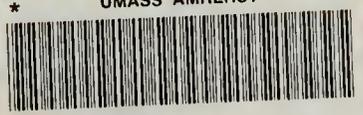
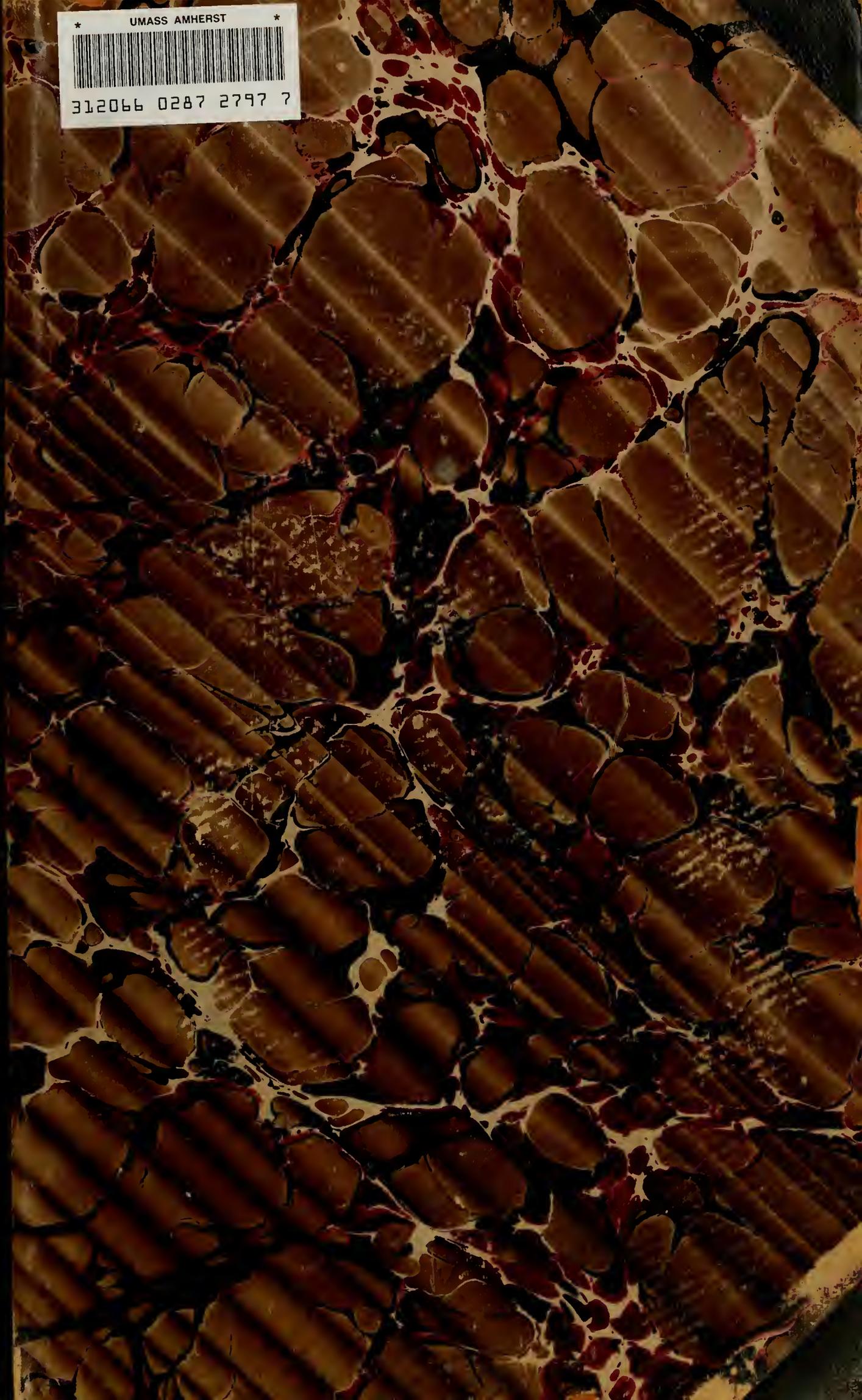


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The groves were God's first temples. Ere man learned  
To hew the shaft, and lay the architrave,  
And spread the roof above them—ere he framed  
The lofty vault, to gather and roll back  
The sound of anthems, in the darkling wood,  
Amidst the cool and silence, he knelt down  
And offered to the Mightiest solemn thanks and supplication.

—Bryant.

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# POPULAR GARDENING.

FOR TOWN AND COUNTRY.

## VOLUME II.

Now Hickories glimmer with fragile gold,  
And lurid colors the Maples hold.  
To the waiting forests all hues are brought  
On a sylvan canvas in silence wrought!  
No wonder it looms like a pageant rare,  
For Autumn, the artist, is working there.

### Treating Young Trees for Speedy Results.

Let the idea that one has long to wait for fruit or shade, after planting the trees, be at once dispelled. It is a wrong notion founded on the many illustrations of bad planting to be seen everywhere—trees set out but not allowed to go ahead, because of ill-treatment if not outright starvation.

We desire to show, from some actual examples, that there is no need to wait long for results, if the planting and cultivation is right. In one instance that we recall a Bartlett Pear tree gave a peck of superb fruit in 2 years from planting. On the same grounds Apple trees that had been planted 4 years averaged a bushel of fruit each the following autumn. Peach trees the third summer bore 3 pecks each, and Grape vines of the same time of planting averaged 8 pounds of fruit, and that after thinning some out to prevent over-bearing.

In ornamental trees results in their way quite as striking follow on good treatment. From our window we can see Elms twelve years planted that are 30 feet high, 20 feet broad, with trunks 1 foot through. Some 8 years planted 19 feet high and 15 feet across the top. Sugar Maples that were mere nursery trees 8 years ago, now are 16 feet high and 10 feet broad. A White Poplar of the same age is 30 feet high and 25 feet broad. Austrian Pines planted at the same time are from 12 to 15 feet high and nearly as broad at the base.

The true secret of such results is careful planting of thrifty young trees in good soil and then decent treatment after. The treatment in the instances adduced was in no wise extravagant, having been not beyond that which every good farmer gives to Carrots, Potatoes and other cultivated crops. No farmer would look for a crop if

he planted and tilled as carelessly as does the average planter of trees.

