The Wisconsin horticulturist. Vol. VI, No. 3 May 1901

Wisconsin State Horticultural Society
[s.l.]: [s.n.], May 1901

https://digital.library.wisc.edu/1711.dl/LK2CZCWR3LLUK8T

The Wisconsin Horticulturist.

VOL. VI. MAY. NO. 3

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.

ANEMONE WHIRLWIND.

In the magnificent collection of flowering plants exhibited at the Wisconsin State Fair last fall one of the first to attract our notice was a fine specimen of the anemone Whirlwind. Its large, semi-double, pure white flowers against their background of green leaves are at once showy and modest. Well-grown plants in full-bloom would be very effective for decorative purposes, either in parlors or churches.

Although beautiful grown in pots, it is properly a garden plant attaining a height of from two to three feet when grown in the open ground. Currie Brothers of Milwaukee assure us that it is very hardy and strong growing and produces its flowers in great profusion. I think we can safely add the anemone Whirlwind to our list of autumn-blooming

hardy perennials. In view of the fact that one can never foretell what freaks a Wisconsin winter may play, it is wise to mulch all perennials with leaves or other litter, late in the fall.

SHRUBS AND PLANTS FOR CEMETERIES.

Taking into consideration the cold winters and dry summers to which our climate is liable, the varieties which we shall recommend will be few and such as have been well tested.

SPIREA VAN HOUTEII comes first in the list for several reasons. It is hardy; its foliage is delicate; it is a beautiful and graceful shrub at all seasons, whether in blossom or not; when in bloom its white flowers are produced in such profusion that its drooping branches seem wreathed with snow; it is almost sure to be in blossom on Memorial Day.

ROSA RUGOSA ALBA.—This is the white, hardy Japan rose. Its flowers are single, but very fragrant, and its foliage is dark green and healthy, making it a pretty shrub even when not in bloom.

HYDRANGEA PANICULATA GRANDIFLORA.—This, when well-grown, is one of the most beautiful of shrubs. It blossoms in August and September, the great pannicles of bloom almost concealing the branches. It survives the coldest winters, but does not endure drouth well. In a location not too dry or where it can be watered, it is magnificent.

The new, large-flowering, white PERENNIAL PHLOX is a reliable and handsome plant.

VINCA MINOR, commonly called Periwinkle, or Ground Myrtle, is much used in cemeteries in the eastern states. Its evergreen foliage covers the graves of many of our most illustrious dead. The writer has a spray picked twenty

years ago from the grave of Charles Sumner in Mt. Auburn cemetery—the "sweet Auburn" of Lowell's poem.

Of course this vinca will grow only in shaded places.

M. C. C. J.

Baraboo, Wis.

TO MAKE HARDY VINES BLOSSOM.

Such vines are usually allowed to grow at their own sweet will, climbing higher and higher as long as any support can be found for them, but blossoming sparingly if at all.

But once drag the vines away from their support and let the young shoots reach out into space, searching for something to cling to and not finding it, and the conditions are all changed. Then they have nothing to do but blossom; this fact is one of the principal reasons why so many people are now raising these vines as standards, the flowers being produced so much sooner and in greater profusion.

One wistaria raised in my neighborhood had more flowers on it last season than I ever saw on any three vines all put together, and this is the way the vine was grown.

The season before the house had been painted, and the vine, which was an immense one, reaching to the roof of the second story, was taken down and laid on the ground close to the foundation of the house. It was left there all winter and the following summer; in June it bloomed profusely, but almost no new branches were produced, its whole strength going to blossoms. In September it bloomed again, but sparingly.

A trumpet creeper was torn from its support near the top of the vine, and the ends broken back a little, and it acted in just the same way, blooming more profusely than ever before.

A climbing bittersweet which had attempted to completely cover a long stretch of fence, had its support blown

down by the wind last spring, after which it was left to creep over the ground as it pleased; more blossoms were produced in the one season than were usually seen in three.

All these vines make a beautiful appearance when allowed to grow to a height of twelve or fourteen feet on the corner of a building, and then be kept away from further support. The young shoots reach out in every direction, and when in blossom look much more attractive than when the vines are clinging closely together.—Vick's Magazine.

HOW TO MARKET VEGETABLES.

Irving C. Smith.

[Read at Winter Meeting.]

The TIME to market vegetables is when some one wants to buy. The WAY to market is to put them up in such fine shape that every one seeing them will WANT to buy.

Beauty and quality are the two most prominent points to be considered. We take it for granted that you know how to grow good vegetables, else you would not want to know how to market.

Tempt the eye first. To do this, study to have everything as neat as possible. Tie bunches with common white wrapping twine, wound twice around the bunch. Wash all goods carefully. Sometimes it is necessary to wash in two waters to get the sand off, especially just after a rain. It is always best to have two tubs for washing, so that stuff may be put from one to the other and save all unnecessary handling. It is usually best to wash radishes before tying. Dump into a tub, stir round a little and dip out with a sieve or fork. Put into water again after tying. Radishes are improved somewhat in appearance if the tails are clipped off, after being tied. Washing first makes it much easier to sort out all wormy bulbs.

Skin onions nicely, being careful not to cut the roots

off too short or they grow out over night, and if too long they look dirty.

Pull off all dry or yellow leaves from lettuce or beets and turnips; also clip roots of the two latter. The tops may or may not be cut off, according to season or trade notions. Be careful not to bruise the tops of green stuff or they will spoil very quickly.

Asparagus should be bunched with the top ends even and then with a sharp knife clip the butts a little. This makes the bunches even in length and gives them a much more tidy appearance in general.

