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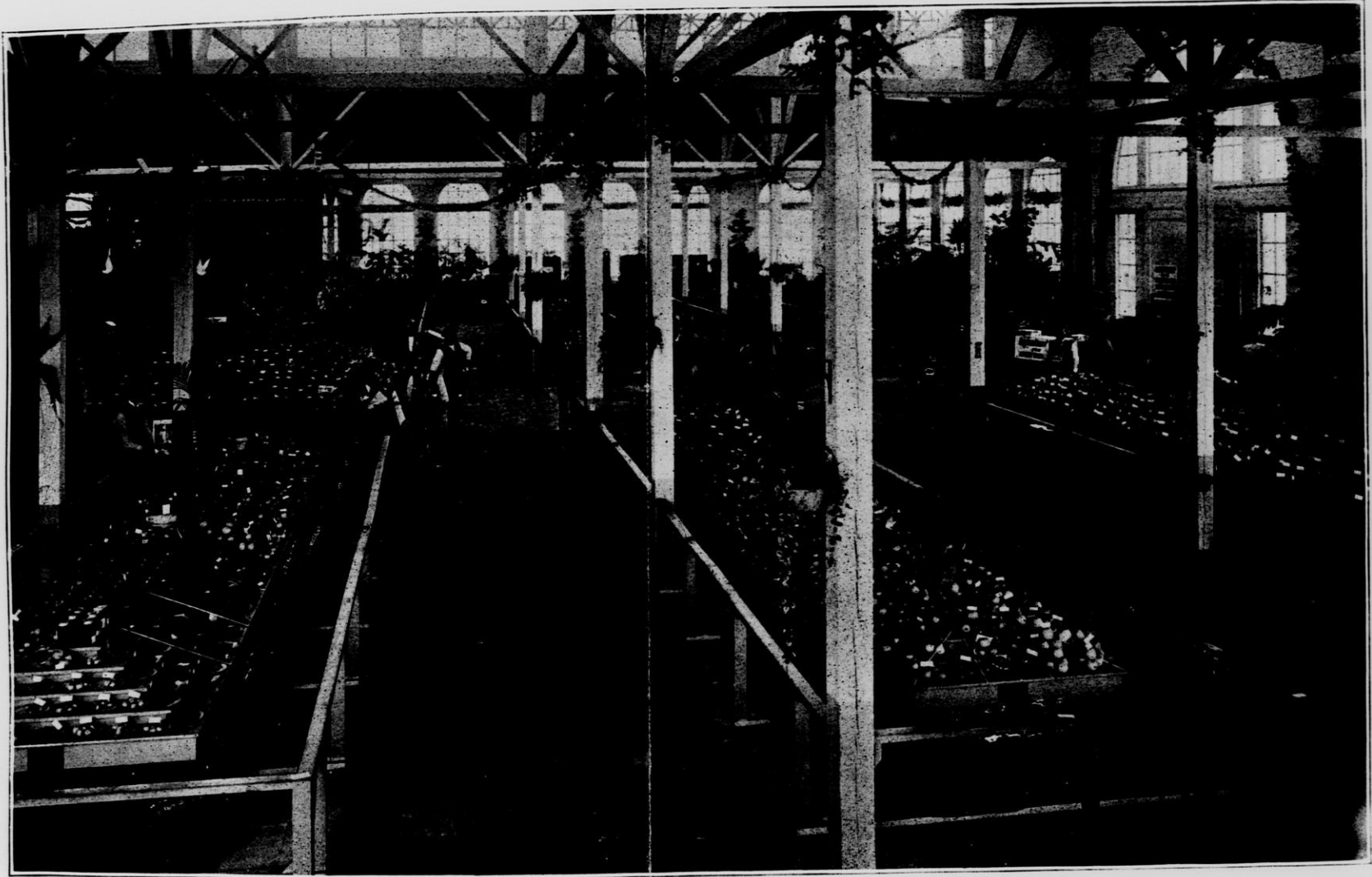
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Horticulture at Minnesota State Fair, 1901.

The Wisconsin Horticulturist.

VOL. VI.

OCTOBER.

NO. 8

OFFICERS OF THE STATE HORTICULTURAL SOCIETY FOR 1901.

President, Dr. T. E. Loope, Eureka.

Vice-president, F. C. Edwards, Fort Atkinson.

Secretary, John L. Herbst, Sparta.

Treasurer, L. G. Kellogg, Ripon.

Corresponding Secretary, Samuel H. Marshall, Madison.

HORTICULTURE AT THE MINNESOTA FAIR.

"Preceding Fairs have been good, but thou excellest them all," is the record of the Minnesota State Fair for 1901. This applies to the number and quality of the exhibits, as well as to the attendance and financial receipts.

The new building devoted to Agriculture and Horticulture gives plenty of room, light and opportunity for decorative display. The horticultural exhibit occupied in the north end of this new building a space eighty feet in depth by the full width of the building, 160 ft. A. W. Latham, Secretary of the Minnesota Horticultural Society, says: "Evergreen decorations were displayed on the walls between and over the windows, and on the posts supporting the interior of the structure, and festoons of evergreen rope were

suspended between this department and that occupied by agriculture.

"No general description of the hall would be complete without referring to the unique and most attractive exhibit of the Jewell Nursery Company. This consisted of a turret, about nine feet high and eighteen feet in diameter, mounting four guns, all, both turret and guns, being veneered with apples, and resting on a pyramid of shelves some six feet from the floor. The shelves were filled with plates of fruit. This exhibit was thought to be of so much value as an exponent of Minnesota horticulture, by the Minnesota Board of Commissioners for the Pan-American Exposition, that they arranged to have it transferred to the exposition at Buffalo, where as this goes to press the turret is doubtless revolving, telling its tale of the beauties of Minnesota fruit.

"Other nursery displays were made by the Minnetonka Nursery and W. L. Taylor of Howard Lake.

"Notwithstanding the scarcity of fruit in Minnesota this year that shown was even of a higher quality than that shown the year before, although in numbers of plates it may have fallen off a little. The fruit was not more highly colored, but of larger size, and especially in plums it was an extraordinary display. Grapes were also much better than in the previous year. The mushroom exhibit was, as usual, a very attractive feature of the hall, though it was not as large as in some other years. This was not the fault of the exhibitors, however, but was owing to climatic conditions peculiarly unfavorable to the development of the mushroom.

"There were shown altogether 3,348 plates of fruit, made up as follows: apples, 2,364 plates; plums, 515 plates; grapes, 454 plates; and a number of plates of peaches and pears. Premiums were offered in this department as follows: Apples, \$501.25; grapes, \$151.00; plums, \$136.25;

sundries, \$16.25; total for fruit, \$704.75. Flowers for professionals, \$309.50; for amateurs, \$52.50; total for flowers, \$362.00. Mushrooms, \$40.00."