Plant well, in a good deep under-drained soil. For years after, keep the soil over the roots well tilled, or in the case of shade trees, mulched and watered in dry times, and the planter can easily equal, if not exceed, such figures as have been given. In case the natural soil is poor, remove it to a depth of 20 inches and some 4 feet across where every tree is to come, replacing the same with surface loam from a cultivated lot or field.

### The Fruit from Overhanging Trees—Who Owns it?

The question whether fruit that falls on one's land from a tree on the line or beyond it belongs to such a person is a common one. There has been much discussion over it, with some contradictory judgments, but the rules are now pretty well established.

In the case of a tree growing on the line, between adjoining properties so that parts of the actual body stand on each, then the fruit is to be equitably divided between the owners, and neither one can cut the tree without the consent of the other.

If the stem of the tree stands wholly within the boundary line of one owner, even if the roots extend and grow into the land of his neighbor and derives nourishment therefrom, the whole tree with its product belongs to the owner on whose land it stands, and none to the neighbor. The neighbor cannot pick it for himself, nor interfere with the picking by the owner so long as the latter remains in the tree or on the fence which divides the property.

In such a case, the neighbor may forbid the owner to come on the soil on the other side of the line to gather the fruit, and all the fruit which falls without violence to the ground on that side may thus become the property of the neighbor. [In some States this matter as to the ownership of such fallen fruit is still unsettled, and the owner would probably have an implied license in law to enter and gather the fruit, if possible without any damage to his neighbor.] The neigh-

bor is also allowed to cut off the branches of such a tree close to its line, and he may dig down and cut the roots of the tree square with his line if he so elects.

When the tree stands on the line, as referred to, neither owner is at liberty to cut away the part which extends into his land, if he thereby injures the common property.

### A Five Dollar Conservatory.

BY "SISTER GRACIOUS."

We moved into a very small house with a small sitting-room in it. Plants being a necessity but money scarce, I applied the inventive talent I possessed to providing a place for them. The sitting-room can boast a large bay window on its sunny side, and here for the plants.

First, the inside blinds were taken off and carefully stored away. A carpenter was called in and he made a broad shelf that fitted the whole length of the bay. It came up as high as the lower part of the window, and was fitted with rollers so that on cold nights it could be pulled into the room.

Several pairs of iron supports, bought at the hardware store for twenty cents a pair, were put up to support three shelves fitted into the bay half way up the window. I also have 8 swinging brackets for single plants; they are plain and cost ten cents each.

There should be very little ornamentation about these things or the hanging baskets or pots. If the plants are flourishing that is attraction enough. The prettiest effect I ever saw in a plant basket was made from a discarded egg basket. The plants wound around the handle and draped it all about. The old brown basket brought out the colors beautifully. I have 3 of them now.

Near the ceiling I have hooks to which strings run from brackets on each side of the window, which support a Cobaea Scandens on one side, a German Ivy on the other. They are now racing to meet each other at the top, and pretty soon will tie themselves into a true lovers' knot.

Over this window is the text "O ye green things upon earth, bless ye the Lord."

### The Spring Garden of Holland -Bulbs.

The garden that is without an abundance of spring flowers of the Tulip, Hyacinth, Daffodil and Crocus class is far from being complete. And yet throughout our land there are many gardens, some of considerable pretense in the way of costly summer bedding, that wholly lack these sweet early flowers. The old-fashioned gardens of our mothers are better off even, for here, if anywhere, may usually be seen plenty of early bulbous flowers. If the improved varieties



GROUP OF DOUBLE HYACINTHS.

said of their "running out," if the ground is made very rich with old manure and leaf mold from the woods there will be but little cause for complaint here. Along with plenty of enriching material it is well to add some portion of sand to any soil for bulbs that may be deficient in this element.

In planting Dutch bulbs there is more danger of planting not deep enough than too deep. For the larger kinds, such as Tulips, Hyacinths, Narcissuses and Jonquils, to be buried beneath five inches of soil is none too much, while small kinds, like Crocuses and Snowdrops, should be covered two inches deep at least. For the former sized ones a good distance apart for the bulbs is from six to eight inches, while the latter may be put at from four to six inches apart.

### Some Principles Applied to Effective Arrangement.

The pleasing lawn scene shown opposite does not depend upon any fanciful conceptions of the artist for fine effect; its very naturalness is its beauty. It is just such a life-like scene as it would be possible to have in any fair-sized garden. It will bear close study from all contemplative planters.

But that our readers who possess only small lawns may not attribute the charm of this view mainly to ample area, we desire to draw attention to one fact: It is that such garden beauty is dependent more upon correctness of principles in the planting, than to largeness of area. The principles which governed the planting of the garden here shown are applicable to lawns of any size, save perhaps to the very smallest town plats.

The main object of this article is to consider the principles referred to for the benefit of those who may desire to go and plant likewise. First let us notice a negative but very important principle, as set forth in the absence of trees and large growths in the foreground of our illustration. Without such an open area centrally in a grass plat one may plant in vain for securing anything like the repose and breadth, which is a chief characteristic of the charming scene here portrayed. With the open area secured we hold the key to the finest effects possible from planting ornamental trees, no matter what may be the size of the lawn treated. This is a fundamental principle in all successful natural arrangements of this kind.

may be absent, this lack is often made up by the abundance of what there are, delighting the eye and nose in the merry springtime.

But why should any garden lack an abundance of the best Holland bulbs? The lover of flowers can invest no money that will bring better returns than for that laid out in these. Bulbs of a superior quality, imported from the nurseries in Holland, are now offered at a moderate price by scores of reliable dealers, who will be glad to deliver them post-paid to any postoffice in the land, however remote. These once in the ground, will continue in most cases to thrive and throw off bloom every spring, with almost no outlay of trouble whatever to the grower.

The season of planting the Holland bulbs is now at hand, and to continue until the ground freezes, our own choice of time being to set them as early in this month as possible. The bulbs once in the soil, soon swell, and in the course of a few weeks, if unhindered by frost, throw out roots. Where the planting is done early the roots have a chance to reach some length before winter, with the result of giving a stronger growth and finer flowers the following spring than if the planting be done late.

