The Wisconsin horticulturist. Vol. VII, No. 10 December 1902

Wisconsin State Horticultural Society
[s.l.]: [s.n.], December 1902

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

De Sota Plum in Full Bloom.

The Wisconsin Horticulturist.

VOL. VII. DECEMBER, 1902. NO. 10.

I FEEL SO RICH ON CHRISTMAS DAY.

BY MARY REYNOLDS.

I DON'T know of another time in all the round of seasons
When a fellow feels so kind of rich as he does on Christmas Day,
When he feels so sort of generous if another fellow owes him,
An' would most as lief allow him clear till Doomsday to pay.

It isn't that you've got so much, most likely, in your wallet;
Nor yet it ain't the hay or oats or corn stored safe from harm;
It's only that you somehow feel just like you owned creation,
And as if all of creation was included in your farm.

On Christmas Day Maria Ann brings out her whitest linen,
And her willow-pattern china that's sure fit for any king;
And our children—them that's married as well as them that's single—
Come home and carry on and make the old house ring.

Some pay visits to the cellar where there's piles of winter apples,
And mounds of yellow pumpkins and heaps of "Early Rose";
Some go upstairs to chatter where the open fires are roaring
And the rooms are warm and cozy-like no matter how it blows.

Then after dinner, in the dusk, we all get 'round the fire,
A merry crowd you'd find it hard to match where'er you sought;
And Maria Ann sits by me an' the children gather 'round me,
An' I tell you what, my riches ain't the kind that can be bought.

An' when at last the talking an' the laughter grows more quiet,
I get the Bible down an' read the Bethlehem story through,
An' I speak about the precious Gift the Heavenly Father gave us,
How we have it every Christmas-tide, and every time it's new.

An' then I try to thank the Lord for all the things he gives us,
But my heart swells up and chokes me so the words are hard to say;
An' so you see there ain't no time in all the round of seasons
When I really feel one-half so rich as I do on Christmas Day.

A CHRISTMAS TREE FOR $1.00.

By Lucile W. Newbury.

The successful appearance of a Christmas tree does not necessarily depend upon a lavish outlay of money. One may prepare all the ornaments at home, and a very creditable Christmas tree be produced at the cost of a single dollar. Several sheets of glazed and tissue paper in two or three bright tints, a bottle of gilding, several balls of tinsel cord, some coarse Swiss muslin, one pound of English walnuts, two or three quarts of cranberries and a quantity of popcorn will be needed. In addition, collect pasteboard boxes of various sizes, colored pictures or picture cards, bits of worsted half a yard or more in length, odd lengths of bright embroidery silks, fragments of materials suitable for dolls' clothes, and as many wishbones as may have been saved from time to time through the year.

The large boxes should be broken up and the smooth pieces laid aside; those of smaller size may be covered with crepe, tissue or glazed paper, and decorated with pictures of flowers or birds. The larger pictures representing figures are first pasted upon the cardboard, then cut out. The paste used may be made as follows: Dissolve sufficient yellow dextrine in half a pint of boiling water to give it the consistency of cream, adding a pinch of borax. Swiss muslin may be made into rosettes and a figure pasted on the side of each. The rosettes may be finished with loops of tinsel cord or ribbon.

The popcorn, dyed in various tints or not, as desired, should be formed into long strings by means of a fine needle and thread, and with strings of cranberries, threaded in the same way, be gracefully looped from branch to branch of the tree.

The most difficult task will consist in transforming the wishbones into dolls. Make the heads of peanut shells. These, if carefully selected, will show possibilities in the way of faces, and many will be found to need only a few pen strokes to bring the features out. Some may be dressed as old ladies having plaid shawls about the shoulders, with old-fashioned bonnets shading their queer little faces; others as infants, and still others as old men; in fact, an

endless variaty may be originated. Other wishbones may be simply gilded and fastened to the tree by loops of embroidery silk or worsted.

After the walnuts have been opened and emptied of their contents aud gilded they may be glued together after inserting tinsel cord loops by which they may be attached to the Christmrs tree.

Crescents, stars and hearts may be cut from cardboard. These may be gilded or silvered, or covered with bright glazed paper on both sides, or a different may be used for each side. They also should be finished with tinsel cord, so that they may be easily hung upon the tree.

From the Swiss muslin cut stars, crescents, triangles, squares or diamonds; sew two of the same shape together by buttonholing them with bright silks, and use them as candy bags, running narrow ribbon through the top of each one.

Balls may be made from gilded empty eggshells. Paste a tinsel cord or narrow ribbon to each one by which to suspend them from the tree. Duck eggs are especially showy. Home-made cookies cut in the shape of animals with black currants for eyes will not come amiss.

Colored paper chains may be made by cutting paper into strips six inches long and three-quarters of an inch wide. Paste the ends of each strip together to form a ring; link the second strip through the first, paste its ends together, and so continue until you have a chain the desired length. Paper cornucopias may also be made for the nuts.

Balls of cotton covered with orange cheesecloth, or covers crocheted from orange worsted, will add a pleasing bit of color to the tree.

