise to a new substance preserving the fungicidal properties of the copper sulfate and if properly made will not injure foliage.

Bordeaux mixture is used as a *preventive* of apple scab, asparagus rust, mildew on grapes, roses and other plants, potato blight and rot-shot-hole fungus on plum and cherry and other fungous diseases.

The two ingredients of Bordeaux mixture may be kept separate in solution without deterioration but they rapidly lose their value after mixing. Mix only as much Bordeaux as you will use in any one day.

Helpful Hints for Making a Barrel of Bordeaux Mixture

(1) Have on hand three barrels and two pails (wood fiber or galvanized iron).

(2) Twenty-five gallons of water in each of the barrels.

(3) Dissolve 4 pounds of copper sulfate in one barrel by suspending in a coarse burlap as near the surface of the water as possible; in this way it will dissolve in a short time, while if allowed to settle to the bottom it would require several hours to dissolve,

have been eaten off by the flea weevil, and if the weather conditions are bad, a great deal of rain, we will have a great deal of foliage injury. So we have come to substitute, in a large measure, lime-sulphur for Bordeaux.

In regard to lime-sulphur, you know some man out west conceived the idea, where the San Jose scale began to destroy fruit trees in California, that if lime sulphur was good to kill sheepticks, why not kill the ticks on the apple trees and orange trees, and so he made a mixture and applied it and it worked all right. Now there is another discovery made, not by a scientific man, but one who had good common sense, reasoned from cause to effect and he gave us the lime-sulphur as a spray, and it is not only good as an insecticide so far as the scale is concerned, but it has also been demonstrated that it is a good fungicide. Our horticultural chemists told us that we would have to use the lime-sulphur separate from the arsenate of lead; well, some blundering orchardist was not quite up to that, so he mixed the two together and found he got as good results mixing them together as handling them separately, so through ignorance and necessity and the application of common sense reasoning from cause to effect, we have come into a good many of these spray materials that have been of great value to the fruit grower. I speak of this, not in any way to disparage the scientist, because there is science in that, when you come right down to it, why, science is nothing else than truth; the application of truth is science, and wherever you discover truth, why, there is the place to take it, whether it comes from a university, or whether it comes from

(4) Place the lime in a pail and slake by adding water slowly until a paste is formed. (The lime for Bordeaux mixture should be slaked exactly as for building purposes.)

(5) Pour this lime paste into the second barrel and stir thoroughly.

(6) Add the required amount of arsenate of lead to the lime water.

(7) Now pour into a third (empty) barrel first a pailful of the copper sulfate solution, then a pailful of the lime water, or better, let two persons work at the job, pouring together.

(8) The resultant mixture should be of an intense blue color. If any tinge of green appears it is not good Bordeaux mixture.

(9) The lime water should be strained to remove the coarse particles which serve to clog the nozzles in spraying.

(10) Sufficient lime must be used to combine with all of the sulfate or harm will result. The formula given above provides an excess, but such excess is preferable to a slight deficiency. Use all of the lime water.

Three Things to Avoid in Making Bordeaux Mixture

(1) Do not use iron or steel vessels for the sulfate or Bordeaux. Not only will these be corroded but the chemical action resulting from continued contact may injuriously affect the mixture. Tinned or galvanized pails are safe if new or if the tin or zinc coating is intact.

(2) Do not dissolve the sulfate and lime each in 2 to 4 gallons of water and then mix the concentrated solutions; curdling will result and after dilution difficulty will be experienced in keeping the Bordeaux in suspension.

(3) Do not fail to stir the ingredients while mixing and the resultant mixture when spraying.

The Use of Stock Solutions in Preparing Bordeaux Mixture

If more than one barrel of Bordeaux is required much time may be saved by using stock solutions.

Dissolve 50 pounds, for example, of copper sulfate in 50 gallons of water by suspending in a coarse sack as advised above; slake 50 pounds of lime in another vessel and dilute to 50 gallons; four gallons from the sulfate solution and five gallons from the lime solution will then contain the requisite amount of ingredients for one barrel of Bordeaux.

Such stock solutions may be kept indefinitely if covered, otherwise the evaporation of water from the sulfate solution would result in a more concentrated mixture and the lime would deteriorate. The lime may be covered with water.

This method of using stock solutions is now employed in all extensive spraying operations. In cases where large quantities of spray material is used elevated tanks are employed from which the solution is drawn directly into the spray barrel or tank.

Potassium Sulphide

For checking the spread of certain surface feeding fungi, as gooseberry mildew, grape mildew, rose mildew and many of the fungi which cause "damping" of young plants in the seed bed, potassium sulphide may be used to excellent advantage. (See p. 6.)

some man that has been dipping sheep.

Lime-sulphur has come to be used in place of Bordeaux in many instances, in fact, it has almost entirely supplanted the Bordeaux in our Illinois orchards, and if a man stays away from these horticultural meetings he sometimes gets behind.

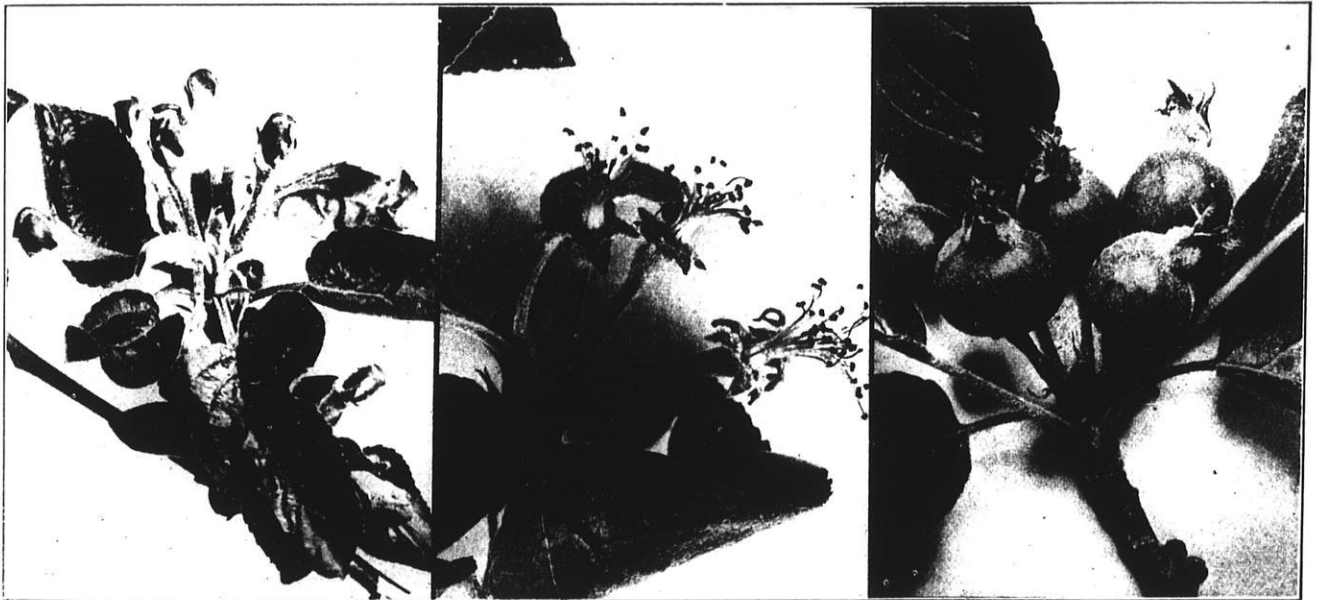
I know one of our old fruit growers in Illinois who has 240 acres in apple orchards, for some reason did not attend the meeting a year ago, when this transition was largely made from Bordeaux to lime-sulphur, and in 1915 he sprayed largely with Bordeaux and he burned his foliage badly and burned his fruit also. He attended the meeting in December and he said, "Well, now, I missed something by not being at the meeting last year; I did not know that they had swapped off the Bordeaux for lime-sulphur, or I would have had several thousand barrels more of apples than I did have." It pays to be up-to-date in the fruit business. One season is not exactly like another, and we are naturally progressing along these lines, because we are really just at the front door as to our knowledge in regard to spraying materials. I think we will learn a great deal more in the next ten years, perhaps more than we have in the past ten years.

In regard to lime-sulphur, it is a question whether we will use commercial lime-sulphur made by those who are engaged in the manufacture of it for commercial spraying purposes, or whether you will make it yourself. If you make it yourself, your orchard ought to be large enough so that it is really an object for you to go into that. You can make it for about half of what it costs for the commercial; the question of

whether it will pay you to make it or not will depend upon how much it will cost you to put in the apparatus for making, or whether you are equipped for that purpose at the present time, or at least a part of it, and do not have to go to very much expense. Some growers cook it in the ordinary iron farm boilers; I do not consider that that is a very desirable way for making lime-sulphur for use in the orchard, although it is done successfully. If a man has a steam boiler on his place, he can

run very slowly, just keep it in motion, and there should be a cover over your tubs, so that you do not get too much air in contact with your boiling material, so as to get a better form of material for spray purposes. If you want to make it yourself, the thing to do is to get from the Illinois station, or the Pennsylvania station and possibly from your Wisconsin station—I am not familiar with your bulletins here—full directions for making lime-sulphur. It is impractical for me at this time

paste or not, but I will say this, in any kind of spray material that is put upon the market, I care not what it is, let the university experiment stations—that is what we have them for—test these matters out thoroughly for two or three years before we swap off what we know to be a good thing for something that we are not so certain about. I remember a number of years ago, in making Bordeaux, that it was recommended by some of the stations to use hydrated lime instead of the quick



"Spray after the pink of the bloom begins to show, from that time until the bloom is entirely out or rather until the first (central) flower of the cluster is out. This is our first spray."—Dunlap.

"then we spray immediately after the first bloom falls."—Dunlap.

"and then we spray as many times after that as we think the season demands."—Dunlap.

ing up to make the lime sulphur at a cost of about \$25 to \$30, so that he could make as high as 30 to 40 barrels of it in a day's time. He mixes it so rapidly that way that the cost of making is reduced to a minimum. There are two or three general things that should be considered, and one is that you should have a mechanical mixer in your tub that you heat it in, so that you can keep it stirred constantly while it is being heated, and this mechanical mixer should

to go into the details of making it. We also use as a third spray material, arsenate of lead, and that has supplanted in all cases, I believe in fruit growing, the use of London purple and Paris green, which were used in earlier days. Arsenate of lead has been of the paste form heretofore, but of late years a number of factories have been making the powdered arsenate of lead. I will not undertake to say whether the powdered arsenate of lead is as good as the

lime. It was a very quick thing to do and a very easy thing to do, but I used that all one season, and I found very much to my regret—it was quite a rainy season—that a mixture made in that way was easily washed off. In other words, if it is easily soluble in water when we put it into the water, when it is easily soluble then, it would be easily soluble when it got onto the foliage and when the rain got on it it would easily wash away; but that which

Formula

Potassium sulphide -----	4 ounces
Water -----	10 gallons

The solution must be used as soon as made, as it quickly loses its strength.

Any unused portion of the potassium sulphide should be kept in a tightly corked bottle to prevent loss of strength.

Combining Insecticides and Fungicides.

Arsenate of lead may be safely combined with Bordeaux mixture. In fact, in orchard spraying operations it has come to be a common practice to add arsenate of lead to Bordeaux at every application. By this means biting insects and fungi are controlled at a single operation. No other fact is more important than this in spraying.

When using arsenate of lead with Bordeaux always add the arsenate to the lime water, instead of pouring it into the combined copper sulfate and lime; this is important.

Arsenate of lead and lime sulphur solution may also be combined in spraying.

Spraying.

(Continued from page 6)

is not so easily soluble when put into water will not so easily be washed away when it gets on the tree. I do not offer that as experience, but simply as education, that it is well enough to try these things in a moderate way, but not to give up our orchards to any new proposition until we have thoroughly tested it out. I know of one gentleman who tried this year a certain kind of spray on his orchard, and he said this fall he lost a thousand barrels of apples by spraying that onto 40 acres of orchards; he burned the apples so severely that most of them fell off, and those that were left had very little color and were of no value. That illustrates the fact that we must not run after fads in horticulture.

In the matter of time of application for winter spraying for San Jose scale and other scale insects, of course we use the lime-sulphur as the principal spray, and use that in varying strength, about 1 to 8, or 1 in 9, or 1 to 8 in commercial lime-sulphur is the

proper strength, and in the summer time we use from 2½ to 3 gallons of the commercial lime-sulphur to 100 gallons of water, and as to the time of application, I will say that we use lime-sulphur in our orchards from the beginning, spraying before the bloom, after the pink of the bloom begins to show, from that time until the bloom is entirely out, or rather, the first central flowers of the cluster are out, we call that our first spray, and then we spray immediately after the first bloom falls, and then we spray as many times after that as we think the season demands, or according to the kind or amount of fungous disease that we expect to correct.

Now, we have various kinds of fungous diseases in Illinois; I do not know whether you have any apple blotch fungus here or not. I notice you have the scab out there on your apples, and I think the scab has done more damage to the apple than perhaps any other pest we have unless it is the codling moth. But it is certainly one of the hardest things we have to combat. The time of applica-

tion is a very essential thing, that is, of the first two applications for scab, that is the one before the bloom and the one immediately following the bloom, because it is in that period that the spores of the scab fungus begin their work. You may not see them until later, but that is where they get the start and after the roots get below the surface of the apple, the skin of the apple, the spray material does no good. Spraying for fungous diseases is a preventive and not a cure, so you have to have your preparation on there when these spores begin to germinate.

As to the method of application, it does not matter so much, except that you do a thorough job. Whatever you do in the way of spraying, do it thoroughly. That counts for so much. If you have your materials right and you get your spray material on at the proper time and you do a thorough job, you will be delighted with the results, but if you have your spray materials right and you put it on at the right time and you only do a half way job in applying it, you will think that spraying does not pay because you will have to remember that you will have to reach every blossom on the apple tree, every blossom should be reached with the spray in order to get into the calyx of the blossom. In the spray after the bloom falls you should get into that some arsenate of lead for the benefit of the codling moth that almost invariably seeks to enter the apple at the calyx end, and as the calyx lobes close within a week or ten days after the bloom falls, you can see that if you do not get your application on at that time, or within that period, why, after these calyx lobes are closed you

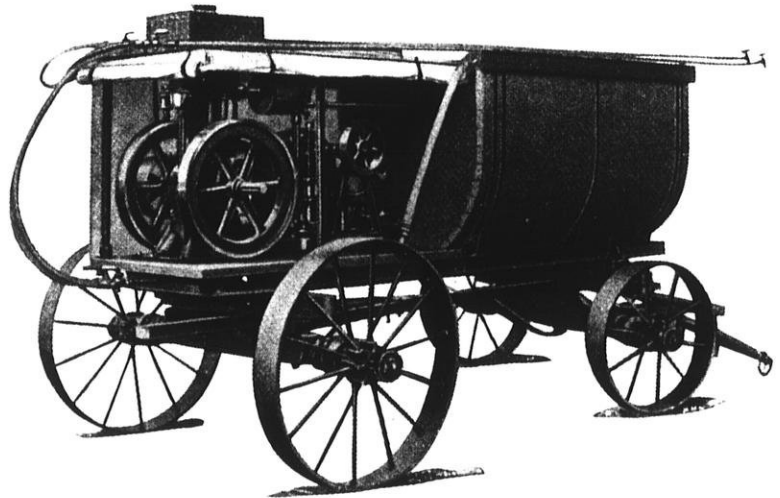
could not get it in there at the calyx or blossom end of the apple, therefore, when the worm crawls around and gets into that blossom, there is nothing to prevent him from coming right on, he has everything his own way, and if you want to kill the codling moth worm, you must apply it in time.

Time is a very essential factor in this business, and the thoroughness with which you put that on, getting it into every blossom is also especially desirable. Now, if you can impress it upon your men, upon yourselves, that you have got to get some of that spray into every blossom there is on that apple tree, you are going to do a thorough job of spraying, and in that way your spraying will be a success.

As to the mechanical appliances, or the machines that you use for spraying, there are many good machines upon the market. It is just like buying an automobile, the one that each one has he thinks is the best, and there are a great many good spraying machines, some are better than others, and some cost more than others, but if I had a small orchard and my neighbors did not have any orchard around me, if I had an orchard of 50 or 100 trees, I would not go to the expense of buying a gasoline spray outfit unless I had use for that engine otherwise and could attach it and use it for pumping and various things upon the farm, and almost every farmer has a use for a gasoline engine, but if he has that fixed up so that he can put it on the wagon and run his pump with it, that is much better. But if I did not want to go to the expense of buying a machine of that kind, I would get an ordinary 50-gallon barrel that you can buy at a grocery store, either kerosene barrel or vinegar

barrel, or any other clean barrel, wash out and you can make a spray barrel out of that, get a good hand force pump, one that is made for that particular purpose, and you can do just as good a job spraying 50 to 100 trees as you can with a high priced machine.

pay the expense of your machine and outfit, and one man who becomes conversant with that is better than if they have only a half day or day's work each, it is better for one man to put in his time three or four days in spraying his own orchard and his neighbors' orchards, rather than half a dozen



A complete, up-to-date spray outfit. Rigs of this type are used in all large commercial orchards.

If I was in a neighborhood where there were a number of farmers' orchards, if I wanted to spray my own orchard I would try and make a contract with my neighbors to spray their orchards for so much per tree for a period of five years. I would not take it for one year, but I would make a contract with them for five years, because after they have had it for five years they would not go without it. If you do it for only one year, they would say, "John Jones had just as good apples as I did and he didn't spray," and that may be the case for one year. So it is better to make a contract and then you can buy a power sprayer and spray your neighbors' orchards as well as your own, and it would be a proper thing for them to pay a good price to spray their orchards and also to help you to

men each trying to spray his own orchard and not doing it right. The same thing might be illustrated by the rural delivery system. One man delivers mail to 75 or 100 families; it is a great deal better than for those 75 families each one going to the post office, sometimes two or three or four miles, after the mail. It is economy of labor.

Common Spray Materials

In Terms of Kitchen Utensils.

The following simple formulas and directions are prepared distinctly for the small lot owner, whose need for sprays is just as great, but not so extensive as the large grower. There is no single cure for all insect troubles. Study the destructive pest, learn

how it secures its food, and something of its habits,—then apply the proper material at the right time and in the best manner.

In general, two kinds of insects may be controlled by sprays of various materials. If the insect chews and swallows portions of plants as food, one can control it by spraying an arsenical poison (arsenate of lead or paris green) on its food. But if the pest has a sharp pointed beak and punctures the plant tissues for sucking out the sap, other sprays must be used which will kill by contact with the insect. In other words, generally speaking, *we control chewing insects by poisoning their food, and sucking insects by spraying the insects themselves.*

Finally, remember that bordeaux mixture (blue-vitrol and lime combination) *will not kill insects*, but is used for control of rusts, rots, scabs and fungous diseases generally. Bordeaux may be combined with certain insecticides for double purpose use.

For Biting and Chewing Insects.

Arsenate of Lead. This recently developed arsenical poison has several advantages over paris green. It can now be purchased in powdered form, which does not deteriorate, freeze or become useless by drying as was the case with the paste form first developed. It sticks better than paris green in rainy weather; will not burn foliage; will show careless and incomplete spraying on account of its white color; and it remains well suspended in water.

For ordinary chewing insects, especially in younger stages, use water 1 gallon, arsenate of lead (powdered) $\frac{1}{2}$ tablespoonful, or arsenate of lead (paste) 1 tablespoonful.

Double this strength for potato beetles and large caterpillars.

In using the powdered lead moisten the powder gradually in a small vessel, stirring and adding water until milky, then pour it into sprayer.

Paris Green. This is a well known poison but has certain disadvantages as noted above in comparison with arsenate of lead. A small portion of paris green is soluble in water and burns foliage when applied alone. Fresh lime equal in weight to the paris green used should be slacked and added to the spray before used, to counteract the burning properties.

Water 1 gallon, paris green, small teaspoonful; fresh lime, piece size of walnut.

For Sucking Insects.

Plant lice (aphis), scale insects, etc.

Nicotine Sprays—Aphids of all kinds are best controlled by the nicotine sprays, prepared commercially, and usually available from druggists or seed stores. No damage to the tenderest foliage will result if used according to directions on the package.

Tobacco decoction may be made by steeping (not boiling) a pound of tobacco stems in 3 gallons of water in a covered vessel for two or three hours and using the strained liquid as a spray. These sprays are especially valuable for aphis on roses, sweet peas and other tender plants.

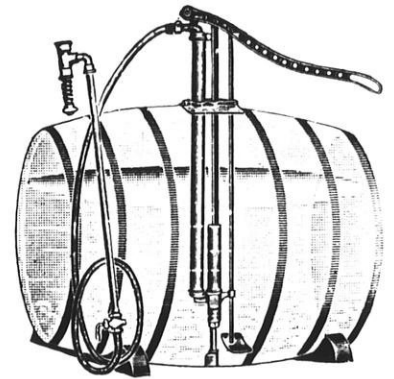
Plant lice on roots of plants may be killed without injury to the plant by placing a handful of powdered tobacco stems at the roots. This treatment is good for failing house plants.

Kerosene Emulsion—This com-

monly used remedy is often carelessly and improperly made, with resulting injury to sprayed plants.

A Stock Solution (must be diluted before spraying) may be made in a quart mason jar by dissolving $\frac{1}{8}$ of a cake of ivory soap in $\frac{1}{2}$ pint of boiling water. Pour the soap solution into one pint of kerosene in the mason jar, screw on the cap tightly and shake violently five minutes, when a creamy-white gelatinous mixture will be formed on cooling. For spraying add this stock solution to $1\frac{1}{2}$ or 2 gallons of warm water and stir thoroughly, making 8% and 6% solutions, respectively, the best strengths for spraying foliage.

Dilutions of Kerosene Emulsion. For 15% spray add 1 part stock solution to $3\frac{1}{2}$ parts of water;



A poor picture of a good type of spray outfit for a small orchard. The pump should be much larger and heavier than shown in the drawing.

for 12% spray add 1 part of stock solution to $4\frac{1}{2}$ parts of water; for 10% spray add 1 part of stock solution to $5\frac{1}{2}$ parts of water; for 8% spray add 1 part stock solution to $7\frac{1}{4}$ parts of water; for 6% spray add 1 part of stock solution to 10 parts of water.

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On account of its symmetrical outline, sturdy habit of growth and dense foliage the Norway maple is an ideal tree for parks and lawns. It is also, for these reasons, an excellent tree for street planting.

Growing Chrysanthemums.

Robert Blackwood, Lake Geneva,
at Annual Convention.

Chrysanthemums have been grown in this country for over one hundred years, and though each year sees them gaining in popularity, they are not receiving the interest these beautiful flowers deserve. The types are so different and the forms and colors so varied that they cannot but please even the most critical of flower lovers. The most distinct and most grown types are the large flowering, the single, the anemone and the pompon. All are of easy culture and while they are seen at their best in green houses, even the best varieties of any of these types can be grown to near exhibition quality in cold frames. Everybody cannot have a greenhouse, but every flower loving member should have some cold frames and on this method of growing I will start. Frames should be of wood 18" high at the back and 12" high in front and made to fit three or four sash 3' wide and 6' long. If 2" x 4" posts 3' above ground are put in at the outside corners the frame can easily be raised at any time during the growing season by adding boards to fill up underneath. The plants that have given you satisfaction and that you intend growing another year should be cut down to the soil after flowering, taken out of the pots, some of the old soil removed and planted close together in the frame. Give them a thorough watering and make sure they are properly labeled with strong labels. Cover them over with dry leaves and put on the sash. Bank up the frame with leaves, straw or manure and

cover over the sash with sacks or such like covering. If some air is given on warm days during winter that should be all that is necessary to carry them over winter nicely. In spring when danger of hard frost is past the leaves and other covering should be removed, but be careful to cover over the sash on occasional cold nights. Pretty soon the plants will show growth and then is the time to select and cut off rooted suckers and put them into small pots or plant in the frame in rows 3" apart and 6" between the rows, adding a little sand to the roots while planting. In four or five weeks they will have made strong roots and should be transferred to 4" pots using a fairly rich soil composed of say five parts fibrous sod with one part well rotted cow manure added. This is best prepared the previous fall, but any good soil with some bone meal added will grow nice plants. When the roots reach the sides of the pots and before they are potbound they should be potted into their flowering pots and 6" is a nice size. The pots can then be plunged to their rims in the frame if some stones or broken pots are put under the pots for drainage and do not overcrowd. When the plants are over 3" high their tops should be pinched off to encourage side growths and every time the side growths are 3" long the tops should be pinched off until the 1st of September, when they are allowed to grow. From the first of June until the middle of September the sash can be kept off entirely and after that plenty of air should be given when the temperature is over 45°. The cooler they are grown the more cold they will stand. If by chance a hard night's frost catches them

uncovered, cover over the sash the first thing in the morning to keep the sun out and let them thaw out in the dark in this way and a few degrees of frost wont hurt these cool grown plants even when in full flower. Give them plenty of water at all times and syringing on sunny forenoons during the summer is beneficial. Keep off green and black fly by dusting with tobacco dust or by spraying with one of the advertised insecticides. Chrysanthemums are little troubled with diseases, but should a little mildew appear on the plants a dusting of sulphur will check it. By growing early and late varieties you can have flowering plants from the first of October until into December for your home, and for your many friends, for with a surplus of such plants you will have many friends.

Out door chrysanthemums are old time favorites and who does not remember Mother's or Grand mother's pompons. They are very hardy and after flowering a covering of branches and leaves will put them through an ordinary winter, but the better way is to lift them after flowering and carry them over winter in frames as recommended for frame growing. The roots can then be divided and planted out in spring in good soil and other than cultivating and watering in very dry weather, they will require little attention. During the growing season a mulching of well rotted stable manure will help retain the moisture and strengthen the growth. When danger of frost comes a covering of cheesecloth or keep off frost and sun will prolong their flowering season. At this time, too, a few plants put in pots will make very fine house plants.

The growing of chrysanthemums in green houses is too big a subject to do justice to in such a short paper, so I will touch on it very briefly. Cuttings are rooted in sand in a cool house from February till April, potted into 2 inch pots when, rooted next to 4" pots and then to their flowering pots or to the bench. Large flowering varieties are grown to single stems by keeping a leader and pinching off all other growths. They are tied to stakes and often attain the height of 8' with flowers up to 10" in diameter. The selection of buds for exhibition blooms can only be acquired by studying the varieties individually which makes growing new varieties uncertain to even an experienced grower. To explain just what I mean. These large flowering varieties grown to single stems will, during June, form a flower bud which if selected would, as a general rule, amount to nothing but rather seems nature's way of stopping the plant to encourage side growth for at this time several side growths appear. One of these growths is selected as a leader and the others removed. In the same way a flower bud will appear early in August, perhaps two in September and the last or terminal bud late in September or early October. Now in order to produce the largest and best flowers we must know which one of these buds in the different varieties to choose. Let us take for example that fine variety, "Beatrice May." On an early August bud this produces an enormous pure white flower. On the next bud it is not so large and has a light shade of pink color, while on the terminal bud it is much smaller and is of a decided pink color. To take the wrong bud on

some varieties will mean a deformed flower or a flower with an open center. There are of course many fine varieties that come good from any bud and these the beginner should grow first. As cool as possible over 45 degrees is the best temperature. Bush plants in greenhouses are pinched and grown same as in frame culture and by feeding and extra care specimen plants have been grown 16' in diameter and carrying as many as 3,000 flowers. Although they are very easily grown, nothing will show the good results of a little extra care quicker than chrysanthemums.

For Frames; Large Flowered.

Yellow: Comoleta, Cheltoni, Golden age.

White: Early Snow, Wm. Turner, Lady Lydia.

Pink: Pacific Supreme, Well's Lake Pink, Dr. Enguhard.

Red: The Bard, Black Hawk, Harvard.

Bronze: Greystone, Brutus.

Single

Yellow: Little Barbee, Golden Mensa.

White: Anna, Mensa.

Pink: Stanley Ven, Cosmos.

Red: Ceddie Mason, Minnesota.

Bronze: Dorothy Dann.

Anemone.

Yellow: Yellow Garza, Mrs. F. Kuehne.

White: Garza, Chas. L. Hutchinson.

Pink: Ada Sweet, Miss Katherine Simmons.

Pompon.

Yellow: Zenobia, Golden Climax, Klondyke.

White: Diana, Lulu, Elva.

Pink: Lillian Doty, Minta, Fairy Queen.

Red: Black Douglas, Viola.

Bronze: Skibo, Princeton.

Yellow: Carrie, Cranfordia, Horace Martin.

White: Carpet of Snow, Well's Masse, Dorothy.

Pink: Cranford Pink, Normandie, Marie Masse.

Aster Type, for Out Doors.

Red: Goascher's Crimson, Crimson Pride, Chas. Jolly.

Bronze: A. Barham.

A Home Made Sprayer.

Mr. Christian Saabye, who lives at Detroit Harbor, which is the principal city of Washington Island, which is a part of Door Co., is a progressive fruit grower and submits the following for the benefit of the smaller grower who does not feel able to pay three hundred dollars for a power outfit.

"I see by the February number of Wisconsin Horticulture one member wants to know about a power sprayer. Now I made one myself out of a 1½ H. P. engine, a well pump jack, a good hand power spray pump and a home made tank all mounted on a low truck and it works fine. I run the jack with a belt and belt shifter. This outfit will last well for years with little expense for repairs. Here is the expense:

Engine	-----	\$25 to \$35
Tank	-----	10 to 15
Pump	-----	12 to 15
Jack	-----	3 to 4
Hose, belt, etc.	----	5 to 6
Belt shifter	-----	2 to 3
	-----	—
Total	-----	57 78

According to the 1910 census, New York fruit products are worth nearly \$25,000,000.

It will keep Wisconsin growers going some to catch up with New York. Still it can be done.

A Delightful Story About Flowers and Friends Entitled, "The West Allis Garden Club."

The West Allis Garden Club is quite young, being only ten months old. It was organized in February, 1916, by a number of enthusiastic gardeners, who for some years had exchanged plants and experiences with both pleasure and profit.

They finally decided that a more formal organization with regular meetings and more members, would be of advantage to themselves and the community. We are not burdened with officers, having only a President and Secretary. And just one strictly abided by rule for membership; no one is admitted to this club who is not willing to work in a garden.

When we asked to be admitted to the W. S. H. S. Mr. Cranfield said he hoped we had no dead ones in our club. We can proudly say there isn't one.

The club was organized for mutual help and pleasure and the desire to interest people in having a garden, especially the old fashioned garden that our grandmothers used to have, one that edged the walks, nestled against the house, strayed off into the row of apple and plum trees, with grape vines growing on the dividing fence, where there was a strawberry bed, some currant and raspberry bushes, where lilac and mock oranges, peonies, phlox, narcissus, daffodils, and tulips, roses, tiger lilies, sweet arcadia and June pinks and countless other sweet flowers bloomed in a riot of color, from spring until fall; a delightful spot to wander round in; something good to eat nearly all the time and always beautiful.

The garden one remembers as long as life lasts. That is the kind of garden we are trying to have ourselves and induce others to have.

But if they feel that is too much of an undertaking, why have some kind of a garden, even if it is only a porch or window box. Dig in the ground and learn what a wonderful thing it is to watch things grow.

We are especially interested in the growing of perennials, for



Hepatica tribola: plentiful in Wisconsin woods in April.

while none of us would give up the annuals, there is so much satisfaction in a plant that comes up year after year. It makes one feel as though they had something to stay for in that one particular spot. That is something to be desired, a permanent home. And if you have planted a garden with trees, shrubs, fruit and flowers you certainly do not care to leave it.

So the members of this club are trying to make their gardens beautiful, for a lovely garden is as catching as the measles. Some

one else is going to have one too. When we see some one trying to start a garden we try to help them, not only with advice, but with some of our surplus plants even though they are not members, we know they will soon want to join us. The exchanging of plants is one of the pleasant things about our club.

We meet on alternate Wednesdays at the home of some one of our members, some times having a regular program with papers, etc., at others just taking up the problems that come daily to all amateur gardeners, in looking at the garden of the member at whose home the meeting is being held, praising, criticising and giving advice as to the best methods of planting and taking care of the different plants.

And when an epidemic of cut worms, rose slugs or plant lice descend upon us we are prompt in telling our favorite methods of getting rid of these undesirable garden pests. To illustrate—my own particular method of getting rid of the green aphid is really a preventive. I cover the ground thickly with strong tobacco around the rose bushes and am almost never troubled, while a spray of paris green the same strength as used for potatoes just before the leaves unfold, rids the bushes of slugs.

When we have papers, they must be the writer's own experience in raising those particular plants and shrubs, not something she has read. We do certainly read everything we can that will help us and try a good many of the suggestions and find many of them very helpful. But we have learned also not to be too credulous, as I was, for instance, when I read in a garden magazine that a good thick mulch was beneficial

to the Yucca and Dianthus. I tried it—result—no Yucca, no Dianthus.

We have visited some of the nurseries in the vicinity of Milwaukee, as a Club making selections of plants and shrubs while in bloom, even taking some of them home with us, safely transplanting them while in full bloom. We were quite sure we got what we wanted. We are also transplanting some of the native plants and shrubs and urging others to do the same.

We are trying to foster a spirit of civic pride, to induce people to mow the weeds on vacant lots, to beautify the school grounds. We are hoping to have a public meeting this winter with a good, live speaker from the W. S. H. S. to stir up enthusiasm. We are each and every one doing all we can to boost the State Fair, especially the Horticultural part of it. We are in hopes that many more Garden Clubs will be formed throughout the State this winter. We are in hopes that the Fair Board will allow us to exhibit as Garden Clubs. We want to fill that small building they call a Horticultural Hall, so full that they will be obliged to give us a larger building, for if they don't, they won't be able to get inside.

We are really doing nothing spectacular in our Garden Club. We are just a few people who are seeing—and learning to see more of the beauties of nature; enjoying life as we believe it was planned to enjoy it—with the trees, birds and flowers in our gardens.

Mrs. C. M. Strong.

The Home Orchard.

Several inquiries have been received since March 1st from people who want to plant a home orchard; varieties, where to buy trees, planting, etc., and every one a hurry up call. If these good people had considered this subject a few weeks earlier it would have been to their advantage.

The fall or early winter is the best time to order nursery stock as the buyer is then reasonably certain to get what he orders. Later orders, received when the



Blood Root, *Sanguinaria Canadensis*. Just a little later than Hepatica.

supply of the standard sorts is exhausted, are apt to be liberally spotted with substitutions.

April, however, is not altogether too late to order trees and the following suggestions are offered for a farm orchard of 24 trees, two trees of each variety:

Orchard No. 1.

<i>Apples</i>	Tolman
Lusk Queen	
Duchess	<i>Crabs</i>
Wealthy	Hyslop
McIntosh	Martha
Northwestern	<i>Plums</i>
Windsor	Surprise
Scott	De Soto

Orchard No. 2.

<i>Apples</i>	<i>Crabs</i>
2 Duchess	2 Hyslop
4 Wealthy	<i>Plums</i>
4 Northwestern	2 Hawkeye
4 Windsor	2 De Soto
2 Tolman	2 Sapa

For the north central counties substitute Malinda for Windsor and Patten Greening for Northwestern.

Plant the trees 25 feet apart on well drained soil that has been fitted as well as for a crop of corn or potatoes and cultivate as often and as thoroughly as for either of these crops.

Potatoes, beans or sweet corn may be grown between the tree rows for the first four or five years if the space between the trees is kept free from grass and weeds. Don't fail to cut back the tops severely at planting time.

Double Planting.

A member asks if it is advisable to plant plum trees between apple trees spaced 25 feet apart.

Ans: It would certainly be very unwise to do this. The plum trees would scarcely come to bearing age before the trees would crowd so badly as to prevent effective cultivation or spraying and in ten years or less neither apple nor plum would be worth cultivating or spraying.

A Question About Pruning.

Q. How much should the previous season's growth be cut back on apple trees which are two and three years planted?

Ans. Do not **cut back** at all unless in the case of too ambitious branches which have reached out or up so far as to injure the shape or the balance of the top. Shape the top of the tree by thinning, but do little heading back unless you want a dumpy tree.

See that all decaying vegetables in the cellar are removed.

Spray Pumps.

Dr. E. D. Ball, State Entomologist

Spray pumps may be roughly divided into four groups, according to size and capacity.

Bucket Pumps.

The first group consists of bucket pumps, knapsack sprayers, compressed air sprayers and similar small outfits ranging in cost from about four dollars to twenty dollars.

The small brass bucket type of pump, with a long lever, will give a fairly good pressure, and by putting on a much longer hose than that ordinarily furnished can be used for a large number of small jobs in town lots and small truck patches with good success and at a minimum cost of four to eight dollars.

The knapsack outfits, compressed air sprayers and that class are worth their cost where there is a large amount of truck which requires nothing more than mere sprinkling with poison or a fungicide and where it would be difficult to handle a wheeled outfit. They cost as much, however, as a well equipped barrel outfit and are incapable of furnishing any adequate pressure for serious spraying work, so they should be used only where all that is required of them is low pressure work.

Barrel Pumps.

The second class consists of barrel outfits which range in price for the pump alone from about six to fifteen dollars. Their value increases much more rapidly than the price, as they increase in weight and size of air chamber. The lighter ones, with small sized air chambers and simple cylinders do fairly good work when new, but as the inside

of the cylinder wears it is impossible to tighten them up and they then begin to leak and lose pressure. The heavier types, with long, heavy handles, large air chambers and cylinders with stuffing boxes around the piston, are very efficient machines and within the limits of their capacity will do just as good work as the big power outfits. One of these heavy barrel sprayers



A very good Barrel pump.

equipped with 30 feet of $\frac{1}{2}$ inch hose, a bamboo spray pole, a cut-off, an angle and a heavy nozzle, will handle 2 to 4 acres of orchard in first class shape, the total cost of the outfit amounting to about twenty dollars. By doubling the length of the hose, this may be used for spraying a small number of tall trees.

Double Acting Outfits.

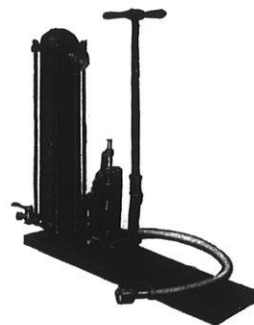
Double acting pumps range in price from 30 to 60 dollars. The heavier they are, the larger the air chamber, and the heavier and longer the handle, the more pressure they will deliver. By using a long suction hose, three or four barrels may be carried at one time and used alternately.

Contrary to general supposi-

tion, these pumps are capable of carrying only one lead of hose and maintaining a high pressure, where efficient nozzles are used. Such an outfit will care for 6 or 8 acres of orchard and either this outfit or the larger barrel pumps may be equipped with a special device for spraying a number of rows of truck crops at one time.

The Gasoline Power Outfit.

This outfit involves an expenditure of 250 to 350 dollars when equipped with tank, truck and equipment, complete. For large orchards, cities or communities where there is considerable spraying, one of these outfits is a good investment. Oftentimes the same values can be obtained by using a gasoline engine in service for other work at other times but connecting to the double acting pump during the spraying season and thus materially reducing the cost of the equipment. The gasoline outfits are capable of handling only two leads of hose, where efficient nozzles are used, and should not be equipped with more. Anyone contemplating the purchase of one of these large outfits



A double acting pump. Made by the Deming Pump Co.

should write for special information and details of equipment.

What to Buy.

In general, buy the smallest type of equipment that will do

your work, but buy the best grade of which ever type is purchased and remember that it requires skill and knowledge to do thorough spraying with any type of outfit. More failure has resulted from wrong methods and lack of thoroughness in application—ten times over—than from inefficiency of poisons or of the equipment. The finest work that the writer ever did in spraying was with an old barrel outfit dug out of a scrap heap and re-packed, while some of the poorest work ever witnessed was done by power outfits in the hands of the hired men.

Dandelions.

A member asks the old, old question, old, yet ever new, how to rid a lawn of dandelions and weeds. If weeds thrive on a lawn it is evidence there is too little grass. The reason there is too little grass is because it has been starved out.

There are two practical means to remedy the difficulty; top-dress the lawn, spreading good loam mixed with well decayed manure over the whole surface from one to two inches deep. Any grass that may be left will push thru this top-dressing and more seed, the more the better, should be sowed and raked in.

The other plan is to completely renovate by spading deeply, thoroly pulverizing the soil and adding plenty of fine manure. One or two pounds of bone-meal to each square yard will pay.

While ordinary weeds can be driven out by increasing the number of grass plants, dandelions will not submit so readily to this treatment. About the only practical remedy is to pull them. Rich soil and thick seeding of grass will tend to keep down the seedlings.

Apples and Plums.

Q. 1. Is it advisable to plant fruit trees in an old orchard if the sod is plowed and kept cultivated?

Ans. Some other place where fruit trees have not been growing would be better, but if the newly set trees are well cared for good results may be expected.

2. Are one-year apple trees called whips better for planting than the two-year branched size?

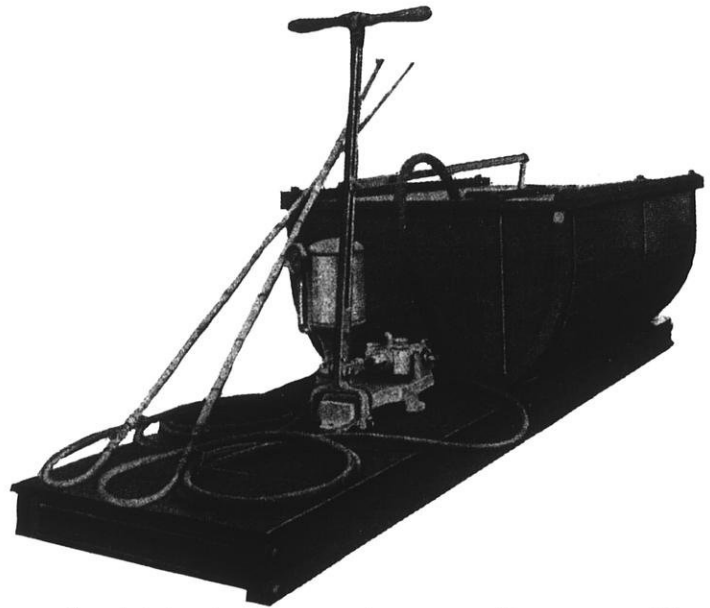
even if we have to pay more for it.