The spring-flowering bulbs will repay the attention that provides a rich, open soil for them to grow in. This is not so much needed to secure fine bloom from the bulbs that are newly set (for the bulbs afford the nourishment needed by their own flowers in the main), but to insure a strong growth in the young bulbs springing from the old ones, and needed for future bloom. Take the Hyacinth, about which one hears a good deal

stand of grass under and between the trees. The trees (in small places, mostly shrubs), too, have the benefit of ample space for fine individual development.

Still another feature of note in this garden view is found in the principle which provides for heavy groups of trees in the background. To show the importance of this matter, especially in large grounds, it is only necessary to imagine this part out of the scene, with a fence and open meadow in its place. These heavy background masses of verdure and wood are of importance in giving a great degree of strength to any work of this kind.



Double White  
Narcissus.

Lastly, one should notice the principle of order shown even in the irregular planting; it might easily be overlooked. We refer to the fact that while in general the grouping of trees of the same class is hardly apparent, yet after all this principle was kept in view in the planting of the place illustrated. We observe, for one thing, that the conical or tapering trees are brought more or less together to the right in the engraving, while the same is true of the only round-topped pendulous trees shown in the cut, those to the extreme left. The two large trees in the middle ground stand like brothers, and seem to keep up a kind of connection with similar ones massed in the back-ground to the left. Even the herbaceous clumps of Yucca and Grass near the foreground show design in their placing, being brought near each other. Altogether the collection shows, in this respect, the work of a master at arranging. To appreciate the importance of this last matter the reader has only to imagine these various classes mixed and scattered from side to side of the scene, instead of as they at present stand.

We think now that the reader who has followed us closely in these brief observations on the handsome engraving should be able to so well comprehend the principles involved in arranging ornamental grounds pleasingly in a natural style that they could apply the same with good results to any grounds they may have in charge. They are principles that belong to all good ornamental gardening, from the laying out of a plat of one rod to that of a thousand acres.



An Early Garden  
Tulip.

Another principle contributing largely to the beauty of this lawn is that which called for the free and uncrowded arrangement of the numerous conspicuous specimens. Imagine twice as many crowded into the area shown and the aspect would be greatly marred. This is what may be termed the open system of planting, occupying middle grounds between entire openness and close massing. In it there is to be as much sunlight as of shadow on the carpet of grass—never enough shade to interfere with the presence of a thrifty

### 40 Years' Progress in Floriculture.

BY PETER HENDERSON, JERSEY CITY HEIGHTS, N. J.

Forty years ago I doubt if there was a greenhouse having a fixed roof in use on the whole continent for commercial purposes. Previous to that time nearly all were constructed of portable sashes as "lean-tos," with high back walls. Then the heating was nearly all done by horizontal smoke flues, the first use of heating by hot water on anything like a largescale having been done in 1839. Heating greenhouses by steam, to the best of my information, was unheard of in the United States 40 years ago. For commercial purposes it was, I believe, first successfully practiced in Pittsburgh, about 1875; it is only in the past five years that its merits have been so fully proved.

Methods of propagating and growing plants have also been much improved upon. The propagator 40 years ago (generally imported

from England) was usually a personage of mystery and over-weening conceit, who guarded his knowledge with a miser's hand, if he did not actually lock the door of the propagating house against all his fellow employees. Few of that ilk can get a foothold here to-day. The knowledge of propagating has now been so diffused by books and magazines that all the mystery of those early days has been dispelled. Now there are no secrets in horticulture. Of course experience or special advantages give a knowledge that the want of such cannot give. But the underlying principles never change, though undoubtedly in methods we have made vast strides in the past 20 years. Whether we have made much advance in the classes of plants grown now, from what was grown 40 years ago, there may be some question.

But the most wonderful advance in floriculture has been in the construction of bouquets and other designs. Forty years ago some of us did not know enough to use a thread to keep

past season there were probably shipped and sold in the New York market and at auction not less than 50,000,000 of ornamental plants. Last year the trade sold 24,000,000 cut Roses, and 120,000,000 Carnation flowers.

If the business increases in the same ratio for the next forty years, rest assured the florist will have a place in the community. Now hundreds of young persons are training direct in the business in all sections of the country. I think it safe to predict that the leading florists, forty years hence, will be far better business men than even the most prominent among us now.—*Summary of Paper read before the Philadelphia Florists' Convention.*

#### Permanent Bulb Beds.

BY GEO. N. ELLSWORTH.

To lift and replant Tulip, Hyacinth and similar bulbs every year, as is so much practiced now wherever summer bedding prevails,

this it may be put in place again, as the bulb growth readily penetrates it.

Because Hyacinths and some of the more delicate varieties of other bulbs do not thrive well under this neglected culture system, this amounts to but little against it. Such should have the benefit of border treatment with rich soil, but the border may even then well be made in these partly shaded situations. Of Tulips I prefer to plant only the single, free-growing kinds in the neglected spots, placing the double and delicate ones in clumps on a well prepared border instead.

Crocuses and Snowdrops are only seen in perfection when left undisturbed for years in the soil. Single lines of these look meaningless, compared with a sheet of blossom. If there is any plant that shows to poor advantage by the frequent lifting and planting plan it is this same chaste and delicate Snowdrop, for when set in fresh soil the blossoms are certain to be splashed and soiled in a way that is



AN EFFECTIVE ARRANGEMENT OF A LAWN. (See article on opposite page.)

each flower in place as the construction went on, and it was some years later that the centre-stick was used to steady the structure. The wire-design man did not appear until 20 years later, and when a cross or wreath of flowers had to be made, pieces of lath or old barrel hoops furnished the foundation. The bouquet was usually a one-sided affair, the ground-work being a flat bunch of Arborvitæ, through which the flowers were drawn.

Forty years ago Camellia flowers freely retailed at \$1.00 each, while Roses were going a-begging at one-tenth of that sum. Now the Rose is Queen indeed, and the poor Camellia finds none so poor as to do her homage. Tuberoses were quoted in November, 1865, at \$8.00 per 100. That year my receipts from a house (10x100 feet) sold for \$1,500 in November; now they are rarely sold at all in New York. Just here comes the question. May there not be danger of a rebound in the Rose boom?

