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The Wisconsin Horticulturist.

VOL. VI.

APRIL.

NO. 2

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.

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Corresponding Secretary, Samuel H. Marshall, Madison.



HORTICULTURE BUILDING—PAN-AMERICAN EXPOSITION.

The Horticulture Building is a handsome one; its style of architecture being richly ornate and the coloring very effective. It is 220 feet square, with a dome and lantern rising to a height of 236 feet. The exhibits to be made in this building will include the popular fruits in large number, together with many new and promising varieties that have found favor with growers. The extensive floral decorations of the grounds constitute a rich display of floriculture, and several acres, including hundreds of beds, are devoted to the exhibits made by leading florists of the country. Flowers in profusion will welcome the earliest visitors and breathe out their fragrance and display their incomparable beauty the

season through. Thousands of trees and shrubs flourish throughout the grounds. The exhibits of Nursery Stock, including orchard and ornamental trees, shrubs and evergreens, will be unquestionably among the finest, if not the finest ever made.



THE PRIMROSE.

Wm. Toole, Pansy Specialist.

Of the Primrose family—Order Primulaceae—there are several genera that are native, but none of the genus *primula*. Of our native members of the family—our *Dodecatheon media*, also called American Cowslip and Shooting Star, is a hardy perennial well worthy of a place in our gardens. It will thrive well in any good soil, if at all times kept free from weeds and grass and protected in the winter with a little brush and some leaves. If started from seeds, as much care is needed as with the *primula*.

The genus *primula* includes many species and none of them are quite hardy enough to be depended on for Wisconsin gardens, but most of those which are not commonly grown for winter flowers could be forced to bloom in the winter, by starting early and giving such summer treatment as is necessary for the ordinary house kinds. Then, if kept in frames and protected outside as long as possible without actual freezing up, they may be brought in and bloomed in the house under such conditions as are best suited for the Chinese and others.

We have grown four species this winter in their numerous varieties, that is, the Chinese Primrose—*primula Chinensis*, the Ever-blooming primrose—*primula oboconica*, the Baby Primrose—*primula Fobesi* and *primula floribunda*, a yellow species of not much account in our estimation. The Chinese is best known and a general favorite, because

it gives us flowers in the dark days of early winter when the geraniums and other things are waiting for sunshine to come.

Primula oboconica is much liked and blooms so freely that the stems of bloom may be picked for bouquets quite often. The flowers are being increased in size and there is now quite a range of color to be had, from almost pure white to deep pink and rosy purple. The leaves of this species have an unpleasant, irritating effect on the skin of some persons.

The Baby Primrose is the most recent addition to our possessions, among the primroses, and it becomes at once a general favorite, its pink flowers with yellow eye are so dainty and freely produced. The little plants commence to bloom when only a couple of inches high and continue as long as they are kept growing. Stems of bloom are very lasting after being cut. A vase of the flowers which were picked nearly two weeks ago is still showing up in good shape. There is quite a variety of shading, some very light and others nearly crimson, the lighter ones having a tendency to lilac. There is some difference in height of flower stems and freedom of blooming, so it is well to increase a choice variety by division, in the spring. To do this, keep off all bloom for a while, tear the plant all to pieces, trim up each little bunch of leaves, with the roots cut back to about an inch long. If there are no roots, then place in saucers of wet sand and they will soon throw out roots. They may then be treated as young plants.

All of the primroses may be started from seeds with proper care, planted from late in April to end of June; May is early enough. Make a small box from one to two feet square, or oblong, and three inches deep, and fill two-thirds full with a mixture of woods earth, common garden soil, and about half as much well rotted manure. If the garden soil is not sandy mix in a little sand, also. All should be

well mixed by passing through a coarse seive. Press down in the box quite firmly and smooth, then cover with about one-fourth inch of woods earth or leaf mould.

Get the leaf mould from the woods, where there is plenty of brush and dry leaves but no grass. Scrape away the coarse leaves and twigs, taking anything that is decayed enough to crumble easily, including the black soil below; sticks, roots and plants of course should be sifted from this when used. The last coating of woods earth should be pressed down smoothly in the box and the faintest possible rows marked off about one-half inch apart. Scatter the seeds in these rows and cover by pressing gently with a smooth bit of board. Sprinkle with a rubber sprinkler and keep covered in the day time with a piece of newspaper. When the little plants begin to show get them gradually accustomed to full light, keeping away from strong sunshine and don't let get dry, either before or after coming up. When plants have four or five leaves transplant into other boxes having good drainage, and, as soon as large enough, transplant into two and a half inch pots. Give plenty of air and light and keep cool and from strong sunshine. Shift into larger pots when the roots have filled the ones they are growing in. Keep off the first flowers until the plants are strong enough, and always use such soil as was recommended for the seed box. The Baby Primrose will bear more sunshine than the others but none of them will stand as much as ordinary house plants; but they must not be away from the light, as ferns and palms may be. The pots should be nearly filled with soil and raised a little in the center so that no water may gather in the crowns of the plants.

Spraying the leaves will not hurt the primroses, if the crowns where the leaves start from do not stay wet. It is better to start each year with young plants than to try to carry old ones through the hot summer weather.

SHADE TREES FOR SMALL LAWNS.