3. How much should native plum trees be cut back at planting time?

Ans. Take off most of the top. First cut out part of the branches, usually about one-half of them, and cut back the remainder to mere stubs.

4. How do the Hansen hybrid plums do in Wisconsin; are they hardier than the Americanas?

Ans. The Hansen hybrids,



Almost, but not quite, as good as a gasoline power outfit.

Ans. A few years ago there was much favorable sentiment created for the one-year tree, largely by nurserymen, but now practically every one who has given both kinds a fair trial is ready to testify in favor of the two-year tree. The root system of the one-year tree is not sufficiently developed to withstand shipment and usually a whole winter's drying; it has too few well developed roots to stand this treatment. Again, there is practically one year lost in the growth of the tree; let the nurserymen grow the tree to planting size

Hanska, Sapa, Oyata and others, are certainly hardy but cannot excel the Americanas such as De Soto and Hawkeye, etc. in that respect. The Hansen group **may** excel the natives in quality and productiveness but that is yet to be proven.

Don't plant more than enough apples to supply home use, unless they can be well taken care of. They are not a profitable crop on the average farm unless some attention is given them.

This from Minnesota, the greatest farm orchard state in the country!

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Rabbits Receive Recognition.

The big Fish and Game Bill, No. 46, S., now before the legis-
lature, which constitutes a com-
plete revision of the existing
game laws, contains one provi-
sion which is of interest to every
member of this Society. No mat-
ter whether you have one fruit
tree or a thousand or for that
matter none at all you are af-
fected by this bill.

The item referred to provides a
closed season for rabbits from
Feb. 1st to Nov. 1st, and limits

the "Bag" or the number that
may be killed to five a day.

This affords most excellent pro-
tection for rabbits and at the rate
of increase of this pest we are apt
to have, before this law can be re-
pealed two years hence, a condi-
tion similar to that in Australia.

Crows, English sparrows, black-
birds and hawks are outlawed
while the rabbit is given better
protection than any other game
except deer and the rabbits cause
more damage every year than
crows, blackbirds and hawks com-
bined.

For ten years past the editor
has steadfastly opposed legisla-
tion designed to afford protection
to rabbits, but without any sup-
port whatever but there seems to
be a little more interest in the
subject at the present time. The
gardeners of Lake Geneva and
the fruit growers associations of
Door Co. have sent protests to
the legislature.

Now, if every one who reads
this who has suffered injury by
rabbits will write to his assembly-
man and to his senator protesting
against this measure, it will have
some effect.

The public hearing on the bill
will be over before this appears
in print, but it is unlikely that
the bill will come to a vote in
either house for several days af-
ter the hearing. The editor is in-
terested in reports of injury by
rabbits, but he is not a law maker.
Go after your member and go
hard.

Save the Maples!

The Cottony Maple Scale,
which under ordinary conditions
is not considered to be a serious
pest, has been increasing at an
alarming rate in the whole
southeastern section of Wisconsin

for several years. The dead and
dying maple trees all over this
section are a mute testimony of
the destructive power of this pest
when conditions are favorable.

This situation has become so
critical that it will require prompt
and efficient measures to save the
remainder of the maple trees.
There is nothing difficult in the
destruction of this insect. The
reason it has not been checked
long ago is mainly on account of
lack of proper equipment. Ord-
inary spraying outfits will not
reach the tall trees and in many
places even these outfits are not
at hand.

A number of cities in this sec-
tion are purchasing the proper
equipment,—in most cases power
outfits equipped with long spray
poles and high towers,—and are
going seriously to work to clean
up their trees. With such an
equipment it will cost only a dol-
lar or two per tree and it is prob-
able that one spraying will pro-
tect them for a number of years
and that even in extreme cases,
two thorough sprayings will clean
up the pest.

It is to be hoped that every one
of the larger barrel pumps and
double acting outfits, as well as
the power sprayers in this area
will be furnished with the neces-
sary equipment and put to work,
as the time is short. The only
really successful time to handle
this insect is before the leaves
appear in the spring, during
which time kerosene emulsion of
15 or even 20 per cent strength,
or a standard miscible oil like
"Scalecide" or its relatives, may
be used.

Among the best perennials to grow
for cut flowers are gaillardias, peonies,
Shasta daisies, coreopsis, Giant daisies,
aquilegias, especially the Rocky Moun-
tain species, delphiniums and iris.

A. J. Philips, Pioneer.

A. J. Philips of West Salem, honorary life member of this Society, secretary from 1892 to 1898, and veteran horticulturist died at a La Crosse hospital March 22nd, after an illness of three weeks.

While A. J. Philips was not a charter member, his membership dating from 1874, he was probably known to more people in the state than any other member of our society. He was a pioneer, "one who goes before, as into the wilderness, preparing the way for others to follow." "A. J." was one of that self sacrificing band of pioneers in horticulture who literally went before into the wilderness preparing the way that we of another generation are following.

The labors of these men in the early days meant sure financial loss and they knew it. None of them expected nor dared hope that apple growing much less the growing of cherries would ever be of commercial importance in this state nor did they expect that their own particular orchards would be of commercial importance. They labored for the home, labored without expectation of financial reward, for pure love of the game.

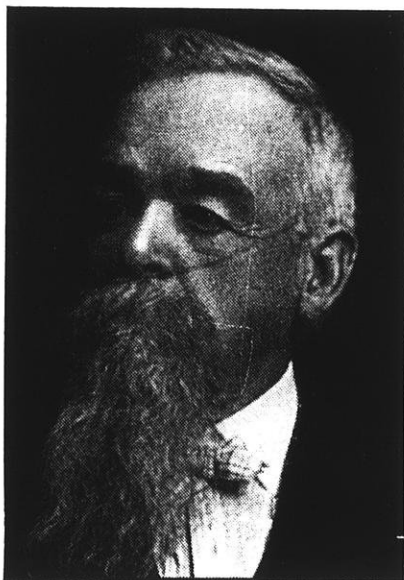
This was strikingly true of A. J. Philips. The "old orchard on the hill white with bloom" lured him back from Dakota, where he had gone to raise sheep on the prairie; the trees he had planted and reared were a part of him. This old orchard which never yielded a car load of apples of one variety, tells the story of his life plainer than words can tell it. It might easily have been all of Wealthy, Northwestern, etc., tried and profitable kinds, but instead these gave way to seedlings, the new, the untried,

the golden promise, the lure of the unknown. And the orchard yielded him *great profit*, altho not in dollars.

The following account of his life is from the La Crosse Tribune of March 23d.

Adoniram Judson Philips was born in Chester County, Pa., Oct. 17, 1834, the son of a Baptist minister.

He came west, settling in Wauertown, Wis., and Big Creek, near Sparta, in 1855 and then to



A. J. PHILIPS.

the location in this county which he made his home for so many years.

In 1862 he was married. Mr. and Mrs. Philips raised a family of whom Charles of Savanna, Ill.; George and Dr. W. J., both of La Crosse, and Mrs. Wm. Storandt of Burr Oak and Mrs. George Shane of West Salem, still survive with their mother.

Among the "Old Settlers" of this county few have been so widely known throughout Wisconsin and Minnesota as Mr. Philips, stockman, agriculturist, horticulturist, breeder of splen-

did dairy stock and grafter of fruits, lecturer, writer, humanitarian and advocate of every righteous reform, charter member of the Wisconsin Horticultural Society and the La Crosse County Agricultural, Horticultural and Dairy association.

He was an unflinching officer of the Humane society in this county for many years and, despite the abuse that his action would incur, he never faltered in doing an officer's plain duty when he saw a case warranting it.

He was a life member of the Minnesota Horticultural society and lectured far and wide in that state as well as in his own and was a frequent contributor to the journals of both states for many years.

Growing organic troubles have been developing for a long time and reached an acute stage a few weeks ago and he was removed to a La Crosse hospital for treatment and nursing that he might have what measure of comfort it was possible to secure under the circumstances, there being little hope for any possible recovery from complications common enough to men of advanced age and almost certain in fatality.

There in the hospital at La Crosse, at the ripe age of eighty-three, the life one of incessant activity, he passed from here to the last frontier, and passing he leaves the once great circle of the "Pioneers" visibly contracted and reminds us that it will be a short time now until it must have disappeared altogether.

An evergreen windbreak is just as effective as a board fence and much more pleasant to look at.

It is well to wash the foliage of palms and ferns occasionally to keep dust and insects off.

Sowing Seeds Indoors.

Prof. J. G. Moore.

While the coal or gas heated house present some difficulties in starting plants indoors, it should be possible, if the more favorable conditions are selected, to secure vegetables somewhat earlier by this method. The seeds should be started in shallow boxes or pans, the boxes being preferable as they permit drainage and the plants are less likely to suffer from overwatering. The seed should preferably be sown in rows. It should be sown thin and as soon as possible after the plants are up they should be thinned or transplanted. Watering should occur at as long intervals as possible without allowing the plants to wilt. The lighter color of the surface soil is a good indicator of the need of water if watering has been properly done and there are facilities for drainage. Enough water should be applied at each application to thoroughly soak the soil. Frequent and insufficient waterings encourage unfavorable conditions.

When the plants begin to develop their first true leaves, transplant to shallow boxes or pots. Where pots are available, the plants can be handled somewhat more successfully than when set in boxes because from pots they can be repotted or set in the garden without any disturbance of the root system and with less likelihood of being checked. It is desirable to avoid as far as possible checking of the growth of the plant in producing early vegetables.

The seeds of certain vegetables are best sown in pots or dirt bands from which they may set in the garden without root disturbance. These are the vegetables which are transplanted with diffi-

culty. The vegetables most often handled by this method are cucumbers, squash and melons, but it is also possible to handle beans, corn and other garden crops in this manner. Sow the seed somewhat thicker than you desire the plants and thin to one or more plants, depending upon the size of the pot and the kind of plants.

All indoor or hotbed grown plants should be "hardened-off" before setting in the garden. This means accustoming the plant gradually to the conditions in which it will be placed when set out. On bright, warm days, ventilate or set the plants out of doors in the sun for a short time. Gradually increase the length of time the plants are exposed without injury until it is possible to leave them out unprotected over night. They are then ready for planting in the garden.

Top Grafting.

By top-grafting or top-working a worthless seedling or an undesirable variety may be changed to any desired variety. A short description of this method of making new trees from old was printed on p. 83 of the February number and what follows may be considered as supplementary to that.

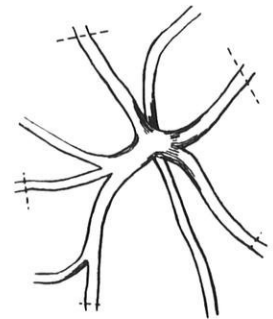
Cions used for any kind of grafting are best cut while the trees from which they are taken are dormant, before there is any indication of growth. The books tell us that the cions **must** be taken during winter before the sap starts and stored in a cool place until the buds have started on the tree to be grafted. This is good advice, and if the cions can be kept from shriveling the top-grafting may be done any time, even when the trees are in

full leaf. It is best to cut the cions early but it can still be done, April 1st. The writer has had excellent success in cutting the cions and immediately grafting them.



The way to make a cleft graft.

The one big mistake usually made by beginners is in grafting the whole top of the tree at one operation. A very small tree, a one-year-old whip planted one year with but little top growth might be safely treated in that way, but any older tree is quite apt to be killed outright by cutting off all the main branches. Graft one-half the branches leaving the balance to support the tree and a year from now if the grafts you set this spring "take," remove the remaining branches. Select the branches to be grafted so



A birds-eye view of an apple tree. The branches indicated by dotted lines to be grafted.

as to have a well balanced top. If you were a bird, or an aviator, you might make your selection of

branches as shown in the drawing.

Don't use long cions for top grafting, cut them to two, or at most three, buds each. Cover the tips and all cut surfaces with grafting wax.

The grafting wax sold by seedsmen and other dealers is usually worthless; make your own as follows:

Melt together 4 parts beeswax, 2 parts rosin and 1 part tallow. Pour the melted mixture into a pail of cold water, grease your hands and when cool enough to handle, knead and pull as in making molasses candy. Roll into sticks and wrap in waxed paper. This is good, old fashioned, reliable grafting wax that will keep indefinitely and when you put it on a tree will "stay put."

Tomato and Cabbage.

I just attended the institute at Manitowoc. Am an amateur in gardening, but have large lot here we would like to get some benefit from.

I think Mr. Rasmussen stated he would plant tomato seed *now*, to be transplanted several times and planted in garden June 1st. When would you sow seed for *early* cabbage plants, *late* cabbage plants? Would you transplant these plants and when plant them in garden. Please recommend some book or paper containing practical knowledge on gardening and oblige

M. K. J., Manitowoc Co.

Ans by N. A. Rasmussen.

We sow tomato seed from March 1 to the 20th, transplant twice and set out in the open about June 1.

The first early cabbage can be sown about March 20 and set out of doors about May 1. A little

time can be gained by transplanting in cold frames before setting in the open.

Late cabbage should be sown in the open ground about the middle of May and set in the field July 1 to 10.

"Wisconsin Horticulture" is the most practical paper on gardening in Wisconsin altho it does not cover as much as "Market Growers Journal," which, however, is a southern paper. The former may be obtained by writing Fred Cranefield, Sec'y Wis. Hort. Soc., Madison, and the latter addressing Market Growers Journal, Louisville, Ky.

Overhead Watering and Other Items of Interest.

I would like some information in regard to your irrigation plant. How deep is your well, and how many leads of pipe run from the tank?

It has been my idea that if I wished to irrigate my twenty acre fruit and vegetable farm I would have to drill a well on the highest part and install some sort of a reservoir and pump with a gasoline engine. I would run the water in ditches between the rows directly from the reservoir. I do not see how I could put ditches between my strawberry rows as they would be mulched between the rows and could not remove the mulch to make ditches during the picking season.

I see in the report that you have a tank that holds about 600 barrels. What kind of a tank is it? What is the size of the pipes that you run underground, and what material?

Do you keep both horses and an auto to deliver with? Which is the best and which is the cheapest? I am one mile from my market and often wonder if it would pay me to own an auto delivery

as I have to have horses anyway to work the soil.

B. F. G., Iowa.

Ans. by N. A. R.

My well is 230 feet deep, water raising to about 40 ft. of surface. We use 30 bl. tank, not 600 bbl., on a 30 ft. tower. The well is located on highest point of farm. We use a common deep well pump and gasoline engine for pumping, pump throws 1 1/4 in. stream.

This will take care of 2 leads of 1 in. pipe. Run pipes on top of ground using sprinklers such as are commonly used on lawns. We use these for both raspberries and strawberries, also for onions and other vegetables.

We have tried running water between rows, but without success. We pump and water thru-out the day regardless of heat and sunshine. We find no advantage in allowing water to stand and warm, in fact we prefer it directly from the well as it seems to control more effectively the red spider and strawberry leaf-roller.

In regard to auto truck will say we find we can give far better service and with less expense than with horses.

STRAWBERRY PLANTS

100,000 choice Strawberry Plants. Also Red and Black Raspberry. Asparagus and Rhubarb Roots.

These plants will not be dug more than twenty-four hours before shipping. All stock guaranteed. Hot bed plants in season. Write for prices.

Rasmussen's Fruit Farm
Oshkosh, Wisconsin

Soluble Sulphur Compound.

A Walworth county member writes: "Will you kindly give me your opinion whether lime sulphur in liquid form is better than the dry form as put up by the — Company?"

If the dry form will do what they claim, it would be much easier for one with a few trees than to use the liquid form.

Prof. Fracker of the State Dept. of Entomology, answers as follows:

This compound is used for two purposes,—one in combatting scale insects, especially San Jose Scale, and the other as a fungicide against apple scab and similar diseases. For the first purpose it is rather satisfactory, experiments indicating that it is about 15% to 25% less efficient than lime-sulphur. This is based on U. S. Department of Agriculture bulletin 278, pages 36 and 37, in which the soluble sulphur compound is called "commercial" sodium sulphide for the reason that the U. S. Department of Agriculture never publishes the name of commercial products. The average results of the experiments reported in this bulletin show an increase of fruit free from scale or lightly infested from 60% in the unsprayed plots to 94% in those sprayed with the soluble sulphur compound and 98% when sprayed with lime sulphur solution.

Soluble sulphur compound, however, is not satisfactory as a summer fungicide for the fungicide at this time is universally applied with an arsenical poison for codling moth and other chewing insects. The sulphur compound forms sodium arsenite when used in connection with an arsenical which is soluble and burns the foliage. Either Bordeaux mix-

ture or lime-sulphur is superior for this purpose.

These results, I believe, agree with those published by the manufacturers of the dry compound in the bulletins which they have published, which report the result of the investigations on their part.

I do not understand your statement in regard to the increased convenience of the dry material. In both cases it is simply necessary to mix the product with water, no heating being necessary.

S. B. Fracker,
Assistant Entomologist.

The Culture of Pansies.

A member asks: What things are essential to success in growing pansies?

An expert, one who has had literally a life-time experience, answers as follows:

"It is a common notion that pansies require a shady location, and they are often planted close up under trees or on the north side of buildings where there is little or no sunshine. Pansies delight in a cool moist climate, but must have a reasonable amount of light and sunshine."

"The main points essential to success are, a reasonably rich soil, and *lots of cultivation*. Do not plant on a decided south slope except for early spring flowers, nor so close up to the exposed south side of a building that the heat reflected from the building will cook the plants. Pansies, and in fact but few flowering plants will do well planted so close up to trees that the trees rob them of fertility and moisture. An ideal location would be where they would receive all the morning sun but shaded in the afternoon. For long continued flowering, keep blossoms removed, and again, *cultivate or stir the soil often.*"

W. A. Toole.

The Hawks Nursery Company

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Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

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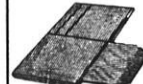


Fig. 1



Fig. 2



Fig. 3

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As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

More gardens will be started this year than ever before. Many will be expensive luxuries, while many well planned and well cared for will cut down living expenses. Every home should have its garden.



Arsenate of Lead
 Paste or Powder
 Lime Sulphur Solution

Recognized as standard in principal fruit growing sections of the country. Convenient source of supply for Wisconsin fruit growers. Sulphate of Nicotine 40% and free Nicotine 40%. For further information write

The Grasselli Chemical Co.
 Established 1839
 Main Office, Cleveland, Ohio
 Milwaukee, Wisconsin

It's a Waste of Time Talking to Ignorant People.

A good and loyal member recently ordered a barrel of apples from his grocer and by way of conversation said to the grocer: "Why is it that we are never offered Wisconsin apples? You are always telling us about New York apples and western apples." His reply was to this effect, "There aren't any Wisconsin apples, are there? I never heard of any anyway."

Hence the headline.

Culture of Ferns for Home Decoration.

James Livingstone.

The Milwaukee Florist Club has asked me to write a short article on the above subject for Wisconsin Horticulture.

I have been asked, hundreds of times, by friends, why their ferns don't grow and I can assure you it is a hard question to answer. At least, it is hard to give advice, there are so many adverse conditions to combat. Hot, dry atmosphere, gas, dust, poor soil, careless watering and a host of other things that are against the successful culture of house ferns.

The varieties of ferns adapted to house culture are very limited, and yet, I should say that any one who can grow a good Boston fern

McKAY NURSERY COMPANY
 PARDEEVILLE, WISCONSIN

Nursery Stock of Quality
 for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

would have fair success with some of the more tender varieties.

Study the nature of the plants, go to the woods and see them at home, examine the soil they are growing in and then imitate nature in your homes as far as possible. The proper soil for ferns is well rotted sod with plenty of leaf mold, enriched with well rotted manure and a liberal amount of sharp sand and charcoal. Don't sift the soil to make it fine, leave the sod in pieces the

(Continued on p. 127)

JEWELL MINNESOTA GROWN
Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Wind-break Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

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The Jewell Nursery Company
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"We have a Fine Lot of Plants for the Garden"

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J. E. MATHEWSON
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Quality Stock
 Strawberries
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WISCONSIN GROWN
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 Box 77, Janesville, Wis.

The Weakest Link.

Dr. E. D. Ball, State Entomologist

Just as a chain is no stronger than its weakest link, so any system of protection—whether it be against fire or flood, burglary or the depredation of insects—is no stronger than the weakest place in the system. A country might have every provision and requirement for war and yet if the roads were impassable, for example, it might be impossible to bring them together.

We see the same condition in attempted warfare on insects. Some serious pest suddenly appears, the entomologist is appealed to and directions are given, but some one thing necessary for success in the fight is lacking and the damage is done before it can be procured. Under Wisconsin conditions this one thing, more than any other, appears to be the lack of adequate spraying equipment in the different communities. Directions are sent out for spraying and a request comes back immediately for information as to *where* and *what* to procure in the way of a pump and by the time it is procured it is too late to do effective work.

is like a fire engine in a city,—of no value at all except in emergencies, but invaluable at such times and absolutely essential for protection. Present day spray pumps are well made and with the exception of easily replaceable parts will with reasonable care last for many years, so that while their first cost (for the larger sizes) is considerable, it is distributed over so long a time that it is practically negligible in the end and at the same time their need is so great on certain occasions that even if they were never used again they would abund-

antly repay the outlay. Instead of that, once a spray pump is purchased and a regular system of spraying established, it will be found that numerous losses which have occurred from year to year can, with the expenditure of a very few cents, be reduced to a minimum or entirely eliminated, in most cases many times repaying the cost of the equipment each year of its use.

One of the most effective shrubs in the garden or border in late autumn is the snowberry. Its large, well-grown clusters of snowy fruit are always attractive.

Test all field and garden seed now. It doesn't pay to plant dead seed. It costs little to make tests.

The following are good flowers for a fragrant garden: Sweet alyssum, mignonette, verbena, stock, heliotrope and nasturtium.

Grape fruit seeds plant thickly in a pot or pan of soil soon germinate, and the rather slow-growing stems make a pretty table decoration.

A LARGE STOCK OF

Apple, Cherry and Plum Trees, Grape Vines, Blackberry and Raspberry Plants, and Strawberry Plants

Both Everbearing and common varieties

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES.
All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices

Baraboo, Wis.

A Dozen Different Dahlias For A Dollar, Post-paid

All good popular varieties. A collection that will please you.
Strong "toes" or divisions. Order at once before you forget.
A dollar will do it.

WILLIAM TOOLE & SON

Garry-nee-Dule

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FRUIT DISTRICT

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THE KICKAPOO DEVELOPMENT COMPANY
GAYS MILLS, WISCONSIN



An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

Ferns for the Home.

(Continued from p. 125)

size of a walnut so that the whole mass, when well mixed, will have rather a rough appearance. I have even added pieces of broken bricks, or flower pots, to the compost.

Ferns require to be potted very firmly and in a compost mixed in this way will not get water logged. Next in importance to good soil is careful watering. The only safe guide in this is to tap the flower pot with the knuckles. If the plant needs water the flower pot will ring, if no water is required the pot will give forth a dull sound. If the plant needs water give it enough so that the water runs through the hole in the bottom of the pot.

When potting the plant put plenty of drainage over the hole in the bottom of the pot. Select one piece of broken flower pot large enough to cover the hole, and then lay other pieces overlapping each other until the bottom of the pot is completely covered, then finish off with a layer

of finer pieces to the depth of an inch. This will secure ample drainage and will keep the plant from becoming water logged.

A plant that is allowed to get water logged will soon turn yellow and die off. When the plant gets well rooted a little feeding will help to keep it in growing condition, and I know of nothing as good as Clay's fertilizer for this purpose. A little of this scattered dry over the surface of the soil, and watered it will work wonders with the plant. Half a teaspoonful to a plant in a six inch pot every two or three weeks will be sufficient to keep a well rooted plant in growing condition.

When the fern plant becomes infected with scale it should be sprayed with a solution of nicotine, according to directions given on the package. Some people make the mistake in thinking that the spores or seeds growing on the back of the fronds are scales. This is a grave mistake, and these should not be interfered with. Spraying with a weak solution of ivory soap will also help to keep the plant free

of scale and other injurious insects.

Keep the plants free from dust, and away from gas or other fumes. Give it plenty of pure air, plenty of light, without direct sunlight. Be careful about watering and feeding, and if your plants don't do well buy another and start all over again.

WANTED

Two Thousand Names of people who need a copy of the **Spray Supplement**, (March Wisconsin Horticulture.) Help spread the gospel of better fruit by sending to the Secretary names and addresses of friends and neighbors who are not but ought to be members of the Wisconsin State Horticultural Society.

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.



The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

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Lime Sulphur

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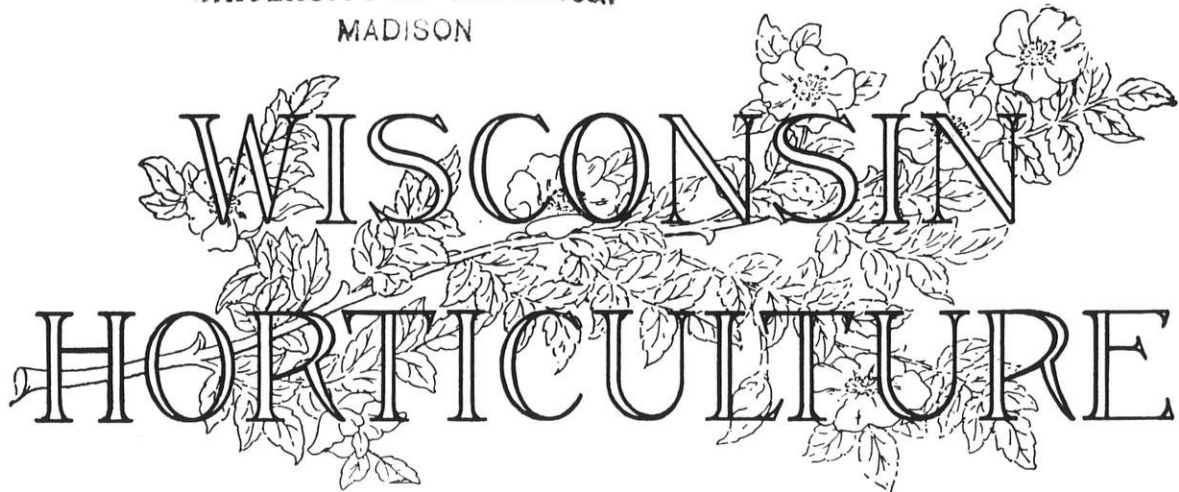
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WISCONSIN
HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

Volume VII

Madison, Wisconsin, April 17th, 1917

Special Edition

WAR EXTRA

WISCONSIN INVADED: AN ARMY OF MILLIONS LED
BY GENERALS APATHY, INDIFFERENCE, CONCEIT
AND BOMBAST OVERRUN OUR STATE AND
THREATEN OUR BASE OF SUPPLIES.

Wisconsin Horticulture

Published monthly by the
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FREDERIC CRANEFIELD, Editor.
Secretary W. S. H. S., Madison, Wis.

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consin, under the Act of March 3, 1879.

PROCLAMATION

Insomuch as our country is now engaged in a war with the central powers of Europe, the possible magnitude of which we must not underestimate, I feel it my duty to call the attention of the people of the state of Wisconsin to the sacrifices that we must make and the responsibilities that we must assume in order that we may fully co-operate with the national government in upholding the arms of our nation. Whatever disagreement there may have been about the necessity or advisability of engaging in the war is now a thing of the past. War is upon us and I call upon every citizen of the state of Wisconsin to aid in the preparations that must be made to meet every emergency and to enable our state to do its full share in the support of our government.

Military preparations must of necessity be controlled by the United States government. We shall be called upon to provide our quota of troops and I feel confident that Wisconsin's sons will respond to the call of the president of the United States willingly and promptly and with the same spirit of patriotism that has characterized our soldiers in the wars of former years.

Soldiers alone cannot carry on a war successfully. Battles cannot be won with empty commissaries. Troops must be equipped. Armies must be fed. No soldier can endure the hardships of a campaign unless he is properly nourished. It is with a view of awakening our civilian population to a full realization of their duty in the present situation, therefore, that I address this message to the people of Wisconsin.

The most important problem that confronts us now, and which must be met in no uncertain way, is to provide a supply of food. The high cost of living has been a source of complaint in our industrial centers for more than two years. The available stocks of food have been gradually depleted until we find ourselves practically without any surplus in our own country, and an absolute

shortage seems to exist all over Europe. The price of some commodities, because of this shortage, has risen so high as to place them out of reach of the masses of the people.

To add to the seriousness of the situation is the fact that the South American grain crop is a partial failure and that a vast acreage of wheat in our own country has been winter killed. In the Canadian northwest there exists a shortage of labor, which will materially reduce the acreage of wheat in that section. The fact that we shall enlist a large army of able-bodied young men and take them out of production, coupled with the further fact that large numbers of laboring men will be required in the factories that will produce the munitions and other supplies for our army, may produce a similar shortage of labor in our agricultural districts.

I regard this as a serious situation, particularly in view of the fact that we must feed an army in addition to our industrial population, and also provide food supplies to the people of Europe with whom we are upon friendly terms.

In view of the foregoing, it is perfectly apparent that the man who works with a hoe will be a patriot in the service of his country, and I urge all who are able to work to contribute their part in the production of food, to the end at least that none shall contribute less than is required for their own support. What the country will need most are these plain articles of food: meat, potatoes and cereals for bread.

I urge every farmer in the state of Wisconsin who has suitable land, to plant enough wheat to produce the flour necessary for his own use, and a surplus if possible. I urge that he plant sufficient acreage of corn and, if possible, increase his herd of swine, to produce pork for the market. I particularly urge that the acreage of potatoes be increased. Every farmer should plant enough of this vegetable for his own use, and wherever the soil is suitable he should make his potato field as large as he is able to cultivate.

I urge our farmers, as a matter of patriotic duty, to cultivate every foot of their soil; none of it is too poor to raise something. White navy beans and buckwheat will be in demand—in fact, anything that is food for man or beast will be a contribution to the pressing needs of our country.

Our farmers should require no greater inducement than the present high prices of all farm produce to encourage them in the cultivation of every foot of tillable soil. The fact that no large stocks of food will this

year be carried over is in itself an assurance that the price of farm produce will be high for another year, even if peace were immediately declared.

It is reported that in some sections there exists a shortage of seed, particularly potatoes. The department of agriculture of the state of Wisconsin stands ready to act as a clearing house in the matter of seed supply, and all who have a surplus of seed of any kind should so advise Mr. C. P. Norgord, commissioner of agriculture, Madison, Wis.; and all who are short of seed of any kind should address the same official, who stands ready with his department to co-operate with the farmers of the state to the fullest extent in the matter of securing suitable seeds to plant the crop.

In order that we may conserve labor for agriculture and the necessary industries I recommend that public work, so far as it is possible, be deferred until such a time as labor shall not be so urgently needed for these purposes as it is at present.

I wish to again impress upon the people of this state that the food situation is so serious that we will commit a moral wrong against our government if we in any way unnecessarily interfere with the production and successful harvesting of our agricultural products.

I ask that all bankers, business men, farmers, societies, agricultural associations, labor organizations and, so far as possible, the schools of the state, interest themselves in the matter of increasing our agricultural products.

I urge that the bankers of the state give aid in the form of loans, in reasonable sums, to farmers who may need assistance either in the purchase of seed or in the cultivation of crops.

I recommend to the people of the cities, towns and villages that they plant liberal crops of vegetables on the vacant property, in order that they may supply themselves and thereby be protected against high prices of such commodities.

I also recommend that the citizens practice all reasonable economy in the conservation of food, bearing in mind that under present conditions food wasted is food taken from someone who needs it.

EMANUEL L. PHILIPP,

Governor of Wisconsin.

Dated Madison, Wis., April 13, 1917.

WAKE UP!

DESERT THE ARMY OF GENERAL APATHY AND ENROLL UNDER GENERAL FOOD SUPPLY.

AN APPEAL TO MEMBERS OF THE STATE HORTICULTURAL SOCIETY!

The United States is at war and needs your help. The country is stripped bare of all surplus cereals and meats. The winter wheat crop for 1917 has been estimated by experts at fifty million bushels less than that of 1916, which in turn was below that of 1915.

The farmers of the nation already at their wits' end to secure help to cultivate their present acreage, will be further handicapped by the raising of an army of half a million men, possibly two millions, recruited largely from the farms and shops.

The food shortage is serious and will be more serious still before next fall. The United States Government can raise and equip an army and supply ammunition without end, but of what avail is an army without food. Of what account all the billions of money in the United States if there is insufficient food?

Food shortage is now a fact. This shortage now masquerades in the guise of high prices, but before another year the question of prices may be secondary, it may be easily be an entirely different question, that of getting food at all.

Readers who think these statements are exaggerated, who believe the editor is creating a bogey man, are respectfully invited to ask any one of the following if the editor is hysterical or if he is really stating the case mildly: Governor Philipp; Dean Russell or any of the professors of the Agricultural College; Commissioner Norgord or any of his assistants; any official of the U. S. Department of Agriculture at Washington. You will surely agree that these men are in a position to know. Also read your daily paper.

THE DUTY OF THOSE WHO KNOW HOW.

Hundreds of the best gardeners in the state, both professional and amateur, are enrolled as members of this Society. There is an opportunity **now** for you to do a service to others such as you may not have again in your life time. Not only increase the yield in your own gardens but urge others, even plead, with them to plant gardens and—when you have succeeded help these beginners with your counsel and advice. **Service!** After all, that's all there is in this life worth living for, doing something for others!

MEMBERS WHO LIVE IN CITIES AND VILLAGES.

This appeal is directed largely to you. No matter what your age or occupation if you are not physically disabled you can cultivate a piece of land. You can raise vegetables which will take the place in part of cereals. If the back yards and vacant lots of Milwaukee, Oshkosh, Superior, Racine, Kenosha and hundreds of smaller cities and towns sufficient vegetables can be raised to largely supply the people of these places.

Have you such a back yard? If you have, plant vegetables; if not get a piece of land no matter how small. In many cities owners of vacant property are offering the use of the land free.

WHAT CAN WE DO?

Members of this Society can do much toward increasing the food supply. We cannot raise wheat or corn in back yards, but we can more than double the production of winter vegetables if we try and in this work **every** member, man or woman, old or young, can help.

Even if we cannot carry a knapsack and a gun we can still be good soldiers.

WHAT TO PLANT.

In very small gardens 20 x 50 ft. or smaller, plant beans, parsnips, carrots, beets, winter squash and tomatoes and a few hills of potatoes.

The tomatoes can be trained to single stems and tied to stakes and the squash planted along the border, can be trained on a trellis or even on the back porch.

Lettuce, radishes and spinach may be grown between the rows of parsnips, etc. Plant early peas and sow cabbage seed either in boxes or in open ground to supply plants for planting after the peas are harvested. Dig and plant **NOW**. Questions of cultivating, hoeing and watering will be taken up later.

In gardens 50 by 100 feet and larger plant potatoes and sweet corn in addition to the other vegetables named and increase the bean patch using Refugee wax. This is a very prolific green podded variety, excellent for snap beans and equally as good as the navy for winter use.

FOR THE W. S. H. S. MEMBER WHO NEVER PLANTED A GARDEN.

Don't be ashamed to ask questions. Ask your friend or neighbor; get an A. B. C. book on gardening from the free library, or, if you can't do any better, get a seed catalog and study it. Some of the catalogs give excellent directions for beginners. Above all, **Ask Questions.**

TO THE W. S. H. S. MEMBER WHO WORKS IN SHOP OR FACTORY.

Perhaps you feel that it is expecting too much of you to work in the garden either before or after your day's work of 8 or 10 hours. It won't hurt you a bit. The writer knows of one instance, some years ago, where a slightly built individual, never physically robust, who worked ten hours a day at digging and hoeing, planting and at all the hard work that goes with gardening and in addition worked two hours a day in his home garden and is still alive. You can if you will.

TO THE WOMEN OF THE W. S. H. S.

Not Least or Last, but First. You can do more than all the men combined if you will. Some of you can work in the gardens. Some of you can supervise children's gardens, but all of you can **persuade.**

The good Lord knows it! And so do all men. So employ those heaven-sent powers of persuasion that you know so well how to use to get gardens planted. Will you?

TO THE BOYS AND GIRLS OF THE W. S. H. S.

If you live in a city join the Boys' and Girls' Garden Movement. Nearly every city in the state has such an organization. If there is none you boys and girls get together and start one, you are big enough to do it. This gardening work is play if it is worked out in the right way.

We need you, boys and girls. An hour a day this spring and summer in a garden will help, indirectly, to feed starving children across the ocean.

EVEN IF THE WAR ENDS TOMORROW.

The need is quite as urgent as if the war continues a year or three years. The food supply of the world is short and daily growing shorter. If the war ends before the ink on this page is dry every ounce of food that can be produced throughout the world will be needed.

Millions of Belgians, including hundreds of thousands of innocent children are now slowly starving to death. Millions of others in the warring countries haven't had a square meal in two years and will take all the food we can spare. Whenever we produce for our own needs we release other supplies for those who are now hungry and will be hungry for many months to come.

COAL ASHES.

The soil in back yards is apt to be heavy. A liberal supply of coal ashes worked into the soil when spading will help. If no wood was burned, except occasional kindling, an unlimited amount of the ashes may be used. Coal ashes, however, contain practically no elements of fertility.

USE LIME FOR SOUR SOIL.

Many garden soils are sour. To offset this as well as to improve the physical properties of clay soils use lime, either fresh or burnt lime or slaked lime; if the former on a plot 50 by 100 feet use 100 pounds, pulverized and raked in after digging and before planting. If air slaked, use 1-150 lbs.

CITY AND HOME ADORNMENT CAN WAIT.

Governor Philipp says in his message to you: "I wish to again impress upon the people of this state that the food situation is so serious that we will commit a moral wrong against our government if we in any way unnecessarily interfere with the production and successful harvesting of our agricultural products."

Any community which now expends time and money purely for adornment is committing "a moral wrong against our government." These things can wait. Use this energy and money to get gardens planted. The individual, no matter how comfortable he may be financially who now spends large sums in beautifying his home grounds

and nothing in the effort to increase the production of food is committing "a moral wrong against our government." Keep up the parks, but spend nothing additional on them. Keep your home grounds neat and attractive but plant more potatoes and fewer flowers,—this year. Next year we can make up for lost time.

WHAT NOT TO PLANT!

In small gardens do not attempt to grow sweet corn, cucumbers, eggplant, cauliflower or melons, as these take up too much room. Forego also planting such "fancy" kinds as brussel sprouts, artichoke, etc. Stick to root crops largely—kinds that will fill the vegetable bins next fall.

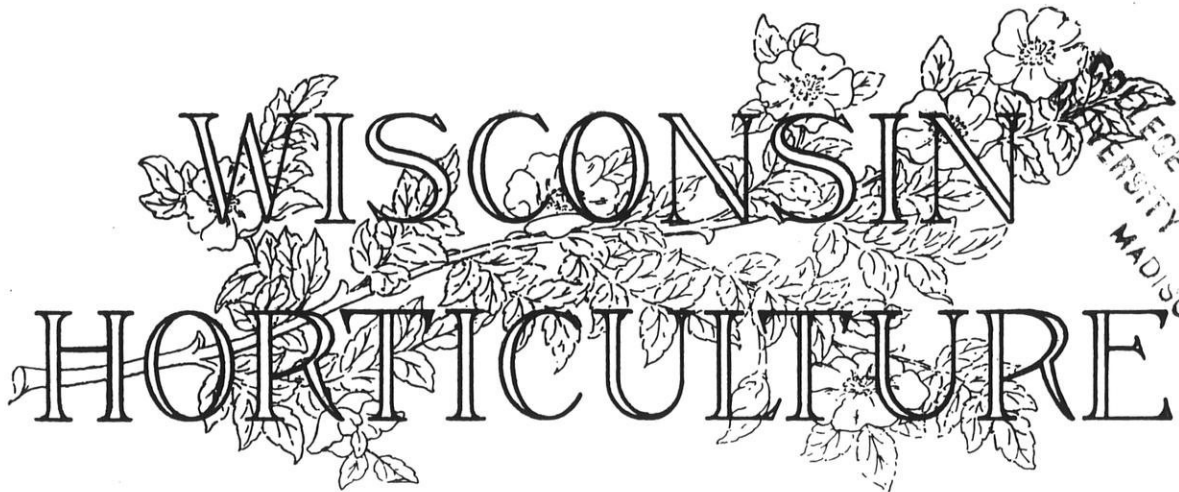
WELL ROTTED BARN YARD MANURE BEST.

Neither coal ashes nor lime will take the place of manure. Where available, use liberally. Spread so as to completely cover the surface or even to a depth of two or three inches and dig or plow under.

For fifty-two years our Society has labored unselfishly to "make the land fruitful" and to instil a love of the beautiful in the hearts of our people.

A greater need has now arisen than any we have ever before known. Let us set our hands to this task in the same steadfast, earnest manner in which we have faced our problems in the past.

Let us show to all the world that the horticulturists are not "slackers" but workers and "doers."



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“But the right is more precious than peace, and we shall fight for the things which we have always carried nearest our hearts, for democracy, for the right of those who submit to authority to have a voice in their own government, for the rights and liberties of small nations, for a universal dominion of right by such a concert of free peoples as shall bring peace and safety to all nations and make the world itself at last free.

“To such a task we can dedicate our lives and our fortunes, everything that we are and everything that we have, with the pride of those who know that the day has come when America is privileged to spend her blood and her might for the principles that gave her birth and happiness and the peace which she has treasured. God helping her, she can do no other.”

—President Wilson.

Planting the Garden.

By J. R. Hepler, College of Agriculture, University of Wisconsin.

The first and most important part of a good garden is a well prepared seed bed. The soil should be free from sticks, stones, and clods, and should be in perfect tilth. It may be necessary to rake the garden three or four times and use a hoe or the back of the rake to break up the lumps of soil, but such extra labor is well repaid.

After the soil is in condition for planting, the rows of the garden may be laid out according to the plan previously prepared. There should be two permanent stakes at each end of the garden and then all measurements made from these stakes. The rows may be marked by putting small sticks or labels, at each end of the row, on which is written the name of the vegetable. It is then a very simple matter to get the row straight by stretching a line and planting under it. Viable seed need moisture, air, and warmth to germinate. Seeds must absorb moisture from the soil before they germinate. That is why they often lie dormant for two or three weeks in dry soil before they sprout. Firming the soil over the seed to establish capillarity, planting the seed deeper in dry soil, and sprinkling the soil after planting are ways of supplying moisture to the seed.