The increase in sales in the past 40 years has certainly kept pace with most industries. I have but little doubt that the aggregate sales of cut flowers in the city of New York, for the past year cannot be short of 3 millions, which is probably twice that of any European city of its size. An equal advance has been made in the output of plants. We have good reason to believe that Mr. William Elliott, the auctioneer, often sells more plants in two hours from his warerooms than were sold during a whole season by the florists of New York in 1844. The

is not favorable either to economy or best results. This is equivalent to treating the bulbs as annuals, and thus they never have a chance to perfect even one season's growth. To get the most satisfaction out of this class of flowers it is much better to treat them to permanent culture for years in the same place.

Most kinds of our hardy bulbs, if planted permanently in good soil, grow well and increase in heauty the longer they remain and the larger the clumps or masses become. I cannot say that I find them so satisfactory by themselves as when they are interspersed in bold clumps among hardy border flowers or shrubs, or even when allowed to spring up in the grass. The Narcissuses, for example, never show to better advantage than when they lift their bold leaves and flowers somewhat above a ground-work of dwarf-growing kinds. They succeed well even in grass, as may be seen in many a deserted old garden now run wild.

The best position I find for a permanent bulb bed is under the partial shade of deciduous trees. Wherever there is just enough shade from overhanging branches to cause the grass to grow thin and weakly, there bulbs succeed well. On many places such spots abound some of them in waste and semi-wild corners, and those could be thus improved. To have bulbs succeed in such situations it only becomes necessary to take out a spadeful of the present soil, replacing it with good loam in which to plant the bulbs. If any turf was lifted for

anything but pleasing to the eye to behold.

#### Bulbs in Window Boxes.

About now the outside window boxes may be restocked with Tulips, Hyacinths, Crocuses, etc., for adorning the inside of the window later on. Most bulbs do even better in a window box than in pots. They should be planted not later than November (this month would be better), using good, light, well-enriched loam. Tulips may be set at 4 inches apart; Hyacinths, 5 inches; Crocuses and Snowdrops at 3 inches apart. It would be well to arrange the taller growers in the center, with the smaller kinds along the front lines. With respect to Tulips, there are enough kinds to ensure bloom without break for six weeks. The little scarlet Von Thols should be used for the earliest ones, following with other good kinds, like Rex Rubrorum, La Candeur and the Double Yellows. After planting set the box in a cool place, covering over the surface with three inches in depth of sawdust or coal ashes. After six weeks it may be brought to the window for forcing.

A TIMELY HINT. For the early spring display in the greenhouse and at flower shows some forced hardy plants, such early bloomers as Bleeding Heart, Double Lychnis viscaria, Hardy Candytuft, Fennel-leaved Paony and the like are as lovely as can be. Lift and pot for this purpose any time during this month.



### A. M. PURDY'S DEPARTMENT.

Postoffice address, - - - Palmyra, N. Y.

To "Fruit Recorder" Subscribers. Hereafter send all letters about missing numbers, specimens, etc., as well as renewals, to the office of POPULAR GARDENING, Buffalo, N. Y.

Mr. Purdy's Exchanges should be continued as heretofore directly to his home at Palmyra, N. Y.

### Walks and Jottings About the Fruit Farm.

THERE IS some talk as to Strawberries being unprofitable in this section! Well with common, small kinds poorly grown they have been, but when land is fixed up right and such sorts as Wilson, Sharpless, Windsor Chief, Iron-clad and Crescent are grown at the rate of one to two hundred bushels per acre it pays at even five cents per quart, and pays well.

The same is true of Raspberries. So long as we can get five cents per quart or say \$1.00 per bushel over expense of picking we shall grow them. But there must be no vacancies and the ground must be in good order and such sorts as Tyler, Gregg and Ohio be planted.

RIGHT HERE I would say that a Strawberry plantation may be made to almost double its crop, as also Raspberries, by sub-soil ploughing. In fact if soil is pretty well run out even heavy manure will not increase the crop much more than a good thorough sub-soiling. This should be done with a plow that loosens up, but does not throw up the sub-soil to the surface.

I DO NOT recommend digging Raspberry and Blackberry plants forever from bearing plantations as a rule but only in cases of necessity. It is the best way to keep plants growing in hills and give all strength of roots to the bearing canes, by keeping suckers cut off at the surface and by oft repeated and shallow cultivation.

WE ARE CUTTING down our Peach Trees that show signs of the yellows; its the only way to eradicate it. Some claim the yellows is not a disease. We have no confidence in this. Fifteen years experience has satisfied us its a fungoid disease. Keeping trees free from grubs and borers, by cultivation or fertilizing, will not save them and no person ever saw on a worm-eaten tree such peculiar colored, distasteful fruit as that grown on a tree having the yellows. The fact that if it gets into one tree it will soon sweep over the orchard is sufficient proof to us "as to its cause." I cannot see, but the fact that it is not known south of a certain line would indicate that our storms and changeable weather may have something to do with it. But if we cannot grow Peaches we can grow Blackberries which come about the same time and sell quickly for table use.

THE BOYS are now picking sets from the tops of the Winter Onion. This sort is so called because of being good when pulled at any time through the winter where ground is open.

These sets we plant out in September or October, two inches apart in the rows, and these about twenty inches apart, if wanted to grow to produce sets next fall. But if to pull in the spring a foot apart will do. They will pull next spring early and make quick selling bunch Onions. A small piece of ground for raising sets will give enough to plant a half acre or more. Parties in Southern Indiana make money growing these for the more northern markets.

### Notes on Fruit at the South.

THE GREAT draw-back in many parts of the South to fruit growing is the worn out condition of the soil. When grown up for 20 to 30 years with a second growth of timber, and this cleared away, it soon loses its vitality, unless fertilizers are used freely. To crop land here as is done North would bring no crops.