The excellent picture of this beautiful exhibit appeared in the October number of the Minnesota Horticulturist. Through the courtesy of Mr. Latham we are permitted to reprint it.

SOME DESIRABLE SPIREAS.

In the fall, after the year's growth has been hardened by light frosts and the leaves have fallen, is the best time for transplanting Spireas. New plants may be propagated, if desired, by making cuttings of soft wood during the summer, rooting them in sand, or by separating from the main plant some of the numerous shoots which spring from the root.

S. Van Houttei is without doubt the finest species in cultivation. The plant sends up numerous tall, slender shoots which curve gracefully toward the ground and are literally covered with a profusion of pure white flowers. It is perfectly hardy, a beautiful ornament to the lawn at any time, and by many landscape gardeners is classed as the finest hardy shrub. Three to five feet. Last of May and early June.

S. prunifolia flore pleno, the double plum-leaved spirea, is the well known Bridal Wreath. It is deservedly one of the most popular species, flowering early and profusely and remaining a long time in bloom. The flowers are small, double, pure white, thickly set on the curving branches which are so willowy that they are easily bent into garlands, hence the name. The foliage turns a beautiful bronze in the fall. Three to five feet. May.

Spirea Anthony Waterer is a variety of recent introduction. It is dwarf in habit, from twelve to fifteen inches

high, of compact, bushy form with bright crimson flowers, and blooms from June to October so lavishly that the flat clusters of blossoms almost hide the leaves. It is a striking and attractive shrub, a very desirable plant for bedding and borders, and withstands the hot sun better than any other Spirea. The season of blooming of both 'Bumalda and Anthony Waterer can be prolonged if the old blossoms are cut off.

Taken all in all, it seems as if no other class of shrubs had so many eminently desirable qualities as the Spireas, which greet us so early in the spring, fill in the gaps in the hardy border in the summer, and take on the bright tints of autumn in the fall. Every garden should contain one or more of them.—Vick's Magazine.



WANTED—LADY BUGS.

What will happen to the crops of New England if 20,000 lady bugs are taken from the Berkshires and shipped to South Africa?

Prof. Lounsbury, the official British entomologist of South Africa, has ordered a supply to kill a certain injurious insect which abounds near Cape Town. F. C. Tobey, of West Stockbridge, Mass., has engaged 100 children to fill the order. The little red-dotted beetles are being scooped up in great numbers. The Berkshire farmers are beginning to protest. The lady bug is estimated to be worth any day, ten times her weight in gold.

Of all the myriad insects in the world this little reddish beetle is the most useful to man. Its value is beyond all price. It saves more crops the universe over, year after year, than any other agent.

Its whole life is a warfare against other insects that destroy the farmer's substance.

French children long ago named it *bete a bon Dieu*

(the insect of the good God), and in English we have the gentle and affectionate rhyme,

“Lady bug, lady bug, fly away home.”

The lady bug is found in every country on the globe, although the species in some localities are more useful than those in other localities.

It has a round body only about one-eighth of an inch in diameter, and is unobtrusive both in looks and manner. Its long suit is its appetite. It is always hungry. It feeds entirely upon the eggs of other insects and upon the insects themselves if they are small enough to be swallowed by a specimen so diminutive as the lady bug itself.

The lady bug lays a string of tiny yellow eggs. She is cunning enough always to lay these amid a colony of plant lice. As soon as the larvae hatch out, looking like miniature alligators, they begin to eat, and being carnivorous they fall upon the tiny insects around them. In the five or six weeks that they are growing up they destroy a whole plant-lice settlement. Then they roll up as cocoons and hang suspended head downward in nearly any available nook. They come out of the shell full grown lady bugs and keep on their carnivorous career.

Curiously enough, the lady bug itself has few enemies. Its only means of defense is a pungent liquid which is not poisonous, is not really of a bad odor and probably frightens none of its hap-hazard foes.

Nearly every insect which destroys the crops is the prey of the lady bug. Many of these are the lady bug's cousins, such as blister beetle, squash bug, cabbage bug, weevil, bark boring beetle, flour beetle, bean beetle and cotton bug, all of which belong to the coleoptera order.

The lady bug's greatest service, perhaps, is in the devouring of the deadly aphids. These plant lice, little green insects no bigger than a tiny pinhead, are the most prolific of insects. They infest all plants and are particularly in-

jurious to cotton crops. Too small and frail to eat the leaves, they suck out the juices.

But the lady bug pounces upon the plant lice. If it were not for this warfare scarcely any small crop or any flowers could be grown.

In California a few years ago a particularly large lady bug was introduced from Australia. It was found to be the only agent which could cope with the aphids which caused the cottony cushion scale on grapes. In two years the work of the lady bug netted a profit of \$500,000 to the state. It has now practically exterminated this special scale insect.—New York World.

KEEPING APPLES.

Joe A. Burton of Indiana does not accept the theory advocated by some fruit-growers, that apples will keep better if picked before they are ripe. In an article written for the Orange Judd Farmer, he says:

“A sound apple hanging in sunshine on the tree will always feel cool to the hand, while in the same sunshine it will cook through if detached. Premature gathering does not add to keeping qualities, but does detract from eating qualities. Rome Beauty gathered before being fully colored were mellow two weeks later, while those on the trees were still hard.

“The ripening is hastened by heat and retarded by cold, whether on or off the tree. Under same temperature they ripen much faster off the tree than on.

“The most critical period in keeping apples is the hot weather during and just after gathering. As I have no cool place, I want them to pass as much of this period on the trees as possible. But it is not safe to leave them too long, lest they drop. When barreled I keep in barn, woodshed or any outbuilding until approach of hard winter.”

PICKING AND GRADING:—"I pick in $\frac{1}{3}$ -bushel baskets, handling with much care. From these they are poured carefully into a long assorting box lined with straw or grass. I grade into fancies, firsts, seconds and culls. Nearly anybody can pick, but it requires a person of good judgment and much will power to assort and grade. Not only the filled barrels but the empty ones should be kept in the shade. I simply keep in shade of apple trees. When the weather will permit I prefer to leave them in the orchard over night to thoroughly cool off. The culls and seconds I sell at very tempting prices. The firsts and fancies are very tempting themselves and I like to let people pay for them."

Mr. Burton ascribes his success in keeping apples to the handling and time of gathering, and is confident that if he had cool, not cold, storage during the hot weather in the fall his apples would keep until April, with but little loss.

In the winter he stores his apples in a plain double wall brick house, one foot in the ground with earth banked up two feet outside.

CIDER MAKING EXPERIENCE.

C. M. Sterling, Illinois, in Orange Judd Farmer.

I own a small hand press which I use for making cider for table use, as soon as my apples begin to ripen, which is usually about the middle of July or the first of August. Some member of the family gathers up the apples every day or two and makes enough cider to last two or three days. When the supply is exhausted another lot is manufactured. This is continued as long as the apples last. We often have newly made cider in December, January and sometimes in March or April. Everyone knows that the riper the apples become within limits, the better the cider.