Because it shuts out the air and often causes the seed to rot, too much moisture is almost as bad as not enough. Thorough drainage or lightening the soil with sand or manure, will usually correct this condition.

Plant at Right Depth.

The depth of planting depends on the moisture content of the soil, the character of the soil as regards fineness, and the age of the seed. Seeds must be planted deep enough that they will get a sufficient amount of moisture for germination, and yet shallow enough that they can push their way to the surface of the soil. The moister and finer the soil, the shallower the seed is planted. Seeds are planted shallower in heavy soil than in light soil. If a heavy rain falls shortly after making a planting of small seeds in a clayey soil, the ground is likely to bake so hard that the seedlings cannot push their way to the surface of the soil until the crust is broken by tillage or softened by another rain. If the soil is lightened by the addition of either organic matter or sand, small seedlings will without difficulty push their way through an inch or more of soil.

As a general rule, the larger the seed, the deeper it must be planted. Very small seeds like celery do not have strength enough to push their way through an inch or two of soil. Such seeds may be covered with a very light sprinkling of soil or even with a cloth, or with paper. Peas may be planted deeper than beans because in germinating they keep their cotyledons or seed leaves below ground. The general rule is to make the minimum depth of planting at least two times the diameter of the seed.

Consider Growing Temperatures.

Garden seeds germinate the best at approximately the same temperature at which they make

their growth. Thus the cool season crops germinate best at a temperature around 50 to 60, while warm season crops, such as muskmelons and egg plant, must have a temperature of 65 to 70 to germinate, and germinate better at a higher temperature. This factor determines very largely the time of planting. It is useless to plant seeds of the warm-season crops before the soil warms up, because the plants are likely to be weak and to produce a very small crop. If it is desired to germinate cool season seeds like lettuce during the hot summer months, it may be accomplished by keeping the seed bed moist and keeping it shaded with a covering of moist hay or straw to reduce the temperature.

"Drilling" the Seeds.

In making a drill, use a pointed stick or the handle of the hoe for shallow drills and the corner of the hoe or a trowel for the deeper drills. Always use a line to get straight rows. Care should be exercised not to crowd the line out of position.

Seeds may be dropped into the drill in several ways, the most common of which is by hand, using the thumb and forefinger. A supply of seed is held in the palm of the hand and rolled out over the forefinger by the tip of the thumb. This is a slow and tiresome method, but is very accurate. A quicker and easier way is to cut off one end of an ordinary envelope and drop the seed by a backward and forward motion of the hand. Although at first there is a tendency to sow the seed unevenly, a person soon becomes expert at this method and can distribute the seed evenly.

Gardeners make use of a seed drill which costs from \$7 to \$8. Where much seeding is done, the seed drill is indispensable.

The seeds may be covered with a hoe or a rake. After covering the drill, the soil should be firmed so as to get the seed in contact with the soil and re-establish capillarity.

Broadcast Only on Clean Land

Broadcasting the seed is advisable only where the soil is free from weeds and where the crop grown stays in the ground for a short period of time. Radishes are sometimes sown broadcast and plants for transplanting are often grown by this method. If the seedlings are not replanted before they are set in the field, they are usually stockier when the seed is broadcasted.

If vegetables are planted in hills, the seed is usually scattered over a circle six to ten inches in diameter. From three to four times as many seeds are planted as we want plants, in order to provide against loss by insects. This is especially important with vine crops.

Thinning the Seedlings

Although commercial gardeners regulate the amount of seed that they sow so that they will need to do very little thinning, the home gardener usually finds his stand of seedlings three or four times as thick as necessary. The first thinning is done when the garden is weeded for the first time. The amount of thinning depends upon the thickness of the stand and the amount of space that the plant needs. A hand weeder with a sharp blade at right angles to the handle is a very good instrument

to use in the thinning. Later thinning, especially with root crops, consists in the pulling of the largest of the plants and using them on the table.

Radishes as "Marker" Crop

A marker crop of radishes is often grown with the slow germinating vegetables. The seed is sown very thinly at the time the permanent crop is put in. It breaks the ground for the other crop and also enables one to cultivate between rows. The plan works best with carrots and parsnips. The radishes are allowed to mature but should be removed as soon as they are big enough to use.

The Cherry Leaf Spot.

A Door Co. member asked about treatment for cherry leaf spot commonly known as "shot-hole" fungus. The letter was referred to Professor Keitt, who replied as follows:

In our work on this disease we have found clean cultivation **in the spring well before the blossoms open** followed by thorough spraying to be a satisfactory means of controlling the disease. In some cases, it may not be practicable to give clean culture so early, but usually cultivation is given at this time anyway for other reasons. The fungus which causes this disease lives over winter in the old dead leaves on the ground, and about blossoming time produces "seeds" too small to be seen except with a powerful microscope, which are carried by the air to the young leaves. There they grow and cause the disease. From these early spots, a great many more seeds are produced, and these

spread the disease. By carefully turning or harrowing under the leaves before they produce the first seeds—that is well before the blossoming period—the disease can be greatly checked—just as you can check the spread of many weeds by cutting before they seed. It is, of course, the early clean culture that counts, as the seeds of the fungus are shed before the summer cultivations.

This early cultivation does not take the place of spraying. It simply makes it easier to control the disease by spray. There is still some question as to the best spray program for shot hole. It will vary with conditions. Good results have been obtained with Bordeaux mixture, 4-4-50, or 3-3-50, and with lime-sulphur, 5 or 6 quarts in 50 gallons. Lime-sulphur seems to control shot hole better if arsenate of lead is used with it. The following timing of applications has given good results: Spray (1) as soon as the petals (blossoms) are off, (2) about two weeks later, and (3) as soon as the fruit is picked. The leaves should be well covered on both the upper and the under surfaces. If the leaves are not turned under before blossoming, it may, in extreme cases, be desirable to give three treatments before picking—the first when most of the petals (blossoms) are off, the second about ten days later, and the third about two weeks after the second.

G. W. Keitt.

Sticktoitiveness.

Not in the dictionary and it is doubtful if it ever will be there, but it expresses a qualification much to be desired in amateur gardeners.

A City Garden.

(Mrs. John Geiger, Oshkosh, at Annual Convention.)

The subject assigned to me is A City Garden and having passed the High School age, I can write only upon a subject of which I know a little something at least—and in writing about A City Garden I can only tell a little of my own experience. This has been confined to my own garden which is the back yard of an average sized city lot. Planning, planting and caring for this garden has been my principal recreation for a number of years.

Having been raised in the country, I, no doubt, inherited a natural liking for digging in the dirt and watching things grow. These things seem to be absolutely necessary to my happiness.

City dwellings are usually without front yards of a sufficient size to permit of much planting except perhaps around the foundation of the house, so attention must be given to the back yard.

Almost everyone, who does not live in an apartment, has at least a small plot of ground back of the house which too often is simply a dumping ground for refuse and a place to hang up the washing. Even though the backyard is a small one it may be made to yield much in fun and food, health and happiness.

Gardening is man's greatest outdoor sport, antedating war and golf by Scriptural account.

The fact that we live such strenuous lives in the city makes it all the more necessary that we provide for ourselves an opportunity to relax and regain strength amid beautiful surroundings and a little garden spot in the back yard is one of the best

places in the world to rest after a day of nervous strain.

Almost any patch of ground will grow something well worth while if given only half a chance. There probably is not a back yard in any small city that would not yield wonderful returns if it were planted and cared for.

What an excellent thing it would be for the community if all the land which now lies idle were planted to useful and beautiful things! We must buy vegetables unless we grow them, and in this time of high cost of living, raising one's own vegetables will make a material difference in the household expenses, while the increased consumption of good, fresh vegetables will greatly improve the health of the family. And to a great many of us flowers are just as necessary to our happiness as fresh vegetables are for our health.

Sunlight, good drainage, a good soil, a few good tools, such as a spading fork, a rake, a good strong hoe and a trowel, the very best seed obtainable, together with a love for the work, are all that are necessary to start a garden.

Each one must decide for himself what he wants to raise in his own garden, but it is possible, by careful planning and planting and cultivating, to raise practically all the vegetables the average family will want, in the back yard of the average sized city lot, as well as one's favorite flowers to brighten and beautify the home from early spring until the snow flies.

If one has only a small garden, a few rhubarb roots, a small asparagus bed, a few currant and gooseberry bushes and a strawberry patch are not out of the

question and will furnish many a delicious dessert. Two or three grape vines may also be planted along the fence and will add much to the beauty of the landscape.

Intensive farming is what must be practiced in the city garden because of lack of space. The crops must be planted so that all the ground is used all the time.

Our springtime enthusiasm will start the garden off in fine shape and we plant some lettuce and radishes, some tomatoes and cucumbers and our favorite flower seeds. The early vegetables will be harvested early and unless we plan to plant other crops on the same ground only part of the ground will be working after the early vegetables are gone. By a little thought and planning in advance, at least two or three crops may be raised on the same ground. Lettuce and early radishes can be planted together in the same rows and between these rows set tomato or early cabbage plants. By the time these plants are of any size the lettuce and radishes are gone. In the same way peppers, cauliflower or kohlrabi may be set between the rows of onions. By planting at intervals and by using different varieties, a great many of the quick growing vegetables may be had practically all summer instead of only a few weeks in the spring.

But the planting is only a small part of raising a garden. It is not enough to know what to grow and how to plant it, but we must also know what not to have in a garden, and first in this class comes weeds.

Weeds, like the poor, are always with us; but, unlike the poor, they need no assistance, but the strongest possible resistance. Cut off their heads and cut off

their feet and do it before they have any offspring. Then start in and do it all over again, for they have a wonderful way of resurrecting if given half a chance. When hot weather comes the garden needs our help more than at any other time for then the weeds seem to grow the fastest. And then it is that we feel less like giving it the necessary care.

The weather is hot, the air is still and the mosquitoes are all out for blood, so that a hammock in a cool corner of a screened-in porch looks better to us than any "Man with the Hoe" tableau—especially after a hard day's work. Probably we feel that we do not need the exercise nearly so much as we did in the spring, and probably we are right, but at the same time it will do us good if we take it properly; and we can not afford to let the garden go to pieces now when a little work will save it.

Let us get up an hour earlier than usual in the morning and do our garden work then instead of waiting till evening when we are all tired out. A little daily work in the garden in the cool of the morning will do us much more good than would that little extra sleep. Nature is at her loveliest while the dew is on, and half of the fun in gardening is getting close to nature. So let us do our gardening before we are tired out and enjoy it to the utmost.

The pecuniary profits derived from a garden are of no more importance than the beautifying of our surroundings. No one can live amid beautiful and ennobling surroundings without being influenced for the better, even though it be unconsciously.

In these days we hear a great deal about the "Boy Problem" in

our cities, but in the country this problem is scarcely ever heard of. It seems to me this is simply because in the country the boy is kept busy while in the city so many boys have nothing to do so much of the time and "Mischievous" always finds some work for idle hands to do."

The thing we must do in the city is to find something to keep our boys yes, and our girls, too, busy, and the back-yard garden is a splendid place in which to do this. Right here is where the mother of a family can get benefits beyond calculation for the boys and girls if she is clever enough to interest them in gardening and that there is just as much fun in using a hoe as in wielding a tennis racket. It is then much more than gardening, it is character building of which we read so much and see so little in actual practice.

A Back Yard Garden to Aid Food Production.

Sow at once carrots, onions, parsnips and salsify for early use and what is not needed may be left for the winter supply. Mix these seeds with radish seeds which will come up in 2 or 3 days, thus enabling one to cultivate or hoe between the rows, giving the other seeds a much better chance to come up especially if heavy rains fall and pack the ground. This also gives you radishes for the table without extra expense to your garden. Spinach and lettuce may be followed by potatoes and early peas by turnips and rutabagas. Tomatoes may follow early beets by pulling a few beets where the tomato is to be set, or early beets may be followed by late beets,

turnips and rutabagas. Thoroughly cultivate and sow these seeds between the rows when early beets are nearly full grown.

By planting Golden Bantam sweet corn 3 by 3 ft. five kernels of corn and 4 Refugee or 1,000 to 1 Beans in the same hill both will do better than if planted alone and produce a large quantity of food. Golden Hubbard Squash may be planted so as to climb on your porch, fence or a tree and it will not demand any room in your garden and will produce more than if left on the ground.

If you have only a strip of ground, say 2 by 15ft. beside your house or fence, plant Champion of England peas, Kentucky Wonder Beans and Late Stone tomatoes, grow on stakes or trellis and plant root crops below and perhaps one squash seed at either end. You will be surprised at the amount of vegetables which can be produced on this small space.

N. A. Rasmussen.

First Principles.

A large part of this issue is devoted to the A. B. C. of gardening, largely timely and practical bulletins issued by the horticultural department of the Agricultural College. While most of these articles have been printed in whole or in part in the daily and weekly papers of the state, such papers are rarely preserved and the bringing together of these practical hints in one place should prove helpful to many of our readers.

Give cauliflower, cabbage, and celery plants that are in frames, plenty of air.

Directions on Growing Potatoes in the Garden.

Prof. J. G. Milward.

On good, fertile gardens, potatoes should be planted close, rows approximately two feet apart and the hills about one foot apart in the row.

The soil should be spaded deep, thoroughly pulverized, and worked with garden tools. The potato crop likes a deep, cool, fertile and well drained sandy loam soil, but will grow satisfactorily in most gardens of the state. Stable manure may be used if well cut up and mixed with the soil at the time of spading.

Early varieties are preferred for the garden, as such stock can be used for table purposes late in July, August, and September, before the main commercial crop of the state comes on. Early Ohio and Triumph are preferred for early, and the Rural New Yorker for late.

Cut seed tubers into blocky pieces (not thin slices), at least one good, strong eye to the piece. Seed tubers exposed to light a few days before planting will start strong, stubby sprouts, and it is desirable to plant seed in this condition. Seed pieces should run approximately one and one-half to two ounces in size. Small potatoes, (3 or 4 ounces), may be cut lengthwise in halves.

Potatoes are commonly planted with a hoe, one seed piece to each hill. Plant from 3 to 4 inches deep. It is also satisfactory to make a furrow with the hoe or garden tool three to four inches deep and then drop the seed pieces every foot and cover promptly.

Rake the potato patch after planting and after rains. Pre-

vent crust from forming by use of rake or garden cultivator. When plants come up, cultivate carefully, keeping the surface soil mellow and compact around the plants. On clay loam gardens, the potato patch should be kept fairly level. During early summer and after vines become larger, the soil may be ridged and moulded slightly around the hills. Be careful not to cut into hills deeply with hoe or garden tools.

On small gardens, it is advisable to pick the old potato beetles by hand from the vines as soon as they appear. Clusters of potato beetle eggs may also be pinched off. Should the eggs hatch, however, the young bugs can be killed by the use of one tablespoonful of Paris green to a pail of water. Paris green may also be used in the dry form by diluting with equal parts of flour, land plaster, or air slaked lime.

How About Sod Land For a Garden?

This question is asked again and again. The professional gardener who is satisfied with nothing less than deep loam manured to the limit every year will say that it can't be done. Managers of Garden Clubs in many cities will tell you it **can** be done because they have done it.

Much depends on the preparation of the soil for planting. Tough June grass sod of years' standing simply plowed and scratched with a harrow makes a mighty poor foundation for a garden. The grass turned under serves to shut off the water supply and the tough grass roots hinder cultivation, but if this same sod is thoroughly chewed up

by a disk and then dragged or raked level removing the larger clumps of grass brought to the surface it provides a fine seed bed. If possible, a heavy coat of manure should be applied before plowing, but very good results may be had without it. Quack grass sod is the worst of all to handle, but even this is not hopeless, just more work, that's all.

Training Tomatoes.

Tomato plants may be planted one foot apart in the row or even less if trained to a **single stem**. The plants may be tied to stakes or to stout string. Instead of filling the garden with a forest of stakes, which must be at least 2 x 2 inches if a stake is used for each plant, set small posts 16 ft. apart along the row and fasten 2 x 4 scantling to their top and bottom. The tomato plants can then be tied to strings attached to the scantling. The expense is considerable but this structure is the framework of a trellis that can be used for many years and for a great variety of plants.

If the plants are trained to three or more stems two feet apart is close enough and individual stakes are best.

As soon as we begin to prune a tomato plant we set for ourselves a big task and one that demands close attention every day to the very end of the season.

It is not, however, a laborious task, nor does it require but a few minutes a day. Sprouts which will appear in the axil of every leaf must be removed. When the plant reaches the desired height cut off its head.

The training system is almost a necessity in small gardens.

Planning the Garden.

By J. P. Hepler, College of Agriculture, University of Wisconsin.

The greatest returns can be obtained from the garden only when the garden is definitely planned. The difference in times required for maturity and of space needed by different vegetables, the season at which they grow best, and the greatest utilization of the garden area practically necessitate a garden plan.

Three Classes of Garden Crops.

In garden planning, the first thing to recognize is that garden crops may be grouped into three general classes: permanent crops (those which occupy the allotted area during the entire season; semi-permanent crops (those which are planted rather late and after planting occupy the area so long as to usually preclude the growing of other crops after they are removed); and short season crops (those which occupy the land for a comparatively short period). In the first group we have late beets, late carrots, parsnips, salsify, chard, parsley, early tomatoes and onions grown from seed. The second group are sweet corn, late tomatoes, late cabbage, celery, eggplant, peppers, late beans, and the vine crops. The third group contains lettuce, spinach, early beans, peas, radishes, turnips, onions from sets, and early cabbage.

In making the plan for the city garden, the permanent and semi-permanent crops should be given first attention. The short season crops are easily provided for either as succession crops or as companion crops. Succession crop-

ping is following one crop with another on the same area. Early radishes or lettuce followed by late cabbage or celery is an example of succession cropping. Companion cropping is growing a short season crop between the rows of those which are permanent or semi-permanent. Early carrots or early beets between corn or late tomatoes furnishes an illustration of companion cropping. The most successful gardener is the one who, through well-planned succession and companion cropping, makes his gar-

In the city garden, the distances between rows should be kept at the minimum and still allow for proper development of the plants and ease of tillage operations. The following table will be of assistance in determining the distances to be used. Attention is called to the fact that where companion cropping is done, the distance between the rows of permanent or semi-permanent crops remains the same, the companion crops merely being placed between the rows.

Crop	Method of planting	Time of first planting	Distances between rows		Distance in row (Inches)	Time crop occupies ground
			Min.	Max.		
Beet.....	Drills	May 1	12	24	3	10 weeks to end of season.
Carrot.....	Drills	May 1	12	24	2	10 weeks to end of season.
Parsnip.....	Drills	May 1	12	24	3	All season.
Radish.....	Drills	Apr. 20	6	15	1	4-7 weeks.
Salsify.....	Drills	May 1	12	34	2	All season.
Turnip.....	Drills	Apr. 20	9	15	3	6-8 weeks.
Rutabaga.....	Drills	May 15	18	24	3	10 weeks to end of season.
Onion.....	Drills	Apr. 20	12	18	8-12	8-12 weeks.
Early Cabbage.....	Hills	May 1	18	24	14-18	10-12 weeks.
Late Cabbage.....	Hills	June 20	24	36	18-20	End of season.
Chard.....	Hills	May 1	18	24	8-12	All season.
Celery.....	Hills	May 15	18	36	6	12-15 weeks.
Lettuce.....	Both	Apr. 20	12	24	8	6-8 weeks.
Endive.....	Hills	July 15	12	24	6	6-8 weeks.
Spinach.....	Drills	Apr. 20	12	24	1-2	5-8 weeks.
Parsley.....	Both	May 1	12	24	2-6	All season.
Pea.....	Drills	Apr. 20	18	30	2-3	7-10 weeks.
Bean.....	Both	May 20	18	30	3-4	7-10 weeks.
Eggplant.....	Hills	June 5	24	30	18	All season.
Pepper.....	Hills	June 5	24	30	18	All season.
Tomato.....	Hills	June 1	24	30	24-48	All season.
Cucumber.....	Hills	June 1	43	72	48-60	All season.
Muskmelon.....	Hills	June 1	48	72	48-60	All season.
Squash.....	Hills	May 25	48	96	48-95	All season.
Sweet Corn.....	Hills	May 15	24	36	8-12	10-12 weeks.
Winter Radish.....	Drills	Aug. 1	12	24	3-4	To end of season.
Chinese Cabbage.....	Hills	Aug. 1	16	24	12	To end of season.

den produce the maximum of which it is capable.

Companion Cropping.

In planning for companion and succession cropping, it is essential that the season at which the crop grows best and the time required for it to mature be given consideration. If this is not done there will be overlapping of crops and unsatisfactory results.

Potatoes Require Much Room.

Potato "seed" is prepared by cutting potatoes into irregular shaped pieces so that each piece has two or three eyes, preferably three. These are planted at least 12 inches apart in the row and the rows 24 to 30 inches apart. When whole potatoes are used, small ones, these are planted at least two feet apart. At this rate the average "back lotter" cannot afford to grow potatoes.

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BOARD OF MANAGERS.

N. A. Rasmussen.....F. Craneheld
L. G. Kellogg

Our Duty.

Men and Women of the State
Horticultural Society! A great
responsibility rests on us.

The nation is at war and the
end of the war cannot be fore-
seen.

The surplus food supply of the
world is exhausted and crop pros-
pects for 1917 are not encourag-
ing so far as cereals are con-
cerned.

Awaken then to the needs of
the hour!

The great danger lies in indif-
ference. Two things every one

of us can do, first, **plant, plant,**
sow seeds **now** and urge others
to do the same.

Second, **Talk War,** talk it day
and night until it has penetrated
the conscience of every man and
woman of this land that we have
signed up for war, a war that is
bound to take its toll of lives great
or small and bring sorrow and
desolation to many of us. We
cannot evade it, it is here, now
and until we end it.

Let us then do our duty, give
the best that is in us in order that
it may end quickly. It will fall
to many to go as fighting men. It
falls to most of us to perform an-
other kind of service, but one
none the less patriotic, to feed the
nation.

The stronger the force we send
in to the field, the greater the aid
we extend to those who are fight-
ing with us the sooner will the
hideous monster, warfare, be
driven from the face of the earth.

The obligation then rests on us
to increase the food supply.

A special edition of Wisconsin
Horticulture was mailed to every
member April 18th, an appeal to
members who live in villages and
cities to plant gardens and to
those who are skilled garden-
ers, either professional or ama-
teur, to give of their time to help
beginners. Before the edition
was in the mails one member as-
sured his friend that it was hys-
teria and no great need existed,
no danger threatened our food
supply. An awful responsibility
rests on all who now voice this
sentiment.

Altho the writer is fully con-
scious of the great danger that
threatens us thru such indiffer-
ence, he refuses to believe that
any large number of our members
will take this position. It is not

hysteria, but only plain reasoning
and common sense.

The president of our Society,
true as always to the trust im-
posed on him, loyal as always to
his community, his state and his
country, has practically aban-
doned his own work and is spend-
ing his time helping others, in
schools and public places, Osh-
kosh, Neenah, Milwaukee and
wherever called.

Not all of us can afford to do as
much, but we can all "do our
bit." No one of us but can do
something. Now is the critical
time, the seeding time, a month
from now will be too late.

Let each one of us then do the
thing he is best fitted to do so
that when peace comes, whether
it be tomorrow or years hence,
when the roll of honor is made up
of all who labored unselfishly to
the end that "liberty should not
perish from the face of the earth,"
the name of every member of the
Society shall be written there.

Plant Flowers.

Devote at least one row across
the garden to flowers. Those who
have grown asters alongside car-
rots and taugt mignonette to
live in peace with cabbage will
need no urging.

Those who have heretofore
starved their flowers in stingy
flower beds or borders will be
converted forever after to the
garden plan.

"Let me suggest also that every
one who creates or cultivates a
garden helps, and helps greatly,
to solve the problem of the feed-
ing of the nations."—President
Wilson.

A Faithful Friend.

Belated word comes to this office of the death on January 25th, of George Jeffery, Sr.

For fifty-one years, without a break, Mr. Jeffery exhibited fruits at the state fair, thus establishing a record unequaled by any other exhibitor.

No matter how poor the season for fruit, we could always depend on Mr. Jeffery; he was always on hand, cheerful and optimistic.

He came for pure love of the game, for premiums, so far as their cash value was concerned, troubled him not at all. He loved fruits, and above all, loved to mingle with fruit growers.

The pear was his favorite fruit, and a line from the obituary notice in his home paper gives us a hint why this was so; "born in County Kent, England." The pear is a native of there and especially popular in Kent, the garden of rural England.

He was one of us, no one else could claim him and his life and his work an inspiration.

"Mr. George Jeffery, who for the past two years has made his home with his son Charles in this village, died late Thursday evening from general debility.

Deceased was born in County Kent, England, September 29, 1827, and when a lad of twelve years came to America with his parents and settled at Lisbon, Wis. Thirty years later Mr. Jeffery moved to Wauwatosa, Wis., where he owned and operated one of the finest and most profitable horticultural farms in the country.

Mr. Jeffery was instrumental in organizing the state Agricultural society under which auspices the state fair has been held for

nearly fifty years. He exhibited his fruit at the first state fair held on the Cold Spring site in Milwaukee, and at every state fair held since up to 1915 when illness compelled him to give up. During his time he exhibited more than 500 varieties of pears, apples, plums and grapes for which he took very many attractive prizes. About two years ago he and his wife came to Dousman to reside with their son Charles.



Mr. Jeffery was an authority on fruit raising and his council on the various phases of the industry were considered valuable by the horticulturists of the state.

His work was done and well done, and the stern Reaper found him as a "sheaf of grain ripe for the harvest."

Dousman paper.

Make Use of the Spray Pumps.

A number of spraying outfits have been purchased by the different communities of Wisconsin this season in an attempt to rid the maple trees of the cottony scale. These pumps will no doubt

pay for themselves in this one service alone, but that is no reason why they should not be kept working and be of still greater service to the community.

In all of the communities where spraying outfits have been used there are as many or more apple trees than maple and these trees, especially where grouped in blocks of 10 to 20 or more, could be made to yield handsome returns if properly cared for.

At present the apples coming from these trees are largely scabby or wormy, or both, and of a very low grade and will keep for only a short time. With a small amount of spraying, which need not cost over a few cents per bushel, the apples could be changed into clean, sound fruit.

In order to do this it is absolutely necessary to apply two sprays in the spring of the year. One is called the "pink bud spray" from the time it is put on—when the blossoms are just showing pink—and the other, the calyx spray, which is put on as soon as possible after the blossoms fall.

These communities should arrange to have their pumps in use during this period. The State Department of Agriculture or the State Horticultural Society will be glad to furnish detailed directions for making up the proper sprays and furnish suggestions for equipping the outfit and applying the spray. The State University will have a bulletin on the subject ready before time to spray.

In this way the spraying outfits can be of double benefit to the community and will materially increase the food supply as well as bring profit to the owners of the orchards.

No Vine Crops in Small Plots.

It does not pay to grow the vine crops in very small gardens unless they can be trained on trellises at the side of the garden or planted on the area which has matured an early crop like lettuce, early peas, spinach, or radishes.

The vine crops are all warm season crops and cannot be planted in the field usually before June 1st. The growing season is so short that only the earlier varieties of muskmelons and watermelons can be matured from seed started outdoors. Cucumbers and squash usually mature if started the first week in June, but even they should be started in the hotbed if an early product and a large yield are desired.

Starting Vine Crop Seeds.

The seeds may be started about April 25th in berry boxes, four-inch paper pots or on four-inch squares of sod. From four to six seeds are planted in each box. The hotbed should be kept warm as the vine crops do best at a temperature ranging from 75-85. Thorough ventilation is necessary. Care must also be taken to water frequently enough to prevent the soil from drying out or the leaves from wilting.

The plants are hardened by exposing them to outdoor conditions and withholding water for five or six days before they are set in the garden.

In setting the plant, dig the hole and place the plant in it, drawing the soil around the plant, being careful not to disturb the roots. If the plants are grown in a berry box, it should be removed before planting.

The training of vine crops differs from tomatoes in that the ax-

illaries are nipped off beyond the second node instead of being removed altogether. The fruit is borne in the first node of the axillary shoot. With cucumbers this method of pruning is continued as long as they bear fruit, but with muskmelons all the growing tips are pinched off after the plant has made a growth of five feet and set two or three fruits.

Vine Crops Seldom Cross.

Many gardeners are afraid to plant muskmelons and cucumbers together for fear of their crossing. These two crops never cross, and if poor quality melons are obtained, this condition must be ascribed to improper cultural conditions, poor seed, or the attacks of disease or insects. Varieties of cucumbers or of muskmelons cross readily among themselves, but never with each other. Neither do either of these crops cross with watermelons, squash or pumpkins. Winter squash and pumpkins will not cross, but summer squash and pumpkins may cross.

Varieties for the Home Garden.

Beware of using "Wonder Plants," with promise lithographic, For hauling in the yields from such Never blocked the traffic.

Quality should be the first consideration in selecting varieties for the home garden. Only those varieties possessing high quality should be grown. Adaptability is also of prime importance. It is useless to attempt to grow some varieties at certain times because they are unable to stand the unfavorable conditions to which

they are subjected. Thus the selection of a high quality wrinkled pea for the earliest crop would result in failure, as it could not withstand the unfavorable conditions.

Use the Old Stand-by Kinds.

Confine your selection largely to standard sorts. We are often tempted by the glowing description in the seed catalogue to discard a variety which has been entirely satisfactory for a new and untried one. Better depend largely upon the tried variety and plant the new one sparingly until you have established its worth for your conditions. One cannot afford to risk the loss of a crop merely to satisfy his curiosity.

Work With Tomatoes.

The home gardener should start his tomatoes about the middle of March for the early crop. After they get their first leaves, they should be transplanted into two-inch paper boxes and later into four-inch paper boxes. They may be set into the gardens as soon as all danger of frost is over and the ground is warm. A succession of tomatoes may be provided by planting an early and a late such as Bonny Best and Stone at the same time, or by making two plantings of the early variety, three or four weeks apart.

The yield in the home garden may be greatly increased by staking the tomatoes. The vines are trained to two stems by cutting out all the axillary shoots except the first one which is allowed to grow. They are tied with raffia to a five-foot stake.

(Continued on P. 140)

One of the many homes our Landscape Department has helped to make attractive.

We are now ready to help you make your place a Beauty Spot.

A booklet showing places we have planned and planted is free.

You want the best varieties when planting your Orchard, Home Grounds or Fruit Garden. Our catalogue tells you about them.



The Coe, Converse & Edwards Co., Nurserymen, Fort Atkinson, Wis.

**MADE IN WISCONSIN
INSECTICIDES AND FUNGICIDES**

Lime Sulphur

Arsenate of Lead

Dry and Paste Form

Bordeaux Mixture

Nicotine Solution

Kerosene Emulsion, Etc.

CREAM CITY CHEMICAL WORKS

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MILWAUKEE, WIS.

WRITE FOR CIRCULARS AND INFORMATION



An Attractive Home Means Contentment

Keep the children at home by making them proud of it. The most effective and economical way to do this, is to beautify the lawn. Careful arrangement and good plants are essential. Our Landscape Department has specialized in this work, is familiar with Wisconsin conditions, and has probably the largest assortment of choice nursery stock in the state to select from.

White Elm Nursery Co.

Oconomowoc, Wisconsin

Training Tomatoes.

(Continued from P. 138)

When the vines reach the top, they are cut off. The advantages of staking are that twice as many plants can be set on the same area so that the yield is materially increased and the fruit is much cleaner and ripens earlier.

TRAINING AND PRUNING HELPS.

Tomatoes are sometimes trained on a trellis made of slats, or on a wire fence or even on wires stretched between two posts set at the ends of the row. The tomatoes may or may not be pruned, but it usually is advisable to cut off the excess vegetable growth, especially where the ground is rich. This will force most of the growth into the fruit.

How I Made Apples Pay.

Six years ago an orchard came into my hands along with a good spraying outfit. 500 apple trees were bearing well, but middle men got the fruit, or had been

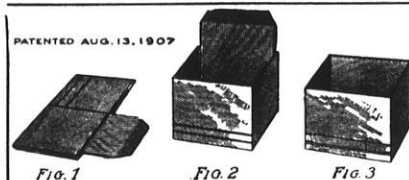
J. E. Baer.

A message from Baraboo just at this edition goes to press announcing the death of J. E. Baer of that place.

Mention of Mr. Baer's services to horticulture in Wisconsin will appear in a later issue.

getting it, at a very small price and the spraying outfit had not as yet been used.

I was a poor man and needed a fair price for my produce. But the produce must be made to equal the prices wanted. To this end the spray was applied thoroughly, and the results the first year were very satisfactory. My entire crop of 700 bushels was sold direct to consumer either by peddling or shipment. The next year I found the apples to be almost absolutely free from worms. So to get more and better customers and a little better prices the buyers were offered 2 cts. a piece for every worm found in a bushel. Well, the idea worked



BERRY BOXES

Crates, Bushel Boxes
and Climax Baskets

As You Like Them

We manufacture the Ewald Patent Folding Berry Boxes of wood veneer that give satisfaction. Berry box and crate material in the K. D. in carload lots our specialty. We constantly carry in stock 16 quart crates all made up ready for use, either for strawberries or blueberries. No order too small or too large for us to handle. We can ship the folding boxes and crates in K. D. from Milwaukee. Promptness is essential in handling fruit, and we aim to do our part well. A large discount for early orders. A postal brings our price list.

Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

splendidly and many people leaned to know the value of good clean, wormfree fruit. Surely the way to make an orchard pay big is first, of course, to make it produce good fruit and second, to place this product before people that appreciate it.

H. P. Anderson.



Arsenate of Lead
 Paste or Powder
 Lime Sulphur Solution

Recognized as standard in principal fruit growing sections of the country. Convenient source of supply for Wisconsin fruit growers. Sulphate of Nicotine 40% and free Nicotine 40%. For further information write

The Grasselli Chemical Co.
 Established 1839
 Main Office, Cleveland, Ohio
 Milwaukee, Wisconsin

JEWELL MINNESOTA GROWN
Nursery Stock

Complete assortment of Fruit and Ornamental stock in all varieties suited to northern culture. A specialty of Hardy Shade Trees, Wind-break Stock, Evergreens (Coniferous), Deciduous Shrubs, Apples and Native Plums.

AGENTS WANTED

The Jewell Nursery Company
 Lake City, Minnesota

The Hawks Nursery Company

are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

Will be glad to figure on your wants either in large or small quantities.

Wauwatosa, Wis.

McKAY NURSERY COMPANY
 PARDEEVILLE, WISCONSIN

Nursery Stock of Quality
 for Particular Buyers

Have all the standard varieties as well as the newer sorts. Can supply you with everything in

Fruit Trees, Small Fruits, Vines and Ornamentals.

Let us suggest what to plant both in Orchard and in the decoration of your grounds. Prices and our new Catalog sent promptly upon receipt of your list of wants.

Nurseries at Waterloo, Wis.

"We have a Fine Lot of Plants for the Garden"

SEND FOR LIST

J. E. MATHEWSON
 SHEBOYGAN, WISCONSIN

Bound Volumes Wisconsin Horticulture.

Twenty-five sets of Wisconsin Horticulture and index, complete from September, 1910, to August, 1916, inclusive, have been bound in two volumes, heavy board with leather back and corners.

Twenty of these sets are offered for sale, to members only, at \$2.50 a set, purchaser to pay carriage. This is less than cost of binding and index.

Postage on the set amounts to 13 cents for the first 2 zones (150 miles) and 22 cents for the 3rd zone, which includes all points in Wisconsin.

The following are good dahlias: Queen Wilhelmina, Snowlad, Sunshine, Cuban Giant, Grand Duke Alexis, W. W. Rawson, Delice, Jack Rose, Mina Burgle, Kriemhilde, Golden Gate.

Quality Stock
 Strawberries
 Native Plum Small Fruits
 Apple

WISCONSIN GROWN
 for Wisconsin Planters. Read our Price List before you buy, and save money.
 62nd Year

Kellogg's Nurseries
 Box 77, Janesville, Wis.

A Good Garden Bulletin.

The Home Vegetable Garden, Farmers' Bulletin No. 255, U. S. Department of Agriculture. Free for the asking.

Three Good Garden Books.

For the amateur who wants the **how** rather than the **why** and wants it right away, Vegetable Gardening by Greene, the Webb Pub. Co., St. Paul, will prove a source of great comfort.

How to Grow Vegetables, French, the Macmillan Co., and Productive Vegetable Growing, Lloyd, cover both principles and practice.

No Poultry Department.

The full page reproduction of the poultry poster is by way of co-operating with the Agricultural College, to circulate more fully a most excellent plan for increasing food supply. It does not mean a permanent poultry department.

Help Offered.

Communities desiring garden help are requested to notify this office. A practical gardener will be sent on petition of ten or more persons at the expense of the W. S. H. S., who will visit gardens for half a day and meet the gardeners in the evening to answer questions. This may prove to be a big contract, but we will do our best to fill it.

Good annuals for cut flowers are marigolds, sweet peas, calliopsis, asters, scabiosa, petunias, snapdragons, nasturtiums, and zinnias.

A LARGE STOCK OF

**Apple, Cherry and Plum Trees, Grape Vines,
Blackberry and Raspberry Plants,
and Strawberry Plants**

Both Everbearing and common varieties

And a general line of ORNAMENTAL TREES, SHRUBS and ROSES.
All stock clean and thrifty, the best that can be grown in Wisconsin.

GREAT NORTHERN NURSERY CO.

Write for catalog and prices Baraboo, Wis.

**A Dozen Different Dahlias For A
Dollar, Post-paid**

All good popular varieties. A collection that will please you.
Strong "toes" or divisions. Order at once before you forget.
A dollar will do it.

WILLIAM TOOLE & SON

Garry-nee Dule Baraboo, Wis.

The Kickapoo Valley WISCONSIN'S FAVORED
FRUIT DISTRICT

Our Specialty: Planting and developing orchards for non-residents.
A few choice tracts for sale. If interested, write us.

THE KICKAPOO DEVELOPMENT COMPANY
GAYS MILLS, WISCONSIN

Ask Questions.

Amateurs are implored to ask questions. No matter how simple or how complex the problem may be, come forward with it. A personal reply is assured in every case. This service is rendered to all, without money and without price.

The following hardy plants make good cut flowers, coreopsis, hardy chrysanthemums, delphiniums. Spanish and German iris, lupine, peonies, phlox, golden glow, sweet william, gaillardias.

**"CANNOT BE BEAT"
IN WAUSHARA COUNTY"**

180 acres good sand loam adapted for potatoes, corn clover and rye, beautiful trout stream flowing through pasture land; about 20 acres timber.

Orchard 500 apple trees in their primes, worth \$2000.
and Home Buildings worth \$3000 excellent location.

This property is a money making bargain to someone who likes to handle apples.
Price \$45.00 per acre.

APPLE FRUIT FARM
Pine River, Wis.

Cut out the old dead wood of the currants and thin out new shoots if they are thick. Leave no more than can have plenty of room to grow.

Emergency Poster 4

April, 1917

HELP SUPPLY YOUR OWN TABLE

Mr. Town "Lotter"!—

Your country calls you to help. We face a very serious food shortage. In the emergency, your garden space, your muscles, and your spare time must be enlisted.

President Wilson says: "Everyone who cultivates a garden helps and helps greatly to solve the problem of feeding the nation!"

Remember, somebody has to raise everything you eat. A garden in your back yard, though small, will surprise you by the amount of vegetables it will produce. A lot of patriotic folks are going to have a garden this summer. Why don't you have one, too? There's plenty of time if you will start right now. Let the boys and girls have a hand in it. Here is a plan you can follow — with success.

Plan First Before You Plant

Hit or miss gardening wastes time and energy and does not yield good results; so plan your garden carefully.

Remember, winter vegetables will count most this year. Grow the small, early maturing crops between the rows of winter vegetables.

GET THE GROUND IN GOOD SHAPE. — (1) Apply fine or well-rotted stable manure if you can get it. (2) Plow or spade from 7 to 8 inches deep. (3) Rake until thoroughly pulverized and leave level and smooth.

WHEN TO PLANT.—Sow seed for late tomato plants indoors at once. Later, you may be able to buy plants from your grocer.

Plant early beets, early carrots, lettuce, onions (seed and sets), peas, radishes, and early turnips as soon as you get the garden ready.

Plant late beets, carrots, parsnips, salsify, and seed for late cabbage plants about May 1-5.

Plant beans, corn, cucumbers, squash, tomatoes after frost damage is past. Set late cabbage the last of June.

Sow turnips and winter radishes late in July on all ground used for early maturing vegetables.

Lettuce, peas, radishes, beans, and corn may be planted at two weeks intervals to ensure a constant supply.

SOME OTHER THINGS TO REMEMBER.—The best crops to plant for a winter supply are: beets, cabbage, carrots, celery, onions, parsnips, rutabagas, turnips, and tomatoes. Suggestions will be made later on storing and preserving these. Unless you have a large garden, don't waste your space by growing potatoes, corn, squash, and other vine crops.

Plant seed of standard varieties—don't experiment with new varieties this year.

After the Garden Is Planted

—your work has just started. Stay by it and you will find it both profitable and enjoyable. Have appetizing fresh vegetables on the table during summer, home-canned vegetables on the shelf and others in storage in the cellar. Don't let the hot weather wilt your patriotism.

USE THE HOE to keep the surface soil loose and fine. Hoe shallow—the roots are near the surface. Hoe after each rain and at least once a week. Be sure to wait until the soil is dry enough before hoeing—this prevents lumps. Frequent hoeing kills the weeds before they get above ground.

Plan right now to can or store surplus vegetables.

"More Food This Year Is Patriotism"

If you want to know more about gardens ask your neighbor who has had one or write

**Agricultural Experiment Station, The University of Wisconsin
Madison**

"The hoe in the back yard is mighty good backing for the flag on the front porch"

Emerson, c. 1850

April, 1917

An Army of Poultry Will Help Win the War

Uncle Sam Says:

- “The Nation’s meat supply is short.
- “Chickens are the quickest meat crop that can be produced.
- “Chickens require no large cash outlay.
- “We need an increase of one hundred million pounds of poultry this year.
- “Wisconsin’s share is three and a half million pounds.
- “Will you raise a bigger flock?”

Raise More Chickens — It Pays and It’s Patriotic

But the big waste in poultry comes through losses after the chicks are hatched. It is a crime against the Nation’s meat supply to let a chick die that has eaten some of the farmer’s feed and used up some of his energy. Save your chicks.