"The Cut-leaved Birch is one of the very best trees for small lawns," writes Eben E. Rexford, in the April Ladies' Home Journal. "It is entirely hardy. It is easily transplanted and it requires as little attention as any tree I know of. And it is very attractive, with its finely cut foliage, which is always bright and healthy, no matter what the season may be. The Mountain Ash is another good tree for a small place. It is a strong, rapid grower, of utmost hardiness, fully equal to taking care of itself after it gets a start. It has very pleasing foliage, and great drooping clusters of scarlet fruit. The Japanese Maples are lovely trees, in all stages of growth. Most varieties have delicately cut foliage, a broad, spreading habit, and the merit of rapid growth combined with great hardiness. Some varieties have slender drooping branches, and make extremely attractive specimens for use on an open lawn where their beauty may be fully displayed. The Negundo or Ash-leaved Maple (Box Elder) is of extremely rapid growth, and on this account many persons who are impatient of results select it for lawn use. It is a clean tree, has attractive foliage, is as hardy as an oak, and becomes quite a good-sized and a hardy specimen in five or six years."



THE CULTIVATION OF THE BLUEBERRY.

The article by J. A. Gaynor, "Our Native Wild Fruits," in the February number of the Horticulturist, mentions the Blueberry as a fruit which some organization should seek to develop. In a letter since received, Judge Gaynor says he thinks the cultivation of the blueberry ought to be pressed forward by the State Horticultural Society.

A man in Vermont gives his experience in a recent number of the Rural New-Yorker. He says "I had a small plot of about one-quarter acre of high-bush blueberries on the

farm when I purchased it, that was well supplied with the bushes but badly overgrown with other brush. These I cut out and for eight years have kept cleared, and every Fall have applied either old rotted manure or wood ashes. This treatment I have found increased size of fruit and an immense increase in quantity. The soil is heavy gravel or hardpan, and very rocky, so is unfit for any other crops. I do not think transplanting or artificial cultivation would be profitable."

THE HOME GARDEN—WHAT SHALL WE PLANT?

Amid the bewildering lists of varieties in the seed catalogues the inexperienced garden-maker knows not what to choose. For the benefit of these perplexed ones we will mention some varieties which we know are good, because we have tried them.

BEANS—Last year we planted three kinds of wax beans, of which Burpee's Saddleback Wax was by far the best; it was what it claimed to be, absolutely stringless, meaty and of the finest flavor. This year we shall plant that variety for our main crop, but shall plant for trial Burpee's Stringless Green-pod and Jones' Stringless Wax, a new white-seeded variety catalogued by Vick. For shelled beans, Henderson's Bush Lima and the Dwarf Horticultural. For our readers in Illinois we would recommend Burpee's Bush Lima, which is a true Lima, larger than Henderson's, but not early enough for our climate.

SWEET CORN—Shaker's Early, Country Gentleman, Stowell's Evergreen and Black Mexican are our favorites. The latter is deliciously sweet. A neighbor tells us that she prefers it to any other kind for making "scaloped corn." The kernels when ripe are bluish black, but for cooking it should be picked when showing only a slight tinge of color.

CUCUMBER—Early Frame is a favorite "all around" va-

riety for both slicing and pickling. Improved Long Green is also good.

BEETS—Crosby's Improved Egyptian for early; Half-long Blood Red for winter.

SWISS CHARD—We planted a row of this for "greens" last year, and liked it so well that we shall try it again. A 10-foot row is enough for an ordinary family.

LETTUCE—Grand Rapids is the kind to plant in your hot bed for forcing. Also plant a generous bed of Grand Rapids in the garden, to follow the hot bed lettuce. For late summer plant the Deacon or the Improved Hanson.

RADISH—Burpee's Earliest Scarlet Button or Salzer's Early Bird will give radishes for the table in three weeks after planting in the hot bed. For planting in the garden we use Early Scarlet Globe and Chartier.

PEAS—Nott's Excelsior and Horsford's Market Garden are our "tried and true" varieties. The Excelsior we plant for early as soon as the ground is dry enough to be worked. About two weeks later plant the Market Garden and when another two weeks have passed plant some more Market Garden. We tried Juno last year, but either our seed was not true to name or the Juno is not as "delicious" as the catalogues represent. Ours were not as good as Horsford's Market Garden. Prince of Wales is also good.

SALSIFY—A row of Mammoth Sandwich Island salsify will furnish a good substitute for oysters in soups and scallops next winter.

TOMATOES—"Their name is legion," and most of them are good. The Atlantic Prize or Early Ruby is not "smooth and of fine quality," whatever the seedsmen may say, but it is early, so we always like a few plants to give early tomatoes. Perfection, Favorite and Early Michigan are all good mid-season tomatoes and you want some Stone for late, and a few Yellow Plum for tomato preserves.

Dwarf Champion is an excellent garden variety where room is scarce. It does not sprawl around like the other kinds. Yellow tomatoes are of milder flavor than the red tomatoes and are delicious sliced when fresh for eating with cream and sugar. We notice that Burpee in the Quarter-Century edition of his Farm Annual, describes a new yellow tomato which he is sending out, Golden Dwarf Champion. We shall try it this year, for our experience has been that the new varieties introduced by Burpee are meritorious.

TURNIP—We raise turnips for winter use only and have found Burpee's Breadstone excellent, flesh tender, sweet and fine-grained. The seed may be sown any time in July.

SQUASH—We have tried several kinds of winter squash but have found none better than the Hubbard. Early Bush Crookneck is our stand-by for a summer squash.

MUSKMELON—Emerald Gem and Paul Rose are two kinds so sweet and delicious that our mouth waters at thought of them. The little Emerald Gem, sweetest of all melons, was originated by W. Atlee Burpee of Philadelphia. We notice that Mr. Burpee has originated a larger melon, the Melrose. His former productions have proved of such superfine quality that we shall not fail to try the Melrose.

MRS. FRANKLIN JOHNSON.

Baraboo, Wis.



INSECT ENEMIES OF TREE AND FRUIT AND HOW TO CONTROL THEM.

Following is a condensed report of the able paper on this subject given at the annual meeting of our State Society, by Prof. E. C. Green of Illinois.