Be careful to make the bunches of each variety of goods of a uniform size and also of a convenient size for the retailer to sell.

In picking peas and beans be careful to leave all overripe or rusty pods; and do not wet after picking if it can be avoided.

If you have a home market carry goods to town in open boxes or bushel baskets packed in so as to present the best possible appearance; but never put the best goods on top. Better put the poorer on top if there be a difference.

If you are shipping use light boxes or crates and pack evenly and regularly, so goods will come out without being crooked and ill-looking. For most goods crates should not hold over one bushel. Large crates heat and pack too much.

Freshness is the first essential of good quality. By constant care and a reasonable knowledge of prospective trade this may be provided. To do this, we must reverse the old proverb and say: Do nothing today that can be done tomorrow. Never put up goods for market in the afternoon if the next forenoon will give opportunity to gather and deliver in proper time. Goods kept on hand over night must not be allowed to heat or they will be badly damaged.

Remember too, that the greater part of the people who

buy vegetables do not know what good quality is, as you understand the term; and you must educate them only as fast as you find yourself able to supply the demand.

When people want a better quality of goods than you can furnish, beware! Some one is getting ahead of you. Lead and others will follow. Don't follow where others lead.

In selling, better have the reputation (and be sure you earn it) of being the high priced man, than the cheap man. In the latter case you are liable to be cheap in more than one sense. Stand on your dignity and honor and let no one browbeat you and make you think your goods are not worth the highest market price, when you should know better.

Be on friendly terms with the retailers and occasionally discuss the price you want and the price they must get for goods and you will find most of them ready to do the fair thing by you. This is particularly true in the case of some new goods, such as hotbed lettuce. Ask him 40c per dozen and let him sell at 5c per head. This gives both a reasonable price for his work. But be sure your stock is first class and worth 5c each, or you will get into trouble.

Of the many points to be considered in marketing vegetables only a few of the most important ones have been mentioned. Many more might profitably be discussed but Father Time calls a halt.

In conclusion let me repeat our first proposition. The TIME to market vegetables is when some one wants to buy. The WAY to market is to put them up in such fine shape that every one seeing them will WANT to buy.

Green Bay, Wis.

Hand-painted china is a pretty feature of housekeeping, but hand-mended stockings will produce more happiness in the family.

HOW I SAW NIAGARA FOR TWENTY-FIVE CENTS.

Mrs. Franklin Johnson.

What connection have the Falls of Niagara with horticulture, do you ask? Well, this is the connection. This summer you will all want to visit the Pan-American Exposition at Buffalo; not far from Buffalo is Niagara, one of the greatest natural wonders in the world,—and I want you to see Niagara.

Most horticulturists belong to that blessed middle class who have "neither poverty nor riches." They desire the knowledge and culture which come of travel, but to gain this they must use their money prudently and count dimes and nickels as well as dollars. It is for the benefit of such that this article is written.

With your permission I will begin with a bit of personal narrative. A few years ago a little five-years-old girl dragged from its hiding-place an ancient gay-flowered "carpet-bag," thrust into it her little clean dresses and aprons, donned her Sunday hat, clasped her doll in her arms and—started for Massachusetts! When her journey was intercepted and she was brought back sorrowful, her heart-broken wail was, "I have GOT to go to Massachusetts; I have GOT to hear the Atlantic Ocean roar." In the course of years the girl became fifteen instead of five and we thought the time had come for her to hear the ocean roar, so she and her mother set off for Massachusetts.

Our tourists' tickets allowed but one stop-over and that was at Niagara. We did not avail ourselves of this stop-over privilege on the outward journey. Not even Niagara could stay the mother's eager feet when once they were turned toward friends and kindred after an absence of twenty years.

Oh! the memory of those happy weeks on the rock-bound sea-coast and amid the beautiful inland hills! But

when at last our faces turned toward the west, our depleted pocketbook led us to conclude that we shouldn't "have time" to visit Niagara. One among the kinsfolk, suspecting our dilemma, said, "That girl ought not to go home without seeing Niagara Falls. I can tell you how to do it for twenty-five cents apiece." We followed his directions and now give them to you.

We took a west-bound train over the Wabash route which would reach Niagara City about eight o'clock in the morning. Not wishing to be burdened with our hand-bags and wraps we left those in the care of the station agent at a cost of ten cents. Then following the direction pointed out by the obliging agent we walked a few blocks, perhaps a quarter of a mile, to Prospect Park. Here were in waiting costly carriages and comfortable but unpretentious "vans." These vans take one to all the points of interest on Goat's Island and Luna Island. You can go to one point, get out of the carriage and stay as long as you please, then take another van as it passes along, go to another point and remain for awhile, then hail another van, and so on until you have made the rounds, and all this for fifteen cents. The ticket which you buy for the first van is to be retained and used on all, being punched and handed back by each driver.

The route includes magnificent views of the Rapids above the Falls, an unexcelled view of the great American Fall and the Central Fall and a fairly good view of the Horseshoe Fall. Of course this is not ALL there is to be seen, but it is as much as one has time for between trains. Our train left about three o'clock in the afternoon, giving us six hours to spend amid the indescribable sublimity of this mighty rush of waters. My daughter, awed into solemn silence for awhile, afterward confessed that it seemed as if the whole Atlantic Ocean had burst loose and was pouring over that abyss.