Right now before you go home

Buy a can of insect powder—be sure it’s fresh—and some vaseline.

Have you any coal tar disinfectant?
And how about a good egg crate so you can market your eggs without waste?
Unless you have a supply of buttermilk or sour milk, stop and get a sack of meat scrap.

Tonight when you get home

Let the boys do your chores while you grease the heads of the baby chicks, and dust the setting hens with that insect powder.

Then tomorrow, clean the coop and paint the roosts with kerosene or coal tar disinfectant. That will kill the mites.

Why not market or eat the poor laying hens and all but a very few roosters?

You can tell your poor layers. They molt in the summer (good ones molt in the fall). They sit on the roost late in the morning and early at night. Feel

**Town Folks—
Start a Flock!**

Keep a dozen hens in the back yard.

Feed them your table scraps, your lawn clippings, and garden waste.

Read all the good advice you can get.

Write to the College of Agriculture, Madison. They will be glad to help you.

their crops at night—good layers are good feeders. Sell all small, long-headed, late-hatched pullets.

Feed some buttermilk, sour milk, or meat scraps.

Give them free range—but fence in the garden.

Feed regularly a variety of good, clean feed.

Keep a dry mash before the hens at all times. Use 2 pounds of ground feed, 1 pound bran, 1 pound middlings, and one pound of meat scrap if milk is not available.

Provide plenty of house room for the growing chicks. Sell or shut up all roosters after May 15. The rooster makes eggs fertile—fertile eggs spoil.

Have the boys provide a clean, well-littered nest for every five hens.

That will prevent dirty and broken eggs. Have them gather the eggs twice daily, and pack them in that egg crate in a cool, dry cellar or milk room.

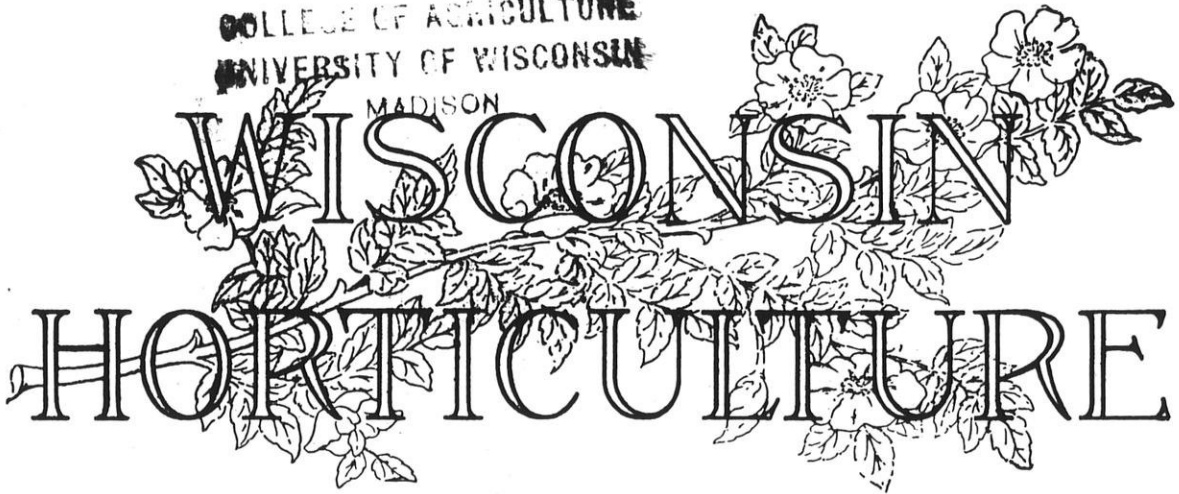
Market them at least once a week. Don’t let the sun hit them on the way to market.

Of course this means a little extra work, but eggs and poultry are going to be high

“More Food This Year Is Patriotism”

*Any questions you care to ask will be answered by
Agricultural Experiment Station, The University of Wisconsin, Madison*

LIBRARY
COLLEGE OF AGRICULTURE
UNIVERSITY OF WISCONSIN
MADISON



WISCONSIN HORTICULTURE

OFFICIAL ORGAN OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

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Volume VII

Madison, Wisconsin, June, 1917

Number 10

“We are now about to accept the gage of battle with this natural foe to liberty and shall, if necessary, spend the whole force of the nation to check and nullify its pretensions and its power. We are glad to fight thus for the ultimate peace of the world and for the liberation of its peoples the German people included; for the rights of nations great and small and the privilege of men everywhere to choose their way of life and of obedience. The world must be made safe for democracy. Its peace must be planted upon the trusted foundations of political liberty.

“We have no selfish ends to serve. We desire no conquest, no dominion. We seek no indemnities for ourselves, nor material compensation for the sacrifices we shall freely make. We are but one of the champions of the rights of mankind. We shall be satisfied when those rights have been made as secure as the faith and the freedom of the nations can make them.”

—President Wilson.

Insure Garden Harvest by Liberal Use of the Hoe.

By Professor J. G. Moore.

The summer months are the critical periods in the city garden. The garden fervor of spring has worn off in the work of soil preparation and planting and the garden operations assume more and more the aspect of drudgery. Although the gardener may feel less like hoeing and raking than he did earlier in the season, he must give the plants more attention in these respects than earlier in the season if the harvest is to be worth while. This is the test which reveals the real gardener.

We might designate this period as the "Three T" period of gardening—the thorough, timely, tillage period. The gardener's motto at this time should be "Catch moisture—hold moisture." The demand of the plants for moisture as the warmer weather comes on is ever increasing. Moisture is necessary for plant growth and unless there is an abundant supply available for the plant, growth ceases, the parts used for food fail to develop or are of such a nature as to be undesirable. Moisture, therefore, becomes at this time the chief concern of the gardener. Tillage is the chief dependence of the average gardener in supplying this essential of successful gardening.

Tillage is Garden Life.

Not only does the plant demand moisture, it must also have an abundance of available food. The old sayings, "Tillage is essentially manure," and "The best garden fertilizer is the hoe," are indicative of the importance of tillage in making available to the plants this requisite of growth.

Many a garden convert is caused to blackslide because of the persistent opposition of weeds. In the conflict with weeds, tillage is of prime importance. Properly used, tillage renders weeds negligible factors in gardening. It may not do so the first season under the same conditions, but unless quack grass or some weed of similar character is the offender, the conflict is a comparatively easy one. Thorough, timely tillage, then, ordinarily equals a good moisture supply, abundant available plant food, and an absence of weeds.

Till Soil Thoroughly.

What is thorough tillage as regards these important factors in insuring the harvest? It is that tillage which produces conditions best fitted to accomplish the desired results. The ideal condition for all objects is the same; the continuation of a shallow layer of soil, as nearly dust like as possible, over the entire surface. The methods of securing this ideal may be various, but the following program is well adapted to produce and maintain it. First of all the preparation tillage of the early season should have been such as to create a large moisture holding reservoir and place the soil in a fine, loose condition. The maintenance tillage will then be as follows:

Hoe or rake the area to be planted immediately preceding sowing or planting.

Hoe entire garden at least once a week if soil conditions permit.

Hoe, and if necessary, rake after each shower of sufficient extent to pack the soil.

This tillage should be shallow, for deep tillage will destroy many

of the roots of the plants and would probably do more damage than good.

Till at Proper Time.

The old adage, "A stitch in time saves nine," applies admirably to garden tillage. Many gardeners pay a heavy penalty for not tilling when garden conditions are most favorable for tillage.

The best time to destroy weeds is just as the young plants appear above the surface. Tillage at this time will save much hard work in eradicating weeds later on.

The best time to restore the soil mulch is after a rain, before the surface soil becomes baked. A few hours delay after the soil is fit for working often means from three to four times as much work to restore the soil mulch and often a much less effective mulch than had the work been done on time.

Tillage may be untimely by being done too soon after a rain. This is particularly true on the heavier types of soil. A heavy soil worked wet cements or puddles and then bakes, destroying its tilth and making it very difficult or impossible to re-establish a good soil mulch. Timeliness, then, on such soils means tilling neither too soon nor delaying tillage too long. The following test will prove advantageous in determining whether the soil is in condition for tillage. Take a handful of soil and squeeze it firmly. If, upon opening the hand, the soil falls apart upon little or no disturbance, then tillage is safe. If the particles adhere tenaciously, it is best to let it dry before tilling.

Set Plants Right.

The most important factor in setting plants is to get the soil in contact with the roots of the plant. Very often the plant when set with a trowel is "choked," that is, the soil is pressed around the collar of the plant while the roots are suspended in the hole. It is impossible for the roots to come in contact with the soil when in this position, and the plant withers and dies.

Cucumbers, melons, and squash, which are to be transplanted, should be grown in paper pots or flower pots so that the ball of earth around the roots is not disturbed in transplanting. Plants are ordinarily set a little deeper than they were in the seed bed. Overgrown or spindly tomato plants may be set in a slanting position in a trench three or four inches deep. A plant set in this way will form roots along the buried stem.

Uses for the Garden Rake.

With a good soil and proper hoeing, the rake may be dispensed with except in the preparation tillage. Most people use the rake to level improperly hoed soil. In maintenance tillage, the chief value of the rake lies in its use as a substitute for the hoe when the rows are far enough apart to permit of its use. It is used with a slight chopping motion and saves time when comparatively large areas are to be tilled. Our choice is the old-styled straight rake with straight teeth.

Tools for Tillage.

The hoe and rake are the chief tillage implements in the average

city garden. In fact, no other tools are necessary for maintenance tillage if these two are of the proper kind and properly used.

More than half the garden hoeing is less than half done. This is because most amateur gardeners do not know how to use a hoe as a tillage implement. The aim in hoeing should be to leave the entire surface fine, loose, and level. Hoeing usually falls short of this aim for one or more of the following reasons.

DON'T "CUT AND COVER."

First we notice in faulty hoeing the cut and cover method. This consists in inserting the hoe into the soil and pulling a quantity of soil on top of an unhoed area. The operation is repeated leaving a series of hills and hollows with only approximately one-half of the original surface soil stirred. This must be followed by raking and even then is far from efficient. The only thing in its favor is that it is a rapid method, but we should have higher ideals than mere rapidity in our garden work, if we are to insure the best harvest.

The second reason why we fail to secure best results is because we leave the row strip too wide, thus permitting the loss of a large amount of moisture and leaving an opportunity for weeds to develop in direct competition with the vegetables. This failure is usually due to unsuitable hoes. Most hoes are too large and are so constructed as to make work between plants, set at small distances, almost impossible. The long-handled, three-cornered hoe frequently called the onion hoe," will largely eliminate this difficulty.

Loosen the Surface Soil.

We hoe to preserve a layer of loose soil on the surface, yet in looking at many recently hoed gardens, you would never mistrust that this was the chief object. The gardener, due to faulty methods, has succeeded in largely repacking the soil by tramping over the area he has just hoed, and not infrequently, his labor is worse than wasted as he has less favorable conditions when he has finished than before he began. A good mark at which to aim in this regard is to have no footprints visible when the hoeing is finished. If you set out with this in mind, you will quickly devise ways of accomplishing your purpose, and that without loss of time or efficiency. Of course, this mark cannot be reached where the wheel hoe or horse cultivator is used.

Hoeing properly done, then: (1) stirs all the soil possible; (2) leaves the soil fine and level; (3) avoids repacking the soil by tramping.

The small hoe is preferable to the large hoe in a number of ways. Some of the reasons are that it is easier to operate; can be used closer to plants; if soil is somewhat compact, a much better job can be done, and at less expenditure of energy. Nine-tenths of the hoeing in the city garden can be done efficiently with the long-handled, three-cornered hoe previously mentioned. Avoid round-backed and very large-bladed hoes.

Do not prune spring-flowering shrubs until after they flower. Those that flower in autumn may be pruned now.

HOW I CAN MAKE MY GARDEN PRODUCE FOR WINTER USE.

Miss Blanchard Harper Madison.
Wis.

(From 1909 Annual Report)

Mr. Cranefield has asked me to tell you how I can my garden produce for winter use, and I am willing to do so in order that the pleasure the results of my efforts have given to me and my friends may also be yours. I need not say pleasure only but should lay some stress on the profit also as may be shown in the one fact that Mrs. Geo. N. Knapp whose husband was formerly a professor in the College of Agriculture, made eighty dollars the first year she accepted any orders and the second year refused further orders when those received amounted to three hundred dollars. I have more than once been offered four dollars per dozen pints of canned peas, and cost of cans extra.

Any one who has had peas, corn, string beans, etc., canned at home will not willingly go back to factory goods. The flavor is exactly that of the fresh vegetable, and there is absolute certainty of purity.

Please bear in mind that I in no way claim to be the originator of the following recipes. Some of them are taken directly from Mrs. Rorer's *New Cook Book* and the ones for the corn were worked out by my friend, Mrs. G. N. Knapp. In some cases I have changed or adapted a recipe, but in all cases, I shall as far as possible credit the originator.

Before giving the recipes, it will be necessary to consider a few preliminary preparations and to mention several cautionary "dout's" to the unwary housekeeper. The

preliminary care for canning vegetables must begin in the picking and handling in the garden, and the necessary directions will be given with the recipes—but the preparations in the kitchen are the same for all and can be given here.

This kind of canning is merely sterilizing food stored in sealed jars, and once the contents have been thoroughly sterilized there is no likelihood of spoiling for several years if the sealing is intact, except under one condition and that condition is so important, so underrated, so generally ignored that I can hardly place too great a stress upon it—and that is *clean jars*, chemically clean jars. How many times do women canning use a jar stained by previous contents, or a mason jar cover roughened and whitened and corroded inside, by the fruit acids of last year's canning, how many stop to consider the possible chemical combinations and deposits made by the action of fruit juices on the metal under that innocent looking opal disc in the cover of the Mason jars. A woman will do every stage of the process carefully and well, then after all her efforts put on a contaminated and corroded cover, ignoring the fact that in so doing she is merely adding unknown lead and zinc salts to her fruits, then wonders why they taste queer. On that account I prefer to use glass topped jars. There are a number of different makes on the market, as nearly every manufacturer of Mason jars also makes the glass topped. The first cost of the latter is more than Masons but when balanced by corroded covers which must be renewed and spoiled cans, it comes out even about the second year. Never use a jar or cover that is stained. If

hot soap suds does not remove the stain, soak the jar for 24 hours in strong solution of washing soda, if that fails use commercial hydrochloric acid one part, water two parts (can be used over and over again) or try sapolio, bon ami or dutch cleanser—and if all these fail use the jar for pickles or throw it away.

Never use a rubber ring a second time. Buy the best you can get. They should be soft, flexible, not too thick, and should not stretch in the boiling.

Never touch or handle the cover or rubber on a *sealed* jar. The steamed juices in cooling form a delicate cement between the cover and rubber, and this, if broken by turning or handling is liable to start a leak and admit air. Always lift a jar by the jar itself, never by the cover. Keep your jars in a cool, dry, dark place after canning.

Provide the following utensils: (1) A boiler or kettle with flat bottom and with a close cover. The kettle should be deep enough to take pint or quart jars and yet leave an inch of space above them. An ordinary tin wash boiler such as is used for clothes is the best when a number of jars are to be done—but when I have only one or two I use a soup kettle.

(2) Provide a piece of expanded metal lath, or galvanized wire netting having $\frac{1}{2}$ or 1 inch mesh, cut to fit the bottom of the boiler. Or have a wooden rack made to fit the boiler. Either should lie flat. The object is to lift the jars from the bottom of the boiler to prevent them from bumping when the water boils hard.

(3) Plenty of new good rubbers.

(4) One or two extra jars for emergencies.

(5) Boil one or two gallons of water for ten or fifteen minutes after it comes to a boil. Cover it while cooling and keep it covered until used as shown later. The objects in boiling the water are three-fold: (1) To sterilize; (2) To expel the air absorbed in it; (3) To throw down the lime if the water is hard.

With clean jars, rubbers, covers, and the above utensils one is ready to try the first vegetable.

Peas.

As the variety of peas grown makes a great difference in the result, I will state that my friend Mrs. Knapp tried canning "Telephone" peas and found them so unsatisfactory that she said "One would not know them for the same vegetable as yours." I always use the following varieties: Little Gem, Premium Gem and A d v a n c e r. Nott's Excelsior were not bad. Gradus I did not care for.

It is labor lost to can old peas. Peas for canning are better picked when *best* for the table but better too small than too large.

As peas ripen the development of starch makes them difficult to keep when canned. Canning also emphasizes any tendency they may have to a mealy flavor. Peas should be picked in the early morning, when they are cool. If the pods are dirty or the pickers of questionable cleanliness, *wash the pods before shelling*.

Fill a pint jar half full of the sterilized water, (if the water is put in first air is not imprisoned in the space between the peas, to cause trouble in boiling.) With clean hands shell the peas directly into the jar until it is full. Add $\frac{1}{2}$ teaspoon of salt. Lay on carefully washed rubbed ring, then the cover *loosely* fastened. When all

jars are ready place them in the boiler on the wire or wooden rack. Now pour in cold water until it comes to two-thirds the height of the jars, cover and put the boiler on the stove and boil two and a half hours from the time the water boils. Quarts should boil three hours. As soon as the period is up turn the fire out and *without delay* as quickly as possible lift the jars out one at a time and tighten the cover before lifting another to tighten. One bushel of peas makes 10—12 pint jars.

Never, never, never, lift a cover off the jar, as that would admit infection of moulds and ferments. Let me repeat again *do not delay* in tightening or sealing covers as soon as the water ceases to boil; if you do you can in a few minutes hear fresh unsterilized air carrying all sorts of germs of moulds and ferments sucking into your jar to ruin your work. I consider this and the question of clean jars and covers and good rings the crucial points of the whole process. Everything depends on them. Adapted from Mrs. Rorer.

Asparagus.

I have never myself canned asparagus, but give herewith Mrs. Rorer's recipe for those who care to try.

Wash and trim the asparagus. Cover it with boiling water, boil fifteen minutes, drain, cool, and arrange it neatly, heads up, in wide mouthed jars; adjust the rubbers, fill the jars to overflowing with water that has been boiled and cooled; add a half teaspoonful of salt and lay on the tops loosely. Cook the jars in the boiler one and one-half hours as directed for peas and finish in the same way.

Beans.

String beans should be picked before the dew falls in the evening or after it is dry in the morning, and kept in a cool place covered with a cloth or wet paper to keep them crisp. Mrs. Knapp and I have used the Stringless Green Pod, and the 1000—1 Refugee with the best satisfaction. I tried some wax beans one year but found them flavorless and unsatisfactory. String and cut the beans as for the table, throwing them into cold water as they are cut, drain them and throw them into boiling water to cook until they can be pierced by a silver fork without breaking and they must cook no longer. If they are cooked too long at this stage they become soft and mushy in the cans. Remove from fire, drain immediately and pour cold water through them in a colander until they are *cool and firm*. If one has not a faucet or pump, three or four changes of water will be sufficient. Use plenty of water. This cooling is called blanching by some writers.

Half fill the jars with the sterilized water, then put in the beans which have been thoroughly drained and pack them in as firmly as one can without crushing, add one-half teaspoon of salt. Finish as directed for peas cooking one and a half hours.

Young and tender beans require little more than scalding in the preliminary or first cooking, but old beans require sometimes fifteen or twenty minutes according to toughness and quantity. It is advisable on this account not to cook more than four or six quarts at a time for the preliminary cooking. Shelled Lima beans are done in the same way. Adapted from various sources.

Beets.

Young beets may be canned either whole or sliced, and with or without vinegar.

Mrs. Rorer's Recipe.

"Select young fresh beets; wash, put them into boiling water and boil carefully for thirty minutes; then remove the skins, and pack the beets into quart jars. Add a half pint of vinegar to a quart of water that has been boiled and cooled; fill the jars with this mixture. Finish as directed for peas, cooking forty-five minutes."

After cooking the beets thirty or more minutes, I rub off the skins, slice the beets, run cold water through them, then half fill the jars with sterilized water, then put in the chilled beets and finish as directed after adding half a teaspoon of salt. They should boil an hour in the boiler. I have also canned young carrots and spinach in this way. The carrots were successful but as carrots can be so easily stored in the cellar in sand, it is not necessary to can them. One can out of several that I did of spinach was successful. I am inclined to think that the others would also have been had I canned them in the orthodox way, but I tried cooking them in the hay box instead of the boiler and so failed.

Corn.

Many years ago Mrs. Knapp saw a paragraph in the Breeders' Gazette telling some woman's experience in canning corn. On that foundation she has since worked up the process hereafter given.

The paragraph mentioned particularly the fact that the corn must be gathered at such an hour

of the day that there should be no moisture upon the husks from rain or dew, that after gathering the corn must be spread out separately to avoid all danger of heating or sweating by piling in heaps.

The other details of manipulation are Mrs. Knapp's.

As said before the corn must be dry when gathered, the weather must not be damp, rainy or cloudy. Mrs. Knapp would sometimes gather her corn when a thunder shower threatened, but never after. The canning must be done only on clear pleasant days—never on a rainy day—why we do not know, but corn canned on a rainy day is more liable to spoil.

After gathering the corn should either be used immediately or spread out on the floor of porch, shed, or cellar. It should be husked and the silk brushed off with such a brush as is usually used to wash vegetables. After brushing the corn is cut from the cob with a sharp knife, not too close, and then the cob scraped down to get out the milk and pulp still adhering. As soon as enough corn is cut to fill a pint jar it should be immediately put in the jar and packed down firmly with a spoon or better still a stick just wide enough to go through the mouth of the jar easily and shaped something like a potato masher.

The jar should not be filled above the shoulder to allow for expansion by heat of cooking. Mrs. Knapp adds no salt. I use $\frac{1}{2}$ teaspoonful to each pint. As fast as filled each jar should be loosely covered and set in cold water to keep cool until all are ready for the boiler.

Do not put on rubbers at this stage.

When all the jars are ready put the grating or rack in the boiler,

fill with cold water to two-thirds the height of the jar and boil for two hours after it begins to boil. If during the boiling any of the jars boil over they must now be wiped clean. The rubbers are now adjusted making sure that no particle of corn be between them and the glass or the cover, and the cover must be fastened tight. The jars are then replaced in the boiler and enough hot water added to completely cover them. They must boil for one and a half hours longer after coming to a boil. The jars must not be taken out until thoroughly cool. Wipe the jars clean immediately as the scum is difficult to remove when once dried. The expansion of the corn in cooking varies greatly in the different varieties of corn and also the age. And this expansion is to be guarded against because it sometimes blows the covers off. No water must be allowed to enter the jars. By tight or firm packing and so excluding the air from between the kernels, the expansion seems to be lessened; but an even more important factor seems to be the prevention of fermentation previous to cooking by working quickly and without interruption from the husking until the corn is in the jars and then keeping the jars standing in cold water.

There is another way of doing corn when it is to be used for cream soup, fritters and pudding, to score each row of kernels and then scrape out the pulp with a knife leaving the hulls on the cob; or this may be done more rapidly by a corn-scorer, which can be purchased for fifteen cents.

This pulp should be handled even more rapidly than the cut corn. The jars owing to the great expansion which takes place in cooking, should be *only half filled*. It is im-

possible to cook it and have a jar more than half full when finished; hence it is more economical, cleaner and less aggravating to start with a jar half filled and get it all. It is cooked exactly as in the first recipe. Corn put up according to these recipes is delicious and well worth the effort.

Frequently in cooking the jars I myself do not follow Mrs. Knapp's method of tightening the covers and adding hot water to cover at the end of two hours; I cook the jars two hours, wipe them clean, adjust the rubbers, lay on the covers loosely, and cook for the additional hour and a half, then close at the end of the time. But I must admit that my way is not as safe and sure as Mrs. Knapp's although I have never failed in it.

Mrs. Knapp and I have tried the following varieties: Early Crosby, Melrose, Portland, Stowell's Evergreen, Zig Zag Evergreen and Country Gentleman. They are all delicious—but the Early Crosby and the Zig Zag Evergreen seem to stand the canning better. Corn for canning should be picked when best for the table. Old corn like old peas is difficult to keep.

As a rule from 5 to 7 ears are required for a pint of cut corn, although we have used sometimes as many as ten and as few as four. It all depends on the corn.

Tomatoes.

Tomatoes form an important element of modern cookery, taking their place as vegetable, salad, soups, purees and sauces for meats, macaroni, etc.

The method of cooking I use in putting them up belongs to Mrs. Rorer's recipes, but the flavoring and many other details are my own. "Adapted partly from Mrs.

Rorer" I think should be the label on the following recipes. Use only good, solid, fleshy tomatoes.

Stewed Tomatoes.

Select tomatoes carefully, scald by dipping for a minute or two in boiling water to loosen skin, skin, and divide the tomatoes if very large. Put them in a porcelain lined kettle, and add enough onion juice or chopped onion to taste. I use one small onion to two gallons of tomato, and a half teaspoon of celery seed, eight or ten peppercorns and a tablespoon of salt. Boil until the tomatoes are as thick as are usually served on the table, then pour them into clean jars, put on the rings and cover loosely. Set the jars in the boiler, and fill to two thirds height of jars with water about the temperature of the jars of tomatoes, warm if they are warm, cold if they are not. Bring to a boil and boil ten minutes. Remove at once from boiler and tighten covers.

Tomato Puree for Soups and Sauces.

Cut up sound tomatoes and boil in an enamel or porcelain kettle until thoroughly soft. Strain and mash through a colander, then through a fine sieve. Return to the kettle and add for two gallons of tomatoes the following: 1 tablespoon salt, 12 peppercorns, ½ teaspoon celery seed, 1 small onion chopped, 2 bay leaves, 6 cloves, 6 allspice, 1 bunch parsley. Cook slowly until tomatoes are thick, then turn into jars and finish as in preceding recipe.

To use these tomatoes:

For soup: Add an equal quantity of soup stock, enough butter and flour to thicken and a few drops, if one likes it, of kitchen bouquet.

For tomato bisque: Add a salt spoon of soda to the tomato heated then an equal quantity of hot milk, thickened with butter and flour and serve immediately.

For a sauce for chops, cutlets, fish, etc.: Merely heat tomatoes and thicken with browned flour and butter. A little left over gravy or soup stock may also be added with advantage.

Tomatoes Whole for Salad.

Carefully select tomatoes of globular shape which will just slip through the mouth of the jar. Scald and skin them as directed for stewed tomatoes, take out the stem and core and slip the tomatoes gently into jar. Mrs. Rorer adds merely the sterilized water and a little salt but I add the following liquid.

The day before I stew a small quantity of tomatoes until soft and then set the kettle aside to cool and settle. The following morning I carefully pour off all the clear liquid floating on the top, strain it through a jelly bag, and boil it for a few minutes with onion, bay leaves, celery seed, peppercorns and parsley, then cool it and use it to fill the jars of whole tomatoes.

The jars are covered with rubbers adjusted and placed in the boiler with cold water. Bring to a boil and boil ten to twelve minutes only. Remove immediately from the boiler. When wanted to serve, drain off the juice, thicken with gelatine and use it to imbed the tomatoes either single or together.

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Frederic Cranefield,
Sec. W. S. H. S.

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Hold!

The great Spring Drive started by the Agricultural College and other state institutions and continued by the newspapers of the state has been successful. Not only the larger towns, such as Milwaukee, Superior, Oshkosh and Sheboygan but hundreds of smaller places have been captured and the inhabitants all inoculated with the garden germ. Travel where you will in the state you may see gardens innumerable where no gardens ever grew before. And it's a mighty good thing. Even if

the war should end tomorrow and if the food supply, on account of an abundant harvest, should be superabundant, two things highly improbable there would still be great gain.

Several things will be gained, health and vigor for many city gardeners, a love of gardening that will not end with the war and, on the part of many, a greater respect for the farmer and gardener, for the man or woman who this year for the first time raises a bushel of potatoes or of tomatoes will know what it costs to produce them.

Also the money value of all these thousands of gardens will be tremendous, if, and here comes the rub, if we all HOLD FAST! This is the first battle for many and some will drop their weapons and run. Digging and sowing the seed is not unlike marching down the street behind the band but getting into the trenches is another matter.

That's where you will be during June, July and August, dear brethren, in the trenches. Let's see if you've got grit enough to stick. Your enemies will attack day and night, week-day and Sunday, rusts, blight, bugs, worms, drought and storm. Yet every one of them can be overcome if you Hold Fast.

Call it war and you have it about right, we won't change the figure but somehow when I think of you beginners hammering at some hard and unkindly soil with a dull hoe, the thermometer at 80 or 90 and not a cloud in the sky I like to think of the big Chicago-Wisconsin foot-ball game at Camp Randall last October.

The home team had been getting rather the worst of it, forced back inch by inch but fighting bravely

all the way; all the way back across the ten yard line, back again over the five yard line they are now scarce a foot from the goal and the ball on the opponents side. There they stand or crouch, tense, every nerve strained, every muscle taut, waiting for the signal that will start the opponent's rush across their goal,—unless! Then from the ten thousand spectators came a cry, not the college yell, not a mere shout but just a single word, at first almost like a dirge but with each repetition swelling louder and louder, one word, hold, hold, h-o-l-d, and they *did* hold the line, Will you?

Summer Meeting.

The summer meeting will be held in Oshkosh Aug. 22-23.

Some of the best market gardens in the state are located near Oshkosh and it is for this reason the meeting was located there.

This is the greatest garden year in our history, everybody is gardening and while many of the beginners may fall by the wayside many more will have acquired a love for the work that will persist.

To these converts to our ranks as well as all those who have been saved in the past the summer meeting offers a splendid opportunity.

The meeting will be unlike those of recent years in one respect, the entertainment features will be minimized and the program and demonstration emphasized.

At least one-half of the time will be spent in visiting market gardens.

If the war should happily be ended by that date we, who have done our bit, and that means every member of the Society, should gather to rejoice, each to

congratulate the other for his part. If this "day of darkness, a day of clouds and of thick darkness," still lasts then the reason for getting together is still greater, that we may plan for the year to come.

So there will be a summer meeting of two days at Oshkosh, Aug. 22nd and 23rd, and whatever course world events may take it should be well attended.

Mr. J. E. Baer.

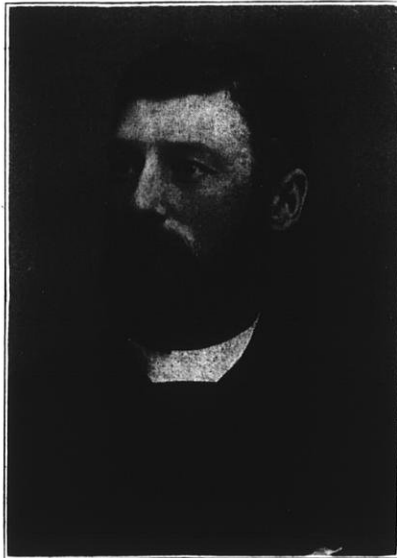
Mr. J. E. Baer for many years a member of the Wisconsin State Horticultural Society passed away at his home in the Skillet Creek neighborhood, town of Baraboo, Tuesday April 17th.

The cause of his death was a combination of indigestion and heart disease. On the Friday previous to his death he was taken suddenly ill in the field and fell unconscious before his son Carl to whom he called could reach him. He rallied sufficiently to be able to look about the farm on Monday so the end seemed to come suddenly.

Mr. Baer will be sadly missed by his many friends for his quiet, genial, kindly companionship, and the helpful interest he took in all that stood for the betterment of the community.

Mr. Baer was born in Grupery, Switzerland, in the year 1855 and came to Sauk Co., in May 1871. After a few years he traveled some and then settled down for a time in Stanford, Ky., where he was married in 1885 to Miss Lillian Bastin. In 1890 they came to the city of Baraboo and engaged in market gardening. Mr. Baer in Switzerland had been trained to fruit growing and always had a

longing for the old occupation so in 1899 purchased the farm of the present family home which is very near where was his father's farm. Mr. Baer's orchard consisted of about eight acres of apples with a considerable variety of plums, native and domestica, also some cherries, grapes and a few peach trees. While his is a farm orchard, it is, for good care, a model for amateur or professional. His fruit as shown at the state fair and Winter Meetings of the Wisconsin State Horticultural Society was always of high quality. The home garden and or-



J. E. BAER.

namental plantings were models of good taste and careful management.

Besides Mrs. Baer he leaves the following children: Carl J. at home, Miss Bessie Baer a teacher at Jefferson, Miss Susan teaching in Delton, Miss Dorothy a student at Platteville Normal and Alfred a student at Delavan.

By William Toole, Sr.

Remove the blossoms from newly set strawberry plants.

Traction Sprayers.

(Answers by Dr. E. D. Ball, State Entomologist.)

(1) Question.—Can one depend on a traction sprayer to get pressure enough to keep two double nozzles going and do effective work?

Answer: No. The traction sprayer has not proven to be a success in any line of orchard work, due to the fact that there is not enough travel for the amount of spraying required. Practical horticulturists have long since abandoned these except for special services where a very small amount of spraying in long rows was required and even under these conditions the pressure furnished is not satisfactory.

(2) Question.—Can one man manage two nozzels if he has an engine to run the sprayer?

Answer: One man might handle two nozzels set on a single pole but he would not be able to do satisfactory work as the volume of the liquid handled would require excessively rapid movements of the pole which could not be accurately made. A single nozzle of the "Mistry" or Bordeaux type on the end of a 10 or 12 foot pole is all that one man can manage with efficiency and economy of liquid. If you have a power sprayer it will handle two nozzles, but these should be on separate poles and leads of hose and with a man for each nozzle. More power outfits use three men than two, another man driving the team and caring for the pump and engine. In this way the full efficiency of the outfit can be utilized.

Seedlings should have plenty of air and sunlight to keep them stocky.

The Control of Garden Pests.

By James G. Moore, College of Agriculture, University of Wisconsin.

Practically all garden crops are attacked during their development by one or more pests. These pests are ordinarily classified as disease or insects. The greater struggle on the part of the gardener usually has to be waged against insects.

Frequently the seriousness of the attack is due to neglect on the part of the gardener to follow some of the simple practices which tend to reduce the danger to the minimum. Some of the practices recommended for the truck gardener or the farmer are not available to the city gardener.

Sanitation Must be Guarded.

One of the first things for the gardener to observe is "garden sanitation." Frequently garden pests, both insect and disease are carried over on the waste material of the previous season's crop. While working refuse material into the soil is commonly recommended, one should be sure that in so doing he is not inviting trouble for next season by providing a pest to be controlled. Burn leaves and stems or other refuse if there is the least suspicion of its being a source of infestation.

Rotation of crops is one of the best methods of avoiding pests in ordinary farm operations. While it is not possible to realize as much benefit from crop rotation in the city garden, especially as regards insect pests, it is of some value in certain instances and frequently of great value as regards certain kinds of diseases.

In the case of those insects

which pass the winter in the upper layer of soil fall tillage which exposes the pest to the unfavorable temperature changes and to the attacks of birds helps materially.

Another sanitation measure is the removal from the garden or immediate vicinity of weeds or other plants upon which garden insects may feed. Very frequently there would be no serious trouble from a particular insect if its presence had not been encouraged by such plants.

Plants to Trap Insects.

Trap plants, plants started in advance of the regular crop upon which the insects may collect and then be destroyed is often found to be a satisfactory method. Frequently if the first insects to appear are destroyed there is little probability of depredations later on. This is true in the case of many aphids, the squash bug, and several others.

Trapping is a useful method in some cases. Short pieces of old boards, clods, or stones are put close to the plants in order that the insect may find shelter at certain times. It is then an easy matter to destroy the insects when they have collected underneath the protector. This is a favorite method of many in controlling the squash bug.

Hand Picking Best at Times.

Hand picking is used in the case of insects which are usually not very numerous, or when the number of plants is small. This is usually the most satisfactory method with the tomato worm. It is also very helpful in the case of potato and cucumber beetles.

Stalk borers, root maggots, and bacterial wilts usually necessitate the destruction of the plant or the portion attacked. Such pests are often detected by the wilting of the plant even though it is evident that there is sufficient soil moisture. The immediate destruction reduces the possibility of a spread of the trouble to other plants or of infestation from this source the following year.

Know Before Spraying.

The majority of insect pests and plant diseases are controlled by the application of spray materials. In order to spray intelligently we must determine what the pest is; if an insect, how it takes its food, and how it is most easily destroyed. This knowledge is usually not all gained by the beginner in his first or even his second year.

An examination of the plant usually reveals the manner in which the insect takes its food. Not infrequently, however, the pests are so numerous that waiting for the action of an insecticide would result fatally and the gardener must decide whether even more direct methods may not be necessary to save the crop. This is especially true in the case of striped cucumber beetles, flea beetles, and blister beetles.

Eating and Sucking Insects.

In ordinary cases if an insect eats the foliage or exterior parts of the plant it may be controlled by poisons, as Paris Green, arsenate of lead, or hellebore. If the insect merely sucks the juice from the plant, poisons are valueless and a material which kills by coming in contact with the pest, as nicotine sulfate, or kerosene

COMMON GARDEN INSECTS OF WISCONSIN

emulsion, is necessary. On the other hand, if the attack is on the interior of the plant, removal of the part, or in the case of seed, fumigation may be necessary.

Some knowledge of various insects is necessary in order to identify some of our less common insect pests which at times are very troublesome, but descriptions of them cannot be undertaken in this article.

Below is given a list of the more common insect pests of vegetables, with methods of control and formulae for spray mixtures.

Methods of Control.

1. Trap plants. 2. Dust plant with air slaked lime and Paris Green or Arsenate of lead. Repeat at intervals as often as insect reappears. 3. Fumigate seed with Bisulphide of carbon before planting. 4. Soak for 1 minute in boiling water. 5. Same as 3 but as soon as harvested. 6. Kerosene emulsion or nicotine sulphate. Nicotine sulphate at times gives undesirable flavors to salad crops. 7. Bordeaux mixture containing arsenate of lead or Paris Green. 8. Protect plant by tarred paper protector about 2 inches in diameter fitted closely around base of plant. 9. Burn badly infected plants as soon as discovered. 10. Apply arsenate of lead or Paris Green in liquid form. 11. Fresh hellebore or pyrethrum may be substituted for 10. 12. Destroy infected part as soon as discovered. 13. Cover plants with hill protectors. 14. Hand picking—should be done daily until further injury is unimportant. 15. Use traps—boards, sticks, clods, stones, adult insect hides under them. May be found in early morning or late evening. 16. Mash eggs—usually found on

Vegetable	Insect	Stage in which damage is done	Damage	Control method
Peas.....	Pea aphid (louse).....	All stages.....	Sucks juice from foliage.....	6
	Blister beetle.....	Adult.....	Eats foliage.....	2-7
Beet.....	Flea beetle.....	Adult.....	Eats foliage.....	2-7
	Leaf beetle.....	Adult.....	Eats foliage.....	1-2-7
	Beet aphid (louse).....	All stages.....	Sucks juice from foliage.....	6
Cabbage.....	Cabbage maggot.....	Larva.....	Base of stem and roots.....	8-9
	Cabbage worms.....	Larva.....	Eats foliage.....	2-10-11
	Cut worms.....	Larva.....	Cut off plant.....	(See general)
	Cabbage (aphid).....	All stages.....	Sucks juice from foliage.....	6
Cucumber.....	Cabbage leaf miner.....	Larva.....	Mines through leaves.....	12
	Cucumber beetle.....	Adult-larva.....	Eats foliage—destroys roots.....	2-13-14
	Squash bug.....	Adult-larva.....	Sucks juice from foliage and stems.....	1-13-14-15-16
	Pickle worm.....	Larva.....	Eats fruit.....	1-10
	Melon aphid.....	All stages.....	Sucks juice from foliage.....	6
	Squash vine borer.....	Larva.....	Burrows in vine.....	1-12
Celery.....	Celery caterpillar.....	Larva.....	Eats foliage.....	11
Corn (Sweet).....	Cut worm.....	Larva.....	Eats off stem.....	See general
	Corn ear worm.....	Larva.....	Eats seed on cob.....	2-19
Melon.....	Same as for cucumber.....			
Onion.....	Maggot.....	Larva.....	Burrows in bulb.....	No satisfactory method
Squash.....	Same as for cucumber.....			
		Larva.....	Burrows in roots.....	No satisfactory method
Radish.....	Maggot.....			
Potato.....	Potato beetle.....	Adult-larva.....	Eats foliage.....	2-7-13-14
	Potato flea beetle.....	Adult-larva.....	Eats foliage.....	2-7
	Blister beetle.....	Adult-larva.....	Eats foliage.....	2-7
	Potato stalk borer.....	Larva.....	Burrows in stem.....	9
Tomato.....	Tomato worm.....	Larva.....	Eats foliage.....	14
	Tomato stalk borer.....	Larva.....	Burrows in stem.....	9
Eggplant.....	Flea beetle.....	Adult.....	Eats foliage.....	2-7
	Potato beetle.....	Adult-larva.....	Eats foliage.....	2-7-14
	Cut worms.....	Larva.....	Eats foliage and base of stems.....	17-18
General.....	Leaf beetles.....	Adults.....	Eats foliage.....	1-2-7
	Blister beetles.....	Adult.....	Eats foliage.....	1-2-7
	White grubs.....	Larva.....	Eats roots and bases of stems.....	19

Fungus diseases—Use Bordeaux mixture both to prevent infection and spread of disease.

under surface of leaves. 17. Poison bait—(1) vegetable—spray clover with Paris Green or arsenate of lead, scatter fresh material around plants in evening. (2) Bran mash—White arsenic or Paris Green one-fourth pound, brown sugar one-fourth pound, bran ten pounds. Mix thoroughly and add enough water to make a damp mash. 18. Dirt bands, tin or strawberry box protectors. 19. Fall tillage.

How to Make the Sprays.

Arsenate of lead (powder) or Paris Green, liquid—1 oz. to 6 gal. water.

Arsenate of lead (powder) or

Paris Green, dry—1 oz. to 3 or 4 lbs. air-slaked lime or flour.

Kerosene Emulsion—5 to 7% kerosene.

Nicotine sulphate (40%) 1 part to 700 to 800 parts water. Add small amount of soap solution.

Bordeaux mixture 4-4-50 formula.

Without apology we present several articles by Prof. Moore and Mr. Roberts. These were sent to all of the newspapers in the state earlier in the season and probably widely published but all will bear reading a second time. These notes are all thoroughly practical and remarkably well presented for amateur consumption.

Equipment for Drying Fruits and Vegetables.