As a last touch, give the tree a liberal sprinkling of white cotton, pulled into flakes and sprinkled with gilt powder. Nearly all these ornaments may be saved for the next year's tree.

ROOT GRAFTING AND HOW TO DO IT.

A good deal of root grafting will be done during the winter months, and for those who intend doing some and are not clearly

posted on the methods, we give what Mr. H. E. Van Deman says in the Rural New Yorker:

"NOT A DIFFICULT JOB.—There are many country people who have some idea of how root grafting is done but who have never tried it nor seen others do it. Some may be anxious to put up a few apple grafts the coming winter and set them out next spring, for the purpose of growing a few trees for their own use, for apple trees are usually propagated in this way. It is usually better to let the nurserymen grow the trees and buy them ready for setting than to try to do such work on the farm; but as the operation is very simple and by no means costly, and it is very interesting as well, the necessary directions are given.

STOCKS AND SCIONS.—The first thing is to get the stocks or roots on which to graft. Some may think that any kind of apple roots will do, but this is a great mistake. Small roots dug up from large trees are of no value, because the scions will not unite with them, strange as it may seem. Large or No. 1 apple seedlings are the best, and those one year old are much better than two-year-olds. They cost from $4 to $5 per 1,000, and are mostly grown on new and very rich prairie land in Iowa and neighboring states, that they may make good growth and be free from all diseases. Such stocks are cheaper as well as better than the chance seedlings which may be dug up about the farm. Not a day should be lost in getting these roots bought and put into a very cold cellar or buried in the earth outside; but they must be protected so they will not be frozen and yet be accessible at any time in the winter. The scions should be cut as soon as possible, tied in bundles, securely labeled, and put in a similar place. Any temperature that will induce the slightest swelling of the buds on the stocks or scions will damage them.

THE TOOLS AND MATERIALS needed to do the work are very simple. Any small knife with a large handle and a thin and rather wide blade will do for making the grafts, provided it has good steel, for the cuts must be smooth and this requires a keen edge. A small shoe knife will serve the purpose well. A good supply of waxed thread, conveniently arranged, is all that is needed to complete the preparations. This is made by getting small "cotton twist," which is usually sold in skeins or hanks and at a low price.

It should be wound on large spools or into balls. I have used pieces of corncobs about five inches long instead of wooden spools, and they are about equally good. Wind on as much as they will hold. They should then be boiled in common grafting wax, which is made of one part of tallow, two parts beeswax or paraffin, and four parts of rosin, melted together. When the spools or balls are well saturated with the hot wax they should be taken out and put in any convenient place for future use.

THE GRAFTING can be done any time after all things are ready, as has just been directed, but not later than about the first of March. The grafts must have time to heal or knit together. It is done by nurserymen in grafting houses, which are merely rooms or shops where the grafters can be made comfortable and good light afforded. But any place of the kind, as a good cellar or workshop, is all right. I have put up many thousands of root grafts in my kitchen during the days when it was too cold to work outside, and on winter evenings, my wife and little boy doing the tying, counting, labeling and bundling. If the spools of thread are put overhead by some device that will allow them to uuroll easily, it will be handier than to have them on the table before the grafter. We are now ready to do the grafting. Get a bundle of roots and one of scions, put them on a table and take a comfortable seat before it. If they are dirty or gritty, which is probable, they must be washed thoroughly. After untying the first thing is to cut them into proper lengths. The scions should be from five to six inches long and cut so that a strong bud will be at the top end of each and every one. This is important, because the growth of the future tree depends on a good bud near the top of the scion. It is well to make a lot of such cuts or short scions at once and have them ready, with the butts all turned one way. The seedling stocks should be cut off at the collar. This is sometimes done by chopping them while they are yet in the bundle, but I think they are too much bruised by such rough treatment and prefer to use pruning shears or a sharp knife, cutting one at a time or by small handfuls. All the side branches and fibrous roots should be trimmed off closely, leaving only the main or central part. There is a difference of opinion among good nurserymen and fruit growers as to the

length of the piece of roots to be used for a single graft, but it is quite well proven that the upper five or six-inch cut of a good root is equal to or better than a longer one. I have found that cuts four inches are about as good as any other length. The lower or second and third cuts often make good grafts, but I prefer not to depend too much or not at all on them.

FITTING THE GRAFTS.—Having prepared a lot of roots ready for the next part of the operation we can proceed to cut and fit the two parts together, one by one, or trim a lot of one or booth before fitting them together, as may best suit the grafter. My preference to trim a pile of scions, and then, when I trim a root fit a scion to it. This saves one handling of the root, over the other way. To trim the parts ready for their union, take a scion in the left hand and with the knife make a long sloping cut at its butt end, about an inch and a quarter long, and tapering to a point. This cut must not be haggled, but long, straight and smooth. Without dropping it cut a slit half an inch long, parallel to the cut just made, forming a tongue, and with its point a little below the middle of the sloop. The top end of the root is cut exactly the same way.