The late cider contains much more sugar, is more mature and has what cider makers call body. Immature apples should never be used, as fermentation starts, soon reaching the acetic state.

CIDER FOR VINEGAR—The bulk of my cider is made from late fall and early winter apples. At this time we make our apple butter and also all the cider intended for vinegar. Of course newspapers tell us not to use wormy or rotten apples. I try to follow their suggestions as much as possible, but it is seldom practicable to throw out all of the defective fruit. It is a tradition in my vicinity that the poor apples go to the cider press. Consequently it is hard to get away from it. However, I always plan to throw out all decayed apples and all the wormy ones so far as they can be readily detected. I also plan to mix my sweet and sour varieties. If I want sweet cider I allow the sweet varieties to predominate. If tart cider is desired, I select Fameuse, Russets, Smith's Cider and the like. These when matured make an excellent product. I gather them from the trees and place them on boards in the orchard under the trees, taking great care not to allow any to lie on the ground, as this results in a musty, earthy flavor. Neither is it desirable to allow them to remain in large heaps very long, as there is danger of rotting and contamination. Spread them out so they are about 8 inches deep, and if there is danger of frost cover lightly with straw. They can be left in the orchard until almost freezing weather. But other things being equal, it is desirable to make the cider as soon as possible, especially if it is wanted for vinegar. If wanted for home use, let the apples remain on the trees as long as possible until cold weather arrives, then pick and run through the mill at once.

CLEANING CIDER MILL—I own my own cider mill, operated by steam power, consequently it is possible for me to keep it in good condition. When the season opens I see

that all the sieves, cloths, vats, etc., are thoroughly cleaned with lye and scalding water. Everything that is detachable I place in a large kettle and boil. Parts of the machinery which cannot be treated in this way are scrubbed with a strong solution of lye. Then at the end of every day's run I see that everything is cleaned and the entire press thoroughly rinsed with boiling water. All the pomace is removed at once so that none of it gets a chance to ferment and contaminate the cider. By taking these precautions I get a first-class product. Years ago I used to take my apples to a cider mill in the neighborhood. The person running it was not especially cleanly and I became so disgusted that I decided to purchase one of my own.

CIDER BARRELS—Cider intended for vinegar should be put in clean barrels, which have not been used for anything else. Old vinegar barrels will answer fairly well, but it is advisable to burn sulphur in them a few days before they are to be used, then rinse out thoroughly. New barrels, of course, are best. Cider should never be put in a barrel which has held oil or anything but cider or vinegar. When the cider is to be kept for vinegar, the barrels should be placed in the upper story of a barn or fruit house. There they will be practically free from the little borer which makes holes in the barrels and causes cider to leak out. Where only a few barrels are made, and no house is available, simply put the barrels on blocks under a tree. Cover the bung with a piece of cheesecloth or muslin, agitate every few days by rolling the barrel backward and forward. By the middle of the next summer, or at least by autumn, the cider will have turned into first-class vinegar. I have often done this and have been uniformly pleased with results.

[Of course in our Wisconsin climate the barrels of cider must not be left out of doors too late in the fall, as they might freeze.]

REPORT ON NURSERY INSPECTION IN WISCONSIN, 1901.

To Professor W. A. Henry, Director,

Agricultural Experiment Station, Madison, Wis.

Sir:—Owing to the enforcement of a state law, which prevents the shipment of nursery stock from the state of Wisconsin unless the nursery from which it comes has been inspected and found to be apparently free from the San Jose scale, *ASPIDIOTUS PERNICIOSUS*, or other dangerously-injurious insects or plant diseases, many of the nurseries in the state are inspected yearly. In 1899 sixteen nurseries, in 1900 eighteen nurseries, and in 1901 twenty-two nurseries were inspected. Each successive year the inspection seems to have become of greater importance to the nurserymen, as is seen by the yearly increase in the number of nurseries inspected.

Under the instruction of Professor E. S. Goff, the following nurseries were inspected this year:

At Baraboo, The Great Northern Nursery Co.

At Sparta, Nurseries of Thayer Fruit Farm, Geo. Hanchett & Son, Z. K. Jewett & Co.

At Bangor, Nursery of Karl Duro.

At Black River Falls, Nursery of Henry Lake Sons Co.

At Waupaca, Nursery of A. D. Barnes.

At Sturgeon Bay, Nurseries of Hatch & Bingham, Hody & Son and Evergreen Nursery Co.

At Wauwatosa, Hawks Nursery Co.

At Waterloo, Nurseries of Riley & McKay and R. Pfeiffer & Co.

At Ft. Atkinson, Nurseries of Coe & Converse, F. C. Edwards, J. M. Edwards & Son, W. H. Bright and A. F. Tamblingson & Sons.

At Janesville, G. J. Kellogg & Son and W. B. Davis.

At Delavan, Phoenix Nursery Co.

At Yorkville, Nursery of W. J. Moyle.

The primary object of the inspection being to ascertain whether the nurseries are free from the San Jose scale, that insect receives special attention, but not to the exclusion of other insect pests and plant diseases. In 1899 no San Jose scale or near relatives were found. In 1900 the San Jose scale was not found but a scale which belongs to the same genus, namely *ASPIDIOTUS FORBESI*, was found on cherry trees from Ohio which had been set out in a nursery. This year the San Jose scale was found on Japanese plum trees which had been set out in a nursery in the spring of this year. The trees, according to the nurseryman, were from Ohio. There were four hundred trees and as it was found that at least ten per cent of them were infested, the only safe procedure was to burn the entire lot. On notifying the nurserymen of the infection of their stock, they were willing to have the entire lot of trees destroyed. The insects were alive, but had not multiplied rapidly this season. A close inspection was made of the adjoining trees to ascertain if any young insects had located on them, but not a single scale was found. It is safe to say that if the scales had remained undiscovered for two months longer, the season of most rapid breeding, the whole nursery would have become infested. When a nursery becomes infested, there are only two alternatives, the destruction of the entire nursery, or the fumigation of every bit of nursery stock before it leaves the place.

It is by the resetting in the nursery of nursery stock from other states that the scale will be imported into Wisconsin nurseries. Many of the Wisconsin nurserymen have an idea that the inspection is a farce, and it is only by such practical lessons as the burning of infested trees that they will be brought to a realizing sense of the danger of infestation by this noxious pest and the importance of the inspection. An individual who is not trained in the detection of San Jose scale WILL NOT find it when it is present in

small numbers, and only a specialist can distinguish it from closely related species. Of course it is an impossibility to inspect every twig of every tree in a nursery, but in an ordinary inspection, if the scales are present in any great numbers, they will probably be found. After a nursery has received an ordinary inspection, the stock from that nursery cannot be guaranteed to be free from the scale.