Our grandmothers, who lived before germs were invented, dried apples in the open air, sometimes with a covering of mosquito netting but oftener without. Aside from the matter of dust and germs this is not a good way. Apples as well as other fruits and vegetables, should be more quickly and thoroughly dried than is possible when exposed only to sunshine a few hours a day.

No elaborate or expensive equipment is necessary.

A Box Dryer

A box of rough lumber 3 by 3 ft. and 6 ft. high with a small stove in the bottom and lath trays with wire bottoms provides a cheap and effective dryer. There must be sufficient ventilation to carry off the moisture or the fruits will be steamed instead of dried.

Oat Sprouter

An oat sprouter such as used by poultry raisers for sprouting oats for green feed in winter may, according to Miss Harper, be used in drying vegetables. The sprouter consists of a cabinet with 5 trays, a water pan and a lamp beneath the pan. By not filling the pan we have a dryer instead of a sprouter. Ventilation is provided by slightly raising the top of the cabinet.

The Oven Dryer

A detachable oven such as used on gas and gasoline stoves will serve as a dryer if the door is left slightly ajar. An oven that has been discarded on account of cracks or other defects is especially adapted to drying as a hole may be made in the top to serve as a ventilator.

The Hotbed Dryer

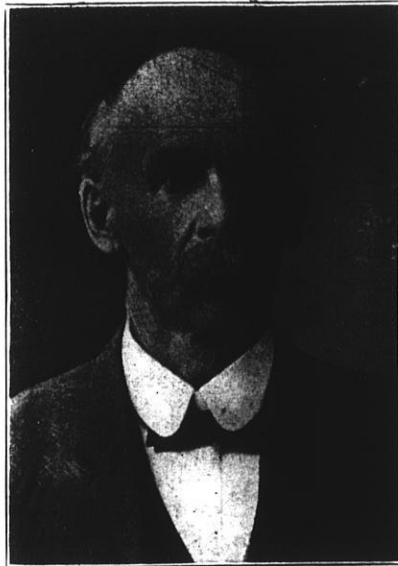
The hotbed or cold frame can be converted into an excellent dryer by simply putting in a board floor. Here we have a most excellent heat trap in which fruit and vegetables can be dried in a sanitary manner. It will work, try it.

No doubt many of our members can suggest other and better plans. Send along your ideas, the July number will not be too late.

The excellent articles on home canning by Miss Harper, reprinted from our annual reports of 1909-1910 should be read carefully by every one interested in canning fruits and vegetables: that means everybody this year.

Alson Duane Brown.

Mr. A. D. Brown died Monday, April 23rd, at his home in the city



ALSON DUANE BROWN.
of Baraboo after a critical illness of ten days.

Mr. Brown moved from his fruit farm in the Skillet Creek neighborhood about three years ago because of failing health. Indigestion which developed into a cancer was

the direct cause of his death. He was born in Oneida Co., New York, in 1847 and came to Wisconsin with his parents at the age of 19 and in 1867 was married to Miss Matilda Cook. They lived in Minnesota ten years and in the town of Del-lona, Sauk Co., Wis., six years. Mr. Brown always had a liking for fruit growing and about thirty years ago purchased the place on which he established his fruit farm because he judged the location to be exceptionally well adapted to apple growing. The orchard which has grown up under his care proves his good judgment.

Mr. Brown was an earnest seeker of knowledge and an enthusiastic horticulturist. Because of deafness he could not take part in the discussions at our Winter Meetings but he was a faithful exhibitor there and also at the state fair and county fair. Mr. Brown has been very earnest in bringing to the knowledge of the public the merits of the variety of apple named Gem City. He has made an interesting collection of seedling apples, some of which are quite promising. Mr. Brown was the first within our knowledge in the state to build a fruit cave or cellar. This was a number of years ago and others have observed the value of this plan for keeping apples.

He leaves a wife and two children, Wayne E. Brown of Lone Rock and Mrs. L. B. Irish who with her husband now owns the fruit farm which was established by Mr. Brown. To those who are not horticulturally inclined Mr. Brown was best known as an earnest christian and until his hearing became impaired he was an active worker in the Methodist Church.

By William Toole, Sr.

Notes on Spraying.

Amount of Material: "About how much spray material will be required for one acre apple trees ten years planted, tops 6 to 10 ft. in diameter?"

(Answered by D. E. Bingham on basis of 75 trees.)

To thoroughly spray 75 apple trees of the size mentioned, 3 times, will require about five hundred gallons of material if the trees are loaded with fruit; if no fruit, three hundred gallons would do a good job. For the 300 gallons this would mean 24 lbs. copper sulfate, 6 lbs. dry arsenate of lead and 30 lbs. fresh lime.

Cost of material

Copper Sulphate -----	\$3.00
Arsenate -----	1.25
Lime -----	.50

Total -----	\$4.75

The dry Bordeaux sold in closed packages is seldom used by commercial growers but amateurs love it. The directions printed on the packages usually provide for mixing at least 5 gallons. A member has computed that 1 ounce is the proper amount for a gallon of water.

Watch for the currant worm. We predict that this pest will be especially destructive this year. This voracious serpent usually begins operations on the inside branches, thus escaping notice until only the outer leaves are left. There are people who would give a billion or more for an appetite equal to that of the currant worm.

Powdered white hellebore is good medicine. Use a heaping tablespoonful in a gallon of water. A whisk broom will answer for a sprayer. Hellebore left over from last year and kept in a paper sack

on the top shelf of the pantry is *not* good, get a fresh supply.

If the present dry spell (May 18) continues a few days longer plums will get through the blossoming season with little blossom blight. This destructive blight which so often kills all the bloom in seasons when rains are frequent is one manifestation of brown rot, *sclerotinia fructigena*, affecting both the twigs and ripening fruit. A dormant spray is advisable followed by lime sulphur 1 to 35 or bordeaux 3-4-50 just as soon as the first blossoms begin to drop.

An Omission.

The supplement to the March number contains among other things a discussion of lime sulphur and a formula for dormant spray, one part commercial lime sulphur solution to *eight* parts water with the caution added that at this dilution lime sulphur should not be used on growing plants. This is all very good so far as it goes but does not go far enough. Lime sulphur is now commonly used in place of Bordeaux for prevention—the different diseases of fruits and for this purpose one part of lime sulphur is used to thirty-five parts of water.

Good Tillage and Artificial Watering.

Proper tillage practices reduce to a minimum the necessity for applying water artificially, and in most cases should make artificial watering unnecessary. At times, however, garden crops demand additional moisture to that naturally found in the soil. The methods of applying water are various, but all save the overhead irrigation system are faulty in one or more respects. If one is gardening permanently it will usually pay in the end to invest

in an overhead system adapted to his needs. Such a system is comparatively inexpensive.

Water Gardens Intelligently.

In any method of watering artificially, certain precautions should be observed. Preferably, watering should be done in the late afternoon or evening. This avoids loss of moisture and in some cases, injury of the plants. It also permits the water to soak deeper into the soil before rapid evaporation takes place.

Apply water liberally. Small, frequent applications are usually more injurious than beneficial. Enough should be put on to moisten the soil during the operation to a depth of three to four inches, depending upon the method employed. Its effects will extend somewhat below this by the following morning.

Placing the Soil Mulch.

The soil mulch should be re-established just as soon as possible after watering. During the warmer weather and on the loamy types of soil this usually will mean the following morning, providing the water has been distributed evenly. If there are wet places, do not leave the tillage of the remainder of the garden until these are dry enough to work. Leave the wet places and till all the rest.

Some are frequently deceived as regards the necessity for watering by the wilting of plants. Wilting is not always an indication of deficient soil moisture. Wilting is quite likely to occur on a bright day following a period of damp, hot weather, even though there be abundant moisture in the soil. Adding water at this time is not only unnecessary, but may even be detrimental.

Canning Vegetables from the Home Garden.

Blanchard Harper, Madison, Wis.

From 1910 Annual Report

Everyone interested in the canning of vegetables as described in my notes in the Report for 1909, should procure from the Agricultural Dept. at Washington, Farmer's Free Bulletin No. 359, "Canning Vegetables in the Home." Naturally I prefer my own methods, but the bulletin contains so much that is valuable that every one interested in the subject should secure a copy.

One fact stated there solved for me a problem that had long puzzled me; namely that peas gathered from the same vines within a day of one another should taste so differently when canned. A farmer grew for me two bushels of "Advancer" peas picked them in the evening and drove six miles the next day to deliver them. They seemed in good condition. I canned some that day and the remainder the next. Those cans of peas kept perfectly—there was no sign of spoiling, but they were as flat and tasteless as sawdust. I find the explanation in the following statement the author of the bulletin Mr. J. I. Breazeale, makes in regard to corn, one which I believe holds true in regard to all sweet vegetables, and on which too much stress cannot be put. After stating that vegetables should be gathered fresh, if possible with the dew on them, and kept damp and cool until used, he says, when he speaks of corn, "that experiments * * * have proved that in the sweet varieties of corn the amount of sugar diminishes very rapidly after the ear is pulled from the stalk; therefore in order to retain the original sweetness and flavor

it is necessary to can corn very soon after it is pulled, within an hour if possible." Incidentally I may add that *for table use* I have kept corn twenty-four or forty-eight hours with but slight loss of flavor, by laying each ear in the husks *directly on ice*, but not in any other way.

The following recipes are in use by several successful housewives and are contributed as affording a means of keeping corn when otherwise variously possible conditions would prevent canning.

Canned Corn. (Mrs. Frank Mae Connell.) A recipe very generally used. To 9 pints of fresh corn cut from the cob, add one pint of sugar, and one pint of salt (if the salt is very strong use $\frac{1}{2}$ pint), and three pints of water. Boil all together for five minutes and pack while hot in thoroughly sterilized jars. To serve soak in several changes of water to remove the salt; cook with a little cream until scalding hot.

Dried Corn, as made on the *Turrill Farm*, by Mrs. Elizabeth F. Wood. Gather tender fresh corn, boil it in water three minutes drain and cool; then cut the grains from the cob, but not too close. Spread the kernels in a thin layer in a large pan and place in a *cool* oven, stirring and shaking from time to time to allow it to heat and dry evenly for several hours. The flavor seems better if the drying is not prolonged over a day. When dry store loosely in a paper bag kept in a dry place. To serve, soak over night in water, then simmer gently on the back of the stove for several hours, and add butter and cream before sending to the table.

Dried Corn as made by Mrs. Albert J. Lamson. Gather the corn when best for the table, score the kernels with a knife and press

out the pulp, or use a "corn scorer." Take as many enameled pans or plates as required, grease them lightly with butter and spread the pulp thinly over the bottom of the plates, the layer should not be more than $\frac{1}{4}$ inch thick. Place the pans in an oven not warm enough to burn or scorch the corn, but warm enough to cook it, and allow them to remain until the corn thickens, so that it can be cut into wafers 3 inches square. Gently turn the wafers to allow the under side to finish drying in the now cooler oven, or finish the drying in any suitable warm dry place. Corn begun in the morning should be done by night. To serve, soak the wafers a few minutes, and cook with salt, butter and cream.

Rose Diseases and How to Control Them.

The rose gardener should understand that roses are subject to a number of fungous growths causing serious diseases and that he must ward these off carefully if he would keep his plants in the healthful condition necessary for satisfactory growth and the production of blossoms. These fungous parasites rarely kill the plants outright, say specialists of the U. S. Department of Agriculture, but by their presence the vigor of plants is greatly reduced, the foliage may be rendered unsightly, branches more or less distorted or disfigured, and the quality of the blossoms lowered. In considering the fungous diseases of these plants the fact must be recognized that in common with similar diseases of other plants treatments are preventive rather than curative. While thorough and repeated sprayings with a suitable fungicide will in most cases so check the development of the parasite that the

disease for the growing season will be in a great measure controlled, the full benefit of fungicidal applications can only be secured by their early use in the spring, guarding in this way against the recurrence of a disease of the previous season.

Fungicides to be recommended for rose diseases are Bordeaux mixture, lime-sulphur, potassium sulphid, and ammoniacal solution of copper carbonate. The lime-sulphur has proved very valuable, especially in controlling mildew, as it does not injure the foliage of even delicate tea roses.

Powdery mildew.—Powdery mildew is extremely common, few gardens being entirely free from this most destructive of all rose diseases. Wild as well as cultivated roses suffer from it, crimson ramblers being especially susceptible. The fungus frequently appears very early in the season on young buds, leaves, and young shoots causing the appearance of a delicate white mildew that becomes mealy after the development of the summer spores. If the attack is severe, the normal development of the succulent young shoots is arrested, the leaves become curled and deformed, falling prematurely, and complete defoliation sometimes results. Later in the season the winter spores develop. These spores are capable of persisting through the winter and setting up a new infection in the spring.

Rose rusts.—Rose rust appears as conspicuous, orange-colored swellings on the green parts of rose bushes in the spring or early summer. Later these take a deeper shade and become powdery. Small, circular spots may occur on the leaves.

Anthracnose.—Anthracnose attacks principally the leaves, but also, to some extent, the branches, causing the appearance of blotches,

which later discharge a pinkish mass of spores. The affected leaves are dwarfed and fall.

Leaf-spot. There are several leaf-spot diseases of roses. In most cases the spots have a more or less brownish center with a purplish border.

Leaf-blotch.—Leaf-blotch, which is also known as black-spot, ranks next to powdery mildew in frequency of occurrence. Bush roses are more susceptible to this trouble than climbing roses and the attacks are most severe in wet seasons. The first symptoms of the presence of the parasite are irregularly shaped blackish spots without definite borders on the upper surface of mature or nearly full grown leaves. These spots may grow together so as to cover almost the entire leaf.

Practically all these diseases require the same treatment, which consists, in general, of careful spraying for control during the growing season and the cutting out of diseased portions of the plant in the fall, followed by more spraying of the shortened plant. The diseased wood removed, together with the old leaves and debris under bushes, should be burned. In case of attacks by rusts and leaf spots, the diseased wood or leaves should be removed and burned even during the growing season.

For powdery mildew, the control sprayings should be with lime-sulphur or potassium sulphid. After cutting back in the fall, a similar spray should be made use of. The control spraying for rusts should be ammoniacal copper carbonate. The fall spraying should be with a strong Bordeaux mixture. For leaf-spot and leaf-blight, the control sprays may be either Bordeaux mixture or ammoniacal copper carbonate, and the fall spraying should be with the former.

Another disease to which roses are subject is canker. A wholly satisfactory method of control has not been worked out for this disease. The early symptoms are the appearance of small reddish patches on the green parts, generally of 1-year-old growth. The disease is caused by a fungus classed as a wound parasite, that is, the spores gain entrance to the bush through certain mechanical injuries. These may be slight ones made upon the *young branches by the thorns of the bush itself* when one branch has been blown against another, or by insect punctures. Such infected areas may increase until the entire stem is surrounded and may extend for several inches along the branch. The only advice to be given is to cut away rigorously all diseased branches, and it may be necessary to cut back entire bushes if badly infected. Cover the exposed surfaces made by this cutting with paint or tar. This diseased material must be pruned and the dormant bushes sprayed with strong Bordeaux mixture in both the autumn and early spring. At the first appearance of the disease, cut away and destroy all the branches showing infection. Then spray about every 10 days, first with Bordeaux mixture and later with ammoniacal copper carbonate, as spraying has no disfiguring effect upon the foliage, an appearance to be avoided when blossoming time is near. It is possible that by such careful attention the bushes may outgrow the disease.

Insect Enemies of Roses and How to Combat Them.

In the path to easy success with roses lie numerous insect pests which, unless prevented, will devour leaves or suck juices, thus

seriously impairing the vitality of the plants. The only way in which the rose gardener may prevent these attacks is by careful and in insistent spraying with insecticides.

Insects which most commonly affect roses, according to specialists of the U. S. Department of Agriculture, are of two general types, those which eat the foliage, as rose slugs and the rose chafer, and those which suck the sap, as aphids, scale insects, and thrips. The presence of leaf-eating insects is usually first detected through the discovery of partially eaten leaves or of skeletonized leaves; that is, leaves from which a portion of the lower or upper surface has been eaten, leaving the other surface as a transparent membrane, or leaves the fleshy part of which has been eaten clear through, often leaving merely the midrib and veins. The discovery of the enemy frequently follows. Protection from this sort of attack is afforded by hand picking or by covering both surfaces of the foliage thoroughly with some poisonous substance, as arsenate of lead. Wherever a garden hose is available, a strong stream of water directed against rose slugs on the foliage will knock them off and, in many cases, save the bush from further injury by them. The rose chafer is a rather difficult insect to control, and arsenical poisons applied at double the usual strength often fail to kill them before the damage is done. Frequent hand picking of the beetles and dropping them into a vessel containing water covered with a film of kerosene, or screening the plants with mosquito netting, especially the latter, often affords the only means of preventing their destructive work.

Insecticides.

Arsenate of lead, which may be obtained as a powder or a paste, has been found to be one of the most effective substances for use as a spray against leaf-eating insects. It is a deadly poison and should be handled with great care. About one-eighth of a pound of the paste or one-sixteenth of a pound of the powder to 10 quarts of water makes a solution of the proper strength.

Sucking insects obtain their food by sucking the sap. Aphids are usually on the youngest growth at the tips of the branches, both on the stems and on the under side of the leaves. When badly infested the leaves curl and protect the insects on their under surface. Thrips injure the flowers, while scale insects usually inhabit the woody portion of the bush and are capable of killing it. Insects of this class have to be killed by the insecticide coming in contact with them. Materials used for this purpose are 40 per cent nicotine sulphate, pyrethrum, fish-oil soap, kerosene emulsion, and lime-sulphur. The material should be applied in a fine spray, with considerable force, so as to find its way under the foliage and strike the culprit. Death comes from the insecticide closing the breathing pores and suffocating the insect or penetrating to its vital parts, or both. Great thoroughness is needed in applying these insecticides. The aphids may often be knocked off by a strong stream of water from a hose where available, and this treatment, frequently given, is often all that is necessary to keep them in check. An abundance of ants on the plants is always suggestive of the presence of aphids.

Forty per cent nicotine sulphate, a liquid procurable in most seed stores under various proprietary names, diluted with about 1,000 parts of water in which a little fish-oil soap or good laundry soap has been previously dissolved is now recognized as the most efficient aphid remedy. For small quantities, add 1 teaspoonful of the nicotine to each 1 or 2 gallons of water in which about one-half an ounce of soap has been dissolved. One thorough application is usually 100 per cent effective, though a second spraying many sometimes be necessary. The necessity of covering every individual insect should be constantly borne in mind.

Other remedies useful in combating the sap-sucking insects are pyrethrum, or Persian insect powder, used at a rate of 1 ounce to 2 quarts of water; fish-oil soap dissolved at a rate of $\frac{1}{4}$ pound to 8 quarts of water; kerosene emulsion; and lime sulphur and other commercially prepared insecticides.

Some Transplanting Reminders

Cabbage, cauliflower, tomatoes, eggplant, pepper, and celery are always transplanted, while the vine crops are started in the hot-bed and transplanted when an earlier product is wanted. Plants that have a tough, fibrous root system like the first group are easily transplanted, while those with large or tender roots like the second group must be handled more carefully. Roots like parsnips and carrots, where a clean, smooth root is desired cannot be transplanted successfully because the tip of the root is broken off and the tap root is covered with a mass of hairy roots.

In transplanting, the plants must be handled in such a way that they will not suffer from lack of moisture and wilt. This can be done in a number of ways:— (1) by taking care not to damage the root system; (2) by transplanting as quickly as possible after removing from the seed bed; (3) by puddling the roots at setting time; (4) by shading the tops; (5) by setting in the evening after the sun has gone down, or just before or after a rain; (6) by pouring water in the hole where the plant is set; the wet soil should be covered with a mulch or dry soil; (7) by pruning the tops of the plant; from one-third to one-half of the leaf area of cabbage, onion, or tomato plants should be cut off so as to limit the transpiration of water; care must be taken, however, not to injure the central bud or "heart" of the plant; (8) by sprinkling the soil with water with a hose or overhead irrigation system; care must be taken not to compact the soil, and if it is compacted, it should be loosened as soon as the ground is fit to work; (9) by setting the plants whose tissues have been hardened by exposure to outdoor conditions and judicious watering.

Onions.

The onion puzzles many amateurs; one writes to inquire if good winter onions can be grown from "sets" and when answered affirmatively comes back with the experience of a neighbor who planted "sets" and got no mature bulbs but only "roots" that wintered over in the open ground and the following year sent up tall, hollow stems crowned with bunches of "sets."

The most common inquiry relates to the best method of raising onions for winter use, whether from "sets" or seeds.

Planting time is now past except possibly for a late crop of "black-seed" onions but the following brief outline of the onion family may be of interest to beginners if not of value.

Cultivated onions or onion-like plants are named by Bailey under six species but only three of these, the true onions, will be considered here. The others, cives or chives, garlic and leek are only occasionally grown in home gardens and are not of general interest.

Probably ninety per cent. of all onions grown for winter use and storage, whether by commercial growers or home gardeners are grown from seed. If you want to know how onion seed is obtained select a sound onion of the Danvers or Wethersfield type, (onions grown in 1916 will be hard to find now but a sound bulb shipped from the south will answer,) and plant it in the garden and by October your curiosity will be satisfied. Do not attempt to raise your seed, however, unless you are an expert market gardener or seedsman as the production of a good strain of onion seed requires much skill.

The common onion then is grown from seed planted in the open ground in early spring and the crop matures in September or October.

But, you say, very good onions may be grown from "sets." Certainly if you get the right kind of sets and you are quite apt to get right kind as the wrong kind, to be described later, is seldom offered for sale.

The onion "sets" offered for sale this spring and so popular

with amateur gardeners are simply dwarfed and stunted onions grown from seed last year. The seed was sowed very thickly, late in the season and usually in broad drills. The object was to produce a miniature onion that planted the following spring will complete its growth. The most desirable sets are $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter. Larger ones are apt to run to seed and smaller ones produce inferior onions. Onions from sets mature much earlier than those grown from seed and of course produce green onions for table use much earlier.

This is all very fine but here enters another "set" onion, the Egyptian or Top Onion. These sets, which may be had from seedsmen and occasionally found in other stores look much like the real sets. The top onion set rarely produces a sound bulb of long-keeping qualities and is grown wholly for green onions. If left in the ground over winter it sends up a stalk the following season that produces a cluster of bulblets or sets on top. Don't plant Egyptian or top onion sets for winter onions.

The third common species is the multiplier or potato onion. The "multiplier" onion instead of being solid like the "onion of commerce" grown from seed, consists of two, three or more small bulbs in one skin. When planted each part produces a compound bulb. Like the Egyptian the multiplier is grown for green onions and is of little account otherwise.

Plums do well on sandy soil. Apples do best on a loam soil underlaid with clay. Many times a side hill may be made good use of for apples or plums.

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Now is the time to begin preparation for the big Fall Drive, canning and drying. After looking over carefully all available material on preserving vegetables for winter use, the editor offers the two articles by Miss Blanchard Harper of Madison, to be found elsewhere in this issue, as the plainest most practical and best all around presentation of the subject to be found.

The big spray for apple scab is the "cluster bud" spray. See March supplement for illustrations and formulas.



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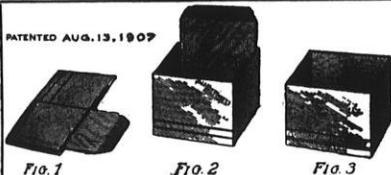
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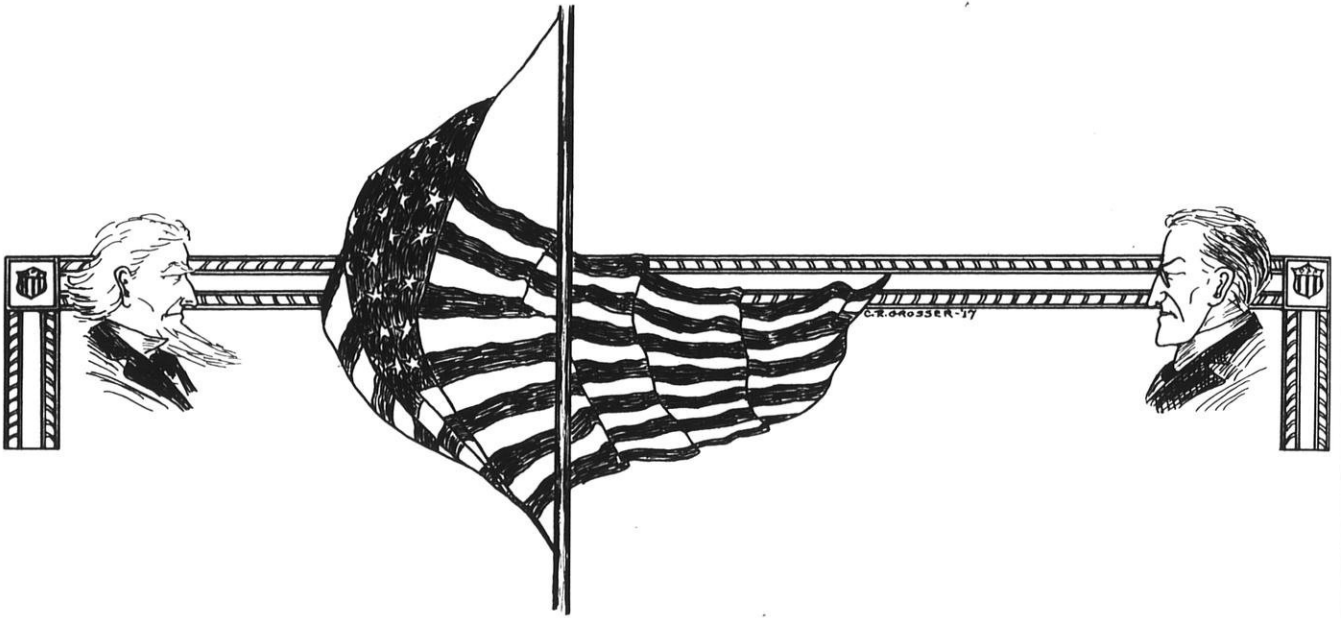
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WISCONSIN HORTICULTURE

JULY 4, 1917.





PRESIDENT WILSON'S FLAG DAY ADDRESS, WASHINGTON, JUNE 14th, 1917.

My fellow citizens: We meet to celebrate flag day because this flag which we honor and under which we serve is the emblem of unity, our power, our thought and purpose as a nation. It has no other character than that which we give it from generation to generation. The choices are ours. It floats in majestic silence above the hosts that execute these choices, whether in peace or in war. And yet, though silent, it speaks to us—speaks to us of the past, of the men and women who went before us and of the records they wrote upon it. We celebrate the day of its birth and from its birth until now it has witnessed a great history, has floated high in symbol of great events, of the great plan of life worked out by a great people. We are about to carry it into battle, to lift it where it will draw the fire of our enemies. We are about to bid thousands, hundreds of thousands, it may be millions of our men, the

young, the strong, the capable men of the nation to go forth and die beneath it in fields of blood far away, for what? For some unaccustomed thing? For something for which it has never sought the fire before? American armies never before were sent across the sea. Why are they sent now? For some new purpose to which this flag has never been carried before, or for some old familiar, heroic purpose, for which it has seen men, its own men, die on every battle field on which Americans have borne arms since the revolution?

These are questions which must be answered. We are Americans, we in our turn serve America and can serve her with no private purpose. We must use her flag as she has always used it. We are accountable at the bar of history and must plead in entire frankness what purpose we seek to serve.

FORCED INTO WAR.

It is plain enough how we were forced into the war. The extraordinary insults and aggressions of the imperial German government left us no self respecting choice but to take up arms in defense of our rights as a free people and of our honor as a sovereign government. The military masters of Germany denied us the right to be neutral. They filled our unsuspecting communities with vicious spies and conspirators and sought to corrupt the opinion of our people in their own behalf. When they found they could not do that their agents diligently spread sedition amongst us and sought to draw our own citizens from their allegiance and some of these agents were men connected with the official embassy of the German government itself in our own capital. They sought by violence to destroy our industries and arrest our commerce. They tried to incite

Mexico to take up arms against us and to draw Japan into hostile alliance with her and that not by indirection, but by direct suggestion from the foreign office in Berlin. They impudently denied us the use of the high seas and repeatedly executed their threats that they would send to their death any of our people who ventured to approach the coast of Europe. And many of our own people were corrupted. Men began to look upon their own neighbors with suspicion and to wonder in their hot resentment and surprise whether there was any community in which hostile intrigues did not work. What great nation in such circumstances would not have taken up arms?

PEACE DENIED US.

Much as we desired peace it was denied us and not of our own choice. This flag under which we serve would have been dishonored had we withheld our hands.

But that is only part of the story. We know now, as clearly as we knew before we were ourselves engaged that we are not the enemies of the German people and that they are not our enemies. They did not originate or desire this hideous war or wish that we should be drawn into it, and we are vaguely conscious that we are fighting their cause as they will some day see it, as well as our own. They are themselves in the grip of the same sinister power that has now at last stretched its ugly talons out and drawn blood from us.

The whole world is at war because the whole world is in the grip of that power and is trying out the great battle which shall

determine whether it is to be brought under its mastery or fling itself free.

GERMANS MASTERS OF AUSTRIA.

The war was begun by the military masters of Germany who proved also to be the masters of Austria-Hungary. These men have never regarded nations as peoples, men, women and children of like blood and frame as themselves, for whom governments existed and in whom governments had their life. They had regarded them merely as serviceable organizations which they could by force or intrigue bend or corrupt to their own purposes. They have regarded the smaller states in particular and the peoples who could be overwhelmed by force as their natural tools and instruments of domination. Their purpose has been long avowed. The statesmen of other nations, to whom that purpose was incredible, paid little attention; regarded what German professors expounded in their class rooms and German writers set forth to the world as the goal of German policy, as rather the dream of minds detached from practical affairs, as preposterous private conceptions of Germany destiny, than as the actual plans of responsible rulers; but the rulers of Germany themselves knew all the while that concrete plans, that well advanced intrigues lay back of what the professors and the writers were saying and were glad to go forward unmolested, filling the thrones of Balkan states with German princes, putting German officers at the service of Turkey to drill her armies and make interest with her government developing plans of sedi-

tion and rebellion in India and Egypt, setting their fires in Persia.

AUSTRIA AND SERBIA.

The demands made by Austria upon Serbia were a mere single step in a plan which compassed Europe and Asia from Berlin to Bagdad. They hoped these demands might not arouse Europe, but they meant to press them whether they did or not for they thought themselves ready for the final issue of arms.

Their plan was to throw German military and power and establish power across the very center of Europe and beyond the Mediterranean into the heart of Asia and Austria-Hungary was to be as much their tool and pawn as much as Bulgaria and Turkey or the ponderous states of the east. Austria-Hungary indeed was to become part of the central German empire, absorbed and dominated by the same forces and influences that has ordinarily cemented the German states themselves. The dream had its heart at Berlin. It could have had a heart nowhere else. It rejected the idea of solidarity of race entirely. The choice of peoples played no part in it at all. It contemplated binding together material and political units which could be kept together only by force—Czechs, Magyars, Croats, Serbs, Rumanians, Turks, Armenians—the proud states of Bohemia and Hungary, the stout little commonwealth of the Balkans; the indomitable Turks, the subtle peoples of the east. These peoples did not wish to be united. They earnestly desired to direct their own affairs, would be satisfied only by undisputed indepen-

dence. They could be kept in union only by the presence or constant threat of armed men. They would live under a common power only by sheer compulsion and await the day of revolution. But the German military statesmen had reckoned with all that and were ready to deal with it in their own way.

And they have actually carried the greater part of that amazing plan into execution.

Look how things stand. Austria is at their mercy. It has acted, not upon its own initiative or upon the choice of its own people but at Berlin's dictation, ever since the war began. Its people now desire peace, but cannot have it until leave is granted from Berlin. The so-called central powers are in fact but a single power. Serbia is at its mercy, should its hands be but for a moment freed. Bulgaria has consented to its will and Roumania is overrun. The Turkish armies, which Germans trained, are serving Germany, certainly not themselves and the guns of German warships lying in the harbor at Constantinople remind Turkish statesmen every day that they have no choice but to take their orders from Berlin. From Hamburg to the Persian gulf the net is spread.

GERMANY'S TERMS NOT STATED.

Is it not easy to understand the eagerness for peace that has been manifested from Berlin ever since the snare was set and sprung? Peace, peace, peace, has been the talk of the foreign office for now a year or more, not peace upon her own initiative, but upon the initiative of the nations over which she deems herself to hold the advantage. A little of the

talk has been public, but most of it has been private. Through all sorts of channels it has come to me and in all guises, but never with the terms disclosed which the German government would be willing to accept. That government has other valuable pawns besides those I have mentioned. It still holds a valuable part of France, though with slowly relaxing grasp, and practically the whole of Belgium. Its armies close up on Russia and overrun Poland at its will. It cannot go farther, it cannot go back. It wishes to close its bargain before it is too late and it has nothing left to offer for the pound of flesh it will demand.

THINKING ABOUT POWER AT HOME.

The military masters under whom Germany is bleeding see very clearly to what point fate has brought them. If they fall back or are forced back an inch their power both abroad and at home will fall to pieces like a house of cards. It is their power at home they are thinking about now more than their power abroad. It is that power which is trembling at their very feet and deep fear has entered their hearts. They have but one chance to perpetuate their military power or even their controlling political influence. If they can secure peace now with the immense advantages still in their hands, which they have up to this point apparently gained, they will have justified themselves before the German people; they will have gained by force what they promised to gain by it—an immense expansion of German power, an immense enlargement of German industrial and commercial opportunity. Their pres-

tige will be secure and with their prestige their political power. If they fail their people will thrust them aside; a government accountable to the people themselves will be set up in Germany as it has in England, the United States, France and in all the great countries of modern time except Germany.

The facts are patent to all the world, and nowhere are they more plainly seen than in the United States, where we are accustomed to deal with facts and not with sophistries; and the great fact that stands out above all the rest is that this is a people's war, a war for freedom and justice and self-government among all the nations of the world, a war to make the world safe for the peoples who live upon it and have made it their own, the German people themselves included; and that with us rests the choice to break through all these hypocrisies and patent cheats and masks of brute force and help set the world free, or else stand aside and let it be dominated by a long age through by sheer weight of arms and the arbitrary choices of self-constituted masters, by the nation which can maintain the biggest armies and the most irresistible armaments—a power to which the world has afforded no parallel and in the face of which political freedom must wither and perish.

“For us there is but one choice. We have made it. Woe be to the man or group of men that seeks to stand in our way in this day of high resolution when every principle we hold dearest is to be vindicated and made secure for the salvation of the nations. We are ready to plead at the bar of history, and our flag shall wear a new luster. Once more we shall make good with our lives and fortunes the great faith to which we were born and a new glory shall shine in the face of our people.”

Why Do We Fight Germany?

Address by Franklin K. Lane, Secretary of the Interior, on June 4, 1917, before the Home Club of the Interior Department, Washington, D. C.

Tomorrow is Registration day. It is the duty of all, their legal as well as their patriotic duty, to register if within the class called. There are some who have not clearly seen the reason for that call. To these I would speak a word.

Why are we fighting Germany? The brief answer is that ours is a war of self-defense. We did not wish to fight Germany. She made the attack upon us; not on our shores, but on our ships, our lives, our rights, our future. For two years and more we held to a neutrality that made us apologists for things which outraged man's common sense of fair play and humanity. At each new offense—the invasion of Belgium, the killing of civilian Belgians, the attacks on Scarborough and other defenseless towns, the laying of mines in neutral waters, the fencing off of the seas—and on and on through the months we said: "This is war,—archaic, uncivilized war, but war! All rules have been thrown away; all nobility; man has come down to the primitive brute. And while we can not justify we will not intervene. It is not our war!"

Then why are we in? Because we could not keep out. The invasion of Belgium, which opened the war, led to the invasion of the United States by slow, steady, logical steps. Our sympathies evolved into a conviction of self-interest. Our love of fair play ripened into alarm at our own peril.

We talked in the language and

in the spirit of good faith and sincerity, as honest men should talk until we discovered that our talk was construed as cowardice. And Mexico was called upon to cow us. We talked as men would talk who cared alone for peace and the advancement of their own material interests, until we discovered that we were thought to be a nation of mere money makers, devoid of all character,—until indeed we were told that we could not walk the highways of the world without permission of a Prussian soldier, that our ships might not sail without wearing a striped uniform of humiliation upon a narrow path of national subservience. We talked as men talk who hope for honest agreement, not for war, until we found that the treaty torn to pieces at Liege was but the symbol of a policy that made agreements worthless against a purpose that knew no word but success.

And so we came into this war for ourselves. It is a war to save America—to preserve self-respect, to justify our right to live as we have lived, not as some one else wishes us to live. In the name of Freedom we challenge with ships and men, money and an undaunted spirit, that word, "Verboten" which Germany has written upon the sea and upon the land. For America is not the name of so much territory. It is a living spirit, born in travail, grown in the rough school of bitter experiences, a living spirit which has purpose and pride and conscience.—knows why it wishes to live and to what end, knows how it comes to be respected of the world, and hopes to retain that respect by living on with the light of Lincoln's love of man and its old and new testament. It is

more precious that this America should live than that we Americans should live. And this America as we now see has been challenged from the first of this war by the strong arm of a power that has no sympathy with our purpose, and will not hesitate to destroy us if the law we respect, the rights that are to us sacred, or the spirit that we have, stand across her set will to make this world bow before her policies, backed by her organized and scientific military system. The world of Christ—a neglected but not a rejected Christ—has come again face to face with the world of Mahomet, who willed to win by Force.

With this background of history and in this sense, then we fight Germany—

Because of Belgium—invaded, outraged, enslaved, impoverished Belgium. We can not forget Liege, Louvian and Cardinal Mercier. Translated into terms of American history these names stand for Bunker Hill, Lexington and Patrick Henry.

Because of France—invaded, desecrated France, a million of whose heroic sons have died to save the land of Lafayette. Glorious golden France, the preserver of the arts, the land of noble spirit. The first land to follow our lead into Republican liberty.

Because of England—from whom came the laws, traditions, standards of life and inherent love of liberty which we call Anglo-Saxon Civilization. We defeated her once upon the land and once upon the sea. But Australia, New Zealand, Africa and Canada are free because of what we did. And they are with us in the fight for the freedom of the seas.

Because of Russia—New Rus-

sia. She must not be overwhelmed now! Not now, surely, when she is just born into freedom. Her peasants must have their chance; they must go to school to Washington, to Jefferson and to Lincoln, until they know their way about in this new, strange world, of Government by the Popular Will.

Because of other Peoples, with their rising hope that the world may be freed from Government by the Soldier.

We are fighting Germany because she sought to terrorize us and then to fool us. We could not believe that Germany would do what she said she would do upon the seas.

We still hear the piteous cries of children coming up out of the sea where the Lusitania went down. And Germany has never asked forgiveness of the world!

We saw the Sussex sunk, crowded with the sons and daughters of neutral nations.

We saw ship after ship sent to the bottom—ships of mercy bound out of America for the Belgian starving—ships carrying the Red Cross and laden with the wounded of all nations,—ships carrying food and clothing to friendly, harmless, terrorized peoples,—ships flying the Stars and Stripes—sent to the bottom hundreds of miles from shore, manned by American seamen, murdered against all law without warning.

We believed Germany's promise that she would respect the neutral flag and the rights of neutrals, and we held our anger and outrage in check. But now we see that she was holding us off with fair promises until she could build her huge fleet of submarines. For when Spring came she blew her promise into the air, just

as at the beginning she had torn up that "scrap of paper." Then we saw clearly that there was but one law for Germany, her will to rule.

We are fighting Germany because she violated our confidence. Paid German spies filled our cities. Officials of her government, received as the guests of this nation, lived with us to bribe and terrorize, defying our law and the law of nations.

We are fighting Germany because while we were yet her friends—the only great power that still held hands-off—she sent the Zimmerman note, calling to her aid Mexico, our southern neighbor, and hoping to lure Japan, our western neighbor, into war against this nation of Peace.

The nation that would do these things proclaims the gospel that government has no conscience. And this doctrine cannot live, or else Democracy must die!

We are fighting Germany because in this war Feudalism is making its last stand against on-coming Democracy. We see it now. This is a war against an old spirit, an ancient, outworn spirit. It is a war **against** Feudalism—the right of the castle on the hill to rule the village below. It is a war **for** Democracy—the right of all to be their own masters. Let Germany be feudal if she will! But she must not spread her system over a world that has outgrown it. Feudalism plus Science, thirteenth century plus twentieth,—this is the religion of the mistaken Germany that has linked itself with the Turk,—that has, too, adopted the method of Mahomet. "The State has no conscience." "The State can do no wrong." With the spirit of the fanatic she believes this

gospel and that it is her duty to spread it by Force. With poison gas that makes living a hell, with submarines that sneak through the seas to slyly murder non-combatants, with dirigibles that bombard men and women while they sleep, with a perfected system of terrorization that the modern world first heard of when German troops entered China,—German Feudalism is making war upon mankind. Let this old Spirit of Evil have its way and no man will live in America without paying toll to it, in manhood and in money. This Spirit might demand Canada from a defeated, navyless England, and then our dream of peace on the north would be at an end. We would live, as France has lived for forty years, in haunting terror.

America speaks for the world in fighting Germany. Mark on a map these countries which are Germany's allies, and you will mark but four, running from the Baltic through Austria and Bulgaria to Turkey. All the other nations, the whole globe around, are in arms against her or are unable to move. There is deep meaning in this. We fight with the world for an honest world, in which nations keep their word, for a world in which nations do not live by swagger or by threat, for a world in which men think of the ways in which they can conquer the common cruelties of nature instead of inventing more horrible cruelties to inflict upon the spirit and body of man, for a world in which the ambition of the philosophy of a few shall not make miserable all mankind, for a world in which the man is held more precious than the machine, the system or the state.

The Crimes of Germany.

The world is not hostile to Germany because it is unwilling that Germany should have a fair chance in the world, or because it had in the beginning any special love for the enemies of Germany. When the war began it was a fair field and no favor with most of the neutrals. Germany has alienated a dozen nations by the faithlessness, the brutality, the arrogant contempt for the rights of others, that its government has displayed at every stage of the war. It has been its own worst enemy; it has written its own condemnation in the eyes of the world; it has done its best to convince everyone that German domination in the affairs of mankind would be a calamity that civilization must avert, even if it perish in the attempt.