As we stood on Luna Island on the very brink of the American Fall, the clouds in the heavens opened and the rain poured down. But there was no hurrying and skurrying to seek shelter. Under the fascinating spell of the mighty cataract people gazed and wondered, unmindful of the drenching shower. There were fair, girlish brides in their pretty new traveling dresses. They spread their dainty white parasols in partial protection, but made no move to go. One elderly lady without even a parasol, calmly turned the skirt of her tailor-made gown up over her shoulders and seemed oblivious of all save the tossing of those mad waters.

No language can describe the Falls or the Rapids. No picture, either of pen or pencil, can convey other than the faintest idea of their stupendousness. In the words of Charles Dickens: "I think of it in every quiet season now; still do those waters roll and leap, and roar and tumble, all day long; still are the rainbows spanning them a hundred feet below; still, when the sun is on them do they shine and glow like molten gold; still when the day is gloomy, do they fall like snow, or roll down the rock like dense white smoke. But always does the mighty stream appear to die as it comes down, and always from its unfathomable grave arises the tremendous ghost of spray and mist which is never laid; which has haunted this place with the same dread solemnity since Darkness brooded on the deep, and that first flood before the Deluge—Light—came rushing on creation at the word of God."

[The above paper was written for the winter meeting of the State Horticultural Society, and is printed now for the benefit of any who may wish to visit the Falls this summer.]

The easiest load to pick up and the hardest to lay down is responsibility.

WHITE GRUBS AND STRAWBERRIES.

If, in plowing land to prepare it for planting, a great many of the white or brown grubs are seen, there is no use in planting it with strawberries this year. The white grub almost always infests a timothy sod, the parent bug selecting such sod to lay her eggs, as the bulb just at the surface of the ground, in the timothy plant, is a favorite morsel with the grub. Many pieces of timothy are every year ruined by this pest. For this reason, land upon which grass has been grown should always be planted in some kind of hoed crop for one or two years, before strawberries are set on it.

REMEDY AGAINST MOSQUITOES.

By E. H. Plumacher, Consul.

A simple remedy against mosquitoes has been employed in several places in South America and is equally well adapted to the temperate zone. It consists in planting the castor-oil plant (Ricinus communis), or "palma christi," around the house and premises.

In cold and temperate climates the castor-oil plant grows to a height of four or five feet; in these countries, it becomes a tall tree and is perennial. It seem that the smell of the plant is disagreeable to mosquitoes and other insects, and it is an acknowledged fact that where these plants grow few mosquitoes will be found.

My personal experience bears this out. My residence is surrounded by plantain and banana trees, and I have been much troubled in the past by the great number of mosquitoes which gathered between the leaves. Following the example of old settlers in the country, I planted the castor-seeds, which grew up in profusion, and there are now no mosquitoes to be found among the plantain and banana trees, although I keep the ground well irrigated. By keep-

ing branches and the seeds of the plant in rooms, the mosquitoes are driven away from the latter.

There are several varieties of the castor-oil plant. In this country there are two—one with brown nuts and the other white in color, with a kernel tasting like the fresh almond.

Maracaibo, November 30, 1900.

STRAWBERRY ECHOES FROM OUR WINTER MEETING.

Geo. J. Kellogg:—For an early berry there is nothing that exceeds the Wood, that has borne as much as that in this State. If you want a pistillate there is nothing equal to Warfield, but I would not plant a pistillate. I would forego the privilege of the Warfield and plant the Lovett and Clyde. If you want a late berry there is nothing that will sell as the Enhance; it is not of as good quality as many, but it will give you bushels.

R. M. Kellogg:—Down in Arkansas the Excelsior is becoming one of the leading berries. I had it on my ground. It showed more than double the fruit and was four days earlier than Michel's Early.

The Warfield has failed on some soils. I have heard many complaints that it does not root deeply on light, sandy soils. We fertilize it with Tennessee Prolific.

The Haverland is not of the highest quality, but is one of the most productive berries ever introduced. It ships fairly well in cool weather.

The Bubach is a late berry that is one of the best. Then there is a new berry called the Seaford. I am very enthusiastic over this variety and the Sample. Another variety that has come into bearing lately is called the Kansas. I have had that berry on my grounds four years. It has attracted much attention. The berries of the Kansas are

large, somewhat after the Crescent type but larger and much brighter color.

I set strawberries two rows of pistillates and one row of perfect-flower. I use perfect-flowering varieties only for pollen. As a rule you will find the pistillates more productive and they withstand drouth and frost better.

H. E. McGregor:—Varieties like Warfield and Splendid, that are good plant makers, should be planted farther apart than Clyde or Manchester which are not so good propagators.

Our choice of soil is a loam with clay subsoil, as the best constituted to hold moisture and fertility. This should have been in some hoed crop for two years to clear it of grubs and root-eating insects.

THE BLOSSOM BUD OF THE CRANBERRY PLANT.

J. A. Gaynor.

[This paper was read before the Cranberry Association and is printed in this number of the Horticulturist by special request.]

Every observant fruit grower, whether interested in apples or cranberries, has noticed that one year he will have a great profusion of blossoms, and another, a decided scarcity. Without blossoms there can be no fruit, hence, it is of the highest importance to determine what the conditions are that give a fair supply of the blossom buds, upon which success depends.

The cranberry vine, like most other plants, is divided into joints. While these joints are not as apparent as in the corn stalk, the elder bush or grapevine, yet they are joints all the same, and at the end of each joint there is a leaf, and in the crotch or axil of every leaf, a bud. A bud in the axil of a leaf is called a lateral bud to distinguish it from the bud at the end of the stem, which is called the ter-

minal bud. It is this terminal bud, in the cranberry, that will bring forth the future blossom.