THINK OF IT! Freight from Palmyra, N. Y., to Chicago is 16 cents per 100 lbs., while from High Point, N. C., to Chicago it is 80 cents per 100 lbs., and three-fourths that amount to Philadelphia! No wonder the South cannot develop more rapidly with such outrageous freightage to pay. Northern consumers might be abundantly supplied with early fruits, Peaches, Pears, etc., if freight and express charges were reasonable, but as it is now two or three great Southern railroad companies monopolize all the profits. A party here at High Point bought Peaches at 50 cents per bushel, and after shipping by express North and getting at a rate of \$3.00 per bushel had nothing left for his trouble. It is well to take these things into consideration before coming South to launch out into fruit growing for the Northern markets. The South possesses a great many advantages, but we should not overlook the disadvantages.

THOUSANDS of bushels of wood ashes go to waste throughout the South, which if used on crops of all kinds would add wonderfully to their increase and value. The same may be said of the contents of the average privy South—standing as these usually do above ground, the accumulations are not only lost, but add to the ill health of a great many. Dry earth is a good absorbent and duly applied over the contents will make one of the most valuable of land fertilizers.

WE CAN'T SEE why Persimmons cannot be dried to advantage and profit; they are certainly a fine eating fruit after getting well frosted.

WHILE TAKING in Peaches at our evaporator at High Point, N. C., last month, an old grower remarked to us, while looking at a number of crates of quite green Peaches: "The man who picked that lot will be sorry for it." We inquired why so. "If he follows up picking green for some years, his trees will begin to drop their fruit long before they mature." Here was something new to us. If true it is of great importance to Peach growers. If true of Peaches why not of Pears and other fruits picked too green?

IT SOUNDS funny for a Northerner to come into the Carolinas and hear them tell about the Magnum Bonum, Norse and other Apples. Sorts common in the North, like the Greening, Baldwin, etc., are scarcely ever mentioned south of Virginia, and but little known there. Persons going into fruit growing in any section need to make inquiries as to the best sorts before planting too heavily of any one kind.

THE PEACH crop through the South is rotting badly because of the excessive rains. Here at High Point, where we expected to get 1,000 bushels, we will not get more than 200 to 300 bushels. We notice from Baltimore, Md., to Washington but very few Peaches on the trees, and in Virginia but few. The first shipments we saw were at Charlotte, Va., both of Peaches and Grapes. There is quite a good crop of Apples so far as I have seen South, but there being but very few evaporators but a small proportion of this will be cured.

### Fall vs. Spring Setting.

We prefer fall setting. First, because of more time to do it properly. Trees set in the fall should have the earth well packed around and over the roots, and a bank raised up about the tree, to remain through winter and be drawn away in the spring. This prevents the trees swaying back and forth.

In the case of Raspberries and Blackberries we draw a mound of earth over each where set, and draw this away in early spring.

Trees set in the fall get the benefit of early spring rains and make a full growth the first season. We are told in the South that trees set in the fall will make about the same growth the next season as those set in the spring before. We have always had the best success setting Grapes, Raspberries, Blackberries, Currants, etc., in the fall; but not so with Strawberries. In setting in the fall, in case you do not care to mound these up, at least throw a forkful of coarse litter over each hill after the first time the ground freezes.

### Hogs in Orchards.

Well do we remember in our boyhood days the old orchards in which hogs run freely the season through. Such generally fair Apples, Peaches and Plums as we then raised it would be hard to find now. The trouble is this is a fast age and nearly all growers are planting more than they can properly care for. Instead of having orchards that yield 5 to 10 barrels to the tree of perfect fruit, they do well to get 1 or 2 barrels of such, the rest going to waste.

We believe in this having hogs run in the orchard as a help to better results. In this respect our views coincide well with the following words relating some experience of this kind found in an exchange:

A gentleman of this county has an orchard of 10 acres well set in fruits of all kinds, but principally Apples. It is about 25 years old, and the trees are remarkably free from disease, and noted for great bearing.

He puts the hogs he intends for pork in this orchard every spring to feed on the grass until the fruit begins to fall, remaining here until they are killed. When he begins to feed them on corn, two or three weeks before slaughtering, they are as fat as there is any need to be, but he gives them the corn to improve the fat.

By this treatment the hogs get all the wind-fall fruit in which the eggs of insects are deposited. It is the only orchard in our section where Plums, Cherries and Quinces mature without knot or blemish. The Apple trees seldom fail to bear fruit every year. It has been sodded to Orchard Grass, Timothy, and Clover time out of mind. He generally gets two-thirds or three-fourths of a crop of good hay besides what is eaten by the swine.

### On Managing Grape-vines.

BY S. H. REHMAN, VILLISCA, IOWA.

I wrote to you in May concerning worms on my Grape-vines. Their ravages were so great I saw something must be done at once to save the crop. I dusted them twice with Persian insect powder and every one disappeared.

Here is my way of managing Grapes: For a trellise, I set posts 12 feet apart, nailing a cross-arm 3 feet long. I use 5 smooth wires, 2 on the post and one in the center and one at each end of the cross-arm. In this way I find that the fruit hanging below is not accessible to birds so destructive in some places. For field culture I plant one post having two cross-arms firmly to each vine; I then tie the canes firmly to the outer end of said arms. This mode is the best of many that I have tried.

In '84 and '85 I was very much troubled with Grape rot, but now my Grape-vines are much freer from rot than at any previous time. The season may have had much to do with this, yet I will give my treatment of the vines.

As soon as the clusters were formed I cut off the point of the fruit arm one leaf beyond the last cluster, never leaving more than three clusters on one arm. When laterals were thrown out I kept them pinched off clean until the middle of July. After that I left one or two leaves on each lateral, leaving barely enough for shade to keep the Grapes from sun-burning. I encourage new strong canes from the lowest shoots for fruiters the coming year, not allowing them to bear this year.

**The Wild Goose Plum.**

SAMUEL MILLER, BLUFFTON, MO.

No matter if its origin be not clear, this Plum is to-day one of great value and can be grown by any one who will half try. I have just measured one five and one-quarter inches around one way and five the other.

My impression is that it was first brought out in Tennessee. The claim that it came from a stone taken from the crop of a wild goose may be so, but we incline to believe the story a little "fishy."