The violation of Belgium and the looting and burning of Belgian cities and French villages; the horror of the *Luisitania* and the atrocity of the submarine warfare, in which the murder of non-combatants and neutrals is cynically planned and coolly carried out; the spiteful destruction of priceless memorials of the piety and artistic feeling of the human race; the invention of the Zeppelin raid and the poison-gas attack; the offenses—some of them nameless—against the liberty and the honor of French and Belgian non-combatants; the wanton and wicked desolation of the evacuated country of the enemy; the deliberate sinking of hospital ships; the Armenian massacres, which the Kaiser could have stopped by raising his finger—those things have one by one brought about a universal hardening of the world's heart



“What’s the Task?”

against the government that can order such deeds.

We long hoped that the charges against the Germans were exaggerated through passion and prejudice. Here and there single accusations may be without basis, but the great outstanding facts are well known. Our own diplomatic representatives resident abroad have told us enough in their official reports to convince us that Germany makes war in defiance of the laws of decency and humanity that other nations recognize; that it considers the slow and painful progress that civilization has made as a thing

of no moment, a thing to be ruthlessly sacrificed if it restricts German ambition. The Kaiser once ordered his soldiers to fight as the hordes of Attila fought and to make the name of German dreaded as that of the Hun was dreaded in the ancient days. They have obeyed him; but is it necessary to remind them that Attila and his hordes were not beloved among the civilized people of those early centuries? Neither can any nation that fashions itself upon such a model expect to prosper in the affections of mankind.—*Youth's Companion*.

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Our Country.

This issue of your paper is a radical departure from our established policy and the editor asks that it be received in the spirit in which it is sent.

I want you to forget gardens and gardening for just one day, July 4th, 1917.

Lay aside all thought of work, of business and devote the day to study and reflection.

Take down your history book from the shelf, a school book will do, and read again of our struggle for freedom through all the years from 1776 to now.

Read of Washington and Lafayette, of Perry, Lincoln, Grant and Lee.

Read again the story of Dewey at Manila Bay and then reflect for a time on what it all means.

It may be a revelation to most of us. The privileges we enjoy, liberty of thought, liberty of action, all the blessings of a free land have been accepted by us as of course without thought of the sacrifices of those who have gone before us. Men have fought, suffered and died in defense of things that we esteem so lightly. We are free not because of anything we have done ourselves, but because of what others have done for us.

“What do I owe to my country and how can I pay the debt?”

Will you on our National Day ask yourself this question? The answer to that will be the answer to the other question, “why are we at war?”

Frederic Cranefield, Editor.

What is the War About?

Ask those high in authority and you will be told,—“To Make the World Safe for Democracy,” or again; “To Destroy Autoeracy.” These are fine, high sounding phrases and when analyzed in the cold light of reason are found to be true. But the man in the street and on the farm has little time and less desire to analyze and philosophize on the why and wherefore of it. He wants a plain and concise answer in terms that will satisfy his reason and his conscience.

In my opinion we are at war with Germany because that particular brand of savagery known as German “kultur” does not suit us at all. We don't like it a little bit, it's a garment that won't fit a free people no matter how we may alter it.

The general indictment I make against Germany is her “kultur,” a bill of particulars of which will be found in another column.

England and France are also countries of free peoples and as neither one can conveniently use “kultur” they are at war against it. They have fought for three years and have been unable so far to subdue this hideous monster.

Now lest this “kultur” be imposed on us we have set about to finish the job. That we will finish it there is no doubt. It may take three years more, millions of men and billions of money, but finish it we will and in a satisfactory manner.—F. C.

Pacifists.

Pacifists may be divided for convenience into three groups: In the first we may place that chief high priest of the cult Bryan and a few others whose sole aim is publicity for themselves. This class amounts to only a small fraction of the whole.

Second, cowards; third, traitors, about equally divided.

Pacifists, since the declaration of war, accomplish their aims mainly through certain congressmen.

Congressmen easily fall into two classes, statesmen and men-afraid-of-their-jobs. The ratio is about 1 to 99. Place the figures to suit yourself. Of one class we have nine from Wisconsin. Time may show that we have a third class, viz., traitors. It so happened at the beginning of the Civil War when a dozen or more Congressmen when impeached.

Pacifists and cowardly congressmen are dangerous, somewhat more so than rattlesnakes because the poison of pacifism is a slow poison.—F. C.

Slow Acting Poison.

A few days before the declaration of war the State Department at Washington disclosed one of the most astounding acts of treachery ever known among civilized people.

This, in connection with other disclosures, plainly showed that for two years or more a well organized force of poison-experts had been at work throughout the length and breadth of the land. Read the extracts from the speech of our loyal senator in another column so that you may under-

stand how our minds were poisoned.

Now is there anyone among us so trusting as to believe that this widespread, carefully organized and well paid espionage (poison) gang suddenly quit work on April 6th? Has any one asked you this question: "Why should we send our troops to France?" If so, try to remember who first asked you this question and trace it back of the questioner, **if you can.**

Frederic Craneheld.

A Few Examples of German "Kultur."

The Lusitania, 1,300 lives lost including 130 American men, women and children.

The murder of Captain Fryatt, commander of an English merchant ship. Captain Fryatt acted in defense of the lives and property in his charge by attempting to ram the submarine which attacked him. He was taken to Germany and shot to death.

The cowardly murder of Edith Cavell, a Red Cross nurse in Belgium, the foulest act in the history of civilized peoples.

The shooting of civilians in Belgium.

Zeppelin raids on unprotected towns in England, killing women and children by hundreds.

The recent air raid on London.

These are a few of the things coming our way unless we send troops to France, send them in overwhelming numbers and send them quickly.

"I pledge allegiance to the Flag,
And to the Republic for which
it stands;
One nation, indivisible,
With Liberty and Justice for
all."

Lincoln's Gettysburg Address.

Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting-place for those who here gave their lives that the nation might live. It is altogether fitting and proper that we should do this. But in a larger sense, we cannot dedicate, we cannot consecrate—we cannot hallow—this ground. The brave men, living and dead, who struggled here have consecrated it, far above our poor power to add to or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave us the last full measure of devotion—that we here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom and that government of the people, by the people, for the people, shall not perish from the earth.

The Story of An American.

This is a story of a real American—and a testimonial for Uncle Sam. Four years ago Richard Prokop, 18 years old, was living with his parents in Bohemia. When he was seven years old, a young man in his native village came to America, land of freedom and opportunity, and the boy had read over many times the letters which came back from Antigo, Wisconsin.

The day he became 18 he, too, started for America, and because he knew nothing of this country except that Antigo, Wisconsin, was the place where his friend had found his fortune, he purchased a ticket for that city when he landed in New York.

He had \$12 when he arrived in the Wisconsin city. He found a job at once, with the Antigo Gas Co. Then he worked six months in

a logging camp. He then turned to farm work.

Three years ago he went to Prairie du Sac, in Sauk county, and when the president fixed June 5 as the day for registration he was working on a farm near that city.

DECIDES TO ENLIST

He placed his name on the roll of honor, and went back to his work, but that did not seem to be enough. He thought it over that night, and the next morning notified his employer that he was going to enlist.

He came to Madison on June 6 and enlisted in the regular army for the war. He asked for time to go back to Prairie du Sac and arrange his affairs, and this was granted.

When he returned to Madison today he brought with him a draft for \$650, his savings for four years. And he kept \$50 for himself, and

bought \$600 worth of liberty bonds. The money in the bank paid him 4 per cent. The liberty bonds pay him 3½, but he had decided to do a real job of paying his debt to America.

He left today for Jefferson barracks and from there he goes to the front.

LEAVES A SWEETHEART.

There is another side to the story. He is leaving a sweetheart here to wait until he comes back, and he knows that may never be.

Put these items, then, to the credit side of the ledger when you foot up Uncle Sam's account with Richard Prokop, foreign born:

He is going to the front to give his life, if need be.

He is lending his savings to Uncle Sam.

He is leaving a sweetheart whom he may never see again.

When he left the offices of the state council of defense every man in the room shook his hand and stood at attention as he walked through the door, on his way to the front. As he walked through the capitol park he gave his testimonial for Uncle Sam.

TELLS OF DEBT TO COUNTRY.

"This country has been good to me," he said. "I want to do what I can. I came to this country a boy, without friends and without money. The people were kind to me. I saved more money in four years than I could save in 20 in the village where I was born. I think this is the greatest country on earth, and I am proud to fight for it. This country gave me my \$650. I am glad to let the country use it as long as it needs it. I don't talk about America like some young men do. I don't care about the

high cost of living. I love my country, and wherever they tell me to go, I'll go. I did not enlist for five years. I enlisted for the war."

This is the true story of Richard Prokop, foreign born, which is worth while. How does it appeal to you?—*Madison Democrat*.

Disloyal Few Give Bad Name to Wisconsin.

By Ellis B. Usher.

Milwaukee, June 16.—The registration for war was so satisfactory as to surprise some people who never learn that certain facts govern results in Wisconsin. Such people do not learn that the only reason Wisconsin's loyalty has ever been questioned is that she has been noisily and persistently misrepresented by the German-American alliance; by a few treasonable newspapers, and worse than all by her men in public life, a majority of whom have unfortunately been selected by the combination of sinister interests partially enumerated above.

* * * * *

When Milwaukee gave 10,000 plurality for Wilson it ought to have been a sufficient notice to the country that German sympathizers are in hopeless minority here. If a vote were taken here today the result would be a big, clean majority, and the state would be for Wilson. It is for Wilson.

Today the opponents of Wilson are reduced to the sympathizers with Germany, and a few futile and pusillanimous pacifists, who, though contemptible, are dangerous, as are all men who skulk in the bushes and shoot braver men in the back. All these pacifist elements accomplish is to show a disposition to hamstring the government and

endanger, so far as they can, the lives of their loyal neighbors by inviting violence.

"And if you are ever tempted to say a word or do a thing that shall put a bar between you and your family, your home, and your country, pray God in his mercy to take you that instant home to his own Heaven. Think of your home, boy; write and read, and talk about it. Let it be nearer and nearer to your thought, the farther you have to travel from it; and rush back to it when you are free, as that poor black slave is doing now. And for your country, boy," and the words rattled in his throat, "and for that flag," and he pointed to the ship, "never dream a dream but of serving her as she bids you, though the service carry you through a thousand terrors. No matter what happens to you, no matter who flatters you or who abuses you, never look at another flag. Remember, that behind all these men you have to do with,—behind officers, and government, and people even—there is the Country Herself, your Country, and that you belong to Her as you belong to your own mother."

The Man Without a Country.

Lincoln's Letter to Mrs. Bixby.

My Dear Madam:—

I have been shown in the files of the War Department a statement of the Adjutant-General of Massachusetts that you are the mother of five sons who died gloriously on the field of battle. I feel how weak and fruitless must be any word of mine which should attempt to beguile you from the grief of a loss so overwhelming. But I cannot refrain from tendering you the consolation that may

be found in the thanks of the Republic they died to save. I pray that our Heavenly Father may assuage the anguish of your bereavement and leave you only the cherished memory of the loved and lost, and the solemn pride that must be yours to have laid so costly a sacrifice upon the altar of Freedom.

Yours very respectfully,
ABRAHAM LINCOLN.

What Do I Owe to My Country?

Prof. Volney G. Barnes, Principal
Madison High School.

The above question is one that every man, woman and child should be asking of themselves, for our country is in trouble. We as an American people have not had to think of ourselves as Americans. We are very used to considering the needs of our home, our community, and our state, but the United States has been but a name to most of us. We look upon our union as something remote from us, and now in the time of stress we do not seem to realize that our country is in trouble, we cannot feel that our home is in danger. But if we do not rise above our community, and state, to a loyal support of the United States, our home is in danger. Every man, woman and child should hear our country's call for we can all serve, each in a way he is best fitted to serve. Some will have to go to the front, but the large majority of us must stay at home. We are apt to feel that if we have enlisted, or if sufficient number from our community have enlisted, that our country's call for help has been answered. That is not true, however, for unless we do more than send our boys to the front we have not done our duty.

There are a thousand and one things that must be done and done well in order that our country may use to the best advantage her fighting unit. Many of us are doing our part. We are working in factories, shops and on farms; we are distributing food and growing food. But how many of us realize the vital need for doing these things? How many of us are doing them because of the wages we receive? How many of us are doing them because we need to support our families, with no thought that in doing this work we are performing a vital service for our country. Every man should go at his work with a grim determination that in as far as lies in his power his country shall have every ounce of his strength, every bit of his excess resources. There should be no holding back, no reservations. Very few of us are doing all that we can. We grumble at the call for funds for the support of the Army Y. M. C. A., Red Cross, and Liberty Loan. Some of us seem to feel that we are being imposed upon when we should rather say: "All that I have, all that I am, is yours America. Yes, even my life if that is necessary." Give me only enough to keep strength in my body that I may work harder for you. We need to wake up, Americans, our country calls.

The Greatest Need in America.

House of Representatives,
Washington, D. C., June 21, 1917.
My Dear Mr. Cranefield:

I have yours of the 14th instant but I have been so busy upon matters of legislation that I have been compelled to neglect my correspondence. I am afraid that my compliance with your request

may be too late for use by you. I am, however, enclosing a brief expression which you may use if you desire.

Very sincerely,

I. L. Lenroot.

"The greatest need in America today is a realization that the war in which we are now engaged is not primarily to secure liberty for other peoples, but to preserve our own liberty. If German autocracy is to prevail in this world war, then democracy in the United States is doomed. It is the preservation of our Republic that we fight for. We can do it with less sacrifice of blood and resources now with our allies fighting with us than we can later if they are defeated and we are compelled to fight alone. The shortest road to peace is the enthusiastic support of the American people in this war. We are in war not for England, not for France, but for America."

False Accusations of Disloyalty.

Arthur F. Belitz, Madison.

There is no anguish greater than the gnawing pain resulting from a false accusation or a false suspicion. And there is no public grievance more penetrating to a loyal citizen than to have his loyalty questioned and impugned without cause,—especially so by one to whom, on American ideals of duty, that citizen owes allegiance, respect and veneration.

The record of the German-American element of our population in the building of our nation leaves no room for doubt as to their loyalty, and does not furnish cause to question it now. Yet, we have been assailed (1) by crude and boisterous express accusations of disloyalty; (2) by equally cutting insinuations

and implied accusations of disloyalty clothed in boisterous demands to prove our loyalty; and (3) by the failure of the president to expressly refute the misconstruction of his messages to congress, which have been read by many of our German-American fellow-citizens as carrying the veiled motive to segregate them for the purpose of determining their loyalty.

I cannot believe the president intended at any time to classify our citizenship on the basis of nationality descent; I believe his messages have been misconstrued. America is the land of broad minds and big souls; the land where every stranger is your friend,—when you get to know him. Class distinctions on the ground of ancestry, as upon any other ground, violate the broad spirit that makes our country great and strong. Lincoln and the civil war established for all time the fundamental American ideal that we are all one country and one people, each citizen a sovereign in his own right regardless of his ancestry or any other thing. And it is our sovereign right to assert that the president is loyal to that ideal, as it is our sovereign right and duty to be loyal to the president and country, and back him to the last ditch in his hour of need. That is the German-American sentiment as I know it.

I hate to use the term *German-American*; but the necessity of self-defense compels us to employ it. The distinction has been forced upon us by the need of emphasizing and combatting the fact that we have been unjustly segregated because of birth alone. A kicked dog is bound to growl. We have been called hyphenates and traitors without the slightest warrant; and it makes it hard for us to restrain our expressions, always, to the ab-



solute and perfect ideal of loyalty that is expected of us, and which I know it is our endeavor to maintain. We are not saints, because we cannot be any more than any other class of citizens. But when it comes to the real test it will be found that German-Americans are loyal, as they have always been. The registration records prove it. The bond subscriptions prove it. And only today the papers bring this little item: "No response has been received by the Red Cross war council with so much genuine enthusiasm as that from the German-

Americans throughout the country".

Come, let's forget these little nationality bickerings,—before many months have rolled by we shall have cause to cultivate the American spirit of mutual forbearance and good will. We are up against a hard proposition. We cannot hope to win this war unless we hyphenate all the people and make them one compound whole, according to the verdict of the civil war,—one-third of it German-American. We cannot win the war if we continue to gratuitously offend and ostracize

the German-American loyalty that fed the starving soldiers at Valley Forge. Our armies need German-American stamina and pep that licked Robert E. Lee, on his own admission. We should not make war on each other, but go ahead with it a united people against a common enemy.

German Planes Swoop Down Upon Congested East Side District of London.

London, June 13.—The casualties in the German air raid over London and vicinity, it is officially announced according to the latest police report, numbered 97 killed, and 437 wounded. The killed comprised 55 men, 16 women and 26 children. The injured comprised 223 men, 122 women and 94 children. **No damage of a military or of a naval nature was done.**

The German squadron consisted of about 15 machines, and the downtown section of London was their chief objective. Many bombs fell in the east end. Ten children were killed in a street, and 50 injured in one instance. * * *

SMASH TWO RAILWAY COACHES

Terrible scenes were witnessed during the air raid at a railway station, where two bombs were dropped. Luckily they missed the busy portion of the station, but struck a train at the far end of the platform, fairly full of passengers, waiting to start. The two foremost carriages were destroyed. One bomb hit the train squarely, one carriage caught fire. Several passengers were killed, and others, badly injured and unable to escape, were incinerated.

It is believed that 24 passengers were killed or injured in this train.

PITIALE SCENES AT SCHOOL

The bombing of a school house furnished one of the most pitiable scenes in the whole raid. The bomb struck the roof squarely, cutting clean through and passing through two classrooms, one above the other, killing some children but sparing the majority. It finally exploded with terrific force in a room on the ground floor where there were 64 little children, from 5 to 7 years of age, ten of whom were killed outright, and all the others more or less injured.

The room was 36x24 feet, and the force of the explosion in such a small area was terrific. Most of the ceiling was brought down and the furniture shattered into splinters. Some of the babies had arms and legs torn off, others were shockingly lacerated, some stunned and others buried in the wreckage.

The room was filled with the screams and moans of the tiny sufferers, many of whom were crying for their mothers. Helpers who rushed in from the outside, found four women teachers, wonderfully self-possessed, although covered with blood, giving what help was possible to their little charges. Many of the children were lying limp and helpless across the shattered desks, bleeding from terrible wounds. Others were writhing in pain, and some bodies were unrecognizable.

Press Dispatch.

“I didn't raise my boy to be a Coward.”

War With Germany.

Extracts from speech of Hon. Paul O. Husting of Wisconsin in the Senate of the United States, Wednesday, April 4th, 1917.

THE QUESTION AT ISSUE.

The question with which we are now confronted is not whether we want war; the question is "Shall we suffer war to be made upon us without defending ourselves?" We are not the aggressor. We are not attacking anybody, but we are being attacked. Our ships are being attacked, our citizens and our ships carrying our flag are being sent to the bottom of the sea. In other and even more sinister ways our country has been warred upon for a period of more than two years by agents in the pay of a foreign Government.

GERMANY'S HOSTILE CHANGE OF FRONT.

Again and again our Government has warned Germany that any repetition of the offense of which we complain would result not only in the severance of diplomatic relations, but that we would hold her to "strict accountability" and would omit no steps necessary to defend our rights, or words to that effect.

With these solemn words ringing in her ears, with full knowledge of what her actions meant, repudiating her solemn promise made to us, repudiating the laws of nations and of humanity, the laws of God and man, in defiance of the nations of the world and the opinions of mankind, in defiance of the United States, of her President, and of her people, Germany again threatened to resume and has resumed her ruthless, unrestrained, and barbarous submarine warfare. She is not afraid to do wrong. Shall this great Nation be afraid to do right and to maintain its own rights? Shall we condone or indorse another country's wrong against us and repudiate our country's rights? No; we will not do that! We must not do that! Our honor, our rights, our lives—nay, our very safety and welfare will not permit us to do that. No nation can long endure which permits its rights to be deliberately, wantonly, defiantly, and insultingly trampled upon. No nation can long endure or should endure which fails or refuses to defend the lives of its defenders!

IF GERMANY WINS.

If Germany wins this war she "will bedrill this narrow world like a colossus." She will be all powerful, all

dominating. If our great Nation shrinks now from asserting and maintaining our honor and our rights, will we not, when Germany shall have swept her enemies from land and sea (in the event that she be successful), shrink from engaging this colossus should she then still continue to bar us from the present sea zone of death or when, perchance, it shall be her pleasure to bar us from all the seas and oceans of the world?

A DISTINCTION.

So there is a very broad distinction between the things that England has done against us and those which Germany has done against us. The difference is as great as that between human life and money, as great as that between property rights and human rights, and all the sophistry, all the refinement of arguments, all the specious pleading can not change the fact, and fact it is that Germany has destroyed lives, has committed murder upon our citizens and piracy upon the high seas. The wrongs that we have suffered at Great Britain's hands can and will be compensated for in money.

GERMAN INTRIGUES IN AMERICA.

Mr. President, the conduct of Germany toward this Government during the past two years, aye, for many years prior to the beginning of the war, was not the conduct of a friend. I had it stated to me on pretty fair authority that about 25 years ago Germany changed her attitude toward her immigrants. Formerly she looked upon them as backsliders, as people that were not worthy of the consideration of the German Government, but since that time many persons leaving Germany have still kept in touch with the old country. It has been claimed that thus a sphere of German influence has been formed in the United States. I do not know whether this is true or not. There are some things that seem to bear out the charge, or at least lend color to it; but one thing is sure, and that is since the war in Europe began a German ambassador, German agencies, and German money have carried on a campaign of intrigue and conspiracy calculated to divide the people of this country into racial groups, calculated to array one group of citizens against another, one church against another, race against race, and conspiracies have been formed to commit acts of violence against property and the law and order of this country, calculated, through the medium of numerous societies, leagues, alliances, conferences, newspapers, churches, and other organizations, by means of propaganda and agitation, to prejudice our people against their own Government

and to implant in them mistrust, hatred, and contempt for the President, his advisers, and Congress—in short, of the United States Government. Newspapers have been established, others have been subsidized. The Germany Embassy here at Washington behind its cloak of privilege, encouraged, if indeed it did not actually inspire and direct, this movement which was aimed at the very integrity and sovereignty of this country. An ambassador should carry on the business of his Government through the medium of our State Department; but Germany's ambassador talked through the newspapers and over the heads of our authorities and tried to influence public opinion against this Government through American newspapers, and held conferences with Members of Congress and with sympathetic citizens of the country, with heads of societies and alliances. This ambassador presumed to advise, through the medium of advertisements, in the newspapers what American citizens should or should not do. This ambassador revealed secrets of the State Department to newspaper men under pledge of secrecy not to divulge the source of their information. This ambassador disbursed money to newspapers carrying on German propaganda—newspapers which vilified and foully slandered the heads of our Government. Other agents of the German Government—Von Papen, Von Igel, and the like—were detected and apprehended while attempting, pursuant to a conspiracy, to destroy property, public and private, and to commit other acts of violence against the law and order and decency in this country. Newspapers, some printed in the German language and some in the English language, in one way or another were persuaded to take up a campaign of infamy against the President and this Government that is without precedent in the history of this country.

According to these newspapers in every matter of controversy which we had with Germany America has been in the wrong. As a fitting corollary to this Germany has invariably been in the right. When our crisis was on with Germany last May and it was a question as to whether we were to back down or whether Germany was to back down, they flooded us with a quarter of a million telegrams in which, together with these newspapers and sympathizers generally, they unhesitatingly, boldly, and brazenly asked their country to back down. They thought the idea absurd that Germany should back down because, forsooth, she had told us that she would not back down. They unhesitatingly counseled their Government to abandon a right in order that a foreign country might enjoy a wrong.

On the eve of the late adjournment, when the President, in a last desperate effort to stave off war, asked for authority to arm ships, this chorus loudly protested on the ground that Congress alone had the power and that it should not delegate such powers to the President. Now, when it seems that action by Congress is inevitable and apparently not in accordance with their desires, a deafening chorus again wells up, charging that Congress is about to declare war contrary to the sentiment of the American people. The only instance where a kind or friendly word has been heard in favor of the President and the Government in this entire affair was when the President was endeavoring to cooperate with Germany to bring about a peace without victory. Here, of course, when it appeared that the President was endeavoring to do something that appeared to be in Germany's interest it was promptly approved.

Not only this but the President has been cartooned, lampooned, vilified, and denounced at every turn, and Germany and her chancellor, and her undersecretary, Zimmerman, have been lauded, have been praised, have been glorified, and have been approved at every turn. Nothing was too infamous to say about the President. Nothing too good to say about the Kaiser and his Government. These same men, newspapers, societies, and organizations have brazenly proclaimed themselves as the exponents of true Americanism. They say they love their country; that those for whom they speak would die for their country. But they argue that does not mean that you should necessarily support the Government. Then they charge that this Government is not a true representative of America; that the President is a traitor and a tool of England; that he is betraying this Government into the hands of Great Britain and that he is a hypocrite and a puppet that responds obediently when King George pulls the string.

For Freedom, Not For Hatred.

In 1776 we fought for our freedom from England and again in 1812, but we have not **hated** England.

In 1861 we fought that all men under the Flag, black and white, should be free, but we do not hate the South.

In 1898 we fought Spain that the Cubans might be free, but we do not hate Spain.

In 1917 we are fighting that all the people of the world shall be free, but we will not hate Germany.

We are fighting for freedom, not for revenge or hatred. For forty years German officers at dinners and banquets have drummed to "The Day," the day when they might wreak their hatred and vengeance on England. The German poet, Lissauer, in 1914, sounded the note. Here it is:

LISSAUER'S HYMN OF HATE.

French and Russian they matter not,
A blow for a blow, and a shot for a shot;
We love them not, we hate them not,
We hold the Weichsel and Vosgesgate,
We have but one and only hate,
We love as one, we hate as one,
We have one foe and one alone.
He is known to you all, he is known to you all,
He crouches behind the dark gray flood,
Full of envy, of rage, of craft, of gall,
Cut off by waves that are thicker than blood.
Come let us stand at the Judgment place,
An oath to swear to, face to face,
An oath of bronze no wind can shake,
An oath for our sons and their sons to take.
Come, hear the word, repeat the word,
Throughout the Fatherland make it heard.
We will never forgo our hate,
We have all but a single hate.
We love as one, we hate as one,
We have one foe, and one alone—
England!

In the captain's mess, in the banquet hall,

Sat feasting the officers, one and all,
Like a saber-blow, like a swing of a sail,

One seized his glass held high to hail;
Sharp-snapped like the stroke of a rudder's play,

Spoke three words only: "To the Day!"

Whose glass this fate?

They had all but a single hate.

Who was thus known?

They had one foe, and one alone—
England!

Take you the folk of the earth in pay,
With bars of gold your ramparts lay,
Bedeck the ocean with bow on bow,
Ye reckon well, but not well enough now,

French and Russian, they matter not,
A blow for a blow, a shot for a shot,
We fight the battle with bronze and steel,

And the time that is coming Peace will seal.

You will hate with a lasting hate,

We will never forgo our hate.

Hate by water and hate by land,

Hate of the head and hate of the hand,
Hate of the hammer and hate of the crown,

Hate of seventy millions, choking down.

We love as one, we hate as one.

We have one foe, and one alone—
England!

War With Germany.

(Continued from p. 178)

Therefore they insist that it is patriotic to oppose and obstruct and defeat the Government. Yet they love America they say. Beware of one who while pretending to be your friend finds nothing that is good in you, but only that which is bad—who commends you in nothing but damns you in everything. Friendship is made of a different stuff than this and love of country reveals and manifests itself in other ways than this.

BATTLE-HYMN OF THE REPUBLIC,

JULIA WARD HOWE.

Mine eyes have seen the glory of the coming of the Lord:
He is trampling out the vintage where the grapes of wrath are stored;
He hath loosed the fateful lightning of his terrible swift sword:
His truth is marching on.

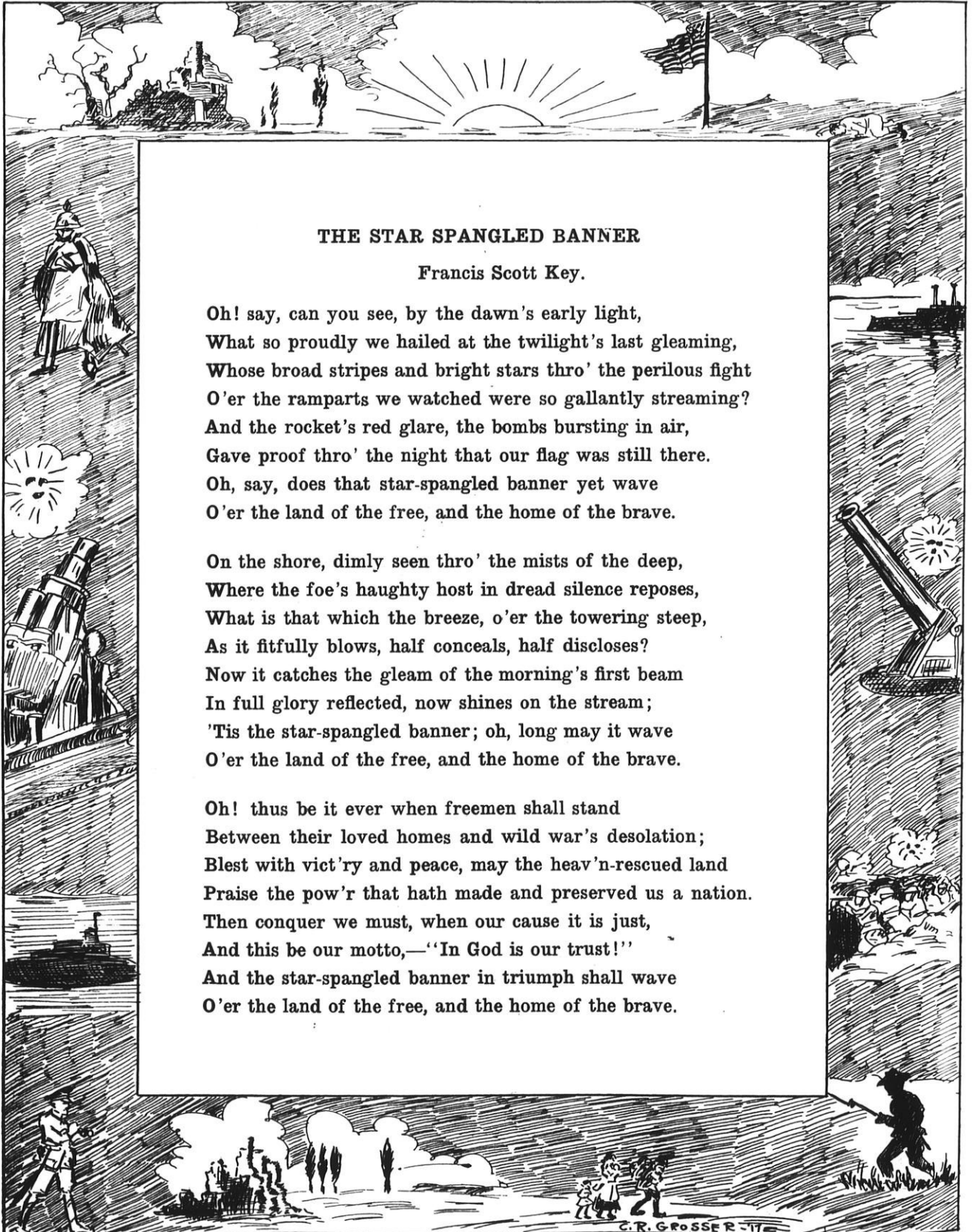
I have seen Him in the watch-fires of a hundred circling camps;
They have builded Him an altar in the evening dews and damps;
I can read His righteous sentence by the dim and flaring lamps.
His day is marching on.

I have read a fiery gospel writ in burnished rows of steel:
"As ye deal with my contemners, so with you my grace shall deal;
Let the Hero born of woman, crush the serpent with his heel,
Since God is marching on."

He hath sounded forth the trumpet that shall never call retreat;
He is sifting out the hearts of men before his judgment-seat:
Oh! be swift, my soul, to answer him!
Be jubilant, my feet!
Our God is marching on.

In the beauty of the lilies Christ was born across the sea,
With a glory in His bosom that transfigures you and me:
As he died to make men holy, let us die to make men free,
While God is marching on.

Breathes there the man with soul so dead,
Who never to himself hath said:—
"This is my own, my native land!"
Whose heart hath ne'er within him burned,
As home his footsteps he hath turned
From wandering on a foreign strand?
If such there breathe, go, mark him well;
For him no minstrel raptures swell;
High though his titles, proud his name,
Boundless his wealth as wish can claim;
Despite those titles, power and pelf,
The wretch concentered all in self,
Living, shall forfeit fair renown,
And, doubly dying, shall go down
To the vile dust, from whence he sprung,
Unwept, unhonored, and unsung.
"The Lay of the Last Minstrel."



THE STAR SPANGLED BANNER

Francis Scott Key.

Oh! say, can you see, by the dawn's early light,
 What so proudly we hailed at the twilight's last gleaming,
 Whose broad stripes and bright stars thro' the perilous fight
 O'er the ramparts we watched were so gallantly streaming?
 And the rocket's red glare, the bombs bursting in air,
 Gave proof thro' the night that our flag was still there.
 Oh, say, does that star-spangled banner yet wave
 O'er the land of the free, and the home of the brave.

On the shore, dimly seen thro' the mists of the deep,
 Where the foe's haughty host in dread silence reposes,
 What is that which the breeze, o'er the towering steep,
 As it fitfully blows, half conceals, half discloses?
 Now it catches the gleam of the morning's first beam
 In full glory reflected, now shines on the stream;
 'Tis the star-spangled banner; oh, long may it wave
 O'er the land of the free, and the home of the brave.

Oh! thus be it ever when freemen shall stand
 Between their loved homes and wild war's desolation;
 Blest with vict'ry and peace, may the heav'n-rescued land
 Praise the pow'r that hath made and preserved us a nation.
 Then conquer we must, when our cause it is just,
 And this be our motto,—"In God is our trust!"
 And the star-spangled banner in triumph shall wave
 O'er the land of the free, and the home of the brave.

WISCONSIN
HORTICULTURE

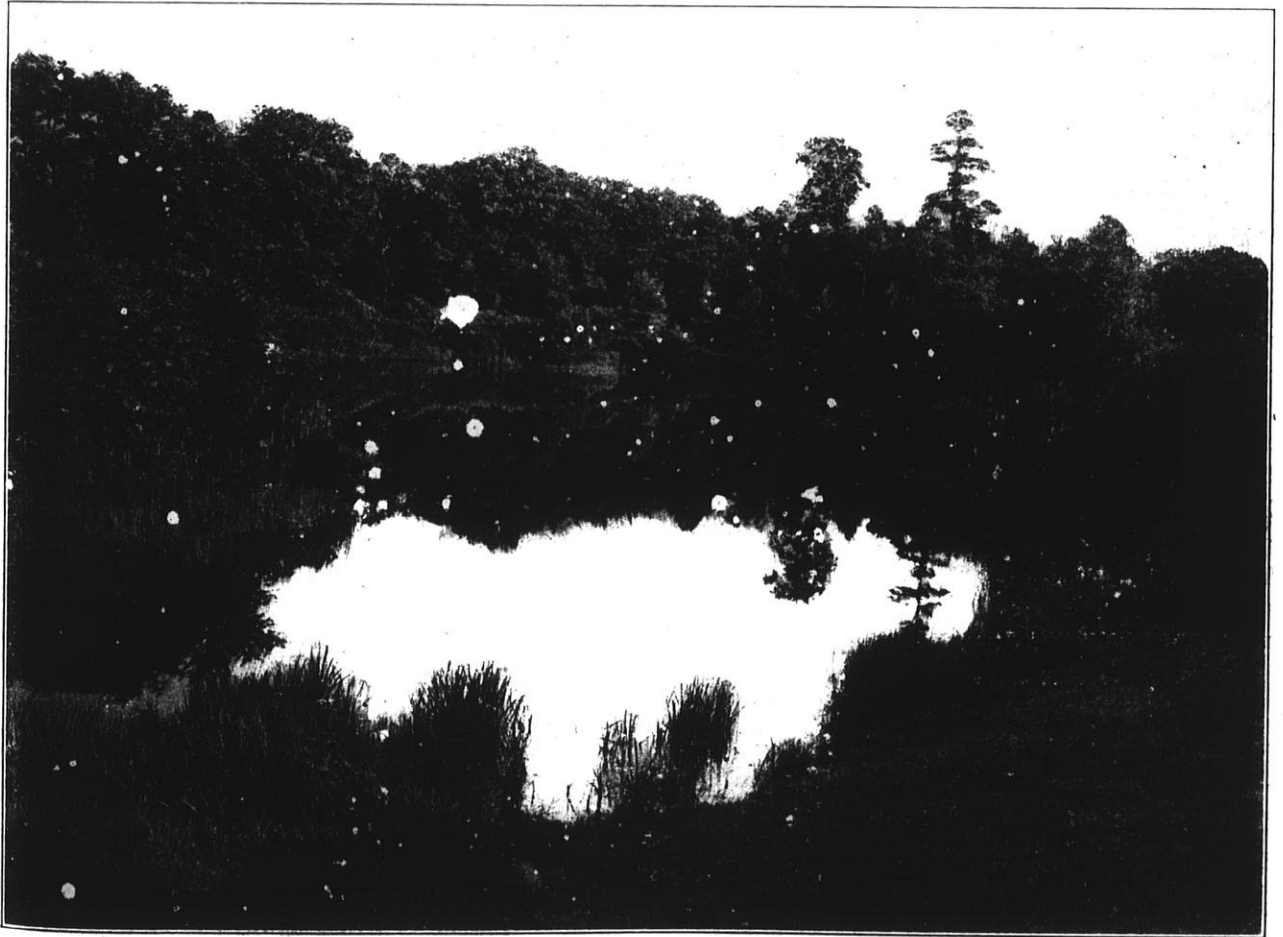
DEPARTMENT OF AGRICULTURE
UNIVERSITY OF WISCONSIN
MADISON

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Some Tricks of the Trade to Increase Garden Yields.

(By Prof. J. G. Moore.)

Practically every gardener has a few special practices or tricks of the trade that he uses to get earlier or a better produce, or to economize space or labor. Many of these practices are fitted only for local situations, but a few have a universal application.

The celery crop offers perhaps wider opportunities to test the gardener's skill than any other vegetable crop. The practices connected with starting the plants, setting them in the garden, cultivating, and blanching the crop vary a great deal.

There are two types of celery in general cultivation, the green type and the self-blanching. Giant Pascal and Winter Queen are examples of the former, and White Plume and Golden Self-Blanching of the latter. The green types have more green coloring matter in the leaf stalks and are harder to blanch than the self-blanching varieties. However, the green types are of much higher quality, they keep much better, and are more vigorous in growth and resistant to disease. They are preferred for storing.

HANDLING EARLY AND LATE CELERY.

The early crop is started under glass during the latter part of March and transplanted. It will take six or seven weeks from sowing for the plants to reach transplanting size. Celery planted on or before May 15th is ready to harvest by the middle of August. The late crop is started from seed sown outdoors about the middle of May and is transplanted to the field around the first of July.

Planting distances for celery vary from as close as 6 in. x 6 in. with the new celery culture to 6 in. x 48 in. A good distance for the home garden is 6 in. x 24 in. This gives room enough for cultivation and yet utilizes the ground. The new celery culture can only be used where the soil is very rich and where plenty of moisture is available. Very little blanching is necessary where this method is used, as the shade of the leaves blanches the stalks.

TRENCH METHOD LOSES POPULARITY.

The old fashioned method of planting celery is to set it in trenches six or eight inches deep. While the celery can be blanched very easily with soil when set in trenches, the method has, in recent years, been largely discarded. The disadvantages of this method are that the celery is hard to cultivate, heavy rains wash the trenches full of soil, the extra labor of digging the trench, and unless we have a very deep soil, we are likely to set the plants either in the subsoil or very close to it.

If there are no facilities for irrigation, the best crop insurance for celery is mulching the ground when the celery is six or eight inches high. Well rotted horse manure forms the best mulching material, but straw, leaves, or marsh hay may be used. The mulch should be put on to a depth of three or four inches. After the mulch is put on, further cultivation is unnecessary. It conserves moisture better than cultivation and keeps the soil cool, loose, and moist, a condition which is very favorable to the growth of celery.

WHEN AND HOW TO BLEACH CELERY.

In blanching celery, the aim is to get rid of the green color of the stalks. Anything which shuts off the light while the celery is growing accomplishes this purpose. The method of blanching depends upon a number of factors, chief among which are (1) the season of the year (celery will rust badly if blanched with soil during the warmer months) (2) the variety (the self-blanching types can be blanched far more easily than the green types) (3) thickness of planting (when celery is planted as close as 6 x 6 or 6 x 8, the thick foliage will blanch the stems) (4) the use to which the celery is put (if wanted for storing, the celery may be blanched in storage).

SOIL BLEACHING IN FALL BEST.

Blanching the celery with soil is perhaps the most common way. It should only be done in the fall, when the days are cool. In blanching with earth, the plants are first "handled." That is, soil is pressed around the base of the plant so as to make it grow upright. Soil is then tilled up around the plant to within three or four inches of the top. Blanching celery with earth gives it a better flavor than blanching with paper and also protects it from frost.

The simplest way to blanch celery in the home garden is to wrap the individual plants with brown paper. The paper should cover all but the leaves and be wrapped tightly around the plant. Drain tile, boards, and paper bands are also used.

Keep the orchard and fruit plantation cultivated clean.

A Michigan Experiment in Marketing Grapes.

James N. McBride, Michigan Director of Markets

It was an experiment in standardization in the marketing of fruit known to be of high quality. Two inspectors were stationed in the territory and they examined the grapes brought in by growers of one of the larger shipping associations. Grapes which were found to meet the Michigan standard which is as follows: "Grapes that are mature, sound, clean, of ripe color, practically free from rot, mildew, mold, diseases and insects, true to name for variety indicated, medium to large berries; bunches well formed and compact; packages of legal size and full weight, were loaded into a certified car. Grapes not coming up to the standard were marketed as in the past. Certificates were issued for certified grapes, these certificates going with the bill of lading to the purchaser. At first it required a high order of salesmanship to get better prices for certified fruit, but by the end of the second week the shipping association had more orders for certified grapes than it could fill. From one to two cents more a basket was charged for certified fruit. This amount went to the growers. A total of 24 certificates were issued: 14 of these were for straight cars of certified grapes, 10 were for cars in which only part of the grapes were up to the standard.