JOINING.—Now they are ready to be joined. Try to put those together which are of equal size, so that they fit well in all their cut edges. When a number have been thus fitted together they are ready for tying. It is a very easy thing to tie root grafts, and almost any child can soon learn to do it well. Take the graft by the scion end, holding it firmly in the palm, with the spliced part between the thumb and fore finger. Take the waxed thread in the right hand and put the end of it under the left thumb, to hold it fast while the thread is passed around the graft and made to bind down the end. Wind the thread or roll the graft in the left hand so as to bind the cut surfaces firmly together; and snap off the thread without tying it. The wax on it will hold it in place. This completes the job. It is simple enough and easy to do, and after a little practice it can be done well and quickly. But careful work should never be sacrificed for speed. Pear roots and scions may be root-grafted the same as those of the apple, but for some reason that I do not fully understand and they are rarely used in this way by nurserymen. I have been told that they do not grow off so well,

but this has not been my experience with the few that I tried on one occasion.

STORING.—After a quantity are made tie them into bundles of about 100 each; they can then be packed in layers in boxes without tying. They should be carefully labeled with the name of the variety, and that without delay. Willow twigs are better for ties than strings, because they will not rot in the damp packing and allow the varieties to get mixed. The packing away until planting time is a very important and particular matter. Damp sawdust, wood mold and moss are all excellent packing material. Use an abundance of it, so the bundles or layers do not touch. It must be moist but not water-soaked. Put the boxes in a damp cool place, but where they will not freeze. See that rats do not dig into them nor that they are disturbed in any way until taken out and planted in nursery rows in early spring. A very cool cellar is a good place. I have buried the boxes in the earth when I had no cellar at command. They will soon callus or knit together like broken bones that have been set by a good surgeon.

PLANTING.—The ground should be rich, deeply plowed and finely pulverized. The graft should be set as early as it is possible to get the ground in good order, and eight inches apart in rows four feet apart. With a line and dibble set them firmly, with only two inches of their tops above the surface. Cultivate thoroughly until late summer. If all these things nave been well done, something useful will have been learned, a lot of cheap trees made on the farm, and perhaps some fun thrown in for good measure."

ISABELLA GRAPE.

In the November issue the Isabella was quoted as being one of the newer varieties of grapes. In looking up the record of the Isabella we find it was the head of the grape list for many years. It behaved badly for two or three years, showing signs of rot, but has not shown it to any extent now for the past twenty years. A correspondent in Farm Journal says: "Isabella is really a better grape than the Concord. It is sweeter and of finer flavor. It is an

enormous bearer, and I have seen no signs of rot for twenty years. It certainly surpases many of the new grapes.

W. P. Woodworth, of Monroe, Wis., says: I notice on page 7 and 8, November number, "Some of the newer varieties (grapes) that are being brought out and have given satisfaction are, Diana, Drummond, Isabella, Campbell, Early, McPike and Salem. About fifty five years ago, I saw many times, in the village of Sandbornton, N. H., a vigorous growing vine in fruits of the Isabella. It was called then, the "Sandbornton." It was the first native grape vine I had seen under cultivation.

I still have an impression, that it was the original vine, from which the vines afterwards called "Isabella" were propagated, though I cannot now yerify it.

It stood, I remember, in a naturally protected situation and had the additional protection of a high, tight, board fence, close to the trellis, on the north. It was a very vigorous, healthy vine and carried a full crop of fine clusters. I remember it perfectly well after all these years, probably because it was a wonder to me and I was always glad to have another look at its beautiful luxuriance, when I was kindly allowed the chance."

M. L. Taylor, Mt. Hope, Wis., says: Over fifty years ago I used to pick the Isabella from an old vine in Conneticut.

ANNUAL WINTER MEETING.

February 2-4, Madison, Wis.

Remember the dates and do not fail to attend. Bring someone with you. Joint session with the State Board of Agriculture and Wisconsin Experiment Station Alumni. Bring your fruit for exhibition. Write the Secretary for program and premium list.

GROWING AND MARKETING OF SMALL FRUITS.

J. L. HERBST, Sparta, Wis.

(Concluded from November number.)

Cultivation: Cultivation should begin immediately after setting. The imprint of the marker will be a guide for a while until your plants get started. As the strawberry bed is marked both ways you will be able to cultivate both ways and save much hoeing. The object of cultivation is two fold, namely to preserve moisture and destroy weeds. One of the most important problems which presents itself to the fruit grower is how can they best preserve the moisture in the soil. Many a crop has been reduced in its yield and even entirely lost because of the lack of sufficient moisture to bring it to maturity. Water is in the soil in three forms, as free, capillary or hydoscopic. The capillary water is the direct source of moisture for plants and it is this moisture which we should aim to obtain and preserve in the soil. The moisture of the soil is desseminated by the particles of which the soil is composed. The compact soils lose their moisture more quickly than those which are loose and porous. The particles of earth being more closely together permit the moisture to travel more quickly and as the tendency is to move to the surface it is evaporated as soon as reaching its limit, the surface of the soil. The soil should be compact about the roots of the plant so as to allow plenty of moisture at this point, but to avoid the capillary attraction of the moisture from reaching the surface, the soil is lossened and broken so as to present the moisture from reaching the surface and being evaporated,

The cultivation which to some seems only as weed killers act an important factor in preserving the moisture in the soil. A cultivation of the surface soil after a rain breaks off the capillary pores in the soil structure.