The terminal bud on the runner rarely produces a blossom, while the terminal bud on what is known as the "upright" usually produces blossoms. But in some seasons and on some marshes the terminal buds on the upright produce few or no blossoms, while in other seasons, the same vines will not only show blossoms on every upright, but on many of them as high as six or seven well-formed "hooks," and in a very favorable season a lateral bud lying close to the terminal bud may produce blossoms. But this very rarely happens, and it is the terminal bud on the upright to which the grower must look for his fruit, and the successful grower should watch and understand this bud thoroughly.

This bud must be regarded as a shortened stem. If one conceive eight or ten joints of the upright so shortened, or pushed into one another, as to bring the leaves together into one whorl, and then conceive each leaf so reduced in size as to become a scale, then the scales folded together over the top of the terminal germ and sealed with a light vegetable wax, he will have the correct notion of this bud. When it unfolds, the stem will expand, and the scales will appear distributed on this elongated stem just as the leaves would have been distributed if the plant had kept on expanding the previous year instead of stopping to form the terminal bud.

Upon the newly expanded stem that bears these scales, and in the axil of each scale, will be found a very small lateral bud, that will grow out into a "hook" which bears some resemblance to the head and neck of a crane, and suggests the name of the fruit. At the end of this "hook" will be found the blossom, and these small, axillary buds are in reality the true blossom buds. Now, when were these tiny blossom buds formed in the axil of the scales that formed

the terminal bud of the upright? And what are the conditions favorable to the development of these buds? If we knew when they were formed and the conditions favorable to their formation, we might assist Nature in their development. The discussion of this subject was made a special order for our annual meetings about eight years ago. But nothing, so far, has been done by cranberry growers to answer this inquiry. The practical grower may have some strong, generalized suspicions or theories founded on a few assumed facts that satisfy his mind on the subject, but the answer will only be reached with certainty by a long-continued series of observations conducted by the scientific observer.

Prof. Goff of the State University about two years ago undertook to investigate the blossom buds in the cherry, plum, apple and pear, and the facts he established will do much to guide our investigations on the blossom buds of the cranberry. He found in some of these, that the blossom buds formed as early as the first days of July, and in others as late as the last of October; that in the early stages of any bud it is not possible to determine under the microscope, as to whether it will grow out into a leafy branch or produce a blossom. In its later development, if it is a true blossom bud, the future blossom will be plainly visible, and after the blossom is once set, its future growth is almost sure to bring forth a blossom. In other words: The development of that bud can scarcely be modified so as to obliterate the blossom.

Prof. Goff has further determined that at the time of the formation of the embryo blossoms in the buds, their development is promoted by SUNSHINE, COOL WEATHER and a SCARCITY of the WATER SUPPLY; that if, instead of these influences, the plant has an abundance of heat, water and shade,—shade either from foliage or clouds,—it will mature comparatively few blossom buds.

If we knew when the embryo blossoms were formed in the cranberry, we might aid their development by removing the tall grass and foul stuff that shuts out the sunshine from the buds. We might even do something toward diminishing the temperature, and we could do a great deal toward lessening the water supply, and this latter is, doubtless, one of the most potent factors in the development of the blossum buds.

Those who are under the erroneous impression that every terminal bud on an upright will produce a blossom the following season are ready to inform me now that they know that the blossom buds are formed as early as the last half of July, and that they are nearly all formed before the middle of August. I would accept this hasty conclusion if the terminal germ of that bud was a part of the future blossom; but the fact is, that when the terminal bud unfolds in the spring, its terminal germ will continue to grow upward and form a second upright, and the blossoms, if any there are, will spring out from the crotch or axil of the scales that formed the winter bud. These buds that spring from the axil of the scales are essentially in their nature like the buds that may be found at the axil of every leaf along the stem; they differ from other lateral buds only in this: That, instead of developing into a leaf bearing branch, they develop into a kind of small branch called a "hook," which bears at its terminus the future blossom, the blossom being the end of that terminal branch, or its terminal bud.

I suspect that well-formed terminal buds exist for a long time on the uprights before these little internal axillary buds develop into embryo blossom buds, but if we only knew when they do develop, we could aid that development very much by lessening the water supply. It is my opinion that they are not developed until about the first half of October, and if this be true, it would be a mistake to flood

or roll the vines down flat before that time. I would not be surprised to learn that these buds are produced in the early spring, and that a scarcity of the water at that time is favorable to their production. In short, that we might let the water off when the ice melts, and it should not be put on again except on account of a threatening frost after the buds show signs of growth.

But this is dangerous advice to the unskilled cranberry grower, for just as soon as the buds begin to swell, a frost will injure them, and this danger point arrives when the bud lays aside its reddish hue and assumes a yellow, pale-greenish color. The increase in size may not be apparent, but this change in color shows that the terminal germ within the bud has started and may be killed by a light frost that will not destroy the outer covering of the bud and to all outward appearances the bud will remain uninjured by it. Remember that there are as many stem joints within the bud as there are bud scales in its formation. If only one or two of the joints within the bud are destroyed by the frost, the bud may unfold a little and produce its lateral buds or hooks from the axil of the scales, and these will develop into blossoms; but if the frost is a little more severe, the outer part may remain uninjured, but so many of the inner joints be destroyed that the bud will never unfold, although it continues to show a healthy color for a long time after the freeze.

I have noticed when the water had been drawn off in the early spring, leaving the vines very dry, the hooks showed themselves among the opening bud scales before the bud had made any considerable elongation, and that vines that had an excessive supply of water showed a considerable elongation of the terminal bud before the hooks were visible.