Prof. Green says: It is my endeavor to present only such facts as are well established by the observations and investigations of the ablest scientists of the world and only such remedies as are approved and practiced by the successful orchardists of this country.

The trees, to best withstand the attacks of these little enemies, should be in a healthy condition, the bark not thin and dull but clean and bright; they should be adapted to the soil in which they are placed and should show by growth, fruitage, or both, that their food supply is ample; they should receive such cultivation as is essential in preventive measures against some of the most common and serious pests.

The canker-worm, especially, the apple curculio and others are practically beyond control in an orchard long in sod. The problem of profitable insect control requires that the orchard be in cultivation, at least through May and June.

Trees should be pruned in order that the insecticide with which they are sprayed may reach the inner branches.

The "spray calendars" in use a few years ago, recommend spraying four times for codling moth; under ordinary conditions two or even three of the four applications are valueless. The progressive orchardist has passed the calendar stage and by the aid of observation, a knowledge of the botany of the tree, the habits of the insects and the properties of arsenites, has saved a large per cent of the former cost of spraying.

I wish to call your attention to those insects which attack the bark of trees. Under this head come the scales, the oyster-shell and the scurfy scales, the Putnam, Forbes and San Jose scales. With the exception of the last named these insects are common. Young trees when first transplanted often suffer severely from these scales. This is one of the common causes which combine to bring about the death of the young orchard.

When trees are received from the nursery they should be dipped in kerosene emulsion, as a precautionary measure, before being planted. Avoid wetting the roots.

The buffalo tree-hoppers injure trees by making incis-

ions in the bark in which to deposit their eggs. There is no doubt that thorough cultivation during May and June will eliminate this pest from the orchard. If trees have been injured by them wash the bark with a solution of whale-oil soap.

The WOOLY APHIS is one of the most serious pests in the southern part of the State. It infests the roots of the apple-tree. Prof. Green urges those setting out orchards to stand the trees in lye solution, or strong tobacco water that no aphid may be introduced into the plantation. In case the insect is already established nothing but the most liberal application of tobacco stems about the roots, coupled with intense cultivation, will bring the trees into condition.

THE PEACH-BORER—Spraying is of no value. Prof. Slingerland, after experimenting for five years, has found that tobacco about the roots and stems will keep out two-thirds to five-sixths of the borers. Wrapping from roots to lower branches with newspaper is also good.

THE CANKERWORM—Many have said that the cankerworm was unharmed by Paris green sprays, but it has been proven that it will die in from twenty-four to thirty-six hours from time of taking poisoned food.

The cankerworm is the sign of a long-neglected orchard. The question is how to free the old misused orchards most expeditiously. At best it will take one or two seasons. The first step is to plow the ground as early as possible in spring and keep up a vigorous cultivation until July. Spray with any of the common arsenites at the usual strength when the little measuring worm first appears. Use the McGowen nozzle, since it throws the spray with more force than the Vermorel. Repeat the dose as long as the worms remain on the tree. When an orchard is in a good state of cultivation and the trees receive annually the codling moth treatment, the cankerworm is never heard of.

THE PLUM CURCULIO.

[From the paper read by Prof. Green at our State Horticultural Meeting.]

The plum curculio comes forth from winter quarters usually in May. The egg-laying mark of this insect is so characteristic that this curculio is commonly known as the little Turk. The snout is used in cutting the deep crescent mark, while the spot representing the star of the Turkish emblem is partly made by the ovipositor. The egg hatches and the small, footless maggot begins feeding on the plum under the tiny wilted flap which formerly protected the egg. As the larva grows it eats its way to the pit of the young plum and there it sets up an irritation which eventually causes the immature fruit to drop. The larva soon leaves the fruit and enters the ground to pupate, emerging in a few weeks as an adult beetle.

It is reported by growers of European plums that the curculio can be controlled by the use of arsenical sprays alone, the success of the operation depending entirely upon the thoroughness of the application. It is advised, by way of preparation, to prune the plum tree so that no cross or parallel branches remain. The tree must be sufficiently open to allow the nozzles to be used freely in all parts of the head. The plums must hang free from the branches.

Shortly after the blossoms fall a very thorough spray of Paris green, usual strength, should be given, and the material should be thrown from the inside of the tree outward, as well as from the outside inward. In case of rain the poison must be renewed. When the mark of the little Turk is noticed the strength of the spray should be doubled and sufficient lime added to protect the foliage. This mixture should be put on the plums themselves, drenching them thoroughly, the object being to fill the incisions made by the insect in the egg-laying process. I am assured that if

this is done carefully the larva is usually killed shortly after hatching, the wound gradually grows together and the fruit develops perfectly.

In small plantations the old method of jarring is satisfactory and profitable. The practice of confining chickens in the plum yard meets with good results. The habit the adult has of dropping to the ground to spend the day makes it a victim of the chickens below. Clean cultivation in the plum orchard is a wise preventive and the spraying of adjacent cherry trees, as recommended for the plum, should be considered part of the necessary procedure to preserve the plum crop.

APPLE CURCULIO—This has a life history similar to that of the little Turk, but its injury is done in a slightly different manner. The adult eats a small circular hole in the skin of the apple and then gouges about and eats until a small oval cavity is formed. In some of these cavities eggs are laid, but for the most part they appear to be merely the result of the normal feeding habit of the insect. The apple does not fall to the ground, but continues to grow. Eventually the injury appears as a small pit or scar at the side of the fruit, or, as this abrasion offers an excellent place of entrance for the germ tube of some rot spore, the apple begins to decay at this point and the secondary trouble finally ruins the fruit.