One of the newer implements which is coming into favor with the small fruit grower is the weeder. It has spring teeth similar to a common hay rake, but does not have any wheels. These spring teeth run right on the ground. If your strawberry plants were set deep enough you can go over the bed several times before the cul-

tivator will have to be used. This machine runs right over the plants but does not tear them out.

When cultivations begin nothing is better for the strawberry bed than the Planet Jr., or the fine diamond toothed cultivator. Cultivate as close as possible to the plant and as runners begin to start narrow up your cultivator. When you have the desired width of the matted row for fruiting, place behind on your cultivator a rolling colter on each side to keep your runners cut off. If you have not the colters, some knives can be made and fastened on to follow close to the hind teeth of your cultivator. The strawberry bed should be cultivated continually throughout the season and until frost comes. Hoeing should be given often to keep the rows free from weeds and to loosen the soil where the cultivator cannot reach. The triangular hoe is much better for this purpose than the common hoe. For close work around small plants and under over-lapping foliage and between the runners this hoe cannot be beat.

Do not allow plants to produce fruit the first year. Pick off all blossoms while hoeing and where a plant has failed to grow fill in with new plants as soon as the runners are well rooted. The new runners can also be turned in the direction of the vacant places.

A common practice has been with some growers to pull off the first runners as they appear. The reason they give for this is, that the new plant will be much stronger and will get established better in its new location. It is the nature of the strawberry plant to produce runners, and if the plant sends out runners as soon as it is well established, that plant is strong and vigorous, and the chances are that its runners will set plants that will be the same. We believe that it is easier to cut off the runners when we have the required width of a row than to pull off the runners at the start.

Some argue that the plants become to thick in the row if the first runners are let go. We have as yet found no year when our plants were too thick in the row, if the runners were cut off when we had the desired width.

As soon as the first general freeze up occurs the bed should be covered with a thin mulch of some kind, to protect the plants from the thawing and freezing weather. Use some mulch that is free from weed seeds if possible. Weeds are a bad thing in the straw-

berry bed, and these will surely come and be a detriment to the second year bed. We find marsh hay very good. Shredded corn stalks, sugar cane waste and pine boughs make good covering. Rye straw is good but will bother considerable the following season.

Remove the covering in the spring as soon as growth begins. it can be placed between the rows to act as a mulch and to protect the fruit from dirt. If the mulching was heavy enough it can be replaced over the rows in case of frost during the time of blossoming, but should be removed the following day to allow the blossoms to pollenize.

Renewing Old Strawberry Beds: When properly done the old strawberry bed can be renewed with but little time and labor. As soon as the fruit is picked go over the bed with a mower cutting close to the ground. If the foliage and mulching is very heavy it can be easily burned as it lays on the bed, but do this when there is a little wind so the fire will go over swiftly and not injure the roots of the plants. If you do not burn over, rake up with horse rake and carry off and burn as in doing so you burn any insects that may have collected. The rows should then be narrowed down to six or eight inches and this can be nicely done by use of a spading harrow or a small plow. In using the harrow remove the two outside and two center sets of knives and straddle the rows, going twice in the row. If the plow is used, plow a back-furrow between the rows, cutting them down to the desired width. Run over the bed at right angle to the rows, with a common drag, running backwards and forwards two or three times, leveling up and scratching the ground between the plants. When this is finished the bed can be cultivated and receive the same attention as the new bed.

Heavier cultivators can be used in the cane fruits. The soil should be kept stirred and free from weeds. Keep the soil loose about the new plant to allow the new growth to come up freely. The cane fruits being set further apart the distance between the rows can be utilized the first year by planting to some hoed crop. Potatoes, beans, and most all vegetables can be planted between the rows without any detriment to the new plants.

The first year do nothing to the cane fruits except the grape. The following year the new growth of the blackberry and black

raspberries should be pinched off when they attain the height of twelve to eighteen inches. By doing this you get much more bearing surface from the second growth of laterals. The canes will stand up much better. Especially will this be true of the more rank and vigorous growers.

The second year's growth will be large enough to produce a considerable amount of fruit the next season, and in this latitude should be given winter protection. This is done by laying the canes over and covering with dirt. The burying process is easily done when once understood. If your rows run north and south begin at the north end of the row. Remove some of the dirt from the north side of the hill. Gather the branches together at the top and gently pull up and over at the same time. While this is being done the man with the fork should insert on the south side of the hill and press forward bending the root. Get the cane down as flat as possible without breaking. When done, cover lightly with dirt. The next hill should be put down the same with the tops of the cane laying close to the butts of the one previously put down. In this manner you save covering and they will be removed much more easily in the spring. In the spring when removed from the covering, trim out all dead and broken branches and cut back all dead ends. New growth will again come up from the roots and these are to be pinched off. Immediately after fruiting trim out the old wood and burn up to destroy any disease that may have come on them.