The terminal bud on every plant is stimulated by an excessive supply of water, heat and shade. This bud is a

greedy one among its fellows and while he lives he holds the lateral buds in check by absorbing nearly all the nourishment the plant can furnish, leaving them merely enough to keep them alive, but nothing to enlarge or expand them, hence, it seems to me that when stimulated as above stated, it is liable to absorb the nourishment that would otherwise go to feed the tiny buds that lie in the axil of the scales, and which are the true blossom buds.

I think I have seen cases in which this actually happened. I have seen two or three little hooks on one upright that failed to develop into a blossom while the terminal bud on the same stem had gone on growing vigorously. These hooks at last appeared blighted, and later disappeared altogether. On all marshes from which the water was drawn off easily and which seemed very dry, the hooks came out vigorously and in great numbers before the terminal bud had shown any considerable development. I submit these points not to establish a positive doctrine, but to induce those who have an opportunity to make their own observations and conclusions.

Prof. Goff has kindly volunteered to make observations on the cranberry vine to determine when the blossom buds are formed, if we will only furnish him the vines at such times as he may direct. I would advise that you make provisions at this session to see that the vines are furnished him.

Who are the "lords" of creation in this country? What does it profit a man to own a whole section and be compelled to stand with his hands in his pockets and see the "sports" from a neighboring town stalk over his domain and shoot all his rabbits and squirrels? Cannot our laws and customs be so amended as to enable a man to control and protect his undisputed premises?—Our Horticultural Visitor.

RENOVATING OLD ORCHARDS.

By Prof. L. R. Taft, Agricultural College, Mich.

[This important paper was read at our Winter Meeting. It will appear in full in the Annual Report. We reproduce now such portions as are seasonable at this time, and will give the sections on "Cover Crops" and Pruning in the June number of the Horticulturist.]

The man who is about to engage in the growing of fruit as a commercial venture, cannot be too careful regarding the nature of the soil upon which he is to plant a new, or to renovate an old orchard. However well the trees may be cared for otherwise, the best of success cannot be expected if the soil is so light and devoid of humus that it will not furnish moisture in time of drought, as such a soil will neither supply plant food nor hold that which may be supplied for the use of the trees. On the other hand, the returns will be equally unsatisfactory if the trees are upon soil that is unduly heavy or wet. The stiff clay soils are not the best orchard soils, as it is practically impossible to so handle them that they will not bake and suffer in time of drought. A wet soil is even more objectionable, as none of our tree fruits do well when they have wet feet. The difficulty can be to a certain extent lessened by draining the land, but this alternative should be avoided if possible.

Among other conditions that may be present are worthless or undesirable varieties, destructive diseases or dangerous insects, "hide-bound," or sun-burned trunks and branches, and the result of the injudicious use of the saw and axe.

Before deciding upon any method of renovation, the orchard should be carefully examined and the extent to which the above-mentioned and other unfavorable conditions exist determined, in order to learn if the probable returns will warrant the attempt to renovate the trees.

Having determined upon the renovation of the orchard,

its needs should be studied and a course of treatment mapped out. Although all orchards have not been neglected to an equal degree, there are few where the treatment should not be along at least four lines, viz., cultivation, manuring, pruning and spraying.

A majority of the old orchards, and this is particularly true of apple orchards, are in sod, or, as might more accurately describe them, they are "hay orchards," and as we are told by physicists that no two bodies can occupy the same space at the same time, so it is as a general rule true that the best results cannot be secured in an orchard when an attempt is made to grow some other crop. It must be said, of course, that here and there a soil will be found that is sufficiently rich and moist to grow fruit of good quality, even though covered with a sod. This is not the case with a great majority of our soils, however, as the roots of the grass not only take the moisture from the soil, but they rob the trees of their food.

Where the climate is severe it is not, as a rule, advisable to plow the land in the fall, but it should be done as early as possible in the spring, that the roots and leaves of the grass may decompose and provide humus and plant food. While the plowing should be thorough, the furrows near the trees must be shallow, in order that the roots may not be bruised and torn. From the time the land is plowed, it should be dragged once in ten days or two weeks until about the first of August. A disk, cutaway or spading harrow answers well while the sod remains, but after this has been broken up, a spring-tooth, or smoothing harrow, or, on light soil, a weeder may be used. Where the orchard is of bearing age and the roots of the trees occupy the soil, it is not advisable to grow any crop between the rows, as, even though the land be well cultivated and supplied with plant food, it will very certainly result in reducing the growth of the trees and the size of the fruit. While the trees are

young some hoed crop may be used, but the selection should be such that the ground can be cultivated until at least the middle of July, and that will not make it necessary to stir the ground during the growing season in harvesting the crop. If the product can be utilized it is a good plan to use such a crop as squashes, pumpkins or melons, as then the hills will be six or eight feet away from the trees. The selection of any of the spring grain crops should be avoided.

THE USE OF FERTILIZERS.