Many Wisconsin nurserymen think that the San Jose scale cannot live through the rigorous winters, yet they have no data on which to base their opinion, since as far as I have been able to ascertain, no practical experiments have been conducted in the state on the ability of the scale to withstand the low temperature of a hard winter. The nurserymen should not consider that they are exempt from invasion by the scale, but should seek to prevent infestation by exercising care in setting out stock from other states in their nurseries.

Last winter was comparatively mild but as if to offset that, the summer has been one of exceptional drought, and many nurseries, especially in the southern part of the state, have been much damaged. In several places thousands of grafts were destroyed, strawberry plants dried up, and the berry crop was a failure. In other places the drought came earlier and the strawberry crop was damaged, but later the conditions were more favorable.

DETAILS OF NURSERY INSPECTION.

Great Northern Nursery Co., Mr. M. Foley, Pres., Baraboo, inspected Aug. 1, 1901. General nursery stock, chiefly apples, but also plum, cherry, berries and ornamentals. Lost many thousand grafts, of last spring's setting, by drought.

Geo. Hanchett & Son, Badger State Fruit Farm, Sparta, inspected Aug. 2, 1901. Small fruits, especially strawberries and red raspberries.

Thayer Fruit Farms, J. L. Herbst, Manager, Sparta, inspected Aug. 2, 1901. Small fruit only. Drought hurt crop slightly.

Sparta Nursery Co., Jewett & Co., Sparta, inspected Aug. 3, 1901. General nursery stock, but makes a specialty of apples.

La Crosse Valley Nursery, Karl Duro, Bangor, inspected Aug. 3, 1901. Small fruits, all varieties, and also grapes.

Henry Lake Sons Co., Black River Falls, inspected Aug. 5, 1901. Full line of fruit and ornamental stock. Not injured by drought. Nursery clean and flourishing.

Waupaca Arctic Nursery, Waupaca, Mr. A. D. Barnes, inspected Aug. 7, 1901. General nursery stock, especially apples and ornamentals.

Hatch & Bingham, Sturgeon Bay, inspected Aug. 7, 1901. Small fruits mainly, but also has apple trees. Strawberries injured some by early drought.

Evergreen Nursery Co., Sturgeon Bay, inspected Aug. 8, 1901. Confines attention only to evergreens. Lost some by "damping off." New growth hurt slightly by late frosts.

Hody & Son, Sturgeon Bay, inspected Aug. 8, 1901. Mainly evergreens, but also has apple and pear trees.

Hawks Nursery Co., Wauwatosa, inspected Aug. 9, 1901. Mostly ornamentals. Injured some by drought, especially the evergreens.

Riley & McKay, Waterloo, inspected Aug. 10, 1901. Fruit trees, ornamentals. Apples a specialty.

Robt. Pfeiffer & Co., Waterloo, inspected Aug. 12, 1901. General nursery stock, especially ornamentals and small fruits.

Coe & Converse, Ft. Atkinson, inspected Aug. 12, 1901. General nursery stock, especially small fruits. Berry crop almost a failure on account of drought.

J. M. Edwards & Son, Ft. Atkinson, inspected Aug.

keep them down. Throw sand over them till they are buried in it and then cover them over with leaves, 3 to 4 inches deep. Be very careful at this work, so that the wood does not get hurt; because Tea Roses must not be pruned in spring, only the tops pinched off a little. If the wood gets hurt in covering it will of course die back and have to be pruned afterward; the consequence is: No flowers the following summer. Do not cover the roses till the foliage is all off and the ground had a severe freezing.

“Climbing Roses should be taken off the pillars or fences which they grew on, the branches tied closely together, then heavily enveloped with straw and burlap and the base of the plants covered with a bed of leaves.”



PLANTS IN THE CELLAR.

It is only old geranium plants of several years' growth, with strong, stocky roots, that can be hung to rafters or packed in barrels with any assurance of safety. The roots of the young geraniums are too tender to withstand the air, and they speedily shrivel and die.

Used merely as a storage to keep plants through the long, cold months, there is no place superior to a dry, well lighted cellar. Tubs of hydrangeas and cape jasmines, and even some of the palms, may be trusted to it with perfect safety. Plants that require rest, like the fuchsias, callas and many others, will find it a cool, quiet retreat for their winter slumbers.

The great secret of taking care of them is to neglect them as much as possible. They are not growing, only resting, and if their owner would have them come strong and fresh through the winter's sleep she will do well not to disturb their repose. If some of the pots and tubs are small and the soil should become dry, it might be well to water

them once or twice during the winter, but in no case should the soil be saturated.

Another critical time with cellar plants is along in March, when the first tiny green buds begin to appear. Their owner is apt to think it a sign of spring and begins to give them water to encourage fresh growth, and by the time the weather is warm enough to put them outside each plant will be covered with a mass of frail, green shoots, some of them four or five inches long. A few days of wind and sun and chill air will shrivel these, and the plants may require months to recover from the shock of the sudden change. It would have been better to retard their growth as much as possible by withholding water. Then when the time came to set them out they would only have had short, compact buds and leaves and would have rapidly expanded into thrifty plants under the influence of the sun and rains.—Farm Journal.

COVER CROPS.

Prof. Craig of Cornell University thinks that a cover crop is of greater importance to the fruit tree than is realized by the fruit grower. In an article written for the Rural New-Yorker he says: "A cover crop good for apples may not suit pears, and may be away off for peaches. A cover suitable for sandy soil may not catch well on clay. Some plants are shade-enduring, while others in deep shade give up the struggle and the ghost, without a kick. One thing is clear to my mind, the orchardist who neglects cover crops is losing money, either through unfavorable soil conditions engendered, and weak tree conditions induced, or, on the other hand, in the purchase of barnyard fertilizers which are imperative under the system which does not employ the cover crops."

Owing to the fact that cover crops will not grow in

dense shade, trees in orchards should be set farther apart than has been customary.

Regarding the merits of the various plants suitable for cover crops Prof. Craig is undecided. He says: "The cow pea is an excellent plant to begin the work of soil regeneration with. Its germination is reasonably certain and growth rapid, but it does not love shade, and it is not partial to heavy clay. With the ground in a good state of tilth, which implies the presence of humus in reasonable quantities, I believe other cover crops may be used with greater advantage. Hairy vetch does not make much of a showing at first—it may even be quite obscured by weeds—but when the frost cuts the interlopers the vetch looms up and sticks to the business of growing right along whenever a favorable opportunity occurs. It has done better this year on sandy loam than on stiff clay. Some enterprising man should set to work and grow a lot of vetch seed. It is now scarce and high-priced. When a fruit grower obtains a start with this plant, he can easily grow his own seed by maturing and harvesting a part of his cover crop each year. Finally, it is true economy in sowing cover crops to be generous in the amount of seed sown rather than niggardly."