Red raspberries should be treated the same as the above with the exception of the nipping process. We find that it is not necessary to nip the red raspberry, but they should always be cut back in the spring when they are removed from their winter quarters.

Currants and gooseberries will need an occasional trimming. This should be done in the fall or spring of the year. Keep the bush open in the center to allow a free circulation of air. Allow two or three new shoots to grow each year and remove the old canes as soon as they show signs of weakness. Cut out all the dead canes and burn as they generally are affected with the borer.

The first year the grape should be cut back to within two or three eyes of the ground. Do not be in too much of a hurry to

get vines. Allow but two canes to grow the second year and trim these back in the fall. When the vine becomes fully established in the soil more growth can be allowed to remain. The grape will stand a severe trimming and as a rule is not to severely done. When only a few vines are had it is best to tie to stakes, but when planted in rows of any length and any number, a trelis made of wire will answer best.

Mulchings of leaves, coarse stable manure. or any refuse is beneficial to all the cane bearing fruits and grapes, and should be used whenever to be had.

Picking and Marketing: This phase of the business requires a good deal of attention. To put up our fruit in neat and attractive shape and place on the market in a salable condition is one of the hardest problems for the fruit grower to solve.

At the present time when so many are in the business, the one who receives the highest price for his goods is one whose fruit is put up in clean packages and in neat and attractive shape. Begin at picking time and watch every little detail in the handling of fruit through the various stages and your reward will be better prices and quicker returns. The pickers should be given their instructions before starting in. We find the following system very satisfactory and is being used by some of the leading fruit growers in this section. Each picker is given a number when he or she begins work and a pickers' crate holding six quart boxes with a corresponding number, and this picker goes by this number throughout the season. When she has picked the six boxes full she calls her number and it is taken from her by an attendant who removes the boxes filled and replaces with empty boxes and returned to her. She is given her check for it and begins on her empty boxes. The fruit is taken to a table which can be moved from one part of the field to the other. The person at the table examines these pickers' crates and when one of them is brought in that shows neglect on the part of the picker her number is taken down and reported to the foreman, who either remedies the trouble or discharges the picker.

All the small fruits for shipment should be picked rather on the green order. Do not understand too green, but at the stage just before ripeness. They handle much better and stand a shipment better

than ripe fruit. The strawberry should be picked with the calyx and short stem as they hold up much better this way. If possible put one variety by itself. or if two varieties are nearly alike in color and shape, they can be picked together in one box. But light and dark varieties no not look well when placed together. Small interior over ripe specimens and nubbins should be thrown out as this spoils the sale of the balance. The boxes should be well filled and placed in the crates to fit tight so there will be no shaking about as the jarring will bruise them more or less in transit.

The picker's case we use, can be made of the material from which the shipping crates are made. Take those pieces which form the end of the crate and saw through the middle. This one end piece will make two which can be used for the ends of the picker's case. The cover can be used for the bottom and sides of the shipping crates can be split in the middle and used for the sides of the picker's case. Use a piece of barrel hoop for a handle fastening to each end of the crate. This size will hold just six quart boxes, about the right number for each picker to carry conveniently. In strawberries this crate should be covered with a flap of canvass to protect the fruit from sun and wind. When used for the cane fruits this cover can be removed and crates set in shade of bushes.

Our pickers are paid one and one-quarter cent per quart during the season, for strawberries, gooseberries, blackberries and currants, and at the end of the season if they have remained throughout the entire season they are paid one-quarter of a cent for each quart picked the entire season which will make one and one-half cent for each quart picked. For red and black raspberries we pay one cent a pint.

The portable table mentioned is easily made. The table itself is made about fourteen feet long. It is made out of 2x4 used for the legs at the two ends and center. The top is made of common inch boards a foot wide and can be made either two or three boards wide. About a foot from the bottom another two or three boards can be fitted so that you will have a double shelf on which to place the crates as they are filled. The standards on which your top is to rest should be made of 2x4 about seven feet long, and with proper braces on three sides at the bottom to rest on the ground.

At the top of this standard cut out a notch deep enough to allow the center piece of the top to fit in. The top can be made by using a 2x4 for the center piece which fits in the two standards. The two side and end pieces of the top to be made of four inch batting and a piece of the same material across the center to stiffen the frame. This frame or top can be then covered with a canvas. The canvas should be large enough to drop over the sides of the cover, to give ample shade to the fruit which sets on the table. These tables can be taken apart and moved to other parts of the field as the picking progresses.

Covers should be placed on the crates as soon as filled and these should fit evenly all around. If corners of the covers over lap or cover is too wide for the crate they are caught in handling and broken off, permitting the fruit to roll out and getting mashed on other crates, making an unsightly looking package, which spoils the sale.

Strawberries, blackberries, gooseberries and currants, should be picked in quart boxes while red and blackberries stand shipments better in pints. Currants and gooseberries bring better returns when shipped in the green state, at least this has been our experience. For the past few years the market has been rather dull on gooseberries and currants and we would not advise the growing of them too extensively unless you have an exceptionally good market to send them to.