When the soil is fairly rich and a good sod is turned under, a sufficient amount of food will generally be provided to produce one crop of fruit, but, after that, steps should be taken to supply the needs of the trees. Ordinarily, stable manure and wood ashes will furnish the elements lacking from the soil, and twenty loads of the former and one hundred bushels of the latter per acre will suffice for two years. Stable manure supplies nitrogen, potash and phosphoric acid, but, as the nitrogen is likely to be slightly in excess, it is advisable to apply the ashes also, as, if hardwood and unleached, they should supply about five per cent of potash and one and one-half per cent of phosphoric acid. Potash can also be purchased as a salt in the form of muriate and phosphoric acid as dissolved phosphate rock or ground bone, but at the present prices for the materials it will be cheaper to use a good grade of unleached wood ashes at fifteen cents per bushel than to buy them. There are also a number of brands of commercial fertilizers that are prepared especially for fruit trees, but while it may be advisable to purchase them if only a small quantity is needed, they are as a rule considerably more expensive than a home-mixed fertilizer that can be readily prepared from the materials mentioned above. It is a good plan to apply stable manure broadcast and plow it under, but the application can be made at any time after growth is over in the fall.

Unless the ground is very rolling there will be little loss from washing. The same rule will apply to the application of wood ashes and ground bone, but when using the more soluble and higher priced chemicals it will be better to apply them in the spring.

PRUNING THE TREES.

Prof. Taft says it is well to go slow before sawing off the lower limbs in a neglected orchard sufficiently high to permit of cultivation. The injury might be greater than the benefits that could be secured from cultivation.

Ordinarily the best time to prune old trees is just before growth starts in the spring, but, as this is generally a busy time on the farm, the work may be done in the late fall or winter. If the branches are not frozen when the pruning is done the injury will be but slight. If the trees are making a rank growth and are unfruitful, it will often be found advisable to delay the pruning until the last of May when, the trees being in leaf, they will be subjected to a check and the formation of fruit buds will be promoted.

SPRAYING FOR INSECTS AND FUNGI.

Our fruit trees are infested with a great variety of insect foes, some of which bite off and consume the leaves, while others feed on the fruit or branches; another large group of insects, which includes the plant lice and scales, suck the sap from the branches. They are especially troublesome in old orchards and, to make the process of renovation complete, steps must be taken to destroy them. Great damage is also done both to foliage and fruit by parasitic fungi, which reduce the leaf area and abstract the nourishment needed by the tree, as well as lessen the size and spoil the appearance of the fruit. Formerly the injury was ascribed to some unfavorable condition of soil or season, but although this may have much to do with the development of the disease, their parasitic nature is now generally recognized.

As the injury from these pests increased, the ingenuity of man served to find remedies for them. He has learned that nearly all chewing insects can be controlled by spraying with some material containing arsenic. Paris green has been used for this purpose, but white arsenic is now recognized as much cheaper and even more effectual. For the sucking insects kerosene emulsion and whale-oil soap have been the favorite remedies, but, during the past five years, have had to yield to the mechanical mixture of kerosene and water, applied with special pumps. This is easier to prepare and apply, considerably cheaper and even more effective.

In old orchards it does not pay to attempt to grow fruit without spraying also for the fungous diseases. The most effectual remedy is Bordeaux mixture, which has the important advantage of being applied at the same time with the arsenites, as well as of increasing their efficiency and lessening the liability of their injuring the foliage.

It is a good plan in the early spring to spray the trees with a strong solution of sulphate of copper, and then to use Bordeaux mixture and an arsenite just before the blossoms open. This should be repeated as soon as the petals have fallen, and, if either insects or fungous diseases are troublesome, another application should be made in two or three weeks. This will usually suffice to ward off the chewing insects and fungi, but if the varieties are especially subject to attack another application early in July will often be found profitable.

In the use of fungicides, we must remember that they are mainly preventives and that the best results will not be secured unless they are applied before the trees are attacked. By covering the green portions of the trees with a thin coating of some fungicide, we render them proof against the entrance of the germinating spores, but, if any parts of the plants have not been reached they are still vulnerable and

while the severity of the attack will have been lessened it will not have been entirely prevented. The importance of thoroughness in spraying should then not be overlooked.

For large trees, and especially if the area to be sprayed is extensive, one should have an easy working spray pump, mounted upon a tank that will hold eight or ten barrels. The material should be applied in a fine mist and, to carry it to the top of the trees, a spraying or extension rod is a necessity. It should be ten or twelve feet long and with the man standing upon the top of the tank, or if desired upon a platform still more elevated, the work can be thoroughly done.

As will be seen from the above, the treatment required for the renovation of the old orchard is practically the same as has been found by our most successful fruit growers needed for the best results in the handling of a young orchard, or one that is in its prime. While location, soil, or other conditions may often make it possible to dispense in whole or in part with some of the treatment recommended, in the majority of orchards none of them can be entirely neglected without danger of loss.

Cultivation, manuring and spraying may be said to be the tripod upon which all hope of success in fruit culture rests, and with judicious pruning will not only make our young orchards fruitful, but will enable us to so renovate our old trees as to insure profitable crops.

China is threatening to ruin the world's egg trade. She produces eggs all the year round at two and three cents a dozen, dips them in a solution of Chinese origin which preserves them indefinitely, and ships them to Australia to be retailed at six cents a dozen. It might be well for the powers in making terms with the empress dowager to wipe out the Chinese hen.

TRAP-LANTERNS AND MOTH-CATCHERS.

We give our readers expert testimony on BOTH sides of the much-mooted question, "Does a trap-lantern catch the codling moth?" We understand that some orchardists in this vicinity are going to test the Haseltine Moth-Catcher for themselves this season by placing and keeping one or two "Catchers" near certain trees and noting the effect on the fruit of those trees.

The extracts from the letters of Prof. Stedman and Mr. Haseltine are taken from the Western Fruit-Grower.

WHAT PROF. STEDMAN SAYS.