There is little to be said in the way of remedies. Cultivation is good as a preventive measure. Neglected orchards show the most injury, but the thrifty orchard is not exempt.

If in doubt about the age of eggs test them in salt water. Dissolve two ounces of salt in a pint of water. A fresh-laid egg will sink in it; if three days old it will swim; if more than three days old it will rise to the surface and project more and more as it gets older.—Poultry News.

THE CODLING MOTH.

[From the paper read by Prof. Green of Illinois at our Winter Meeting.]

No one having once understood how cheaply and simply the codling moth may be controlled would ever allow it to ruin another crop.

The life history of the codling moth, as demonstrated by Prof. Slingerland, is of great economic interest. In the beginning the egg is laid, not, as so long supposed, in the blossom end of the fruit, but on the side of the young apple or a near-by leaf. The moth does not deposit the egg until, in most cases, at least, the calyx lobes have closed, making it impossible for her to lay them in the blossom end, even if she wished to do so. It is about two weeks after the blossoms have fallen that the moth begins to deposit her eggs. In about another week the eggs hatch and the young larvae move about seeking an entrance to the fruit. Though some may start to eat at the stem end and others begin to burrow in some place where a leaf lies sufficiently close to the apple to enable them to brace themselves against it, still, for the most part, the young larvae choose the blossom end as the easiest place at which to effect an entrance. They either crowd through between the closed sepals or chew their way directly to the inside. Once in the calyx cavity a few days are spent in eating about the interior before the journey to the core is begun. For from twenty to thirty days the worms feed upon the fruit, then, when fully grown, burrow to the outside, creep down the trunk to some sheltered place and there spin cocoons and pass into the pupa stage.

In two or three weeks moths emerge, and, a short time after, the eggs of the second brood are laid. The larvae of the second brood usually attack the nearly full grown apple where a leaf lies against it or where two touch togeth-

er. In this case they make shallow burrows about the spot and cause serious blemishes upon the fruit. The winter is passed by larvae in cocoons placed in sheltered and protected places.

In considering the treatment for this pest it is necessary to understand the action of the apple calyx after the blossoms fall. At first the sepals are widely spread, and they remain in this position for two or three days, then gradually draw together forming a semi-tube, and finally, a week or ten days after the blossoms fall, become closed tightly together.

The whole secret of successful treatment is in filling with poison this calyx cup before the sepals close. Whichever of the arsenites proves the cheapest, that is best for the purpose. If Paris green is used one pound to two hundred gallons is the right strength. Too much cannot be said on the intelligent care with which this spray should be applied. The whole object is to fill the calyx cup. To spray while the tree is in bloom is a total waste so far as this insect is concerned, for the petals protect the calyx, or in falling away carry with them much of the poison from the place where you most wish it to remain. One thorough drenching spray, applied three or four days after the petals fall, usually proves the most satisfactory. Supplemental sprays are for the most part thrown away. The only thing which would necessitate a repetition of the treatment is a rain coming before the calyx closes. In spraying for this insect all parts where blossoms were must be well drenched, hence the tree must be pruned sufficiently to allow the poles and nozzles to be put to all parts. No thorough work can be done in an untrimmed tree. Some of the frame devices for wagons which allow the operator to be rather above his work are of great assistance.

In conclusion, it is unnecessary to tell the members of this Society, representing as they do the vanguard of Hor-

ticulture, that it is profitable to keep the insect pests under perfect control. Experience has proven it to each one again and again. But there is a great body of men through the State who still neglect their orchards and through this neglect thousands of dollars are lost annually. May it be the policy of this Society to further in every manner the dissemination of information on this subject. It is of vital importance to the commercial interests of the State and is deserving of the most earnest consideration.

THE APHIS OR PLANT LOUSE ON PLUM LEAVES.

The leaves of the plum, apple, cherry and so on are apt to be infested in early spring with the plant louse. A very weak kerosene emulsion will kill them readily; spray with that or strong tobacco water. Just take ordinary cheap tobacco that you can buy at a cigar store, boil that up until the water has a good rich color and spray that onto them. You will have to get at it early in the spring, as soon as you see the little fellows at work, because the leaves curl so rapidly that you cannot get the spray onto them. Spray from the tree out, as well as from the outside in.

PROF. E. C. GREEN.

RED CLOVER.

Jonathan Periam says in the National Rural that in all that region where red clover will thrive it is the best single leguminous plant known. We have lately seen it advised to inoculate the soil with water drawn through the soil of fields of red clover where crimson clover has failed to grow. Crimson clover is handsome to look at when in blossom, but why go to the expense of inoculating soil deficient in nitrogen to make a tender annual clover grow, when red clover is so much more valuable? As to the South and the prairie region north to forty degrees, the cow pea and the soy bean will be found much more valuable than crimson clover.

TRIMMING THE CURRANT.

Our first trimming is done before planting; if our plants are one year old we simply cut back to a single stem, and allow only enough of this to remain for a start of three or four eyes from which starts the young growth for the first crop. If our plants are two years old we allow two or three of the most vigorous branches to remain, but stub each back to three or four eyes, being careful to cut all other branches very close to the main stem, so as not to be troubled again by sprouting from the eyes that would otherwise be left. We endeavor to get a good stout plant as quickly as possible after planting. We allow from three to four good, strong stalks to grow in each hill; then carefully cut out all others as they appear. We do not favor the plan of keeping the fruiting hill to a single stem for several reasons. All currants are subject to the attack of borers after a few years from planting, which kill out the stalks they attack. When only one stalk is left to the hill, and the attack is made that destroys that hill, it creates a vacancy which in a few years often amounts to one-fourth to one-half of the plantation, while if the hill contained three or four stalks there would yet be left sufficient wood to produce a crop. A bush kept pruned to a single stem is also more liable in winter to be affected by the freezing and thawing of the ground than when the bush is formed by a number of stalks. So too, the single-stem bush cannot so well support its load of fruit in time of high wind and rainstorms.