Alfalfa and Crimson and Mammoth clovers have been used successfully in some New York orchards.

Hairy vetch has been used satisfactorily in some orchards in Wisconsin. In our own orchard here in Baraboo we tried it on a small scale last year and were pleased with the result. It left the ground in fine condition. We sowed seed again this year, but it did not catch well on account of the dry weather.

When a lazy man gets to work in earnest it is dangerous to interrupt him.

FALL TREATMENT OF ASPARAGUS.

In the fall, after the stalks are dry, give the bed a heavy dressing of manure and in the spring dig it in with a fork digger, being careful to disturb the roots as little as possible. This process repeated each season, will astonish the cultivator with the results, for the plant is a good feeder. Of course keep out the weeds. Asparagus is said to be a native of salt marshes, and many cultivators scatter salt freely over their beds. Plants can be cut for use when three years old, but if left longer will develop into much larger heads. Let a party planting a new bed leave a row or corner uncut for four or five years, and he will be astonished at the "hoe handle stems" produced. This is the way the "Giant Asparagus" is grown.—Ex.

STORING BEETS IN PITS.

Cover them with earth without any straw over them and then keep the frost out by a covering of horse manure on the outside of the pit when the ground freezes. When the earth is put on the beets it is wise to have ventilators in the top, which can be made by nailing four pieces of board together so as to make chimneys six or eight inches square, and letting them extend down a foot or more into the beet pile. To prevent the rain from getting in through the ventilators let the boards on two sides be six inches shorter than the others and saw the top sloping and nail a roof board over it.

"Harry," she said, thoughtfully. "What is it?" responded the worried business man, rather shortly. "I wish you could rearrange your business a little bit." "How?" "So as to be a bear on the Stock Exchange instead of at home."—Tit-Bits.

TRANSPLANTING TREES.

The following rules may be of use to young orchardists:

1. First, prepare the ground—drain if too wet, enrich if too poor.
2. Let the soil be deeply and thoroughly mellowed.
3. Take up the tree with plenty of roots long enough to hold it erect without staking.
4. If the roots are bruised, pare off the bruised portions.
5. Shorten in the head enough to correspond with the loss in cutting the roots; always do this before the buds swell.
6. Spread the roots equally on all sides and fill in finely pulverized soil, leaving no crevices or cavities.
7. Plant no deeper than before taking up, but raise the earth an inch or two to allow for settling.
8. Mulch when danger of midsummer drought is feared.
9. Manure should never be placed in contact with the roots, but may be placed on the surface.
10. Allow for the length of the roots as great as the height of the tree and cultivate to a corresponding distance.
11. Never set young trees in a grass field, but always where the ground can be cultivated and made mellow.
12. If the roots chance to be frozen when out of the ground, they may be restored without injury if compactly buried in mellow soil before thawing.
13. Shriveled trees may be made plump by compactly burying in mellow soil for several days. If thawed when exposed they will perish.
14. Watering a tree in dry weather only wets and crusts the surface.

Twelve thousand emigrants from the British islands and over 17,000 from the U. S. went into Canada last year.

STRAWBERRIES FOR 1902.

Geo. J. Kellogg.

The past season has been so generally affected with the drouth, strawberry beds are short of plants. The whole country is short. Where beds were set early and runners were early put down they are in condition to bear heavy crops, but if runners did not get an early start they will be feeble and unproductive. I look for a great scarcity of plants and a light crop of fruit next year. Of my fifty varieties planted here at Lake Mills about half are on low ground, about two feet above water, and they have covered the ground with large, healthy plants. Now if you will insure me against spring frosts, I will promise myself a fine crop.

By the way, I am planting fruit trees on this low ground where they can drink at will. I don't believe it is best, but if ever-increasing drouths prevail what are we going to do to get through the dry winters? I know of nothing to do but cultivate and mulch. Cultivate as does Morrill of Michigan, forty consecutive working days right through the drouth period, every day over the same acres. I am more than ever convinced that this continued cultivation is our only hope in orchard, nursery and small fruit.

I see that many have lost heavily of grafts. We never planted more and have an unusually good stand and growth. Our apple trees are a little undersized, but never a more healthy lot of trees in cellar. In my 2500-mile trip East I did not see one orchard in fifty that was in good cultivation. Grass, grass, everywhere; orchards starved to death, unpruned and unsprayed were the rule.

I saw on Mr. Powell's grounds at Clinton, N. Y., some bearing trees one hundred and ten years old. His grounds were nicely kept.

Randolph, Wis., Nov., 1901.

Dear Editor:—In reply to your queries, I regret to say that very few strawberries, or any other kind of berries, were planted around here. Some think that the climate is unfavorable; others say the soil is not adapted to fruit growing; I say that it is the people who are unfavorable and not adapted to it. They need educating in horticulture, most woefully. So many say, too, that they would rather go without than to “putter” with the “truck,”—and they generally go without. I have taken grown-up people into my strawberry patch who never had a chance, before, of eating all the berries they wanted.

The newly-set plants have not made very satisfactory beds owing to the protracted drouth. In July the plants just stood still or died. What else could they do? When it did rain enough they sent out runners, but they are uneven and the plants small. The variety which did the best with me this year was the Glen Mary. After the Warfield, Enhance, Splendid and a dozen other varieties had withered from apparent lack of moisture and the unremitting rays of old Sol, Glen Mary yielded one picking after another of large fine berries which sold at sight, if not sooner! Their eating qualities are not the best, somewhat coarse and a slight rank taste. Perhaps this berry wants a dry season; I don't know. However, I generally get the largest returns from the Warfield. Everyone calls for “those dark ones” (they leave a dark taste in one's mouth, though), and will take no other if these can be had.

I consider the Michel's Early my most delicious berry. Although it hasn't much of the “original” strawberry flavor, it is sweet, tender, large and beautiful (quite the qualities of a good wife, nicht wahr?) The little black beetle which is so fond of berries, prefers this to all others and I guess it knows. The greatest fault with this variety is

that only a few blossoms on each stem set fruit, which makes the yield rather light.

Very sincerely yours,

FRANK STARK.

Mazomanie, Nov. 9th, 1901.

Dear Editor:—As to strawberries, the last spring's setting on light sandy land were very badly killed by the extremely hot weather and those that lived hardly made any plants. Those planted on heavier land lived through till the rains came and then seemed to be in a hurry to make all the plants they could.

Strawberries retailed here at ten cents per quart box all through the season. I had only a small patch, 20 feet wide by 124 feet long, from which we picked 640 quart boxes of as fine berries as I ever raised. There were eleven different varieties in the patch and Clyde yielded most of all, though some were spoiled by the extreme heat.

The New York gave us some of the largest berries that I ever saw, of fine flavor, but poor keepers; they melt down too quickly.