Three conclusions have been reached as a result of the work of the inspectors. These are as follows: First—as the grape marketing is now done, there is little reward for the grower who produces fruit above the average. He has the satisfaction of knowing that he is a good grower and that his

grading and packing are well done, but his fruit goes into cars along with the grapes from his neighbor, who may be an indifferent grower and no packer at all. And both get the same average price.

The second conclusion is—that the local shipping associations are unable to provide a uniform system that is efficient. Their growers are their clients and to offend one means that they lose in volume of business and that a rival shipping association gains in volume of business.

The third conclusion is that the state can work out an inspection system that will be fair to all concerned. It is a neutral party and is interested neither in selling fruit nor in the buying of it. The shippers should defray the expenses of the inspection service.

The inspection system used in connection with grapes has this advantage—that it is no police regulation, punishing people because of failure to do certain things, but is a system whereby those who do better than the average receive a reward in recognition of their efforts.

It was discovered that part of the trade was not enthusiastic over receiving state certificates of quality. It injured their chances of making good on claims for allowances when the market was declining.

Use Garden Hoe to Fight the Foe.

Cultivate your war garden often and thoroughly.

Cultivation means the keeping of the surface soil, the upper two inches, loose.

Cultivate more in dry weather than in wet.

Cultivation makes a dust blanket and prevents the loss of soil moisture by evaporation.

To know the tricks of the enemy is half the battle. Know the insects and diseases which attack your vegetables and you will know how to fight them.

Sod when thoroughly broken up makes the soil richer. The job is to get it broken up and worked into the soil.

The easiest time to kill weeds is just as they begin to start. Therefore, start the garden hoe and the cultivator early.

Skill is shown and good results obtained when the gardener does each job at the right time and in the right way.—R. S. Macintosh, University Farm, St. Paul, Minn.

Orchard and Garden.

Every farm home should have a good strawberry bed, seventy-five or more raspberry bushes and a few black, white, and red currant bushes. The black currants are thrifty and vigorous of growth. Red currants are sometimes a discouragement because the currant worm gets the leaves. This is easily prevented by spraying with paris green or arsenate of lead.

Plant peonies or rhubarb as soon as the ground can be worked.

The following are good varieties of peonies: Festive Maxima, Mons, Jules Elie, Marie Lemoine, Baroness Schroeder and Felix Crousse.

Farm Gardens Pay Handsome Profits.

The garden every year is becoming a more important part of the up-to-date farm. The reason for this is that more and more farmers are seeing in it a source of big profits. A half acre garden, for example, can give a net profit of about \$45.

Fight Fire Blight of Apple.

Circular No. 70, Extension Service, Coll. of Agr.

By R. E. Vaughan.

Fire blight is one of the most destructive apple diseases found in Wisconsin orchards. It often kills the trees entirely or injures them so severely that they require years to recover from the attack. Outbreaks of fire blight are rela-



Healthy Blossoms

tively more severe when the weather is warm and rainy or cloudy at blossoming time, or during the period when the young wood grows rapidly. Pear trees, quince bushes, wild crabs, and some ornaments belonging to the apple family are also affected by fire blight. The disease is known under different names, as fire blight, pear blight, blossom blight, canker blight, and canker and collar blight, according to the tree or part attacked.

CAUSE OF FIRE BLIGHT

Fire blight is caused by bacteria which get into the young growing tissues through the nectaries (the part of the flower containing nectar) in the blossoms or through wounds made in young twigs by insects, or into larger branches through wounds made by pruning tools. Once in the growing part of the wood where there is plenty of moisture, the bacteria increase rapidly in number and kill all the parts they invade leaving them shriveled and dark colored. When the young wood and bark are soft, as in spring and early summer, the bacteria work rapidly down the twigs or shoots into the larger limbs or trunks where cankers are formed. These cankers are known as "hold-over cankers" because it is at their edges, where the tissue does not dry out, that the bacteria are kept alive over winter. When the sap starts in the spring, the few bacteria which are alive multiply rapidly and form little pockets in the cankers next to the live bark. In rainy weather they come to the surface through the bark lenticels, or cracks, and are ready to spread the disease.

SYMPTOMS OF FIRE BLIGHT

Fire blight has some very striking symptoms:

1. Brown blossoms accompanied by a withering and blackening of the young fruit and fruit spurs.

2. Sweetish, sticky, milk-white or brownish ooze which in rainy weather comes from the freshly blighted parts and cankers. It attracts insects which distribute the disease germs.

3. Black or dark brown leaves which are withered after the disease has passed through them but

which for some time cling to the trees. Affected trees have the appearance of having been swept by fire, hence the name "fire blight."

4. Shriveled and blackened bark on the blighted twigs and suckers.

5. Cankers on the larger limbs or trunks. These cankers are usually slightly sunken and blackened and have their bark rough and cracked along the edge be-



A Blighted Apple Twig

tween the diseased and healthy wood.

6. General yellowing and dwarfing of the leaves in the growing season, and premature dropping from one or more of the larger limbs. This is frequently due to blight attack at the base of the trunk, a form of the disease which is known as "collar blight." The bark over the collar blight has a watersoaked appearance in mid-summer. Similar yellowing of the leaves may

also be caused by anything which interferes with the nourishment of the tree as lack of food or by black rot canker, scab, or winter injury.

HOW TO CONTROL FIRE BLIGHT

Fire blight is one of the most difficult orchard diseases to control. The pruning knife, properly used, is the only direct weapon against it. Blight cannot be controlled by spraying or protective washes. But these help to keep



Blighted Blossoms

in check insects which carry the blight. Sprays, therefore, may be indirectly helpful in fighting the disease.

THE TEN COMMANDMENTS OF FIRE BLIGHT CONTROL

1. Cut out thoroughly all hold-over cankers. This should be done in the dormant period and is more easily done by removing the blighted branches well below the points where the last signs of the disease occur. If the branch is large and forms a part of the frame work of the tree, it may be saved by cutting away only the diseased portion. In such cases

remove all the dead wood and bark back into the bright wood and leave the wound smooth. The wound heals more readily if the bark about the edges is trimmed with a sharp knife held in making the cut at right angles to the branch. The lower part of the cut should come to a point like the bottom of a "V" in order to provide good drainage. This precaution makes the wound less liable to heart rot. To make sure that the cankers are all removed, it is necessary to go over the orchard several times, approaching the trees from a different angle each time.

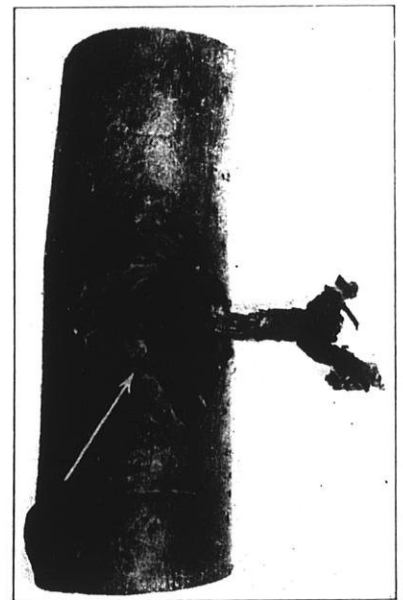
2. Treat the wounds on the large limbs and trunks by disinfecting them with a solution of corrosive sublimate made as follows: one part corrosive sublimate to 1,000 parts water. Convenient-sized tablets of corrosive sublimate may be obtained from any drug store with the directions for making the solution. Keep in glass jars or stone jugs because the solution corrodes metals. It is a deadly poison if taken internally and must be kept from children and animals. After the wounds are dry, paint them with a good white lead and oil paint. If desired, a little lamp black may be added to the paint for the appearance.

3. Prune out new infections promptly and in case of suckers or small branches, cut a foot or more below the blackening of the bark because the bacteria work farther under the bark than its appearance indicates. It is especially important to go over young orchards frequently to remove the blight before an epidemic has time to start. In case of a blight epidemic in blossoming orchards, the prompt removal of all blighted parts may be impractical. In

such orchards, it is important to be sure that all hold-over cankers are destroyed.

4. Disinfect the pruning tools after each cut by wiping them with a clean cloth wet in the corrosive sublimate solution. This destroys any blight bacteria that might be carried on the saw or knife.

5. Burn blighted material promptly because in damp weather the bacteria remain alive in it for some time.



Twig Blight and Canker

6. Remove suckers on trunks and large branches as soon as they appear; they are especially liable to blight and give rise to cankers and collar-blight forms of the disease.

7. Avoid forcing sappy wood growth by too frequent cultivation or too heavy applications of manure and nitrogenous fertilizers because the blight bacteria work most rapidly and severely on such wood.

8. Do not set Transcendent crab because it is especially susceptible to blight under Wisconsin conditions. Yellow Transparent and some other Russian varieties are also more or less susceptible.

9. Kill noxious insects which

spread blight, of which aphids are the most important. Bees should not be poisoned because they gather honey but lice and other insects can be destroyed. For the majority of these pests this can best be done by the use of nicotine sulphat ("Black leaf 40"), 1 part to 1000 parts of water or other spray liquid. Combine the tobacco solution with the regular spring and summer sprays, or with water in case no other spray is desired. When used with water alone, add laundry soap, 2 pounds to 100 gallons. This greatly increases the spreading qualities and effectiveness of the remedy.

10. Cooperate with all your neighbors in cleaning up old orchards, inspecting and pruning. The tenth commandment is very important. Fire blight control is a matter for community, as well as individual, effort.

Other Orchard Diseases.

Fire blight is only one of several diseases with which the Wisconsin orchardist must contend.

Do not confuse it with the following troubles each of which requires different treatment.

Apple scab. Black spot and cracking of fruit, spotting and curling of leaves.

Spray with Bordeaux mixture or lime sulfur.

Apple rust. Yellow spots killing leaves. Worst on Wealthy. Starts as galls on red cedar and spreads from this to the apple.

Destroy all red cedars near the orchard and do not plant Wealthy apples in regions where the red cedars cannot be exterminated.

Winter injuries. Sun scald on the southwest side of the trunk or larger limbs of young trees is the commonest form. Crotch canker and crown rot are other kinds of winter injury.

Whitewash or shade the south

side of the trunk. Avoid over fertilization and late summer cultivation. Use cover crops to mature wood in autumn.

For detailed advice about these or any other orchard or crop pests write to College of Agriculture, University of Wisconsin, Madison.

Defend Your Garden.

L. G. GENTNER

Circular 82, Agr. Extension Service, Coll. of Agr.

Insect pests always take a heavy toll out of garden crops.

If you have spent your time and money in planting a garden you can ill afford, this year in particular, to let your efforts be defeated by lack of control of insect pests.

After the insects once become numerous on the plants, it takes but a short time for them to do a great deal of injury, especially on young plants. Keep them under control from the start. Every one that you miss early in the season will mean many more later on.

As weeds furnish food and shelter for insects, one of the first things to do is to keep the garden free of them.

Where the insects are only few in number or are so large as to be easily seen, they may be kept under control by hand picking and destroying. Of course, this will take quite a little time and labor. It is therefore, often less expensive and more effective to spray the plants.

LEAD ARSENATE "GETS" CHEWING INSECTS

To control insects that chew the leaves and eat the plants spray the plants with arsenate of lead, 2 ounces (10 heaping teaspoons) of the powder to every gallon and a half of water; or dust on the plants the powder diluted with 3 parts of air slaked lime or fine dust.

Early morning is the best time to dust the plants for they are then wet with dew. Arsenate of lead is a deadly poison and care should be taken to keep it from children or animals. It is better to use than Paris green, because it sticks to the foliage better, is not so likely to burn the foliage, and is much cheaper, especially since the war has made Paris green very expensive. On plants with smooth leaves, such as cabbage, a little soap should be added to the spray to make it stick and spread better.

SPRAY LICE WITH SOAP SOLUTION

Plant lice may be controlled by spraying with a strong soap-solution which should be forced into the curled leaves and thoroughly cover the bugs. They are often found on the under sides of the leaves and on the tender shoots, causing them to curl up. Fish oil soap is best, but ordinary laundry soap may also be used in making the spraying solution. It may be made by adding one-half pound of the soap to every 4 gallons of water. Tobacco sprays are very good, especially nicotine sulfate used at the rate of 1 part to 800 parts of water.

POISON BRAN MASH FOR CUT WORMS

To rid your garden of cutworms feed them on poisoned mash. They hide in the ground during the day, but come out at night and cut off young plants near the ground and also feed on the foliage. If one scatters poison bran mash over the ground several days before the plants appear or are set out, the worms in the soil feed on this and will be poisoned. The mash should be scattered in the early evening so that it will not dry out before the worms feed on it, and may be applied at any time during the season that the worms cause seri-

ous injury. Care should be taken to keep poultry and other live stock away from it.

To make up the bran mash mix 2 ounces of white arsenic or Paris green with 3 pounds of bran. Dissolve 1 ounce of salt and 2 ounces of cheap syrup in a little water. Then mix all together adding enough water to make a crumbly mash. The mash may either be broadcasted or placed about the bases of the plants.

SPRAYING WILL NOT KILL THESE

Worms that bore inside of the vines and stems of plants cannot be controlled by sprays. In the case of the stalk borer on potato and tomato plants, infested parts should be cut off and destroyed as soon as noticed. In case of the squash vine borer, the worm may be killed by slitting the vine with a sharp knife.

CAUTIONS

1. Arsenate of lead, Paris green and poison bran mash are deadly poisons. Keep children and animals away from them.

2. Do not spray cabbage with arsenate of lead after the heads are made in the fall; beans after the pods have formed; or tomatoes after the fruit is nearly full grown.

3. Always use the right kind of spray for the right kind of insect.

For maggots on onions, radish, and turnips there is no satisfactory control except to destroy the infested plants. These whitish maggots will often work in the roots of plants, tunneling through them and causing the plants to wilt or become dwarfed. Cabbage maggots may be prevented from getting on the plants by placing tarred felt discs about the

bases of the plants at the surface of the ground as they are being set out.

Squash bugs are resistant to spray. If pieces of board or burlap are placed near the plants the bugs will collect under them and may be gathered and destroyed early in the morning.

Liquid sprays may be applied with a small hand sprayer which can be bought at a small cost. Dust sprays may be dusted through a cloth sack or applied with a dust gun.

As soon as the crops are harvested all refuse matter, old vines and stumps should be gathered and destroyed by burning. If left in the garden, they will give food to the insects and will be a shelter for the winter.

For further or more detailed information write the Department of Economic Entomology, College of Agriculture, Madison.

Canning Greens.

Blanchard Harper.

Pick over and wash carefully any greens such as Swiss chard, spinach, lambs quarters, dandelion greens, horseradish greens or any other greens.

After washing carefully lay them in a piece of cheese-cloth and set them in a steamer or a kettle in which there is only a little water in the bottom. Steam them until they wilt. Now immerse the bundle as quickly as possible in very cold water and remove immediately. Do not let it drain very long. Open the package and pack the greens tightly in glass jars and fill with hot water and put in a teaspoonful of salt for every quart. Now sterilize the jars in hot water for 90 minutes as given in former

recipes. As soon as the boiling of the water is checked immediately seal tightly, then wrap in brown paper before storing. The rapid changes from hot to cold and to hot water materially arrest the growth of the bacteria. The States Relations Service recipe suggests the addition of olive oil and a little dried beef for flavoring, but my experience makes me prefer to omit them.

Save All the Peas.

As the green peas get too ripe for the best eating do not leave them on the vines to rot or to feed the pigs and chickens. Do one of the three following:

Pick the peas and shell them and dry them according to the old process of drying, in the sun or some of the quicker methods recommended in the Farmer's Bulletin, 841 U. S. Dept. of Agriculture—"Drying Fruits and Vegetables in the Home" with recipes for cooking—to use for seed, soups or baked peas (cook like navy beans.) Thoroughly ripened peas dry easily in the sun; green peas dry well if dried as advised for corn as dried on the Turvill Farm by Mrs. E. T. Wood and cooked very similarly when wanted. Save every pea to use it so that some more portable food will be available for our armies and our allies.

B. H.

Fungus diseases—Use Bordeaux mixture both to prevent infection and spread of disease.

Queen-of-the-Market asters are best for pot plants. They are also among the earliest for outside planting.

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This is the regular July number of Wisconsin Horticulture. For the Fourth of July number, mailed July 2nd, the editor alone is responsible; not even the president of our society was consulted so if there be any disappointment on the part of members who would rather have had garden notes earlier in the month, blame the editor only.

As these words are written the special edition has not been mailed and I do not know how it will be received. There may be

censure or there may be some slight word of praise, but for neither of these am I concerned. But if any word in it serves to awaken in any one even if only in one mind, a realization that we are engaged in a just war; that we are fighting for ourselves as well as for the sacred rights of all free peoples; that in facing the Kaiser of Germany and his military machine we are facing the most savage and brutal foe the world has ever seen; that the war, which has exceeded in horrors any ever before known is HERE and NOW and not something that may happen, then I will be content.

The Oshkosh Meeting.

On August 22-23 we will all go to Oshkosh for a two-day convention. The program will occupy one day and one day will be devoted to studying gardening at first hand. The gardens and their gardeners, the best in the state, are there, Rasmussen, Christensen, Phillipson, Roe, and a dozen others all experts.

They all refuse to appear on the program, preferring, no doubt, to demonstrate by deeds rather than words. They will all answer questions, however, or we will know way!

There will be several members on the program that none of us can afford to miss. The August number will give full particulars.

Last year we saw what skill plus money can accomplish, this year we are to see how skill may be employed to make money.

There will be no "entertainment" in the commonly accepted meaning of the term, no bands, no fireworks nor spectacular displays, but that there will be a hearty welcome and that we will

be "entertained" no one who knows Oshkosh doubts.

Let's all go.

The Gardener's Advisory Council.

Members of our society have responded nobly whenever called on for help. Many direct personal appeals have been sent out by the secretary and in every case the response has been prompt and the service rendered of great value.

Feeling that too much could not be done to encourage the thousands of garden beginners all over the state, especially as only a small percentage are members, the "Gardener's Advisory Council" was organized.

Members of the Council, appointed by the president, were asked to spend at least four hours a week inspecting home gardens and giving advice and counsel to beginners.

One hundred appointments were sent out, mostly to members in small towns and cities. All but nine of this number accepted and every one of the nine gave a satisfactory reason for declining. Not only did the 91 accept but did it in a way that gives cheer to the souls of those of us who are trying to organize the food army of the state for the great struggle ahead.

Here are a few words that came with the acceptances.

Dear Sir: I accept with pleasure and honor my appointment as member of Gardener's Advisory Council and will make every effort to be of service to the cause.

I have been working along these lines ever since the call came to increase food production. In our own planting we are using every inch of land and have been advising others to plant a garden. And will make a greater effort now.

L. Herziger, Neenah.

"I consider it an honor to be drafted, will be glad to do all I can to help. Have been doing a little bit along that line, before receiving your letter.

Mrs. C. M. Strong,
West Allis.

Dear Sir: I am sending herewith my acceptance of membership in the Gardener's Advisory Council. While I am above the age limit that I have seen suggested for service under "conscription" (my 66th year) I am willing to register and let future circumstances determine my "liability."

I shall look to the columns of "Wisconsin Horticulture" for future commands.

H. H. Harris,
Warren, Wis.

Oneida, Wis., June 7, 1917.

Dear Sirs: Enclosed please find my acceptance. I am pleased that I can "do my bit" for my country.

Thanking you for the honor conferred on me I am

Very truly yours,
Rev. A. A. Vissers.

Herewith find my acceptance of your draft. I have never known such a craze for garden making as this spring and much of it by people who have a very hazy idea of what it means. I never realized there could be so many questions asked about the gentle art of gardening as have been fired at us this spring. Certainly there is need of such work as you outline in your letter. This was offered a few days ago by a physician, that in planting potatoes you must always have two eyes—a male and a female—in each hill or no potatoes would form. Replied that thought this advice should be taken with a liberal pinch of salt, then explained the sex of flowers. Wishing you success in

your campaign of education, I remain,

Respectfully yours,
J. T. Fitchett,
Janesville.

Dear Sir: I herewith enclose my acceptance to the Gardeners Advisory Council of the Wisconsin Horticultural Society. I have been so busy with office and committee work that I have as yet not found time to work my own garden, but will try and do at least a little in helping others. If I run into anything too big to handle myself I will call on you for assistance.

Hoping that I can "do my bit", I am,

Yours very truly,
A. A. Ullrich,
Watertown, Wis.

"I am very willing to do my bit for the cause."

J. M. Dunlop.

"I surely cannot shirk from such duty."

A. H. Lemke.

This from a member who is nearly blind:

"I shall be very glad to do what I can to be of some service at this time. I am willing to try."

With such a spirit as this we cannot fail.

Tomato Paste.

Blanchard Harper.

The following recipe was kindly sent for Wisconsin Horticulture by Miss Julia Corona, a young Italian girl, 701 Milton St., in Madison.

½ bushel of tomatoes
Salt to taste

Mash the tomatoes and cook until quite soft. Add the salt and rub through a strainer. Spread the pulp on a wide board out in the sun, let stand 15 minutes.

Stir and spread again to dry, and continue alternate stirring and drying until the mixture is dry enough to be rolled into a ball. Put the ball into a dish and allow it to stand three or four days. Then divide the mass into portions about the size of an egg. Shape and dip in oil and place the balls in a stone jar. Cover with a piece of cloth (or heavy paper) which has been dipped in oil and salt. To use, dissolve a ball in boiling water and use as cooked tomatoes in soup, macaroni, rice, or any tomato sauce.

TOMATO PASTE.

The following recipe was kindly sent for publication in Wisconsin Horticulture by an Italian woman, Mrs. Sedali, 6 N. Murray St., Madison, through her brother Mr. Tortoresi.

The tomatoes must be thoroughly ripe. Wash them carefully and cut each in half cross wise, then lay them on a grating, grid or wire frame or colender to drain. Sprinkle a handful of salt over the layer, then add more layers, carefully sprinkling each with salt until a sufficient amount has been prepared. Let drain over night. In the morning place the tomatoes without squeezing, in a kettle and boil for two hours, stirring carefully to prevent burning. Cool, then rub the mass little by little carefully through a strainer so that only seeds and skins are left. Take the strained tomato and strain a second time to make it smooth and fine. Now return the tomato to the kettle and slowly boil until it is too thick to run off the board on which it is to be dried. When thick enough take a board (like a bread board), spread the tomato paste on it and then score it with lines to facilitate drainage, then

put it out in the bright sun on a clear bright day. Stir once in fifteen minutes to aid drying. When dry enough put the mass in a plate or pan and let it stand a couple of weeks. After that put in a bowl and mix it thoroughly with sweet oil; when well mixed pack it solidly in an earthen jar and cover with an oiled and salted cloth or paper. Keep the jar in a cool place. In case the paste dries out rapidly pour a little oil over it again.

NOTES ON THE TOMATO PASTE RECIPE.

Mrs. Rorer in her "New Cook Book," p. 307:

"In almost all the Italian shops one can buy tomato conserve in small cans for ten cents. A tablespoonful of this conserve will take the place of many times its bulk in tomatoes. It is, in my own house, used constantly during the summer in the beef extracts for soups, which saves the purchase and keeping of large quantities of meat. * * * for four ounces of macaroni or spaghetti * * * add * * * a teaspoonful of tomato paste dissolved in two or three tablespoonsful of cream or milk."

In the recipes given the American housewife will find an economical method of preserving her tomatoes and yet save the use of self-sealing jars or time. This method enables one to put down in gallon or larger earthen or stone ware crocks an immense amount of tomatoes in an extremely concentrated and portable form. Owing to the present scarcity of olive oil, a good cottonseed salad oil may be satisfactorily substituted. I have used a well known brand of cottonseed salad oil with perfect satisfaction for several years in preserv-

ing pickles, and open bottles of olives and dill pickles, from mould and scum. Pickles have kept well with it in loosely covered jars for nearly three years. In using oil for a seal or preservative, one precaution must be rigidly observed—the container and contents must be kept in a **cool, dark place**. The oil absolutely prevents mould and scum.

It is suggested that housewives having any means of drying fruits and vegetables as described in the June number of Wisconsin Horticulture will prefer to use them rather than face the unprotected exposure to flies and dust in the sun. Enamel ware pans or plates covered by glass could be used for small quantities, which could be packed in jelly glasses instead of large jars; indeed, the writer has been told that the Italians prefer to pack it in small jars rather than large. Of course in using jelly glasses it would be necessary to wrap them in brown paper to prevent the action of light turning the oil rancid.

If considered desirable, this same paste could be spiced and seasoned like American tomato catsup without the vinegar, spices being boiled in the paste after straining, bay leaf, cinnamon, clove, allspice, etc., but with the exception possibly of onion juice and celery seed it seems better to add desired flavors at the time of using.

A Canning Economy.

Blanchard Harper.

Sugar is by no means necessary for the successful canning of summer fruits. Nearly every fruit can be preserved without a particle of sugar, and at the same time preserve more of its delicate

flavor and delicious aroma than when sugar is used.

TO CAN WITHOUT SUGAR

Wash carefully, pick over the fruit to have no particle of decay, skin or peel where necessary and also where juice is desirable. Fill the jar with boiling water, after the fruit has been compactly packed in it, put on rubber and cover, partly fasten the cover but do not tighten it, then immerse the jar two-thirds its height in the water bath and boil, counting from when the water commences to boil, from ten minutes for strawberries to twenty-five for pears. Seal immediately and set to cool. If the shrinkage is very great as in strawberries fill the jars up from one or two extra ones and then boil again for five minutes all that have been opened.

When wanted for use open an hour or so before serving and add sugar to taste. If economy is necessary sweetening can be very satisfactorily accomplished with honey, or any good corn syrup in place of sugar.

The writer has kept strawberries canned in this way for three years and when they were opened found them sound and good and the perfume of fresh strawberries seemed to fill the room while the snow of the bleakest winter whirled outside.

Notes.

If every house-keeper has not secured copies of the free bulletin issued by the University of Wisconsin Extension Service, "Canning for Pleasure and Profit," she should send for one at once. Send to the College of Agriculture Extension Service, University of Wisconsin, Madison, Wis.

In drying fruits or vegetables in the sun outdoors be sure to cover them with mosquito netting to keep off flies. It is a good plan to have a lath frame tacked to the ends of the drying board to raise the netting two or three inches above the fruit.

Another wise precaution is to set the legs of the table, or supports in small pans of water in which a little kerosene has been dropped so that ants and caterpillars cannot crawl over and up. Ants will swim through clear water but not any with kerosene in it.

HOME DRYING.

Scarcity of Cans or Glass Jars Makes Drying Desirable.

Dry vegetables and fruits for winter use in tin cans or glass jars for canning are scarce or expensive.

This is the advice of specialists of the United States Department of Agriculture, who recently have studied the possibilities of conserving food to meet war needs in spite of any difficulties that may be experienced in obtaining canning containers. Drying was a well-recognized and successful way of preserving certain foods before canning came into general use, the specialists point out, and modern methods make it still more practicable than formerly, either in the home or by community groups.

METHODS OF DRYING

Three methods of drying have been found by the department specialists to give satisfactory results. These are sun drying, drying by artificial heat, and drying with air blasts, as before an electric fan. Trays for drying by any one of these methods, as well

as tray frames for use over stoves or before fans, can be made satisfactorily at home. Frames and trays for use with artificial heat may be purchased complete if desired.

Homemade trays may be made of side and end boards three-fourths of an inch thick and 2 inches wide and bottom boards of lathing spaced one-fourth of an inch. If desired, 1/4-inch galvanized wire mesh may be tacked to the side and end boards to form the bottoms of the trays. Frames for use before fans may be made of wood of convenient size. Frames for use with artificial heat should be made of noninflammable material to as great an extent as possible. As many as six trays may be placed one above the other when artificial heat is used. In drying before a fan the number of trays that may be placed one above the other will depend, to a large extent, upon the diameter of the fan. In drying in the sun, trays as described may be used or the products to be dried may be spread on sheets of paper or muslin held in place by weights.

PREPARING PRODUCTS FOR DRYING

Vegetables and fruits will dry better if sliced. They should be cut into slices one-eighth to one-fourth of an inch thick; if thicker, they may not dry thoroughly. While drying, the products should be turned or stirred from time to time. Dried products should be packed temporarily for 3 or 4 days and poured each day from one box to another to bring about thorough mixing and so that the whole mass will have a uniform degree of moisture. If during this "conditioning" any pieces of the products are found to be too moist, they should be returned to

the trays and dried further. When in condition the products may be packed permanently in tight paper bags, insect-proof paper boxes or cartons, or glass or tin containers.

Notes on the Drying or Dehydration of Fruits and Vegetables.

Blanchard Harper.

An old window screen frame covered with galvanized netting or cheese cloth makes a capital drying tray.

Remember that dried fruits are moisture absorbers and moisture soon becomes mould. Dried fruits and vegetables must be kept dry. After drying thoroughly hang up in a paper bag back of the kitchen stove for a few days then toast a tin box or covered can, while uncovered, in the oven for a few minutes before putting the fruit or vegetables in it and putting on the tight cover.

All solid fruits like apples, peaches, pears, etc., must be cut up and peeled before drying. Also all vegetables like carrots, etc.

Sundried fruits are darker than oven dried—many think the flavor of sundried preferable to that of oven dried.

Never leave drying fruit outdoors after sundown, or put out before the dew is dried.

Plan to store vegetables that will keep without canning by some of the other processes for preserving such as drying or dehydrating, wrapping in paper in a dark cellar such as onions, squash and cabbage, storing roots in sand, etc.

Send to the Department of Agriculture for Bulletin on Canning in the Home; Dehydrating Fruits and Vegetables in the Home.

Potatoes and Bugs.

Have you met Mrs. Leptinotarsa decemlineata? She wears an orange coat with ten black stripes and is literally the "mother of millions." Most (rational) people say "potato bug", but the entomological sharks insist we should say potato "beetle," while occasionally one may be so far gone toward complete imbecility as to use that Lepidino,—stuff in the first line. Farmers and big potato growers know what to do. These few suggestions are

FOR THE BEGINNER

Watch for the first adult beetles: turn over the leaves to find the orange-colored egg clusters. Pick the beetles by hand dropping them into a pan that has a little kerosene in the bottom. Crush the egg clusters. Even with these precautions some will escape and it will be necessary to "spray" in order to poison the young bugs, as these are the ones that do the eating.

Spraying or rather combating the potato beetle with poison is a simple process. Use Paris green **and lime**. A heaping teaspoonful of paris green to a gallon of water is a heavy dose. Get a lump of fresh lime and slake it by pouring water on it drop by drop until it crumbles; add a small handful of this to the Paris-green-water mixture and apply with a whisk broom. Paris green is not soluble in water and will settle quickly in water, therefore keep a wooden paddle in the pail and stir frequently.

Presumably every one knows that Paris green is poisonous and ought not to be kept in a baking powder can in the pantry. While a small quantity taken internally would prove fatal, there is little danger of absorption through the skin.

Garden Notes From Forest County.

The following timely garden notes are clipped from the Republican of Crandon. It appears that the editor must have an advisory council similar to ours. We seldom find such good advice as given here outside of Oshkosh.

Grounders for Gardens.

Just a few pointers for the amateur war gardeners by some of our prominent citizens:

Carrots should be pulled up and shaved every Saturday and then packed back in the ground. Whiskers on carrots always tickled our throat.—G. H. Dawson.

Beans jump out of the ground quicker if rolled in vaseline before planting.—Egbert Wyman.

Be sure to place a pan of soaked bread near the pea plants. You never can tell when a pea plant wants a lunch and it must be handy for him, otherwise he dies.—A. E. Germer.

A pinch of black pepper sprinkled on the seed will put the "pep" in the young peppers and make them grow to enormous size.—James Paul.

As soon as the cucumbers get large enough to notice things, separate the male ones from the female ones, for if you don't they will spend all their time flirting and won't grow. A wild cucumber is no good.—Len Russell.

Cabbage heads should be fitted with breakfast caps as soon as they begin to develop. The hot sun is hard on their domes.—Martin Georgeson.

Be sure to plant the seed right side up. Many a man has lost a good garden through this little error.—Chas. Taylor.

Hell can be raised in any garden patch with a large-footed dog.—A. E. Karlberg.

Soak the pea seed in kerosene and you will find that the peas won't roll around in the pod while growing.—John Whismat.

Use kind words to the young plants and you will get better results.—Bill Webster.

Babies can be raised in this climate successfully. Forest county always has a good crop.—John Bradley.

A phonograph placed in the potato patch will keep the bugs busy "tangoing" and they won't harm the vines.—John Scory.

Pickled cucumbers can be raised by injecting a little "booze" into each one. This saves the house frau the bother of preserving them.—F. A. Sabrowski.

To raise pumpkins without holes in them take a double bitted ax and mash them down every morning. The hired girl can do this to keep down her weight.—R. J. McMillan.

You can raise good collar buttons by grafting radishes onto tomatoes. It takes a good Forest County "grafter" to do this, though.—John Skinem.

Tomatoes will ripen quick if you let a young "chicken" walk thru the rows in a short skirt. They get that natural blush sooner and hold it longer.—C. A. Moe.

Treat your corn seed with white pop if you want to use it for pop corn.—Frank Hellstrom.

Unless you want a crop of wood peckers don't plant bird seed.—Ted Lutterman.

To raise cobless corn, place Blue Jay corn plasters on each young plant. This will pull the cob out when it develops.—Art. Netzel.

To keep turnips from turning up, pound them on the head when young with a 6 lb. hammer.—Henry Mundt.

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**Notes on the Cultivation of Some
Staple Vegetables.**

BY

W. SAXBY BLAIR, *Superintendent,
Experimental Station, Kent-
ville, Nova Scotia*

Carrots and Parsnips.

These should be grown in deep, thoroughly prepared soil of loose open texture, to admit of even root development. This is especially true in the case of parsnips, as a heavy compact soil develops a poorly shaped and rooty parsnip. The ground may be spring or fall manured, ploughed deeply and thoroughly worked.

The seed is sown in the open ground usually before the middle of May, in rows two and one-half feet apart. The carrots may be thinned to two inches apart, and the parsnips four inches. If carrots are spaced too far apart in the row they become too large for table use. The ground should be rich enough and sufficient moisture maintained by frequent cultivation to continue an even growth throughout the season. The root should be kept covered with soil to the top, preventing the top of the root from becoming

green, which is objectionable for market carrots.

Beets.

Beets for early use should be started as early as possible on well prepared ground. For winter use seeding toward the last of May, or early in June, is advised, as the beet does not become so large. (Any good soil will develop good beets providing a uniform growth is maintained. A checked growth has a tendency to produce fibre.

The seed is sown in rows and the plants thinned to three or four inches apart.

Beans.

Beans do best on a fairly rich soil, and unlike the pea, require a warm situation and warm soil. While the pea will do well on a fairly heavy soil, the bean likes a loose, friable soil for best development. The seed should be sown not earlier than the middle of May. They are usually planted in rows two feet apart, and the seed dropped two to three inches apart and one to one and one-half inches deep.

Successional sowings may be made every two weeks until the middle of July, for the purpose of extending the season into the fall.

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Onions.

Onions do best on a light loamy soil rich in plant food. Light loams can be worked to better advantage than heavier loams and do not dry out so badly during summer. An abundance of available plant food is necessary if profitable crops are to be obtained, and consequently a soil that has been manured for several seasons previously should be selected. The seed is sown in rows on the level ground 12 to 14 inches apart and 1/4 inch deep. Seeding should be done as soon in the spring as possible, so that the plants will get well established before the dry, hot weather of summer.

Maintenance tillage is done principally with the hoe, and consists in keeping the surface ground

loose around the plants and all weeds from starting.

The falling down and withering of the tops indicates maturity, at which time the onions should be pulled. They are left for a week to dry, after which they may be topped and put into slatted crates, or put into these crates without topping, taken to a shed and allowed to cure for two or three weeks, after which they are ready for market or storage. The advantage of the crate is that a small bulk of onions is together with plenty of ventilation, which is very necessary for proper curing for storage or shipment. They should not be stored in bags or in large piles in bulk. They may be stored in slatted bins arranged one above another, 10 to 12 inches deep. If stored the temperature should be kept as low

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as possible and the air be dry.

* * *

Cabbage.

Any good garden soil will grow cabbage. A warm, well drained sandy loam, very rich in plant food, is best for early cabbage. A northern exposure is best for late cabbage and a heavy soil may be used. The cabbage is a gross feeder and there is no danger from making the ground too rich. For early cabbage start the seed about March 15. The seedlings are transplanted to two inches apart three weeks later, and will be ready for the open ground early in May. The plants are usually set on the level in rows 30

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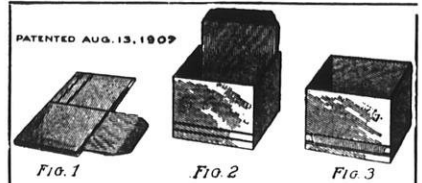
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Dept. D, Cumberland, Wis.

inches apart and 18 inches apart in the row. Late cabbage are usually grown from seed sown thinly in a cold frame early in May and plants from these are set in the field about the middle of June, spacing the plants in rows 32 inches apart and 20 to 22 inches apart in the row.

The usual maintenance tillage should be given during the summer, and the ground not allowed to become hard and compact or to dry out.

In the storing of late cabbage cut the heads during a dry day and store where good ventilation is possible. The air should be kept dry and the temperature as low as possible. The heads should be placed on slatted shelves far enough apart to store two or three tiers of cabbage, with a good chance for ventilation under the shelves. A confined atmosphere renders cabbage storage impossible.

Cauliflower.

The cauliflower requires a cool, rich loam. A northern exposure is

best. Continuous growth is important, and anything that tends to check the plant in any way should be avoided. Dry weather often results in failure, and where watering is possible it may be advisable. For early and late cauliflower start the seed and handle the same as for early and late cabbage, except that more careful attention should be given to detail in the development of plants. Like the cabbage, it takes about seven weeks to develop a stocky, properly hardened-off plant. They may be spaced in the field the same as cabbage.

When the heads are three to four inches in diameter the leaves should be tied together over the head in order to develop a good white flower.

Turnips.

The early turnips may be sown as soon as the ground is fit, in well prepared soil. The Swede turnip should be sown about the last of May. They do best on a good loam retentive of moisture. Continuous

growth is necessary to develop good quality. Like most of the root crops, they develop best during the damp, cool fall weather, and the advantage of late seeding is that they make little growth during the hot summer, developing a succulent tissue in the fall. Swede turnips planted early are very liable to be checked in growth during the heat of the summer, developing a root containing much fibre, and lacking in quality.

Corn.

A warm, friable, rich soil should be selected for garden corn. The seed is sown in hills three and one-half feet apart each way, and five plants allowed to develop in a hill. The seed is sown soon after the middle of May. Early and late varieties should be planted to extend the supply of table corn into the fall. As is the case with peas and beans, constant surface cultivation to keep the weeds down and maintain a loose surface mulch is necessary.

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Volume VII

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Number 12



PENNSYLVANIA ANEMONE AS USED IN PARK PLANTING: A COMMON WISCONSIN WILD FLOWER.

Uncle Sam's Latest Vegetable Preserver.

Blanchard Harper

When I was a child living in Japan, one of my vivid memories is of standing by to watch the wives of the men servants working with what we children called their "pickles." Their "pickles" were egg plants about the size of a hen's egg, cucumbers full grown with the seeds scooped out and the skins on, and "*daikon*" the large Japanese white radish—I never knew the preliminaries, but the "pickles" as I saw them were packed *in saw dust* in wooden buckets and covered with salt brine. After fermentation for some time, they were taken out as wanted, carefully washed in several waters, then sliced and served at the meals consisting mainly of boiled rice and fish. Dietetically the "pickles" added just the elements needed by the other components of the meal for a balanced ration—alho I did not understand that or think of it for many years after—

The process is a good one from the stand point of economy in the conservation of foods—economy not only of utensils but labor, fuel and containers, for by this method, stoneware jars or wooden or fibre pails of several gallons capacity can be utilized in place of the now high priced glass jars, and tin cans. We are so accustomed to regard bacteria as a bugaboo, that few of us realize that the beneficent bacteria far out number the malignant. It is the utilizing of some of these beneficent germs that forms the basis of this process.

The Dept. of Chemistry of the U. S. Dept. of Agriculture has been experimenting on processes for preserving vegetables by fermentation in brine solutions of various kinds. The first account

of the work described the use of a mixture of corn-meal and water which had been allowed to sour to produce lactic acid which is the preserving element. Later experiments showed the corn-meal to be unnecessary and unwise. The process can not be unreservedly recommended for all sorts and conditions of vegetables and the vegetables are acid when removed—just as sauer-kraut and dill pickles are acid, but it is useful for vegetables like young beets, carrots, cabbage, cucumbers, etc., not sufficiently ripened or mature to keep in a root cellar or packed in sand for the winter.

The following is from a preliminary description of the process sent out in typewritten form by the U. S. Department of Agriculture.

HOW TO PRESERVE VEGETABLES BY FERMENTATION

The fermentation method for the preservation of vegetables should be of value to those who like acid foods, and lack receptacles for their canned products. The vegetables are not cooked, but are put down in a salt brine in any non-metal water-tight container, and are then sealed up with paraffin, or otherwise made air tight. Under this treatment lactic acid develops, and this acid, the value of which as a preservative. The Bureau of Chemistry has found this method most successful in preserving cucumbers, chayotes, beets, and string beans.

Wash the vegetables, if necessary, this of course being most important in the case of beets. In the case of string beans, the strings should first be removed. Pack the vegetables into a clean, water-tight barrel, keg, or crock, avoiding the use of tubs made of yellow or pitch

pine which would impart a disagreeable flavor to the product. (On the bottom of the barrel place a layer of dill and a handful of mixed spice. Add another layer of dill and another handful of spice when the barrel is half full, and when almost full a third layer. If a keg or crock is used the amount of dill and spice can be reduced in proportion to the size of the receptacle.) If beets or string beans are to be served like fresh vegetables, no spice should be added. When the container has been filled within a few inches of the top add a layer of covering material—beet tops, or grape leaves—about an inch thick. This layer protects the vegetables beneath against any spoilage occurring in the surface of the fermenting material. Press it down with a clean board cover weighted with bricks or stone. Do not, however, use a cover of yellow or pitch pine or weights of limestone or sandstone. The acid produced by the fermentation acts upon lime.