Our system of pruning is very simple; in fact, we do not believe in the wholesale butchery of a currant bush as advocated by so many. We want plenty of bearing wood, which is at its best from three to four years old. We never shorten in the branches at all. We want them to grow as tall as they will. We find the foliage on the top branches a great protection to the fruit, as in the shade thus afforded it will hang, if necessary, several weeks after being fully

ripened, which is sometimes of great importance when labor might be scarce, or is needed in gathering more perishable products, or in case the market becomes temporarily overloaded. Bushes closely cropped back at the ends, and exposing the fruit to the direct rays of the sun, are in danger of total loss of crop in case of wet weather followed directly by hot sun, which will scald the fruit as effectually as if hot water is poured upon it. Our trimming is simply a thinning process. We cut close to the ground all unnecessary young growth, retaining three or four main fruiting stems, and treat the remainder as so many weeds. After the third or fourth year from planting we allow several of the strongest young shoots to grow each year for the purpose of renewing the bush, and when these become old enough to bear we then cut out the weaker of the old stalks, and let the new ones take their place as rapidly as the old ones become partially exhausted and show signs of decay. Thus by properly fertilizing and caring for the soil we could run a plantation through a long period of years, and have wood of four to six years' growth, thus keeping the bush in prime condition all the while.—Rural New-Yorker.



THE DUCHESS ORCHARD.

The Duchess orchard is now of no commercial value unless it is within easy reach of a good market without shipment, or unless nearby cold storage is available. Sometimes the shipper realizes a profit but on an average he ships Duchess at a loss. It will often pay to change over such an orchard to Wealthy or Peter or other valuable long-keeping varieties, by top grafting. This will require considerable labor, depending largely upon the size of the trees to be grafted. If trees are large, grafting must be done farther out on the limbs and many limbs must be grafted on each tree to maintain a well balanced top. This work

is usually delayed till it is warm enough in the spring so that wax will work readily, which crowds the work into a short space of time and a very busy season of the year. I am working over a large orchard in this way and have invented a wax warmer (not patented) which enables me to do the work in March or April and I incline to the opinion that it might be done in late fall or midwinter just as well. Take a short length of stovepipe, put on a broad flat bottom so that the thing will stand up, put in a door near the bottom to admit a good sized kerosene lamp, fit a tin or iron vessel on the top to hold the wax to be melted. We graft a tree or two then melt wax and apply with a small brush. After the weather warms up all should be gone over carefully to see that the wax covering remains in perfect condition.

Owatonna, Minn.

E. H. S. DARTT.

WHAT STRAWBERRIES SHALL WE PLANT?

This question is perennial. Like the grass and the wild flowers it starts up anew every spring. To aid you in answering the question we will give some notes gathered at various horticultural meetings and in conversation with fruit-growers during the past year.

The three new varieties which seem to have the largest following are Kansas, Senator Dunlap and Rough Rider.

KANSAS originated in the state whose name it bears. This is an imperfect-flowered variety, season late. At our meeting in Oshkosh last winter R. M. Kellogg of Michigan, the famous berry man, said he considered this among the most promising new sorts he has tried. He has been testing it for four years. The berries are large, somewhat after the Crescent type, but larger and of much brighter color. In his catalogue Mr. Kellogg "commends it to growers as a variety of the greatest merit." He classes it as late in

season, plant vigorous, fruit "very large, bright red and luscious." Mr. Allen of Salisbury, Maryland, speaks of its drouth-resisting qualities and its strong strawberry flavor and predicts that it will be "the most popular strawberry for canning ever yet produced."

SENATOR DUNLAP is of Illinois origin, a perfect-flowered, mid-season variety. Mr. Bryant of Princeton, Ill., when asked about the Senator Dunlap, at the meeting of our State Society last winter, said it was in great favor in Illinois. They claim it is an improved Warfield, somewhat larger, as firm, of as good color and will carry just as well. The plant is a little stronger than the Warfield plant and a better grower. Mr. Bryant added that those who know it best think the most of it. Mr. Matthew Crawford, the Ohio expert, is very enthusiastic over the Senator Dunlap. He believes it to be the greatest all-around berry now on the market.

ROUGH RIDER is a seedling of Eureka and Gandy, originated in Oswego County, N. Y. It is perfect-flowered and is described as a very late berry, very large, dark red like the Gandy and very firm. It was introduced last year, so has not been widely tested, but will probably supersede the Gandy.

The foregoing three varieties are too high-priced "for human nature's daily food," being listed in the catalogues at twenty dollars per thousand.

SAMPLE (imperfect) is a recent introduction which R. M. Kellogg calls one of his pets. It is a late berry or medium late. Authorities seem to agree that the plant is healthy and productive, and the fruit large and of good color; but opinions differ as to its quality, some say it is of the highest quality, others that it lacks flavor. Mr. Crawford says it is an enormous bearer, dark red to the center and fine for canning.

BISMARCK is a mid-season berry with perfect flowers. It

is similar to Bubach, but firmer and of better quality. The disputed point is with regard to its productiveness. One of our Baraboo growers fruited it last year on a small scale and was much pleased with it. The handsome fruit brought an extra price in the home market.

CRESCENT and WARFIELD are still the leading stand-bys for commercial growers. They are good for table use and for canning and nothing has been found to equal them in productiveness and reliability. Of course both of these varieties require rows of perfect-flowering varieties planted with them. BEDERWOOD, LOVETT and ENHANCE are largely used for this purpose. In Sparta MICHEL'S EARLY is a favorite pollenizer on account of its earliness and its abundance of pollen. Some object to this variety because it is inferior in size, quality and productiveness.