Our seasons are too short and the large quantity of grapes that are shipped into the northwest with the price so low, it would hardly be advisable to grow them very extensively, although in some localities they are being raised on an extensive scale. These are generally put up in baskuts too well known to need a description.

Our small fruits should be placed upon the market as soon as possible after picking. None should be allowed to stand over night as in most cases they become sour and mouldy on reaching their destination. Ship by the most direct route and avoid transfers if possible. Do not consign too much to any one place. Let them have rather too few than too many. The price will be better and demand greater. If you intend sending to a commission merchant consign to one who makes this his speciality and one you know to be honest. We have some honest and some dishonest commission

merchants, the same as dealers in other lines of business. Where you have once found a good place to consign, stay by them. Don't ship one day to one party and another day to another party. They become acquainted with your fruit, know what to expect and can place their orders accordingly. Treat the commission man right and he will do the same with you.

SUMMARY.

First—Decide that you will succeed in the undertaking.

Second—Location, as regards to soil, expense, distance from market and securing the required labor.

Third—Varieties. Planting those varieties which are in most demand, and those we know will sell on the market.

Fourth—Preparation of soil to receive the plants.

Fifth—The proper setting of the plants to insure quick start.

Sixth—Cultivations to preserve moisture and destroy weeds, and protecting in those sections where winter protection is necessary.

Seventh—Picking and marketing. Fruit to be gathered by careful and painstaking labor, fruit to be of one degree of ripeness, and placed in clean, neat and attractive shape. Packages to be sent to its destination by the most direct route and as soon as possible after gathered.

FLOWERS FOR WINTER.

A. K. Bush.

I am quite sure everybody enjoys flowers blooming in the home during the long cold winter months. The forehanded independent farmers of the Northwest supply their families with an abundance of good things to eat and wear and they can well afford to do so, because of their prosperous condition due in part to the rapid increase in value of their possessions, real and personal.

Every larger village and city have their greenhouses where a large variety of potted plants are constantly in bloom. These are on sale at yery reasonable prices. Now I would suggest to the young men, who are usually very generous to their sweethearts, to take them a nice blooming plant to leave in the home as an expression of their unspoken feelings, instead of a box of sweatmeats, which are soon devoured and may result in a sleepless night caused by toothache or indigestion from eating the same. The city fellows can have the plants delivered, with their best wishes, direct by the growers, but the boys in the country must go with them which, I can assure them. will be no unpleasant task. With an established habit, while young, plants in bloom will be regarded one of the best gifts for the wife and children in after years.

When we see the caskets and graves of our departed friends covered with costly designs worked with flowers into suggestive em blems of the past and future, we feel that the investment is not a waste of money, but, in part misappropriated. Possibly the association of a few more flowers in the home as gifts from loving friends would have delayed for years the need of the costly cut flowers for the funeral service. We live only a few years, we shall be dead a long time, hence. let us use flowers for the benefit and good of our friends, when there can be a mutual enjoyment and not so much for show.—Northwestern Agriculturist.

T. H. CHAPPLE'S LIST OF APPLES ADAPTED TO WISCONSIN. LOCATION, OREGON.

Twenty varieties as follows: Louise, Dominion Winter, Salome, very late winter, Seek no Further, Murphy Blush, Gano, late winter, Dick's Seedling, Pittsfield Stripe, Custer Golden Sweet, late winter, Wolf River, McMahon White, Transparent, Lowland Raspberry, Red Champion, large September, Grandmother, same season, Duchess, Fall Orange, Ramsdell Sweet, fall, Prolific Sweet, early fall, good, Utter's Red.

Ten Varieties—* Louise, Dominion Winter, Dick's Seedling, * Salome, Custer Golden Sweet, * Murphy's Blush, * Babbitt, * Aiken, *Johnson, a Waupaca seedling. Those marked with star are recommended for southern and middle sections of the state.

Five best seedlings—Pittsfield Stripe, Walworth Seedling, large, Forest Greening, good, Prichard, large winter, Munger, new, very fine, large winter seedling.

For early and late fall—Fall Orange, Wealthy, Longfield, Cross, Ramsdell Sweet, McMahon White, Golden White, Early Fall, Wolf River, Prolific Sweet, and Jersey Pippin.

A. L. KELLER'S LIST OF APPLES ADAPTED TO WISCONSIN. LOCATION, REEDSBURG.

Twenty varieties as follows: Wealthy, Duchess, Willow Twig, Wolf River, Alexander, Red Astrachan, Yellow Transparent, Red Transparent, Tetofsky, McMahon White, N. W. Greening, Scots Winter, Hibernal, Utter, Red Annis. Fameuse, Newell's Winter, Gettman, Maiden Blush and Longfield.

Ten varieties, Wealthy, Duchess, Willow Twig, Red Astrachan, Yellow Transparent, Red Transparent, McMahon White, N. W. Greening, Hibernal and Longfield.

These are the varieties Mr. Kleeber considers adapted to Wisconsin according as they stand in his own orchard.