Make a brine by adding 1 pound of salt to 10 quarts of water. To each 15 quarts of brine so made add 1 quart of vinegar. Add sufficient brine to cover the material and allow it to ferment. The length of time required for fermentation depends upon the temperature. In a warm place only from 5 days to a week may be necessary; in a cool cellar it may take from 3 to 4 weeks.

During the first stages of fermentation there is always more or less bubbling and foaming of the brine. After this ceases, a thin film appears, spreading rapidly over the whole surface and developing quickly into a heavy folded membrane. This scum is a growth of yeast-like organisms which feed upon the acid formed by fermenta-

tion. If allowed to grow undisturbed, it will eventually destroy all the acid and the fermented material will spoil. As free oxygen of the air is absolutely necessary for its growth, the exclusion of air from the surface of the brine will entirely prevent the formation of this scum. There are three feasible methods of excluding the air.

1. Use an oil like cottonseed oil, which floats on the surface and effectually prevents air from reaching the brine. Care should, of course, be taken to select oil free from any odor or taste other than that possessed by a good grade. Brine with a layer of paraffin oil or cottonseed oil one-half inch thick on the surface will keep indefinitely. The only objection to the use of a liquid oil is the difficulty of removing it from the preserved vegetables.

2. Cover the surface with very hot melted paraffin. Paraffin, sufficiently hot to make the brine boil when poured upon it, forms a smooth even layer before hardening. Upon solidifying it effects an air-tight seal. Paraffin is easier to handle than liquid oil, and does not remain on the fermented vegetables when they are removed from the receptacle. Furthermore, paraffin can be used over and over, thus cutting down expense. If it becomes dirty it can be heated to a high temperature and strained through cheesecloth or a thin layer of cotton. The only disadvantage in using paraffin lies in the fact that gas developing below the layer will break the seal. If the paraffin breaks, it should be removed, remelted, and replaced.

Before sealing containers with paraffin, set them where they will not be disturbed until the contents are to be used. Any attempt to move them from one place to another

may break the paraffin seal, thus necessitating resealing. If the containers are not opened until cold weather, the vegetables should keep without spoiling until they are used up. If opened in warm weather they have a tendency to spoil rapidly unless the paraffin is reheated and the container resealed immediately.

3. Pack the container as full as possible and then replace the head. In using this method for the fermentation of beets, cucumbers, chayotes or string beans, allow the product to stand for 24 to 48 hours after board and weights have been added. During this period most of the gas first formed escapes. The boards and weights are then removed and the container headed up tight. Bore a one-inch hole in the head and fill the barrel full with brine, leaving no air space. Let stand until bubbling has ceased. Add more brine if possible, and plug the vent tight. If the barrel does not leak, fermented products put up in this manner will keep indefinitely. The use of this method in repacking fermented product serves to economize space and prevent spoilage of the brine and upper layer of the product. The vegetables may be transferred after bubbling has ceased from the original containers to kegs and barrels which are then headed up as has just been described.

If cottonseed oil or paraffin is used to cover the brine, it is advisable to so adjust the amount of brine and the weights on the cover that the brine comes up to, but not over, the cover. Thus only the brine exposed between the cover and sides need be oiled or paraffined, thereby saving covering material.

Only those vegetables which can-

not be kept by storing or early ones not available later in the season should be preserved. Late beets, for example, can be kept better in the cellar.

Sauerkraut

The method of putting up cabbage by fermentation has several advantages over the present process of making sauerkraut. The belief that only late or fall cabbage is suitable for making sauerkraut has been disproved by experiments conducted in the Bureau. If properly handled excellent sauerkraut can be made from cabbage maturing at any season of the year. Be careful, however, to use only mature, sound cabbage, keep everything scrupulously clean during the whole process, and follow exactly the directions given for treating the surface of the brine when fermentation has ceased.

Remove the outer green leaves of the cabbage, just as if it were being prepared for boiling, as well as all decayed or bruised leaves. A finer looking product is secured when the cores are removed. If no instrument for coring the cabbage is at hand, quarter the head, and slice off the core of each section. Shred the cabbage either in one of the shredding machines manufactured for this purpose, or by cutting it into thin slices with a large knife. Pack the shredded cabbage at once into a clean, water-tight receptacle, as a cider or wine barrel, keg, or tub. Four or five-gallon receptacles, as earthenware crocks, are recommended for small families where larger quantities might spoil before the sauerkraut could be used up, after opening the container.

As the cabbage is packed into the barrel or crock, add salt in the

The Apple Grading Law

CHAPTER 492, LAWS OF 1917.

AN ACT to create section 1668m of the statutes, relating to standard grades for apples grown in the state, and providing a penalty.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. A new section is added to the statutes to read: Section 1668m. 1. The standard grades for apples grown in this state when packed in closed packages shall be as follows:

First: "Wisconsin Standard Fancy" shall consist of hand-picked, properly packed apples of one variety, which are well grown specimens, normal in shape, uniform in size, of good color for the variety, and which are free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing. "Uniform in Size" shall be construed to mean that apples contained in any one package shall not vary more than one-half inch in diameter.

Second: "Wisconsin Standard A" shall consist of hand-picked, properly packed apples of one variety, which are well grown specimens, normal in shape, of not less than fifty per centum of good color for the variety, and which are practically free from dirt, insect injury, fungous disease, bruises and other defects, except such as are necessarily caused in the operation of packing.

Third: "Wisconsin Standard B" shall consist of hand-picked, properly packed apples of one variety, which are well grown and practically free from insect injury and fungous disease; provided,

that apples having healed over insect punctures, small scab or blotch infections, fruit spots, or other defects which, taken singly or collectively, do not materially deform or discolor the fruit or injure its keeping quality, shall be admitted to this grade.

Fourth: "Wisconsin Unclassified" shall consist of apples which do not conform to the foregoing specifications of grade, or which though conforming are not branded in accordance therewith; provided, that if more than ten per centum of the apples are badly deformed or badly discolored by scab, blotch, insect injury or other defects, the package containing them shall be marked "Culls" in addition to the other marks or brands required by this section.

2. In the interpretation of this section a tolerance of five per centum below the standard shall be allowed in the Standard Fancy grade, ten per centum in the Standard A grade, and fifteen per centum in the Standard B grade; provided that not more than half the foregoing tolerance values shall be allowed on any single grade specification or defect. Such tolerance shall apply to size, color, and other grade specifications and shall be computed by counting or weighing the specimens which are judged to be below the standard for the grade in any respect, and those which are found to be smaller than the minimum size marked on the package.

3. In all of the grades specified in this section, the apples included in the face or shown surface shall fairly represent the size and quality of the apples in the package.

4. Every closed package containing apples grown in the state of Wisconsin which is sold, offered or exposed for sale, packed for

sale, or shipped for sale, shall bear upon the outside of one end in plain letters or figures, or both, the name and address of the person by whose authority the apples were packed, the true name of the variety, the grade of the apples therein contained when packed or repacked, and the minimum size or the numerical count of the fruit in the package, provided that apples packed in boxes may be branded Extra Fancy in lieu of Standard Fancy; Fancy in lieu of Standard A; "C" in lieu of Standard B. If the true name of the variety is not known to the packer or the person by whose authority the apples are packed or branded, then such variety shall be designated as "unknown." Every package of apples which is repacked shall bear the name and address of the person by whose authority it is repacked. The letters and figures used in marking or branding closed packages of apples under the provisions of this section shall be of a size not less than thirty-six point Gothic.

5. The marks and brands prescribed in this section may be accompanied by any additional marks or brands which are not inconsistent with or do not in any way obscure the marks and brands required by this act. Apples packed and branded in accordance with the United States apple grading law approved August third, nineteen hundred and twelve, shall be exempt from the provisions of this section.

6. The minimum size of the fruit in all grades, shall be determined by taking the transverse diameter of the smallest fruit in the package. Minimum sizes shall be stated in variations of one-fourth of an inch, as two inches, two and one-fourth inches, two and one-half

inches, two and three-fourths inches, and so on.

7. No person may pack for sale, ship for sale, offer or consign for sale, or sell, in closed packages, any apples grown in this state which are not graded, packed and marked or branded in accordance with the provisions of this section and the regulations made hereunder, or closed packages of apples bearing any false statement, design, or device regarding such apples within the meaning of this act.

8. Any person who violates any of the provisions of this section, or of the regulations promulgated hereunder, shall be deemed guilty of a misdemeanor and upon conviction thereof, shall be punished by a fine of not more than fifty dollars for the first offense and not more than one hundred dollars for each subsequent offense; provided, that no person shall be prosecuted under this section who can establish by satisfactory evidence that no part of the packing or branding of the apples concerned was done by him or under his authority and that he had no knowledge that they were not packed and branded in accordance with said provisions and said regulations.

9. The provisions of this section shall not apply to apples in closed packages which are held, stored or shipped to storage within the state, until the same are packed for sale, offered or consigned for sale, or shipped for sale.

10. The word "person" as used herein shall be construed to include individuals, corporations, partnerships and associations. The act, omission or failure of any official or employe of any person, when such official or employe is acting within the scope of his employment or office, shall, in every case, be deemed also the act, omission or

failure of the person, as well as of the official or employe. The words "closed package" shall mean a box, barrel or other package, the contents of which cannot be easily inspected when such package is closed.

11. The enforcement of the provisions of this section shall be vested in the commissioner of Agriculture, and his officers, employes and agents are authorized to enter upon the premises of any person within this state for the purpose of inspecting packages of apples and securing evidence of violation of this section, and the said commissioner of Agriculture is hereby authorized and empowered to make, promulgate, and enforce such regulations as may be necessary for interpreting the grade specifications prescribed in this section, and for otherwise enforcing its provisions; provided, however, that any grades or classes of apples packed in closed packages, or any requirements for marking closed packages containing apples, mandatory as applying to interstate commerce which may hereafter be established by the authority of the congress of the United States shall forthwith, as far as applicable, be established and promulgated by the commissioner of Agriculture as the official grades, classes and marks for apples packed in closed packages in the state of Wisconsin.

Section 2. This act shall take effect upon passage and publication.

Approved June 26, 1917.

COPY LAW.

Uncle Sam's Latest Vegetable Preserver.

Continued from p. 199

proportion of 1 pound of salt to 40 pounds of cabbage, distributing it

evenly throughout the cabbage. Experiments have shown that the addition of approximately 2½ pounds of salt to each hundred pounds of shredded cabbage gives the best flavor to the kraut. When the barrel or crock is nearly full, pound down the cabbage as firmly as possible and cover with a clean board cover. It is advisable, though not essential, to place a clean cloth over the cabbage before the cover is put into place. The salt soon extracts a certain amount of juice from the cabbage, so that a weight of clean bricks or stone sufficient to bring the brine well above the board cover should be added.

Now set aside the barrel or crock and allow fermentation to proceed undisturbed. In cold weather, or where the sauerkraut is placed in a cool cellar, three or five weeks may be required to complete the process. In a warm room it takes only from ten days to two weeks. As soon as fermentation starts, a foam appears on the surface of the brine. This is followed by a film which develops into a heavy scum, if allowed to remain. Skim off this scum as often as it forms—every day, if necessary. It feeds upon the acid in the brine and, if allowed to grow undisturbed, soon destroys both brine and kraut. As soon as the gas bubbles cease to arise, the scum, if any has formed, should be removed, and a layer of hot melted paraffin about ¼ to ½ inch thick poured upon the brine. If paraffin is not added, the scum develops very rapidly during warm weather and soon destroys the acid of the brine and the sauerkraut beneath. If the sauerkraut is made during the fall and stored in a cool place, it is not necessary to add the paraffin, for the low temperature will prevent decomposition.

Salt Method for Preserving Vegetables

The following paragraphs from the Chicago Tribune speak for themselves. A letter from Dr. George Leininger, manager of the Dunning infirmary, brings to mind a third method that is practicable and convenient. While he has applied it to Swiss chard only, it is just as feasible in the preservation of any succulent green. We quote from his note as follows: "I have successfully put up Swiss chard for winter use by salting it down like kraut. It does not ferment like kraut, but remains fresh as if it came out of the garden. Any jar or keg may be used for salting it down with an ordinary loose cover and weight on it."

Mr. Joseph J. Budling, who has experimented with beans and most other vegetables by salting in this manner, advises pounding enough, while filling, to create a liquid to cover, testing 15 to 20 degrees salometer test. However, these technicalities are important only to large producers. The salient point is that the vegetable must be kept under its own brine and weighted down with a heavy stone or other weight. Many housewives prefer beans salted to those canned. One recently told of finding a crock full of salted string beans which had been misplaced three years before in her cellar, they were found in perfect condition and eaten with satisfaction by the family. For the instruction sheets issued at the lectures in Conservation of Foods given at the University of Wisconsin for the delegates from the county defense committees instructions for packing beans and corn in salt were as follows:

"Corn should be blanched (3 min.) and then cut from the cob. Beans should be left whole, but prepared for cooking and blanched

3 min. Sprinkle a layer of salt in the bottom of the jar, then a layer of beans or corn, then salt and repeat until the jar is full. The top layer should be salt. Place a plate over the top of the beans or corn, and press down well. It is not necessary that the jar should be filled at one time. More may be added from time to time as the foods ripen or are available. When ready to use, soak the beans or corn over night and then prepare as if fresh."

Cucumbers for pickles—My grandmother's way. Summer being a busy time, my grandmother left the making up of pickles until winter and prepared for it as follows: The small cucumbers were gathered daily and packed in layers of salt in a stone crock. As brine formed a plate was placed over them and weighted with a small bag about four or five inches square of salt so that the edges of the bag reached the brine and moistened the salt enough to replace the salt dissolved by the juice of the cucumbers. When wanted, freshen the cucumbers, and using a little alum to make them brittle, finish them according to any favored recipe. In the case of very small tender cucumbers the brine should be weaker—use less salt.

Cucumber Salad for Winter

Pare and slice cucumbers as for use at the table. Pare and slice also one fourth as much of tender onions. Sprinkle layers of cucumbers and onions with salt. Let drain over night. If too much salt has been used rinse quickly in fresh water in the morning. Pack in a freshly scalded crock, and pour over enough vinegar which has been diluted to taste, scalded and cooled, to cover the cucumbers. Seal with olive or cotton seed oil.

Home Canning

(Mrs. N. A. Rasmussen, Oshkosh.)

(Editor's Note: This excellent article on home canning was unfortunately mislaid and could not be found in time for an earlier issue.)

There are three important features to be taken into consideration when canning fruits and vegetables, viz. cooking utensils, fruit or vegetables and receptacles for the finished product.

As to utensils, one may have as elaborate an outfit as the pocket book will afford or as there may be room for in the cupboard but a simple, inexpensive and economical supply will suffice for the average family canning, pickling and jelly making. This should consist of at least two granite dishes of about 16 quart capacity either pans or kettles as one desires, a colander, a wire strainer, a sieve of some description, a masher or ricer, can funnel, several large spoons, a slicer, a wire basket, a cherry pitter, a food chopper, an apple corer, a paring knife, a bottle brush and a jelly bag. This may seem rather an extensive list but the actual cost of the whole outfit is not more than \$6.00 and most of these articles may be used in performing many other household duties.

Now about the fruit: First it must be in good condition if good results are expected. This does not necessarily imply that nothing but fancy fruit can be used for all sorts and grades may be utilized to excellent advantage if good judgment is generously administered.

The various stages of maturity should be considered. Fruit somewhat green is best for jellies, fruit perfectly ripe tho firm is ideal for canning and fruit which is very ripe or past its prime makes jams and butters creditable to any repast.

A great deal might be said about home canning, in fact volumes of recipes etc., have been written but a few general principles may be of some benefit to the inexperienced.

The fruit should be prepared, so far as possible, most convenient for the consumer. Apples, pears and pine apples should be cored; cherries, plums, etc., pitted and the stones should be removed from the peaches thus eliminating many an embarrassing situation as well as a worm, have the fruit trees not been properly sprayed. If one desires the fruit left whole, such as peaches and pears a syrup of sugar and water should be made and the fruit put into the boiling syrup.

Of course one may use the "boiling in the can" method if more effective results are desired. There is no set rule as to the amount of sugar necessary this must be governed by one's personal taste. Some fruits may be canned entirely without sugar, but no fruit should require more than a pound of sugar to a quart of canned fruit. The cans should be thoroughly sterilized immediately before they are used and slightly warm while fruit is being put in and no silver fork, no aluminum plate nor other foolish fancy is necessary to prevent the can from cracking.

Canned fruit should be stored in a dark cupboard or if this is not convenient it is well to fasten a piece of paper around each individual can, thus preserving the color of the fruit, this is particularly true of strawberries. Each can should be labeled as it is sometimes difficult to tell the black raspberries from the black berries and blue berries, and should you wish John to bring a can of plums he would not favor you with pickled beets.

The Housewife's Opportunity

One way American women may serve their country.

The United States is at war with a nation which has the best organized and equipped army the world has ever seen. Back of that army the people of Germany are likewise organized to a degree that to us is scarcely conceivable.

Statesmen and military experts have announced in no uncertain terms that from now on the war is to be a struggle for supremacy in the production, conservation and distribution of food, rather than a contest of arms.

On the advice of the President and his councillors, hundreds of thousands of acres of land in the United States never before cultivated are being used to swell the production of food.

The experienced gardener is redoubling his efforts, while a multitude of men, women and children, who have hitherto paid little or no attention to the tilling of the soil, are now planting and cultivating.

The result of this unprecedented activity cannot fail to be the production of vegetables, berries and fruit in vast quantities. These cannot be consumed as fast as they are gathered. On the women of the land will fall the tremendous task of storing up this great excess. **PRESERVE, DRY and CAN:** Let these be the watchwords of the women of our country! Over-production, without the ability to keep, will avail us nothing.

The list of garden and orchard products which cannot be successfully stored for future use is surprisingly small. Neither is the cost of preparation nearly as great as is generally presumed. The cost of sugar is now so great that I apprehend many women despair of

being able to put up berries and fruits as they have heretofore. This cause of alarm is not well founded. The underlying secret of permanent canning and preserving does not rest on the necessity of the presence of syrup, but on the destruction of every bacteria in the food to be put up and in the can and cover, by sterilization and sealing of the container absolutely against the air.

A can which is not securely sealed, or whose contents has not been thoroughly freed from the presence of bacteria, represents nothing but lost materials and wasted energies.

At the request of the Wisconsin State Horticultural Society, I prepared samples of fifty-seven kinds of apple products capable of being put up for later use. Several others might have been added, however, I felt that the apple had been sufficiently vindicated as a worthy competitor in the field of advertised foods.

With clean, sound fruit, clean jars, thorough sterilization and tight sealing, there is no reason why the women of the land may not save hundreds of thousands of bushels of apples that every year go to waste throughout the country. Like care in the preparation of other fruits and berries may be also be the means of similar saving, the value and volume of which will be a revelation.

Thus, as I have demonstrated, the apple may be used to form the bulk of many products in combination with other more expensive fruits and by this means affording a great variety of flavors at far less cost than where the other fruits are used exclusively.

Mary Parker Morgan.

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SUMMER MEETING

The summer meeting, Aug. 22nd
and 23rd, really needs no adver-
tising, merely a reminder. There
are the usual good reasons why we
should assemble at the summer
meeting and this year one other
reason: We must "take stock."

Our Society has been one of the
impelling forces in the war garden
movement and we may be needed
again next year. Therefore let us
get together, look over this year's
work and see how we can improve
on it.

PROGRAM SUMMER MEETING

STATE HORTICULTURAL SOCIETY

Public Library Building, Oshkosh, Aug. 22 and 23, 1917

Wednesday 10:00 A. M.

The Keys of Oshkosh.....Hon. John Mulva, Mayor
How Have the Horticulturists Heeded the Battle Cry of "Feed Em?"
The War Gardens of Milwaukee and Vicinity.....Prof. C. V. Holsinger
The Oshkosh Garden Movement.....Miss Fannie K. Medbury
What We Accomplished in Lake Geneva.....A. Martini
Members from other cities will be prepared to make brief reports.
Garden Irrigation.....L. Herziger

Wednesday Afternoon, 2:30 P. M.

Progress in Insect Control.....Prof. H. F. Wilson, Univ. of Wis.
Progress in Control of Plant Diseases.....Prof. L. R. Jones, Univ. of Wis.
Winter Storage of Vegetables.....Irving Smith, Ashland
The Apple Grading Law.....Geo. W. Potter, Univ. of Wis.

Wednesday Evening

Color in the Home Grounds.....Prof. F. A. Aust, Univ. of Wis.

Illustrated Lecture

Athern Hotel Headquarters for Delegates and Members.

The latter part of August is al-
ways selected for the summer meet-
ing as that time comes as near be-
ing a slack season as the fruit
grower or gardener ever finds, just
after small fruit and cherries and
just before apples. For the ama-
teur it is also a slack season and
he should be on hand this year
without fail.

Oshkosh will take the best of care
of us both days and no one will
regret a two day stay. A glance at
the announcement shows the pro-
gram proper will be finished the
first day and the second day we
will be at the mercy of members of
the Oshkosh Society.

We will see gardens and gardens
without end also lakes and rivers,
cool spots for luncheons and the
strange spectacle of a big excur-
sion steamer crossing corn fields
and pastures.

The State Fair

The State Fair premium list is
out and should be read carefully

by every member who has fruit or
flowers fit for exhibit. The pre-
miums are better than ever and
ought to bring out a fine exhibit.
The regular exhibitors will be on
hand as usual but will the amateur
and small grower be represented?
Remember the lists are open to all
and the plate or peek of apples
from a small orchard often stands
a better chance of winning than
that shown by the big grower.

The State Horticultural Society
will have an exhibit as usual and
its officers will use their best ef-
forts, as usual, to make the Fair a
success. You are invited, not only
to attend the fair but to participate
in making the fair. Send for a
premium list anyway to O. E.
Remey, Secretary State Fair Park,
West Allis, Wis.

A Washing Machine Canner

Some years ago an account in
Wisconsin Horticulture told of
how Mrs. Wm. Gilbert when she

married and went to live on the farm used the wind-fall apples to make jelly which she sold and made enough money to remodel her kitchen and laundry. Mrs. Gilbert's ingenuity has again been at work and she has now made an admirable steam pressure cooker for canning out of her washing machine. Mr. Gilbert has a steam boiler which he uses to inject steam for heating the mash, water and feed, etc., for his stock during the winter. Mrs. Gilbert sends this jet of steam into her washing machine where she has already placed her jars of vegetables to be sterilized, and clamps down the cover and lets them steam under the required pressure for the required time and then at the proper moment shuts off the steam and lets the washer cool down before removing her cans or jars. The washing machine is the ordinary dolly style of washer, and the use of it for canning in no way interferes with its use five minutes after for washing because when washing Mrs. Gilbert always fills it with cold water and then turns the steam jet in until the water is heated to boiling if need be. We are all ready to bow our compliments to Mrs. Gilbert's ingenuity.

Send to the University correspondence Study Department for Extracts from Home Economics Course 5. The course as a whole deals with "Spending the Family Income." The extracts are a fine concise manual of Canning, Preserving, Jelly-making, and Salting, of fruits, vegetables and eggs. There are other notes given out on "Dairying."

Send to the U. S. Dept. of Agriculture for Bulletins 839 on Home Canning by the Cold Pack Method and 841 on Drying Fruits and Vegetables in the Home.

The Apple Grading Law

It has long been conceded by all who have studied the subject that the first essential in successful marketing is a high quality product, the second the fixing of standards.

The passage of the apple grading law by the state legislature therefore marks the very first step in advance in the problem of marketing farm products in Wisconsin.

The bill which was introduced by Senator Everett at the request of this Society had a rather rough passage thru legislative seas. It was once marked for slaughter by the Senate Committee on State Affairs but was saved on the floor by Senator Everett and finally passed both houses.

The law fixes standards for apples packed and sold in *closed* packages such as boxes and barrels and probably baskets. Growers who anticipate packing apples for sale this year will need to read the law carefully.

Madison Wins

Madison, not Pardeeville, is now the home of the McKay Nursery Co.

This firm has passed the "struggling" stage and is now a well established concern with a rapidly growing business. This being the case it is only natural that the managers should seek a central location. Madison offers infinitely better opportunities than a small town for the business end and is also somewhat nearer to Waterloo the growing end.

Madison is a winner and for that matter so are the McKays, about fifty-fifty.

An Echo

When in the future material is sought for the history of this socie-

ty the secretary hopes that there may be found a sheaf of letters which he has filed with a copy of the special July 4th edition.

These letters coming quickly after the paper was mailed, show clearly that our country comes first in the hearts of our members.

Patriotism, a sense of the duty we owe to the land of our birth, are these things dead or esteemed only as something to be brought out for occasional rehearsal?

These were questions the writer asked over and over and, in a manner to get an answer conceived the Special Number. The answer, complete and soul satisfying will be read by the history writer when he comes. All but one of these letters he may find and that one is too good to keep so long. It's from the far west the land of the I. W. W. the scene of Von Papen's intrigues.

Colville, Wash., July 6, 1917.

Gentlemen: When I subscribed for Wisconsin Horticulture, I thought I would get a really American monthly on Horticulture; but the recent Special, which I am returning with this mail, is an appeal for war at any price, an insult to anyone, who does his own thinking, and does not let Downing and Wall Street do his thinking for him.

My subscription is about run out; and please do not offend me any more with your publication.

Yours for an HONEST America, free from BRITISH as well as German rule.

(Name on Application)

P. S. Your own Bob La Follette is my ideal of how honest Americans should behave in this war.

Washington's Orchard

It is said of Washington, "Providence left him childless that his country might call him Father." That is a distinction only one man can achieve, but it is not the only way in which Washington was distinguished. Besides the title "Father of His Country," Washington has some claim to the title "Father of American Horticulture", as will appear from the following facts:

On Mar. 18, 1774 George Washington leased to one William Bartlett 125 acres of land, "in the barens of Bullskin," a part of the present Berkeley Co., W. Va.

The grantee was "to have and to hold (the land) for and during the lives of the said William Bartlett, Mary, his wife, and Frederick, their son and the life of the longest liver of them." In addition to six pounds annual rent, it was agreed that Bartlett should leave a certain area of timber untouched, erect the buildings, raise 10 acres of "English Grass" and "that within seven years an orchard of one hundred winter apple trees, at forty feet distance every way from each other, and that one hundred peach trees shall be planted on some convenient part of the said demised land, and the same to be kept always, during the continuance of said term, well pruned, fenced in and secured from horses, cattle and other creatures that may hurt, and if any of the said trees shall die, decay or be destroyed, that others of the same kind shall be planted in their place, and the entire number thereof be kept up during the said term."

This orchard of 200 trees is supposed to have been the largest orchard of its time.

It is interesting to note, further, that the site selected by Washing-

ton for his orchard has since become one of the largest fruit regions of the state. "Apple Pie Ridge" boasts of one orchard with a record of 600 barrels of apples per acre.

Squash Bugs

A little late for talk about squash bugs but the following by Mr. Fracker of the State Entomologist office may still be helpful.

"No remedies which are completely satisfactory to growers and to entomologists are known for the striped cucumber beetle. The greatest success seems to result from efforts to cover the upper and lower surface of the leaves with spray materials or other finely divided substances. The beetles will not eat leaf tissue which is covered by such substances as lime, Bordeaux mixture or wood ashes if the substance is applied in such a way as to completely cover the leaves and stems on all surfaces. This may be accomplished in the case of powders, such as ashes or lime, by scattering them in the early morning while the dew is still on the plants.

Commercial growers often cover the plants with cheese cloth or screens while they are small and particularly subject to injury. It also still seems best to plant an excessive quantity of seed in order to have a sufficient number of surviving plants after the insects have taken their toll.

These suggestions do not apply to the large sucking insect known as the squash bug which seems to be included in your request. This must be handled in an entirely different way and directions for it will be sent in case you are troubled by this insect. The striped cucumber beetle is usually distin-

guished from anything else attacking cucumber and squash by the yellow body with three black stripes.

S. B. Fracker,
Assistant Entomologist.

Green Corn in Winter

For more than 40 years we have enjoyed green corn in winter and like the product from the process to be described better than from drying or canning. Gather the ears when at best condition for eating. If too old it will be tough and if the juice is watery instead of milky it will not keep well.

Strip the ears carefully of the husks and silk. To make husking much easier cut off the butts close to the corn with a sharp butcher knife. Cook the corn on the ear in a large boiler until the (milk) has set giving a little less cooking than if for immediate use. As soon as the ears have cooled after taking from the water cut the corn from the cob, cut lightly and scrape from the cob so there shall be only corn to pack away. Have ready earthen ware jars sufficient to hold the quantity desired. In the bottom of the jar place a one inch layer of dairy salt, next a two inch layer of corn, following with half inch layers of salt and two inch layers of corn until jar is full finishing with a one inch layer of salt. A wooden potato masher should be used to press the corn in firmly. The original recipe called for a coating of lard over the last layer of salt.

We now think it more convenient to pack in one or two quart glass fruit jars, with about the same proportion or less of salt and omitting the lard covering. Use the covers of course. Press the corn in firmly so that a little juice

shows on the surface. Corn whether by this process or any other should be taken care of soon after gathering, as it soon becomes tough after gathering.

To freshen for use place the quantity needed over the fire covered with cold water, bring slowly to scalding, drain off the water and repeat. The second water will probably freshen it enough; if not give a third scalding. Then prepare for the table as you would any other green corn.

William Toole.

Contributions for the September number are respectfully solicited but the editor reserves the right to reject any subject matter referring to canning, drying, preserving or anything that has to do with pots, pans or kettles. (I have done my bit and my nerves need rest for a spell.)

"Therefore I counsel that all Israel be generally gathered unto thee, from Dan even to Beer-sheba, as the sand that is by the sea for multitude; and that thou go to battle in thine own person.

"So shall we come upon him in some place where he shall be found, and we will light upon him as the dew falleth on the ground: and of him and of all the men that are with him there shall not be left so much as one.

"Moreover, if he be gotten into a city, then shall all Israel bring ropes to that city, and we will draw it into the river, until there be not one small stone found there."

2 Samuel xvii—11-13

Receipts for Fifty-seven Apple Products

Mrs. H. H. Morgan, Madison.

1. Candied apple.

Make syrup of 2 cups sugar to $\frac{1}{2}$ cup water.

Use Jonathon, Bellflower or N. W. Greening apples.

Pare, core and cut in small slices. Simmer apples in syrup until clear.

Take apples out carefully and dry in sun for 12 hours.

Roll in gran. sugar, repeating rolling daily until apples will not absorb more sugar.

Pack in glass jars.

May be used in fruit cake or as confection.

2. Canned baked apples.

Wash and core sound apples.

Prick skin in several places.

Fill cavities with sugar.

Bake until tender in pan with little water.

Fill with syrup made of equal parts sugar and water boiled 2 min.

3. Apple vinegar.

1 cake Fleischmann's yeast to

5 gal. cider will make vinegar in 3 months.

4. Apple beverage.

Take 8 washed apples cut each in 4 parts.

Yellow rind of $\frac{1}{2}$ and juice of whole lemon.

1 piece of cinnamon and $\frac{1}{2}$ cupful washed raisins and some of currants;

Boil with 2 qts. water, pour through seive.

Sweeten and serve cold.

Instead of raisins and currants, a crust of brown bread may be cooked with apples, omitting lemon peel.

5. Apple with quince.

To every 4 lbs. apples, allow 1 lb. quince, pared, cored and quartered and can same as in receipt for canned apples.

6. Apples—canned.

1 lb. sugar. Juice and rind 1 lemon, 4 lbs. apple, 1 qt. water.

Use ripe Pippins or Bellflower.

Pare, core and throw into cold water.

Lift carefully from water, weigh, then put into porcelain-lined kettle; cover with boiling water, bring quickly to boil, then simmer until tender;

Boil together 3 minutes the sugar, water and grated rind and juice of 1 lemon;

With perforated skimmer lift the apples from water, hold a moment until drained and slide carefully into boiling syrup; continue until bottom of kettle is covered; boil until apples are sufficiently tender to admit straw, then slide carefully into jar and fill with syrup and seal. May use less sugar or none.

7. Dried apples. Old fashioned.

Pare, core and slice firm apples. String and hang up in kitchen or dry attic until dry.

May be stored in bags or cans.

8. Evaporated apples.

Pare, core and slice firm apples. Spread on enameled pans and dry slowly in oven.

These will be much lighter in color than the dried apples.

9. Apple cider.

Use only washed apples.

Cut into pieces, press.

10. Apple honey.

Pare, core and chop 3 qts. apples, saving as much juice as possible.

Boil together for 10 minutes

1 qt. water.

2 qts. gran. sugar.

broken stick cinnamon,

Juice of 2 lemons and the apple juice.

Pour this over the apples and set aside for 3 hours;

Place in enamel-ware kettle.

Cook over moderate heat until clear and thick.

Seal in preserve jars.

11. Apples with whole wheat.

1 cupful whole wheat flour (ground coarse or whole grain),

$\frac{1}{2}$ cupful whole wheat,

6 apples, quartered, $\frac{1}{2}$ cupful sugar, 1 teasp. salt,

3 cupfuls water, 1 teasp. soda;

Mix the flour or whole wheat grain with a little water, and add soda.

Bring to boiling-point, pour off water, then add water again to cover, bring to boiling-point again and drain, but do not add any more soda. This

should be done still a third time in order to take away any disagreeable flavor. Mix this scalded meal with the cracked wheat; add the salt and boiling water. Cook slowly over

night in fireless cooker. In the morning add the apples and sugar.

Transfer to an earthen dish or leave in the fireless cooker utensil. Cover and cook again in fireless cooker for two hours, using one radiator.

Large quantities can be made at a time and sealed for future use.

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Baraboo, Wis.

12. Clarified apples.

10 Greenings, sliced thin, in rings,
Parboil in boiling water;
Drop in syrup made from
2 cups crushed sugar and a little water,
Shake over fire until done.
Should be clear.

13. Apple syrup.

1 doz. tart apples,
1 pint red-raspberries;
Cook in water to cover.
Strain, boil 10 min. add
 $\frac{2}{3}$ quantity of sugar,
Boil 5 min. longer. Seal.

14. Apple butter.

Boil new cider until reduced one half,
the day before it is to be used;
To every 4 gal. boiled cider allow
 $\frac{1}{4}$ bu. juicy apples, pared, cored and
quartered.
Fill large kettle with the cider and
add as many apples as can be kept
moist;
Stir frequently and when apples are
soft beat with wooden spoon.
Cook until dark brown.
Have boiled cider on hand in case it
becomes too thick and apples if too
thin. 20 minutes before removing
from fire add cinnamon and nutmeg
to taste.
Keep in stone jars.

15. Apple catsup.

Peel, core and quarter sour apples,
Stew until soft in as little water as
possible,
Put through sieve;
To each quart of water, add
1 teasp. pepper,
1 teasp. cloves,
1 teasp. mustard,
2 teasp. cinnamon,
2 medium sized onions chopped fine,
1 teasp. salt,
1 pint vinegar;
Boil 1 hour, seal tightly.

16. Apple jam.

Pare, core and chop
1 lb. apples,
1 lb. sugar,
1 cup chopped raisins,
1 lemon, juice and rind chopped,
1 orange, juice and rind chopped;
Cook until clear and thick.

17. Apple delight.

2 cups chopped apple cooked in double
boiler with
2 cups sugar,
1 orange, 1 lemon, juice and rind
chopped,
1 cup chopped raisins;
Cook 1 hour and add 1 cup chopped
walnuts 5 min. before done. Seal in
jelly glasses.

18. Apple preserve.

Use ripe Pippins or Bellflowers,
Pare, core and quarter;
To each pound allow 1 pound sugar and
the grated rind and juice of two
lemons;
Boil sugar and water until clear, add
juice and rind of lemons, then ap-
ples; simmer gently until clear and
tender but not broken; stand aside to
cool.
When cold, put into jars, cover closely
and stand in cool place for week,
then turn carefully into kettle; bring
to boiling-point and simmer 5 min-
utes; return to jars and seal.

19. Apple relish.

3 lbs. pared and diced apples,
1 lb. raisins,
1 lb. pecan meats,
2 oranges, chop peel and cut pulp into
small pieces; cook 1 hour, adding
nuts 5 minutes before done.

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GAY MILLS, WISCONSIN

20. Apple pickles.

Quarter and core apples but do not peel.
Make syrup of 3 lbs. sugar and 1 pint vinegar,
Stick 2 cloves in each apple;
Cook in syrup until tender. Seal.
Apples may be sliced and use 1 qt. vinegar to 2 cups brown sugar.

21. Apple chutney.

Pare and core 12 sour apples.
3 onions, skinned.
1 bunch celery.
1 cup raisins;
Chop all.
Cook with 1 pint cider vinegar and juice of 2 lemons,
 $\frac{1}{2}$ glass currant jelly,
2 cups brown sugar,
1 tblsp. salt,
1 tblsp. ground ginger.
After cooking one hour add bag of 2 tblsp. mixed spices.
Cook one hour longer and seal.

22. Crabapple sweet pickles.

8 lbs. fruit,
4 lbs. sugar,
1 qt. vinegar,
1 level tblsp. each stick cinnamon and mace;

Steam apples saving juice to add to syrup;
Boil syrup until thick and pour over fruit.
If it gets thin, in a few days boil again.

23. Preserved crabapples.

Take finest crabapples, rub with clean, dry flannel,
Prick every apple with large needle to prevent bursting.
To every lb. of fruit allow $1\frac{1}{2}$ lbs. refined loaf sugar and 1 pint water;
Make a syrup and skim until clear.
Put in the crabapples adding for each lb. the juice and grated rind of one large lemon;
Simmer slowly until tender enough to prick with broom-straw, but do not allow them to break.

24. Crabapple-orange conserve.

6 cups oranges sliced thin and quartered,
12 cups crabapples, sliced thin and quartered,
2 cups water, 2 cups sugar;
Cook in granite kettle; when thick add sugar,
Cook until glassy.

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Orchard 500 apple trees in their prime.

and Home Buildings worth \$3000 excellent location

This property is a money making bargain to someone who likes to handle apples.
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Appleton Fruit Farm
Pine River, Wisconsin

25. Apples with anise seed.

Take small apples, cut out blossom end, slit peel from blossom to stem end 3 or 4 times;
Wash and put them into jar with 1 cup water or wine and piece of butter, a little anise seed, cinnamon and lemon peel;
Cover and allow to stew, shake a few times and at last put in sugar to taste.

26. Sliced apple compot.

To a medium sized panful of apples take $\frac{1}{2}$ bottle white wine, 4 or 5 tblsp. sugar, some lemon peel and cinnamon and cook slowly in covered dish until done;
If wished, preserved quince or strawberry juice may be added to the sauce.

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are in a position to furnish high grade Nursery Stock of all kinds and varieties suitable to Wisconsin and other northern districts.

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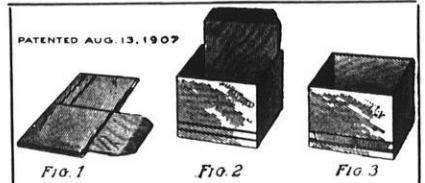
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Cumberland Fruit Package Company

Dept. D, Cumberland, Wis.

27. Apples with pineapples.

Make a syrup of
1 1/4 lbs. sugar and 1 qt. water;
Pare, core and quarter 4 lbs. apples;
Cover with boiling water and simmer
5 min.
Add 1 grated pineapple to syrup and
bring to boiling-point;
Lift apples carefully and slide into
syrup;
Simmer until apples are tender. Seal.
This tastes like pure pineapple.

28. Sweet apple and barberry.

1/2 peck barberries picked over; wash
and put to boil with enough water
to cover;
Add 2 qts. molasses, and cook until
berries are tender;
While these are cooking, pare, core and
quarter 1 peck of sweet apples;
Skim out the berries and add apples
to syrup and cook until tender;
Take out apples and put them in the
jar with berries and boil down the
syrup until thick and pour over
fruit;
Next morning heat all together and
seal.

29. Spiced apple-sauce.

Pare and core apples;
Cook in a little wine, water, sugar,
cinnamon and lemon peel until ten-
der.

Take out the apples and pass through
seive;
Reheat and seal.

30. Plain apple-sauce.

Cook summer apples until tender;
Put through strainer or beat with fork.
Seal.
When ready to use, reheat, add sugar
to taste after removing from fire.
Tastes like fresh apple sauce.

31. Baked apple-sauce.

Fill large bean pot with sour apples,
pared, cored and quartered;
Sprinkle over them 1/2 cup of sugar for
each qt. apples;
Add 1 cup water, cover closely and
bake several hours in moderate oven.
When red, take out apples, fill into
jars, drain off the syrup, let it boil
up once, fill jars and seal. Winter
pears also excellent this way.

32. Maple apple-sauce.

Stew 2 qts. pared and quartered apples
in enough water to keep from burn-
ing, adding 1 cup maple syrup when
partly cooked;
When apples become soft, sprinkle
with gran. sugar and remove from
fire.

33. Sweet cider apple-sauce.

1 gal. fresh sweet cider boiled down to
2 qts.,
Add 1/2 bu. sweet apples, pared, cored
and quartered;
Cook a few apples at a time, skim out
and cook more;
Pour syrup over apples and put away
to cool.
Next day boil down syrup until thick
and pour over apples.
Repeat if necessary. Pieces of apple
should be quite distinct but should
absorb most of syrup.

34. Sweet apples pickled.

1 qt. sweet apples, pared, cored and cut
in rings;
Cook in plenty of water until tender.
Then allow water to cook out and add
1/2 cup vinegar,
1/2 cup sugar, scant,
1/2 in. stick cinnamon,
1/2 teasp. each cloves, mustard seed,
allspice,
1/2 in. ginger root;
1/4 teasp. whole peppers.
Use bag for spices,
Let cook until vinegar is creamy thick.

35. Sweet apple preserves.

1 sliced lemon to 1 doz. apples;
Cook in water.
When tender, pour off water and make
into syrup with equal parts sugar.
Cook until like honey, add fruit and
seal in glasses.

Continued in September Issue

Wisconsin State Fair

..... *and*

Tractor Demonstration

Milwaukee, Sept. 10-15 - SIX DAYS
FIVE NIGHTS

THIS will be a record year for the department of Horticulture and Plants and Flowers, because the Badger state's Great Exposition in 1917 is built to show what Wisconsin is doing to intensify production, and thus aid Uncle Sam's brave fighters at the front.

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