ENHANCE is a berry which personally I do not like. In flavor it resembles wild grapes or Long-bunch Holland currants. But it is late and firm and big and growers say "there is money in it." I hope some of the new late varieties will prove sufficiently productive to displace the Enhance as a pollenizer and late shipper.

HAVERLAND continues in favor for the home market; it bears heavy crops of large, light red, sweet berries. The berries are too soft for shipping and too sweet and light-colored for canning, but are excellent for table use and eating from the hand. This variety also requires a perfect-flowering variety planted with it.

TENNESSEE PROLIFIC, a berry of somewhat recent introduction, is largely used in the South and East as a pollenizer for early blossoms of the Warfield, Crescent and Haverland. It is very early, large and productive. It is planted in Michigan, but I have heard no reports from it in Wisconsin.

BRANDYWINE is a large, late berry of delicious quality, but not productive under ordinary culture.

The MARSHALL is a dark red, fancy berry of exquisite flavor, but needs high culture.

MRS. FRANKLIN JOHNSON.

Baraboo, Wis.



FANCY BERRY GROWING.

[Extracts from the address of R. M. Kellogg, president of the Michigan Horticultural Society, at the Winter Meeting of the Wisconsin Horticultural Society, Jan. 14, 1901.]

The first essential in fancy berry growing is enthusiasm in berry growing. A man who cannot go out on a cold day, away below zero, and shovel manure and cart it onto his ground and take absolute pride and joy in his work, early and late, never can grow fancy berries.

I make a practice of planning all my work about three years in advance. I can tell you instantly what will be grown on every piece of ground three years from this time. I do not like to put manure on the ground this winter and settle it in the spring. I prefer to put a very heavy coat of manure on the ground and then in the spring mix it up with the soil and sow it to corn or cow peas. I used to sow rye, but did not like the result because it did not shade the ground sufficiently to destroy the weeds. I sow corn broadcast. This comes up and as soon as it gets above the ground, indeed before that, I go over with a weeding machine and destroy the first germination of weeds; the corn comes up and shades the ground very densely. Then I have the finest mulch in the world for mulching strawberries in the fall.

I never plow ground in the fall. Plow in the spring, and when I say "plow" I mean plow. I usually go over my ground, before I set the plants, about 12 or 15 times. I plow and re-plow it and cross-harrow it and work it down hard; I want the soil grains rolled down hard. I do not

mean packed. I am very careful not to work the ground at all when it is wet.

SETTING PLANTS—I set my plants while they are entirely dormant. I mulch the plants in the fall to hold the frost in the ground late so they will not start to grow.

There are four ways of growing strawberries, the hill, the hedge row, the narrow matted row and the wide matted row. A plant cannot do its work, neither will it make fruit buds, unless it can have full sunshine. You find very few large berries in the center of a matted row. You will find your large berries always on the outside of the row; and if ever you do get a big berry in the center of the row it will be on a plant that is isolated from the others and can receive the sunshine on its crown where the bud is to form. My way is to grow strawberries in hedge rows. If you have a horse that will work in a narrow space, put the rows about 30 inches apart; perhaps 34 to 36 inches will be better with the average horse. I set plants 30 inches to 3 feet apart in the row, according to the ground. On level ground you can set them closer than on hillsides. A variety, like Warfield and Haverland and Crescent, which makes runners freely, I set further apart than other kinds. I lay them so they set a plant about every 8 inches. I do not like them closer than that. Never let the foliage of one plant shade the crown of the other.

The next best thing to the hedge row is the narrow matted row, say a foot wide.

In setting plants I have a kind of an auger which looks like the wheel of a propellor on a steamboat. It has a handle; you give it a whirl and it digs out a hole and leaves a cone in the center. Pick up the plant and turn it upside down or give it a flip and set it with the roots spreading around the cone and then throw the dirt on it and tread it firmly. The roots are left near the surface as they naturally grow, so they have sunshine and warmth. I have found at the

end of two weeks that the plants set on the cone had twice as much new root as those set with the spade. But I can not use that machine on all my ground; where there are corn stalks and rubbish in the soil it tears the cone to pieces.

I set the pistillate and perfect-flowered plants in the proportion of two rows of pistillates and one row of perfect-flowered.

CULTIVATION—I cultivate my strawberries on the day they are set, always. I have the cultivator in the field when the setting begins. I use a Planet Junior cultivator with 12 teeth, with a pulverizer attachment. For cutting runners I use a disk runner cutter which I attach to a garden wheel-hoe. I make the cutter very sharp with a file. It would not work so well on stony ground because it would soon become dull.

We cultivate till the fall rains begin. The strawberry fruit buds begin to develop early in the fall; I want the plant to grow very slowly then. Late in the fall I put on a mulch of corn stalks which I grow for that purpose. I sow the corn broadcast on ground to be set to plants the next spring. Let it stand till it gets thoroughly dry.



HOW TO GROW PEDIGREE PLANTS.

[Condensed from R. M. Kellogg's address at the meeting of the Wisconsin State Horticultural Society.]

I urge you to grow your plants in special beds expressly for plants, from specially selected plants. I began by selecting plants that pleased me most, both in foliage and fruit, and those I grew in a special bed. I soon found I was getting a remarkable crop of berries. So I urge you to look somewhat after the history of the plant itself and to take plants which are in perfect physical condition, especially as to seed production. Many of the small berries are due to lack of seed-bearing power in the plant. You

fail to get, either in quality or texture of the fibre of the fruit, the quality that you wish.