Warfield did not yield very heavily; Brandywine gave a large yield of very fine, firm berries, but I think they should be grown in hills or by the hedge row method. Tennessee Prolific gave nothing but vines.

Loudon raspberries were loaded, but the heat and drouth were too much for them; they dried up before they were half grown. The Older black raspberries did better and gave us about one third of a crop.

My strawberries were thoroughly watered by a hand sprinkler, my raspberries were not.

Early potatoes did fairly well, but all potatoes planted from the 20th of May to the 20th of June did not set at all. There were some planted about the first of July that gave good crops of fine potatoes which did not get ripe until late

in October. Such potatoes are worth from 65 to 75 cents a bushel now. The merchants have bought but few. I think those who raised them have sold only what they could not store.

Cordially yours,

ASA N. SEYMOUR.

Baraboo, Wis., Nov. 11, 1901.

Editor Wisconsin Horticulturist:

The outlook is good for a crop of strawberries on old plantations. New fields are about two-thirds of a stand and owing to the "dry spell" many of the plants were very late in taking root and will not be in good condition for fruiting next season.

Out of a dozen varieties last season our best money makers were Bederwood, Warfield and Glen Mary. It is rather difficult to say which is the most delicious—they are all good except the Enhance. Splendid, Bubach and Warfield are favorites on our table.

CHAS. L. PEARSON.

Racine, Wis., Nov. 11.

Wisconsin Horticulturist:—In reply to yours of the 7th inst. would say that the outlook was never so poor for a strawberry crop as it is for next year. I planted in April and when the runners came put them down to moisture with a garden trowel, and moisture was deep. They look fine but have cost lots of work. The acreage is very light here and few patches are worth saving: Glen Mary is my best berry for profit, with Clyde and Oberst Jessie close second. The Glen Mary stands the drouth well, is firm and a great yielder. For a sweet berry the Oberst is best, but many people call that insipid. I had over 700 cases the past year and a good promise of more than that next year. I sort and pack all berries and get good prices. Will write you a good long article on berries this winter, as I have made some discoveries.

Yours truly,

B. R. BONES.

Eau Claire, Wis., Nov. 11.

Wisconsin Horticulturist:—Strawberry beds set last Spring are looking fine. They have made abundance of plants. The Clyde yielded twice as many as any other variety that I have. The New York and Sarah Fletcher are the best-flavored berries for eating. Raspberries are looking fine. All of our small fruits are in good condition. If we get a good winter we shall have a good crop.

Yours truly, JULIUS F. CASE.

Appleton, Nov. 11, 1901.

Wisconsin Horticulturist:—Some of the new strawberry beds are not in good shape, while the old ones are fair. One new bed set early has not panned out at all, while one set during the wet season in May is the finest plat I ever had, with an excellent stand of strong, stocky plants. Our most profitable berries the past season were Splendid and Warfield; our best flavored berry was William Belt. The Splendid is an all around good berry, making lots of plants—too many, if not checked—and will produce fine, large berries, if not allowed to grow too thick. Warfield almost ditto, with the exception of being imperfect in flower.

E. G. MCGREGOR.

HUMUS IN SOIL.

Humus is the black or brown substance of the soil, formed by decaying animal and vegetable matter. Leaf mold, swamp muck and peat are examples of humus. The roots and tops of plants, sod, manure and any similar things plowed into the soil furnish humus.

Humus is extremely valuable to growing crops. It exerts a beneficial effect on the mechanical condition of soil. It acts as a sponge, absorbs and holds moisture, or lets it off gradually, as needed. It holds the applied fertilizers

and prevents them from being carried off by rains, and lets them off as plant food as needed.

The wise farmer will embrace every opportunity to induce a large supply of humus in his soil. In seasons of drought it oftentimes is responsible for a good crop when soil lacking in humus turns off a failure.—Up to Date Farmer.

MORE HUMUS NEEDED.

If every farmer or fruit grower could decide what kind of fertilizer his land needs this knowledge would be worth to our country millions of dollars. It is always safe to apply barnyard manure, since that supplies all ingredients of fertility. Experts from our experiment stations and elsewhere have concluded after careful investigation that the large proportion of farms, in fact that nearly all land, needs humus more than potash, phosphoric acid or nitrogen. Humus, that is, decayed vegetation or animal matter, is that which causes new land to produce so freely, and which causes the land to be loose, friable and crumbling under the plow and harrow, and which permits the air and water to pass freely through the soil. If humus should be removed entirely from our farm lands, we would not be able to produce profitable crops. It is a reasonable supposition that lands which have been cultivated for a term of 30, 40 or 50 years or more, must of necessity need an additional supply of humus. Therefore, if tillers of the soil must have a hobby in the way of fertilizers, let their hobby be along the line of additional humus. We can add humus to the soil by plowing under sod with clover, timothy or other grasses, by applying barnyard manure, by plowing under peas, rye, fodder corn, cow peas, vetches, or similar green crops. Sandy soils are even more likely to lose their supply of humus

than others, therefore do not fail to add humus to your sandy soil as well as to that more largely made up of clay.

At Green's fruit farm we have experimented along this line and have found that crops of fruit and grain were largely increased by plowing under cow peas, rye, clover, etc., in the green state. We are fully convinced that humus is what the average farm needs.—Green's Fruit-Grower.

STRAWBERRY MULCH.

If you live near a canning factory, speak for the pea vines with which to mulch your strawberry beds in the Fall. R. M. Kellogg of Michigan says there is nothing better. They will not blow off or settle down so as to smother the plants. They contain quite a large amount of nitrogen and next spring will have so decayed they can be cultivated in to add humus to the soil.

This bit of advice comes too late to be available this season, but lay it away for future reference.

Marsh Hay is the favorite mulch in our vicinity. We have sometimes in the past used cornstalks. They are excellent, but can seldom be obtained in sufficient quantities. Evergreen boughs are an ideal covering for a small bed—if you can get them. Straw will answer, if it is so old and weather-beaten that the seed it contains has lost the power of germination. To quote again from R. M. Kellogg: "Any substance will do for this purpose except heavy, wet or soggy manure, which would settle down so as to exclude the air from the foliage. We must never lose sight of the fact that strawberries grow all the time the ground is not actually frozen, and so at such times they must have air and some light."

With us, all the above mentioned mulching materials

are unattainable this year, so we are using forest leaves. We are putting them on before the ground is frozen, and to hold them down we scatter a little fine dirt on the leaves with a fork. This is an experiment. We can tell you next spring how it succeeds.

M. C. C. J.

SEVENTY ACRES OF CAULIFLOWER.

Your readers will perhaps be interested to know that we, the past summer, have grown about 70 acres of Cauliflower, requiring patient and persistent effort and abundant faith, and resulting in something over 1000 barrels of nice flower. One of the tools in most constant use is a horse-power sprayer made at Lockport, N. Y., very easily operated and very discouraging to worms. It is our purpose next season to apply the same earnest treatment to about 300 bearing apple trees on our farm, for this we shall use one of Morrill & Morley's spray pumps made at Benton Harbor, Mich. They are worked by hand but are said to work easy and are very efficient. Whether they will save us 1000 barrels remains to be seen; if not we are thankful to take 100.