For one thing, when the wild geese come here from their breeding place, in the North, the Plums are past. Therefore that goose must have got the Plum up North and been captured here soon after. In that case there must be some fine Plums somewhere up North to produce such a fine seedling.

Then it is a question whether a wild goose will eat Plums. If any one reads this who is familiar with the facts of the history of the origin of this Plum will they please give it to us.

Barbed wire fences may be put to a good use by growing Grape-vines thereon.

**Drying Strawberries.** If any person has tried this, we would like to have them give us their experience.

Nothing pays better to evaporate than Plums, and we propose to fill in all vacancies made by blight in our Pear orchard to Plums for that purpose.

**Mulberry.** S. K. Marsh of Mich., says this is the best post timber grown in this country. He says it is almost rot proof save at the surface of the ground.

We caution our readers against late working among Raspberries and Blackberries, as it causes them to grow late and not mature the wood well for the rigors of winter.

**Evaporating Grapes.** It is said that if a small puncture is made in each grape on a bunch with a large pin or some sharp instrument they can be evaporated on the bunch.

Of all Black Raspberries we grow for market or evaporating no sort begins to come up with the Gregg. It averages a third larger and the dried fruit will sell for 10 to 15 per cent more.

After a Raspberry plantation gets once established it costs but little to take care of it. Simply plow up to the rows spring and fall, and cut off with a corn knife tops of new growth when too high.

Such a crop of large fine Plums and Pears as we have had this year, and so free from worms, we have not grown before. All from spraying the trees just after the blossoms fell with London Purple water.

Never pull out sucker Raspberry and Blackberry plants to replant. By so doing the side roots are pulled off and many will fail to grow. They should be carefully dug, and always to have a piece of the side root.

**The Dewberry.** We have tried growing this fruit time and again without success. Where found wild it has been on old worn out land of a light sandy character, and this may show they will not succeed on rich cultivated soil.

**Keeping Grapes.** We have had the best success by wrapping each bunch carefully in a piece of paper, and packing all in boxes holding a bushel or so, and keeping in a room where the temperature was not permitted to go below 30° to 35° above zero.

**Crooked Trees.** Our old grandfather used to contend that crooked and knarly Apple trees were the sweetest bearers. Is there anything in it, reader? If so, it must be because the sap does not start quite so early, and hence blossoms do not come out quite so soon and thus escape late frosts and cold northeast storms.

Try two plans with your Red Raspberries. One to cut back the plants to about 5 feet in height; the other to leave the full growth and then bend two hills together, fastening the

tops with stout string. The cutting back should be done at once if at all. The bending system may be carried out at any time through the winter.

**Pear Slugs South.** We read in some of our Northern exchanges that Pears in certain sections South were badly damaged early in the season by slugs eating the leaves. We feel confident if they were sprayed once or twice with a weak solution of Paris Green or London Purple water, say a teaspoonful to a large pail of water, it would destroy them.

**In pitting Peaches** with the patent "punchers" we found a large shortage, especially on clingstones. We have experimented with these and find by throwing them into a large kettle the meat boils off and this stewed up and boiled down makes a very delicious syrup. The skins may be utilized in the same way. May not this be a hint for a great saving where there is now a large waste?

**New Fruits.** Look out for a swarm of new Strawberries, Raspberries, Blackberries, etc., this fall or next spring, not one in one hundred of which will be superior if equal to scores of old sorts. We have tried this getting some new sorts from seed of the largest and finest of all our different kinds, and while we have grown some superb sorts, yet among the older well known sorts were those as good, and hence we have refused to push them.

At the North where land is worth \$75 to \$125 per acre it will not pay to set out an orchard of any kind and give the land solely to the trees; crops must be grown between them for paying results. But in the South, where land can be bought for \$6 to \$12 per acre, and is not so strong as Northern soil, give the land to the trees, at least after the second or third year. Our 60-acre Peach orchard in North Carolina is simply to be kept ploughed and cultivated.

**QUESTIONS AND ANSWERS.**

115. **Meadow Land for Small Fruits.** I have a meadow, rather wet, a part of which is prairie slough-grass, which I intend to underdrain this fall. Will such land be good for Strawberries, Currants, Raspberries and Blackberries after one season of hoed crops? [If the land will grow good Corn or Potatoes it will grow small fruits, but they must be of the hardiest sort, like Turner, Thwack, Cuthbert, Ohio, Tyler and Seneca Raspberries, and the Snyder Blackberries.]

116. **Blackberries, etc., Winter Killing.** Is there any liability of the last two kinds growing too rank and killing back in our severe winters? The land slopes slightly to the northwest. [We think not, of the sorts named above.]

117. **Seedlings.** Kindly give the process of sowing Apple seed to raise seedlings, also Pear, Plum and Cherry seed. F. Bros, Fulton, Ky. [Apple and other seed and pits must be carefully saved and never dried in the sun, and kept in a cool shady place. The best plan is to get seed in the fall and mix with sand and put in an exposed place through the winter, and in early spring sow in drills. If not thus kept, we have had good luck pouring boiling water over it and allowing it to cool and stand for two or three days. Then pour off the water and mix seed with dry earth and sow as wanted.]

118. **Pruning Raspberries.** What tool do you use for this, also do you carry the old wood out of the field; if not, what do you do with it? E. L. P., Cameron, Mo. [We use a hooked knife something like the letter J with a long handle. Lately we have found it advisable to leave the old wood unpruned till winter, as we then have plenty of time to do it, and besides it sustains the new growth till the wood gets ripened and hardened.]

119. **Treating a Strawberry Bed.** I have a Strawberry bed that has borne one crop and "run solid." I want to get it into rows. May I cut down vines which are very luxuriant, burning them when dry and then plow or will some other treatment be better? [If weedy and grassy you can mow such down, even taking off the tops of Strawberries, and clean this off with a rake. Then plow under strips two feet or so wide—leaving strips a foot wide to bear. Run over the plowed ground with a cultivator and level down well. Another plan is to put straw over bed and burn it over. This last is the best plan and makes the best and cleanest beds.]