J. L. SCHULTZ'S LIST ADAPTED TO WISCONSIN. LOCATION, LAKE MILLS.

* Yellow Transparent, * Duchess, Red Astrachan, Red June, Fall Orange, *Snow, Pumpkin Sweet, Jeffries, * Wealthy, * Mc-

Mahon, Utter, Longfield, * N. W. Greening, * Seek no Further, * W. Banana, Salome, Yellow Twig, Scotts Winter, * Walbridge and * Pewaukee.

Those marked with star include the list of ten adaped to the state. His five acre orchard was planted from five to seven years ago. Many trees have been winter killed by the recent hard winters and dry summers. He has planted liberally of new varieties, so that their hardiness cannot be determined as yet. He has but one of the old trees left that was planted forty to fifty years ago and that is Pumpkin Sweet. It has even out lived Seek no Further on his ground.

H. S. Hager, of Hickory, giver his list as follows: Best twenty, * N. W. Greening, * Wealthy, * Wolf River, * McMahon, * Duchess, * Pewaukee, Anisim, Hibernal, Hass, * Longfield, Tallman, * Fall Orange, Alexander, Okebena, Red Astrakan, Switzer, Transparent, * Ben Davis, * Scott's Winter. Patten's Greening.

Those marked with star are his list of ten adapted to the state.

PLANT BREEDING.

Plant breeding is in its earliest infancy. Its possibilities, and even its fundamental principles, are understood by but few. In the past it has been mostly dabling with tremendous forces which have been only partly appreciated, and has yet to approach the precision which we expect in the handling of steam or electricity; these silent forces embodied in plant life have yet a part to play in the regeneration of the race which, by comparison, will dwarf into significance the services which steam and electricity have so far given. Even unconscious or half conscious plant breeding has been one of the greatest forces in the elevation of the race. The chemist and the mechanic have, so to speak, domesticated some of the forces of Nature, but the plant breeder is now learning to guide even the creative forces into new and useful channels. This knowledge is a most priceless legacy, making clear the way for some of the greatest benefits which man has ever received from any source by the study of Nature.

The vast possibilities of plant breeding can hardly be estimated. It would not be difficult for one man to breed a new rye, wheat, barley, oats or rice which would produce one grain more to each head, or a corn which would produce an extra kernel to each ear, another potato to each plant, or an apple, plum, orange or nut to each tree. What would be the result? In five staples only in the United States alone the inexhaustible forces of Nature would produce annually without effort and without cost: 5,200,000 extra bushels of corn; 15,000,000 extra bushels of wheat; 20,000,000 extra bushels of oats; 1,500,000 extra bushels of barley; 21,000,000 extra bushels of potatoes.

But these vast possibilities are not alone for one year, or for our own time or race, but are beneficent legacies for every man, woman or child who shall ever inhabit the earth. And who can estimate the elevating and refining influences and moral value of flowers with all their graceful forms and bewitching shades and combinations of color and exquisitely varied perfumes? These silent influences are unconsciously felt even by those who do not appreciate them consciously, and thus will better and still better fruits, nuts, grains and flowers will the earth be transformed and man's thoughts turned from the base destructive forces into the nobler productive ones, which will lift him to higher planes of action toward that happy day when man shall offer his brother man not bullets and bayonets, but richer grains, better fruits and fairer flowers.

Cultivation and care may help plants to do better work temporarily, but by breeding plants may be brought into existence which will do better work always, in all places and for all time. Plants are to be produced which will perform their appointed work better, quicker and with the utmost precision.

Science sees better grains, nuts, fruits and vegetables, all in new forms, sizes, colors, and flavors, with more nutrients and less waste, and with every injurious and poisonous quality eliminated, and with power to resist sun, wind, rain, frost and destructive fungus and insect pests; fruits without stones, seeds or spines; better fibre, coffee, tea, spice, rubber, oil, paper and timber trees, and sugar, starch, color and perfume plants. Every one of these and ten thousand more are within the reach of the most ordinary skill in plant breeding.—Luther Burbank, in Practical Fruit Grower.

THE NATURE OF PLANT FOOD.

S. P. Fox.

So much has been written and spoken on the subject of plant food and its various forms that it seems needless to publish any thing more; but it is noticeable from the many questions asked of the farm papers and at institutes that there still seems to be a general lack of understanding of the matter among farmers. Before going into the subject it is, perhaps, well to remark that on this, as on all other matters of vital importance to profitable farming, the planter must do some thinking for himself.

Printed or spoken words cannot grow crops, and at best we can only give the general principles, which the reader must apply to his local condition.

Plant food is an expression used to name that substance or substances which promotes the growth of plants and which is found in manures of all kinds, commercial fertilizers and chemical manures.

There is a difference in manures—say farmyard manures, for example. Some are very good, others seem to have little power to make plants grow. Chemists, in studying this subject found that plants need for their very life many substances, though those substances make up a very small proportion of the actual material of the plants.

Except four of these needed substances, all are found in ordinary soils to the unlimited needs of crops.