J. S. STICKNEY.

Wauwatosa, Wis.

PAN-AMERICAN.

My three visits at the Exposition convinced me of Wisconsin resources. Fruit in an off year so fine and abundant was a fact to be proud of. I was there the last week of the show and Mr. Laiten had everything in nice shape.

While I was there in September I made a record of all the varieties of fruits and the books show the list and who from, except one shipment which could not be traced. The later winter apples kept the tables up to a high standard to the close.

Wisconsin had a very prominent place in the Hall and she received her full share of the glory.

GEO. J. KELLOGG.

GOOD EFFECT OF THE PAN-AMERICAN EXPOSITION.

A reader of Green's Fruit-Grower asks the question, Has the Pan-American Exhibition done much to educate the people about fruits and fruit culture?

Prof. H. E. Van Deman replies to this question as follows. Yes, I think it has considerable, although comparatively few have been able to examine the fruits as they have appeared on the tables. Some of the leading fruit growers have seen them and they will carry to their homes and to the various horticultural meetings the lessons they have learned. All such fruit shows tend to elevate the standard of excellence in fruits. Those who see things that are better than they have grown are led to ask why they are so, and how they may grow as good or better. People from different sections get to know what each can do and they are better able to understand what they may expect to have to contend against in the markets. As one prominent fruit grower of Western New York said the other day, when looking at the display from New Mexico, and talking to the attendant, "We are not afraid of you, but we are afraid of your fruit." He was astonished at the large size, brilliant color and good flavor of the apples, pears, peaches and plums shown from that distant region, and he kept saying, "We must grow a better grade of fruit than we do now if we expect to successfully compete with such as this in our markets." All such ideas as this are inspiring.

Some new varieties have been brought to notice that otherwise might not have been, or, at least, much less prominently.

THE BEACH PLUMS.

Prof. E. S. Goff.

On the sandy beaches of the Atlantic coast, all the way from New Brunswick to Virginia grows a straggling shrub from six to ten or even twelve feet high, which bears a roundish plum about the size of the Early Richmond cherry. The fruit is dull purple when ripe and is covered with a dense bloom. The flesh is brittle, sweet and pleasant and free from the rather large stone. This is the beach plum, *PRUNUS MARITIMA* of botanists.

For several years past we have had a few plants of this plum growing on the grounds of our Experiment Station. They seem quite hardy, having endured the winters with little harm, and they bear bountifully nearly every year. The fruit ripens during September, but hangs on until November, unless picked earlier. The birds do not care for it, but it is quite appetizing, and is pleasant to the sight at a time of the year when the garden is generally bare of ripe fruit. That the shrub is regarded worth growing for its fruit is shown by the fact that Mr. Kerr, of Denton, Maryland, catalogues three cultivated varieties of it. The best known of these is called Bassett's American, of which the fruit is said to be about double the size of the wild form. We hope to plant the three named varieties on the Station grounds in the spring. In a climate where so few hardy fruits can be found, I believe this plum is worthy the attention of horticulturists.

The beach plum is worth growing for ornament alone. Its flowers are very showy in spring, and its bluish-purple fruits wreathing the branches in September and October are decidedly attractive.

The only place I know of where this shrub can be obtained is from Mr. J. W. Kerr, Denton, Md.

Experiment Station, Madison, Wis.

APPLE ORCHARDS IN SOD.

The keynote of all the orchard talks in our Western horticultural conventions, of late, has been, Cultivate, cultivate, cultivate! Yet a remarkable fruit exhibit at the late New York State Fair seems to controvert that theory, or at least seems to prove that in some locations orchards do better in sod than when cultivated.

The exhibit consisted of 55 varieties of apples all grown in orchards kept constantly in sod, the trees varying in age from five to one hundred years. The fruit was acknowledged the finest on exhibition at the State Fair, excelling in size, quality, color and freedom from disease. The exhibitor was Grant G. Hitchings of Onondaga County, N. Y., of which Syracuse is the county seat.

Of course this way of raising apples, so eminently successful in central New York, may not be at all adapted to the soil of Wisconsin, though I think Wisconsin orchardists may find some useful suggestions from Mr. Hitchings' account of his method, which we reprint from *The Orange Judd Farmer*.

A WONDERFUL APPLE ORCHARD.

Grant G. Hitchings, Onondaga Co., N. Y.

As a member of the New York state fruit growers' association, I exhibited at the state fair at Syracuse recently, 55 varieties of apples grown in my orchard. The most of these are well-known varieties, but some of them are not generally grown, and are not usually seen on the market. The trees from which these apples were taken vary from 5 to 100 years in age. The most of them, however, vary from 5 to 12 years. I have sprayed regularly for the past eight years, but do not prune at all. In my opinion a young tree is vigorous enough without pruning, as this only increases wood growth at the expense of fruit bud formation. I spray three times with bordeaux mixture each season, add-

ing $\frac{1}{3}$ pound of paris green to 50 gallons. I make the first application just as the buds swell; spraying a second time just before the blossoms open, and a third time soon after the blossoms fall. Sometimes I spray a fourth time, if it rains hard before the calyx end of the apple closes, my object being to encase a little of the poison in the blossom end of the apple if possible.

The underlying principle of the successful management of an apple orchard lies in the fact that one must keep the soil loose and porous, so that air and roots can penetrate deeply. The soil must also be filled with humus to hold moisture and maintain bacteria action. So far as my experience goes, I believe these conditions can be maintained more successfully and cheaper by leaving the orchard in sod rather than by cultivation. This may seem a queer statement, and perhaps some of my readers will not agree with me in this matter, yet at the same time the product from my orchard exhibited at the state fair and at Buffalo attests the value of my system.

In my orchards from the time the trees are set, grass is allowed to grow. For the first ten years it is cut and raked and placed around the trees as a mulch. In orchards of ten years' standing or older, the grass is cut and left where it falls and in this manner serves as a mulch for the entire area. I cut the grass but once during the season, the time depending on the soil and moisture. If suffering from drouth, as last year, I cut early in June, but if conditions prevail such as we had this season, I defer cutting until the last of July. I do not permit any stock to run in my orchards, as I want all the grass for mulching. At the same time I add as much straw as I can spare as a top-dressing. If I am a judge at all, the dark green foliage, bright bark, annual growth, size of leaves, together with five successive crops and the present vigorous condition of the trees, are expressions of approval on the part of nature, at least

in my case, on this system of apple culture. In selecting a site for an orchard I would choose a sidehill sloping toward the north. The trees should be 38 feet apart one way and from 28 to 36 feet the other, varying the distance so as to select the best spots of ground in the row for the trees. This system will also help break the force of the winds during severe storms. I believe it is better to mix varieties, as they will set better under ordinary circumstances.