120. **Water on Manure.** Is it well to pour water upon horse manure which I am piling up under a shed, and adding to from time to time? The manure is very dry. A. M. B., Asheville, N. C. [No need to pour water upon a manure heap, but throw the heap over occasionally.]

121. **Apple Seeds Failing.** Can you tell me why they failed to germinate? I poned boiling water on them as you advised, let them stay for a few days, planted them, and not one grew. The seeds were fresh; saved them myself. B. B., Hunters' Depot, Ky. [The seed was probably not properly cured when saved. It must be dried in the shade and stirred often to prevent mildew or molding.]

**MEAT FROM THE SHELL.**

A *Rural World* writer says he has a Concord vine trained on a large Peach tree, another on an arbor and extending among the branches of a Walnut. The Grapes on the arbor and low parts of the vines rotted this season as usual, while those upon the Walnut and among the high branches of the Peach were free from rot, and the branches healthy and beautiful.

J. H. Hale says the great Peach enemy in Connecticut is the yellows. He set out 800 trees in 1877; 200 fertilized with barn manure, the rest with potash and bone. The fourth year those having barn manure showed some yellows, and more the following year. The others were not affected. Since then half of the former died of yellows. Only one case occurred in the others. To this tree ten pounds of muriate of potash were applied, and it was severely pruned and thereby saved. Mr. Hale thought that careful culture, close pruning, and fertilizing with bone and potash, would secure in a great measure exemption from this disease.

The *Hour* makes a timely suggestion, namely, that as money is spent in the decoration of cemetery tombs, why not use a part of it for permanent effect? Cut flowers fade before they have lain 24 hours, and potted flowers droop hastily. For the money that such flowers often cost some hardy and long-lived ornamental shrub might be planted.

Professor Budd, of the Iowa Agricultural College, writes: A Mr. J. B. Spalding, of Illinois, has practiced ringing for fruit for years past. His plan was at first to girdle every other tree, but he now treats all alike. He rings in the latter part of April, taking off a ring of bark from the stem one-half inch in width entirely around the tree, taking care not to injure the cambium layer under the bark. He begins to girdle when the trees are but 6 years old. So far he has found no harm in the process. The gain is that it sets them to bearing at once, and they bear full, too.

The *Student's Journal*, issued at the Iowa Agricultural College, says: The benefit of mulching Strawberries is clearly shown here. While the neighboring farmers' beds have withered away, the college beds have a fair crop in spite of great drought. The whole secret: A good winter mulch, which in the spring was raked into the spaces between rows, where it kept the ground moist. Without it the ground would have been hard and dry, with the crop light. Of all our varieties Crescent and Windsor Chief have stood the dry weather best. These are old favorites and may be depended on for fruit.

The *Farm Journal* says that green Corn cooked by steam and dried on the ear, is almost as good in the winter as on the day it was plucked. The ears are simply soaked and heated for the table. Valuable juices are lost when Corn is cut from the ear to dry or can.

Charles Downing wrote: My experience is that fruit should be fully ripe for cooking purposes, requiring much less sugar, and the product is richer and higher flavored. Canned fruit prepared when unripe looks inviting, but it does not compare in quality with that which is put up ripe. Sugar cooked with fruit renders it indigestible, but the practice now is less sugar in canning, adding it on the table.

## Garden Notes From Lyndale.

BY A. H. E.

Not one grower in a dozen seems to know how the large-leaved *Caladium*, *C. esculentum*, should be managed, judging by the puny specimens of the plant one so often sees. To understand that they are swamp plants by nature, lovers of moisture, richness and heat, is half the secret of growing them well.

I plant in very rich soil, using nearly one-half manure. With growth starting up, I water without stint and regularly the season through. If I had in my care some of the suffering plants I see every day I'd soon do wonders with them; this with liquid manure applied every other day. It is a plant that should never be put into a vase, because vase treatment is usually too dry to suit their bibulous tastes.

\* \* \*

I have a little testimony to offer on the question of Canada Thistles, and how to remove them. In buying the recent addition to Lyndale there was one part of the acquisition that had some of these Thistles. It happened that this very part we desired to put into a meadow lawn, a continuation of the present lawn, but separated by a woven wire fence, and to be used as a pasture lot for the Jerseys.

This piece was seeded down two years ago

this fall, and has been kept as closely mown as the other lawn ever since until this year, when the live stock was turned in on it regularly.

The Thistles started up in the spring of last year, but with having been cropped at an inch high by the mower every two weeks after, they made no progress whatever, and to my satisfaction I now observe that not a single Thistle is to be seen anywhere on the plot.

From this I conclude that to get rid of this pest one has but to treat the patches of the plants as closely seeded pasture pieces, mowing the plants that escape being consumed, fortnightly through the season. The Thistles will go inside of two years.

\* \* \*

The Shrubbery Walk at Lyndale was never more satisfactory than this year. To your recent readers let me explain that this is simply a portion of the outskirts of our rear lawn, so planted with two irregular lines of shrubs as to leave a gracefully curved grass walk of varying width between the continuous masses of shrubs. The bushes are seated on the grass at about 3 feet apart for dwarf growers, and from this up to 8 feet apart for the larger ones, the latter being in the background.