The four liable to become so deficient as to cause crop failure are nitrogen, potash and phosphoric acids and lime. Lime very rarely becomes actually deficient to the extent of hindering plant growth, so that, from a popular point of view, only the first three require the serious attention of farmers.

It is not therefore, the mass of decaying vegetable matter in farm yard manures that makes plants grow, but certain quantities of nitrogen, potash and phosphoric acid contained in this decaying vegetable matter. This point was well established before chemical fertilizers appeared on the market. As a few farms make enough farmyard manures to cover the losses due to cropping, for farming would not be profitable unless there are sale crops, scientific men began to investigate other materials which also contained the plant food elements.

The result was that it was discovered that all crude materials containing nitrogen, potash and phosphoric acid, or any one or two of them, was available as plant food.

Crops can use the potash, for example, from the German potash salts quite as freely as the potash in farmyard manures; in fact, the German potash salts are found to be more readily available in the uses of plants than manure. In like manner the crude phosphate rock has been converted into available phosphoric acid, and bones and tankage containing bones, make a source of phosphoric acid if anything superior to that in farmyard manure. Also the nitrogen in nitrate of soda, dried blood, tankage, cotton seed meal, fish scrap, etc, has been found fully equal to the nitrogen in farmyard manures

These facts, once made clear, quickly lead to the establishment. of what is now known as the fertilizer industry.

It is not enough, by any means, to rest here. We know that plant food is three certain elements, and we know they are contained in various materials. We must also learn that plants require all three of them, and in certain pretty definate quantities. This is one advantage of farmyard manures, they contain all three of the plant food elements and make what is called a complete manure. The commercial or chemical fertilizer materials rarely contain more than two of the elements, and generally only one of them. Hence, by themselves they are useless, for however liberally any one or any two of the plant food elements may be used, plants cannot grow unless the third element is added. If there is present in the soil, for example, plant food nitrogen and phosphoric acid for a full crop but only enough potash for half a crop, only a half crop can be made. This condition is met by the mixture of various fertilizer materials so adjusted that the resulting mixture contains the three elements in the proportions needed by the crop to be grown.

This is the way commercial fertilizers are made. Now we know what plant food is, and what plants must have it in certain combinations; but we are not all agreed as to what these combinations are. On this point there seems to be no agreement at all, and the farmer must here use his own judgment. In the first place, there is the general composition of farm yard manures, which is about one pound of nitrogen to one pound of potash and a half pound of phosphoric acid. Next, there is the chemical composition of crops, which may be obtained of any agricultural experiment station. They seem to be about all the guides we have, and as such must be studied by farmers.—National Fruit Grower.

BEAUTIFUL FRUITS AND FLOWERS.

Were a Feature at the Annual State Horticultural Meeting at Hart.

The thirty-first annual meeting of the Michigan State Horticultural Society at Hart this week was largely attended and the fine program was much enjoyed. The display of fruit and flowers has seldom been equaled. Nearly 200 plates of fruit were shown, apples of the highest perfection forming the chief exhibit. The Fennville Herald's exhibit was much praised and included 59 plates of apples, with a carrier of H. O. Peterson's Enhance strawberry plants, full of large second crop berries. Among those who contributed to this exhibit were J. P. Wade, Edward Hutchins, Harry Middleton, P. M. Hendrickson and Kingsley & Bassett. The agricultural college showed over 60 plates and Benton Gebhart, H. S. Newton and James Brassington sustained the reputation of Oceana county by their showing of perfect fruit. Flowers, grains and grasses added much to the exhibit. The election of officers resulted in the unanimous choice of the following: President, C. F. Hale of Shelby; secretary, C. E. Bassett, Fennville; treasurer, Asa W. Slayton, Grand Rapids

FRUITS AND FLOWERS.

At the Minnesota State Horticultural Society.

T. E. Loope, Eureka, our delegate to the Minnesota State Meeting gives a few notes of the convention. "The Minnesota State Horticultural Meet was composed largely of "Seedling Apple Cranks." The Seedling exhibit was a wonder in the number and variety of the plates. The enthusiasm of the people in their determined search for the $1,000 apple was a beautiful thing to contemplate. The finest Seedling in my opinion was exhibited by our Winona friend, Frank Yahnke. It comes close to the $1,000 call.

The attendance was good, all parts of the state being represented. The society is a unit on most matters of policy. At the banquet which was a success every way, I responded to the toast, "A Seedling Crank, "The Mississippi is no Barrier to Such as He." I had a fine time and enjoyed myself. Geo. J. Kellogg and A. J. Philips also represented Wisconsin.

The forty seventh annual convention of the Illinois State Horticultural Society was held at Urbana, Dec. 17–18 and was a grand success. W. S. Perrine of Centralia read a paper on the "Cultivation and Care of Orchards." In the afternoon T. J. Burrill of the University of Illinois gave an address on "Experiments in Spraying for Bitter Rot." "The Peach, Cultivating and Pruning" was discussed by H. L. Doan of Jacksonville. In the evening J. L. Hartman of Dixon, read a paper on "The Farm Garden." James Handley of Quincy and Prof. John Craig of Cornell university also spoke.