If you continue year after year to select that plant which makes the greatest amount of foliage and roots, your ground will be occupied by plants that have no seed-bearing power; they have lost it and their whole energy goes to build up a big plant. So it is not the big plant that always counts, nor the plant with the most robust foliage. You want a plant that has foliage and at the same time the seed-bearing habit, and will devote its energies to the development of fruit instead of useless runners. To obtain this you must let the plants fruit. So when I find an extraordinarily good plant I mark it and let it fruit. To prevent pollen exhaustion, I remove about half the blossoms on each stem; it is not enough that you take off one fruit stem and leave all the others; I am careful to prune each fruit stem. I let these plants fruit and then I am able to determine the texture, color and quality. I take runners from these plants and grow them in a special bed by themselves, then I have eliminated the weak plants and have those that will do my work.

When you set your plants in the propagating bed be sure to set them far enough apart so they will not be crowded any more than they would be for fruiting. As they run over the ground in all directions let each one occupy its own territory and it will preserve all of its habits and its best qualities. Do not crowd them together in a solid mat. If you do you will destroy the seed-bearing properties. If possible arrangements should be made for irrigating the propagating bed, as you should not cultivate it after the plants begin to run. They should be allowed to spread out in every direction.

Anybody can be good for a little while but it takes nerve to keep in the path right along.

UNIVERSITY OF WISCONSIN—COLLEGE OF AGRICULTURE.

One of the most successful terms known in the history of the Short Course in Agriculture has drawn to a close and the young men have returned to their homes or to places secured for them by the College, to put into practical use the information imparted to them while attending the College of Agriculture. Two hundred ninety-seven students have pursued the studies of the Short Course during the past winter; of this number 101 were in the second-year class and 196 in the first-year class. Of this number 61 are non-residents and 236 are residents of Wisconsin.

The Students of the Short Course are mostly mature young men, the average age of the first year class is 21 and that of the second, 22. Most of the students have had considerable experience in practical agriculture before coming to the College and with the training received in the Short Course are well able to run stock and general farms in a systematic manner.

The call for the services of the young men who have taken the Short Course is unusually large this year; no less than 200 requests having come to the office during the past three weeks, and 100 students have accepted positions.

Miss R. E. Burce and Mrs. M. A. Birge were students of the Short Course and were well pleased with the work. No doubt there will be many more women attending the Short Course the coming year as there are several studies of the Short Course that can be taken to advantage by them.

Applications from those who desire to attend the coming year are being received; no less than 170 applications have been accepted at the present writing. Those wishing to attend next winter should enroll early, as students are accepted in the order of their application.

COLLEGE OF AGRICULTURE,
Madison, Wis.

THE GIDEON MEMORIAL FUND—A CORRECTION.

[This letter should have appeared in the February Horticulturist, but was inadvertently overlooked.]

Mrs. Franklin Johnson—

Dear Madam:—I notice in the January number of your excellent journal, on page 9, that Prof. Goff says that our society subscribed \$225 towards a fund for the "family" of the late Peter M. Gideon. This statement is correct as to the amount subscribed but not as to its object. These subscriptions were made to what we call "The Gideon Memorial Fund," the principal of which is to be placed in the hands of the Regents of the Minnesota State University and the interest only devoted to premiums or prizes, or something of that nature, to be offered annually to students in the classes in horticulture in the State Agricultural College as an encouragement to proficiency in that department. We expect to increase the amount already subscribed to \$1,000 for this purpose and all the friends of Mr. Gideon and the Wealthy apple, which every one knows was his seedling, will be given an opportunity to contribute as they may desire.

Will you kindly set your readers right on this and oblige

Yours fraternally,

A. W. LATHAM, Sec.

REPORT ON NURSERY INSPECTION IN WISCONSIN FOR 1900,
CONCLUDED.

[In the November number of the Horticulturist was printed a part of Inspector Thro's report on the condition of the nurseries in Wisconsin. By special request we now publish the remainder of the report. If you are staggered by the array of scientific names, you will find some "plain English" of importance following the names.—Editor.]

List of Orthoptera Grasshoppers taken in Wisconsin:

ARCADIDÆ—SHORT-HORNED GRASSHOPPERS.

TRYXALINÆ; *chloealtis conspersa*, *orphula pelidna*, *stenobothrus curtippennis*, *eremnus Scudderi*.

AEDIPODINÆ; *arphia carinata*, *arphia tenebrosa*, *encoptolophus sordidus*, *dissosteira carolina*, *circotettix verruculatus*.

ACRIDINÆ; *schistocerca alutacea*, *schistocerca rubiginosa*, *melanoplus femur-rubrum*, *melanoplus angustipennis*, *melanoplus luridus*, *melanoplus differentialis*, *melanoplus femoratus* (one female).

LOCUSTIDÆ—LONG-HORNED GRASSHOPPERS.

Amblycorypha rotundifolia, *orchelimum* sp., *gryllidæ*, *gryllus abbreviatus*—common cricket.

ENCOPTOLOPHUS SORDIDUS—A small gray locust which makes a cracking noise when flying.

DISSOSTERIA CAROLINA—This is the common locust of the road. It is quite large and when flying the black underwings edged with yellow are quite conspicuous.

SCHISTOCEREA—Large rusty-colored locusts which are strong fliers. Collected some at Sparta and Fort Atkinson.

Notes on plant diseases observed on inspecting trip:

ANTHRACNOSE—This disease was present in almost every raspberry lot examined in the state. One nurseryman reports that it attacks the Loudons as readily as other raspberries.

SEPTORIA RUBRI—This is another disease which is common on blackberries. The leaves turn yellow or brown and are thickly spotted with dark brown spots. Specimens of leaves collected on the premises of Mr. Hatch, Sturgeon Bay, were affected with this fungous disease.