I have personally made three different tests of trap-lanterns in orchards, gardens and fields, in three different states, and ran some of the lanterns from early spring until late summer. A record of each day's catch was kept, so that there could be no mistake. These experiments were made with several different styles of trap-lanterns, and the experiment in this state included a lantern sent me by the inventor, and called Haseltine's Moth-Catcher. These experiments were made, as all experiment station experiments are conducted, with a view to determine the facts, and were not influenced by theories or prejudice.

I find that the following injurious insects, that are claimed to be caught, are either not caught at all or are caught in such rare cases as only to be accidents: Codling moth, potato beetles, plum curculio, gouger, flat and round-headed apple-tree borers, peach tree borers, tobacco worm moths, tomato worm moths, squash bug. The following injurious insects are caught by trap-lanterns: Corn worm moth or boll worm moth, cut worm moths, June or May bugs (beetles), tent caterpillar moth, pickle worm moth, army worm moth.

On the other hand, a great many species of Ichneumon flies, which are our most beneficial insects, were caught in

immense numbers, and outnumbered all other species in my traps. These insects sting and lay eggs in or upon the bodies of injurious and other insects, and their larva prey upon their tissues and destroy them. It is in this way that many injurious insects are kept within bounds; and these Ichneumon flies and other parasitic insects do vastly more good than all trap-lanterns and sprays combined.

Any person can see from the above facts that a trap-lantern is of no value in an orchard, but on the other hand is a great injury, because of the immense number of parasites it kills. A trap-lantern is of great value in its place, and one of these places in Missouri is in the corn field at the time the corn tassels out.

I had five trap-lanterns (one of them being Haseltine's Moth-Catcher) in an orchard that was badly infested with codling moths, and kept them going for one hundred consecutive nights, beginning when the trees bloomed out, and as a result of all this, I caught only two codling moths. Is it not a little strange that they who are not entomologists catch these codling moths, while entomologists all fail? It seems to me the secret of the whole trouble lies in the mistaken identity of the codling moth, since there are a great number of similar looking but harmless moths that are caught by these traps.

J. M. STEDMAN,
Entomologist Experiment Station, Columbia, Mo.

WHAT MR. HASELTINE SAYS.

Some professors have theories that the codling moth cannot be caught in the trap, simply because the open lights and lanterns have failed to catch many of them, but theories have always had to give way to demonstrated facts. I have had about thirty years' experience in orcharding. My father, the Hon. Ira S. Haseltine, as a pioneer, planted 90 acres of orchard in 1869. For many years it was a source of revenue of from $3,000 to $5,000. Birds were plentiful

and the fruit was perfect and kept well. Other orchards were planted until the family owns over 2,000 acres in orchard. Birds were killed. The pests multiplied. We have tried spraying for years. We tried lights and lanterns in the orchards, with about the same results stated by the professors.

You can't catch pickerel with a pin hook. You must have the right kind of a hook. So you must have more than a light to successfully catch codling moths. The codling moths would approach the light, but usually dodge the flame after feeling the heat of the blaze. Something was necessary to "catch" the pests. Hence the reflectors, which served the double purpose to increase and multiply the light, also to prevent the insects from circling around the light. Being bright, but cold, the moths and beetles strike them and fall and are caught in the coal oil on the surface of the water in the vessel below.

We have hatched the codling moths from wormy apples. We know what they are. We know that we caught them. We know that in orchards where we used the moth-catchers we had perfect fruit, but the sprayed orchards by its side had a large per cent of wormy and bad fruit. My invention was tested by the best orchardists of Southwest Missouri last season and is a demonstrated success, not a theory or an experiment. It does catch the codling moth. It is better than spraying, as it destroys the parent of the worm and the fruit was made perfect where these traps were used. S. A. HASELTINE, Springfield, Mo.

LETTER FROM PROF. GOFF.

Madison, Wis., April 24, 1901.

Editor Wisconsin Horticulturist:—

I am in receipt of a letter from Prof. J. M. Stedman, State Entomologist of Missouri, from which I quote the following paragraph:

"I am receiving hundreds of letters from your state in

regard to a trap-lantern made in this state by a Mr. S. A. Haseltine and called the Haseltine Moth-Catcher. About a year ago I tested this trap and endorsed it for the corn or boll-worm moth only. * * He finally issued a circular stating that the trap will catch the codling moth, 'the insect that stings the fruit,' borers, plum curculio, potato beetles, tomato worm moth, etc., etc. and just below this absurd list states that it is 'Endorsed by Prof. Stedman of the Missouri Agricultural College,' omitting my letter entirely and making it appear that I endorse the trap for the entire list of absurdities, which is false, unjust, misleading and deceptive."

I have received at least two copies of an agricultural paper published in Missouri stamped on the wrapper "Marked copy" in which the "Marked" portion was the advertisement of this moth-catcher. It has been proved years ago that these so-called moth-traps catch very few injurious insects and are practically worthless for the curculio and codling moth. Readers of the Horticulturist who do not enjoy being swindled should steer clear of this class of humbugs.

E. S. GOFF.

Experiment Station, Madison, Wis.

THE FRUIT OUTLOOK IN WISCONSIN.

Reported for the Horticulturist.

West Salem—Prospects are not the best. Blossoms are out too early. Aitken plums in full bloom April 28; Ocheeda, Wyant and Rollingstone out May 1 and 2; May 4, Duchess and No. 20 in full bloom. I am fearful of frost later on. Season ten days too early. Mice were very destructive last winter. Plenty of blossoms for a good crop of fruit, barring frost. Steer clear of Winter Banana apple; grafts died last winter. Thermometer 85 degrees in the shade and 106 degrees in sun on May 3. Have put in

100 grafts on Virginia and Hibernal this spring. Trees leaved out the quickest I ever saw.—A. J. PHILIPS.