FOR THE HOUSEHOLD.

CRANBERRY SAUCE.

We will give you several excellent rules for this indispensable accompaniment of the Thanksgiving dinner. Whichever rule you use the first essential is to SCALD THE BERRIES. Many housekeepers do not know this is one secret of a fine-flavored cranberry sauce. Take what berries you wish to use and put them in an earthen pan or jar, pour over them two or three quarts of BOILING water and let stand until the water is so cool you can dip your fingers in; then take out the berries a handful at a time, discarding soft or discolored ones; the good berries will be bright and plump from the scalding.

Rule No. 1.—Place a quart of the scalded berries in a preserving kettle, pour over them one pint of boiling water, cover closely and let cook slowly for a half an hour or more, until the skins break and you can mash them; then add to them two heaping half-pint cups of granulated sugar, which has been heated as for jelly, and let boil ten or fifteen minutes longer, stirring the berries as they cook and mashing them evenly. This makes a rich marmalade.

No. 2.—Over one quart of the scalded berries pour a scant pint of boiling water. Cover closely and let cook until soft, then rub them through a colander. Return the

pulp to the kettle, add two heaping cups of hot granulated sugar and cook ten minutes or so, stirring constantly. Turn into a mold. This should be stiff when cold.

No. 3.—One quart of cranberries (scalded), two cups of granulated sugar, three cups of water, cook slowly until all the berries have burst. If necessary add more boiling water a little at a time. This should make a somewhat juicy sauce, to be served in sauce-plates.

RECIPE FOR WALNUT AND APPLE SALAD.

Boil together for 10 minutes, 1 cup English walnut meats, $\frac{1}{2}$ teaspoon salt. Then cool the nuts in cold water. Pare, core and chop into small pieces 2 large or 3 small sour apples. Mix with the nuts and cover and garnish with a cooked dressing made as follows: Beat the yolks of 2 eggs and to them put 1 tablespoon cold water, 3 tablespoons vinegar, $\frac{1}{4}$ teaspoon salt, $\frac{1}{8}$ teaspoon dry mustard and a dash of red pepper. Stir constantly over hot water until very thick. Then remove from the fire and add two tablespoons butter creamed extremely soft. Chill thoroughly and lastly mix in $\frac{2}{3}$ cup whipped cream.

Sparta, Wis., Nov. 11, 1901.

The present outlook for a strawberry crop in this vicinity is somewhat below the average. None but well tilled fields have much of a growth of plants and these are the exception rather than the rule. The best paying variety on our grounds the past season was Enhance and the most delicious, Brandywine. We are very much pleased with Eldorado Blackberry.

WM. H. HANCHETT.

Sturgeon Bay, Wis., Nov. 13, 1901.

Strawberries are going into winter quarters here in fine order. Plenty of moisture in the soil. Beds planted last

spring have done fairly well and set plenty of runners where the plantings grew, but there was considerable trouble to get plants well started. Outlook is good for larger crop than ever here, as acreage is much increased.

Potatoes have sold 45 to 50c per bu. for shipment. Offered 60c yesterday for some I have in store. No loss by freezing here as far as I know. First frost to kill tender vegetables was on morning of Oct. 17. All crops excellent here. Plenty of moisture all the season with but little exception. Prospect excellent for tree fruits next season, especially cherries. Farmers most prosperous for years. Everything satisfactory. Hundreds of acres plowed for early seeding of peas for canning factories.

Yours,

A. L. HATCH.

Fort Atkinson, Wis., Nov. 13, 1901.

Old strawberry beds are looking well and a few new ones that were planted very early. Spring set plants as a general thing have not made more than $\frac{1}{2}$ their usual amount of runners. Think the crop will be short next season.

Splendid, Lovett, Bederwood and Clyde stood the drouth best, in about order named. Our Warfield did not have a fair show with the above as they were very thick in the row and could not mature the fruit set. Fall work among the fruit growers is well along. Strawberries are partly covered at this date. While the ground is not dry we are hoping for a good soaking rain before freezing up.

We have our cellar well filled with trees, etc., for spring trade.

Yours truly, A. J. EDWARDS.

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Attention! A few of our readers are in arrears on their subscriptions. If such will kindly remit soon, it will greatly facilitate the preparation of our annual report. While remitting why not send enough additional to pay for the Horticulturist another year? Some have already done this.

EDITOR'S NOTES.

You notice that Mr. Hanchett of Sparta speaks a good word for the Eldorado blackberry. If other fruit growers in Wisconsin and Minnesota are testing it, will they kindly report results for the next number of the Horticulturist? Is it a firm berry, shipping well?

Let the next number of the Horticulturist be an "experience" number. Will not you, now, before you forget this request, send us some bit of experience along horticultural lines? If you have not time for a letter send a postal card. "Your light will be none the less for lighting your neighbors."

The Department of Agriculture has completed plans for the annual seed distribution throughout the country. Despite the fact that double the usual amount of seeds is to be sent out this winter, the preliminary work is advanced much further than in past years. There will be 37,000,000 packets of seed distributed, comprising both vegetables and flowers. The Department will begin sending out the seeds about December 1, and most of them will be furnished through Senators and Representatives.

The season of conventions is at hand. The International Live Stock Exposition will be held in Chicago, Nov. 30 to Dec. 7. All railroads will give a rate of one fare for the round trip.

The Indiana State Horticultural Society will meet at Indianapolis Dec. 5-9.

The Minnesota State Horticultural at Minneapolis, Dec. 3-6.

Missouri State Horticultural at St. Joseph, Dec. 3-5.

Illinois State Horticultural at Champaign, Dec. 10-12.

Iowa State Horticultural at Des Moines, Dec. 10-12.

Wisconsin Cheesemakers, Milwaukee, Jan. 8-10.

Poultry Show, Milwaukee, Jan. 7-12.

THE SHORT COURSE.

The winter term of the Short Course in Agriculture at the University of Wisconsin will begin Dec. 9, 1901. The Short Course consists of two terms of fourteen weeks each, hence it comprises two classes, known as "first year" students and "second year" students. Persons applying for admission must have a common school education and be not less than sixteen years old. A good number of the students have already attained their majority. Owing to the exigencies of the case the educational requirements for admission have heretofore been very "easy." The standard will probably be raised in the near future. Tuition is free to residents of Wisconsin with the exception of an incidental fee of \$5 per term. The expenses for board, room (warmed and lighted), books, etc., will probably average about \$70 to \$75 a term. A young farmer who desires to be a man among men should improve the opportunities of the Short Course.

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THE

Wisconsin Horticulturist for 1901.

THIS PAPER

and the

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Note—Frontispiece of Aug. issue of this Journal illustrates
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