PHOMA SP.—Mr. Hanchett of Sparta called my attention to the peculiar appearance of the red raspberry canes on his premises. The otherwise clean canes appeared to be discolored in large blotches and the cane appeared to be dead in these spots. This proved to be the new disease of

the raspberry that has just been discovered. It was first noticed in the Hudson Valley, New York State. Prof. F. C. Stewart described it in Bulletin No. 167, New York Experiment Station, Geneva, N. Y. It may prove a very dangerous disease since it is said the canes die beyond the affected portion.

SPHAERELLA FRAGARIE—This disease was noticed on strawberry leaves. The leaves are covered with dark-brown spots with white centers when this fungous disease is present.

I am deeply indebted to Dr. B. M. Duggar, of Cornell University, who identified these fungous diseases.

The writer hopes that the nurseries in Wisconsin will not be invaded by the San Jose scale, but a constant lookout must be maintained so that it may be combatted on its first appearance. Very respectfully submitted,

WM. C. THRO,

Acting Inspector of Nurseries.

Ithaca, N. Y., Sept. 24, 1900.

CATALOGUES RECEIVED.

Coe & Converse of Fort Atkinson, Wis., are out with a new catalogue, neat and concise. They list strawberry plants of the "tried and true" varieties, raspberries, blackberries, currants, gooseberries, grapes, a good selection of apple, pear, plum and cherry trees, ornamental trees and shrubs, evergreens, roses, a fine line of clematis, bulbs, etc. Write for their catalogue.

Wm. Toole, the pansy specialist, of Baraboo, Wis., issues this year a dainty catalogue, with pansies of a delicate tint on the cover. Mr. Toole's pansy plants certainly produce choice and beautiful flowers. We "speak that we do know," having grown them in our own garden for years. Mr. Toole raises many other flowering plants for sale. Catalogue free.

One of the handsomest catalogues that has come to our desk is that of the Great Northern Nursery Co. of Baraboo, Wis. It is profusely and artistically illustrated with electros and half-tone engravings of fruit, flowers, trees and glimpses of the nursery buildings. Tree fruits, ornamental trees, shrubs, roses, small fruit plants, grapes, currants, gooseberries, climbing vines, etc., are included in the lists.

We have not yet received the catalogue of J. M. Smith's Sons of Green Bay, but last year their specialties were seed potatoes, rhubarb plants and currant bushes, with careful and reliable descriptions of each variety.

W. D. Boynton of Shiocton, Wis., deals in evergreens. In a compact little circular, he gives the best kinds, the special purpose for which the different varieties are adapted and directions for planting.

*
[REDACTED]
IN MEMORIAM.

With sadness we chronicle the death of John S. Harris of La Crescent, Minn. Mr. Harris passed quietly away at his home on Sunday morning, March 24, 1901, having been ill for three weeks with typhoid fever which followed an attack of the grippe. His funeral was held in the Presbyterian church at La Crescent, of which he was a member. Several members of the Minnesota State Horticultural Society came from a distance to attend the funeral, as a last tribute of esteem. The Wisconsin State Horticultural Society mourns with Minnesota. J. S. Harris was a revered life member of our Society, and a frequent attendant at its meetings. We remember his kindly face at the meeting in Madison a year ago. Mr. Harris was conducting important work in experiment orchards, a work which his son, Frank I. Harris, will probably continue.

[REDACTED]

EDITOR'S NOTES.

PRINCIPLES OF PLANT CULTURE. This book was written by Prof. Goff of Wisconsin University as a text-book for his pupils in horticulture. Those who are familiar with the writings of Prof. Goff cannot have failed to notice their painstaking exactness and the care used to guard against over-sanguine statements or hastily-formed conclusions. These characteristics are very marked in this book. The special merits of this handbook are its scientific accuracy, its reliability and its conciseness. It treats of soil, cultivation, pollination, budding, grafting, insects, spraying, tells how to make and use various insecticides, how to transplant, how to prune, how to prevent oats smut,—we have not space to enumerate the many topics treated. The book is substantially and tastefully bound. We keep our copy where it will be handy for immediate reference just as we do our dictionary. To secure Principles of Plant Culture send one dollar to this office (Wisconsin Horticulturist, Baraboo, Wis.) and the book will be mailed to you postpaid.

The American flag is to flutter from every schoolhouse in Porto Rico next 4th of July. Chicago has the job of making them—nearly 200 tons of flags.

The Massachusetts Horticultural Society is to move into its handsome new building on May 1. The first official exhibition in the new building will be the annual rose and strawberry show June 20 and 21. The statues of Flora, Pomona and Ceres which grace the facade of the old building have been presented to the society by the present owners, who will also give the society the memorial box placed in the corner stone of the old building when it was erected.

The Great Northern Nursery Company of Baraboo of which M. F. Foley is president, has recently purchased eighty acres additional of land, much of which will be planted to nursery stock this spring.

The Strawberry Culturist has changed ownership and name and now comes to its readers as the Eastern Shore Farmer and Fruit Grower. We wish it "bon voyage" in its enlarged sphere.

Vick's Magazine has also gone into new hands and enlarged its size and scope. It is no longer exclusively floral, but is a charming publication nevertheless.

Prof. Goodale, the Director of the Harvard Botanic Gardens, has been in Germany during the winter. In his absence the Botanic Gardens are in charge of Mr. Oakes Ames, the assistant director. In these gardens plants are raised for the purposes of study and investigation. One house is set apart for economic plants and here may be seen tea plants, coffee, logwood, cinnamon, vanilla, cotton and the like.

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Note—Frontispiece of Jan. issue of this Journal illustrates
our "NEW PROCESS" plates.