Fond du Lac—Strawberries in fine condition; everything not protected dead. Raspberries, except old plantations, look well. Apples show very few buds. Plums and cherries will blossom full. We need rain badly.—L. A. CARPENTER.

Ripon—Small fruits have come through the winter in excellent condition. Small acreage will be planted in this vicinity. Plums and cherries in full bloom and look healthy and vigorous. There will be no apples here. Pear trees are white with bloom. Southern strawberries are selling for twenty (20) cents for quart boxes; the stock looks poor and is quite tasteless. I wish you much success with the Horticulturist. It is certainly "MULTUM IN PARVO."—A. S. CROOKER.

Waupaca—I think this will be a good fruit season. There is considerable small fruit and fruit trees being planted. Price of strawberries, May 6, is 20 cts. per qt.—M. H. BURNHAM.

Lake Mills—Strawberries covered or uncovered came through all right and give big hope. Plum trees never so full of bloom. Cherries full, even where they bore heavily in 1900. Apricot's bloom killed by the winter. Peaches are O. K. Black raspberries wintered well. Red raspberries, new plantations suffered much less than old; all varieties killed back ½ to ⅔. Loudon seems least injured. Apples where not overburdened last year have plenty of bloom. There is a good deal of bloom in all, but when the trees bore heavily in 1900 we don't look for strength to hold the fruit. Plums—European, Japanese, hybrids and Americana—all full and wintered to the tips, even where they held the leaf all winter. Burbank, every spur is a bouquet of itself; 25 varieties of pears in perfect condition and nearly all fruiting.—GEO. J. KELLOGG.

Sturgeon Bay, Wis., May 4, 1901—Fruit prospects good as far as I know except raspberries have not wintered as well as usual, especially Cuthbert. Columbian so poor we will dig them out. Cherries and plums show lots of buds. Abundance plum very fine. No bloom here yet of any kind. Weather fine but cool. Strawberry planting general next week. Everyone busy. Some fruit growers have given winter spray to their fruit trees using blue vitriol alone at rate of 1 lb. to 25 gal. water. No southern strawberries on sale that I have seen but may be some in town. Shall plant a few more sweet cherry trees. Will probably have some this season and hope to be able to show some at Pan-American Exposition.—A. L. HATCH.

Maple Bluff Farm, Madison—The outlook for plums and cherries in our vicinity is very promising and judging from the bloom we are going to have more apples than is usual on an off year. Strawberries are rather backward owing to the dry weather for the past month. My red and black raspberry canes killed back badly last winter, but can't say as to my neighbors.—S. H. MARSHALL.

Janesville—So far as my knowledge of the fruit prospects for the coming season is concerned would say that all varieties of fruit trees are coming forward nicely, notwithstanding the unfavorable weather last fall for maturing the new growth of wood. Bud and blossom promise a fruitful season, barring other mishaps. Among small fruits the situation is not in all respects a flattering one, unless you happen to have the Loudon raspberry for your red raspberry or your plantation is favorably situated. Strawberries are promising at this date and so are most varieties of black caps. Currants and gooseberries are showing plenty of bloom for a good crop. Peach buds all dead, as usual, but think there will be Harmony peaches enough to go around with proper economy.—L. B. T. WINSLOW.

Oregon—Small fruit prospects good to date. Mature

apple trees that bore last year are mostly dormant this year, but young trees bid fair to bud and blossom at least. Much tree planting this spring.—W. L. AMES.

FOR THE HOUSEHOLD.

ESCALLOPED PIE-PLANT.

As a change from pie-plant pie try this: Butter a granite-ware pudding-dish; cover the bottom with a layer of bread-crumbs dried and rolled fine; on this put a layer about half an inch thick of sliced pie-plant, over which scatter a half cup of sugar; then another layer of crumbs followed by another layer of pie-plant and sugar; have top layer of crumbs dotted liberally with bits of butter. Pour into one side of the dish two or three tablespoons of water. Bake an hour, covering the dish the first half hour, then removing the cover to let brown. Serve hot with cream and sugar.

BAKED RHUBARB—Slice as much rhubarb as will be required, put it in an earthen dish, sprinkle it generously with sugar in layers. Bake slowly until soft; serve cold.

EDITOR'S NOTES.

The State Horticultural Society will start a new Experiment Orchard on Senator D. E. Riordan's farm north of Eagle River, Vilas County.

The American Association of Nurserymen will hold its Annual Convention at Niagara Falls, June 12, 13 and 14, 1901. Headquarters at Cataract House.

The American Pomological Society will hold its regular biennial session in Buffalo, N. Y., Sept. 12 and 13, 1901. We will give details later.

The Pan-American Exposition opened its gates to the public May 1, but owing to damage caused by the great

storm the formal opening ceremonies were deferred until May 20.

Dispatches from Grand Rapids are to the effect that forest fires raged the first week in May, partially destroying several cranberry marshes.

The blueberry crop in some sections of Wisconsin has been destroyed by forest fires.

We are happy to announce that our College of Agriculture is to have its much-needed new building. It will have a general audience room capable of seating several hundred people, besides a number of lecture rooms with adequate seating capacity; also a reading room and space for a good agricultural library.

No frost in Baraboo yet; the mercury fell to 30 degrees May 12, but clouds and wind kept frost at bay.