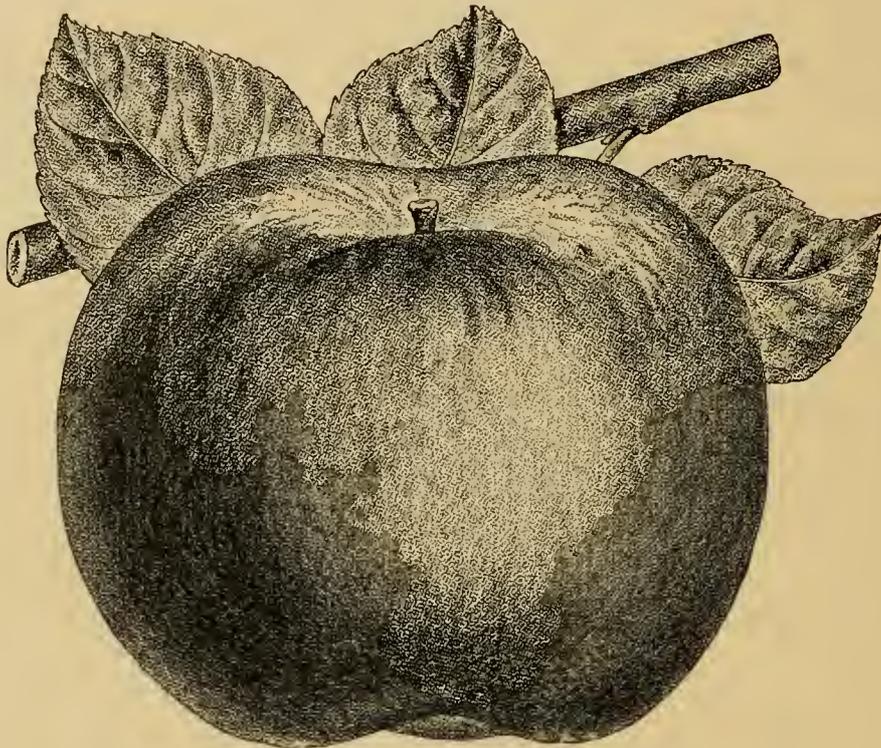
The reasons why this walk satisfies me so well are: First it cost no great price, the shrubs having been bought mostly at from \$3 to \$5 per dozen, and I planted them myself. Then the selection embraces such a variety as to leave scarcely a week from April until November without some flowers, while to count the handsome berries of some, and the rich autumn foliage of others, and then some evergreens for winter, the walk is never without attraction.

Last of all, there is something so distinct about a shrubbery walk from other garden features. Here are verdure and size of growth

that give character to the garden only second to a grove of trees; flowers that in beauty, fragrance and quantity almost equal the flower borders themselves, while the care of all amounts to almost nothing, embracing but the annual pruning and the winter protection of some of the more tender kinds.

\* \* \*

Professor J. L. Budd, of Iowa, writes that on the old homestead is a row of Chestnut trees which were started from nuts planted 11 years ago, and the trees of which commenced bearing



A VALUABLE APPLE OVER A WIDE SECTION.—THE ALEXANDER.

a fair crop of nuts at 9 years of age. Professor Budd naturally enough believes that the best way to raise Chestnut trees is to start them from the nuts. As to this I agree perfectly with the professor, and not only for the Chestnut, but also for Walnut, Hickorynut, Butternut, Beechnut, Oak, etc.

The fact is, here is a class of handsome, useful, and for timber valuable, trees that are rarely planted because difficult to transplant from the nursery, as is done with most kinds of trees. Now my experience is that no easier class of trees than these can be grown, provided one starts with the nut. And trees so raised are much better also—to say nothing of the greater certainty—than those from the nursery. This is because undisturbed seedlings form a strong tap root, that in time goes deep into the soil, serving as a complete and needed anchor to the tree in the soil, a feature not secured in the same degree from transplanted trees.

\* \* \*

This matter of raising nut-bearing trees is now a seasonable one, for the time of ripe nuts is at hand, and fall planting is best. My way is to prepare a spot 3 feet across on the lawn, meadow or in out-of-the-way places, wherever a nut-bearer is wanted, and planting in this.

In the way of preparation, I dig up the earth 18 inches deep, and if this be of a good kind, I simply add one-fourth its bulk of old manure, but if thin and poor I substitute some loam from a cultivated patch instead. Around the spot I drive 5 or 6 stakes as a protection to the future seedling. Then when the nuts are mature I plant three of a kind in the center of the staked spot, the larger ones like Walnuts at 5 inches deep, and smaller ones a trifle less.

The next season, after the seedlings reach 3 or more inches in height, I thin them down

to a single one, (the best,) in each place. I also keep the earth tilled or else mulched. The growth for the first few years is apt to seem discouragingly small, but by and by it improves and in a few years becomes very rapid.

## A Valuable Apple over a Wide Section.—The Alexander.

It so often happens that a certain variety of fruit proves to be valuable only over small areas here and there that it becomes a real pleasure to speak of a good and handsome kind of wide adaptability. Such a kind is the Alexander Apple, of which we give a spirited engraving herewith.

This is a Russian Apple, and like others of its class possesses the iron-clad qualities of doing remarkably well in the extreme Northern and Western States and the British Provinces. At the same time very good reports reach us from such extreme Southern States as Texas, Louisiana and Alabama concerning the Alexander. While in the Middle and Eastern States it also ranks among the best kinds. In Russia it is classed among the most reliable and useful sorts in cultivation.

The Alexander is one of the largest apples, as it is one of the hand-somest. The color is a beautiful deep red, blended with orange on the sunny side, and greenish yellow faintly streaked with red else-

where. The flesh is yellowish-white, tender, juicy and sub-acid with a flavor that makes it a pleasant, if not the very best eating Apple. It is a fall Apple, being at its best in our region from October to early December.

The tree, along with being one of the very hardiest, is a good grower, assuming a spreading form. It is a moderate but regular bearer, as might be expected from its large size.

One characteristic of the Alexander, which commends it to amateurs who have but small gardens, is that it succeeds remarkably well as a dwarf on the Paradise stock. In this way it not only makes a handsome small tree of great endurance, but brings forth good crops of fruit, unexcelled for size and beauty.

The Alexander as a dwarf tree may be procured from several of our leading nurserymen; as a standard, from about every grower and dealer in fruit trees.

## A Parsley Basket.

The Parsley plant, although classed with the useful aromatic kitchen vegetables, is also in the curled variety of pretty leaf, hence of ornamental value. Mrs. S. S. G., of Cumberland County, Maine, contributes a welcome note on how she grows it in the house in winter, for both use and adornment. "In early fall I set some plants in a wire hanging-basket—that was under my balcony in the summer—lining it with fresh Moss. This I keep in the kitchen window, suspended from the top, where it has both light and air. Here the plants grow prettily, and all through the winter I carefully nip out the best developed leaves for use on the table. A few leaves laid on the edge of a plate of cold meat adds much to the brightness of the table, aside from the flavor imparted. I take of the old plants in the garden for the hanging basket."

### A Handy Small-sized Fruit Drier.

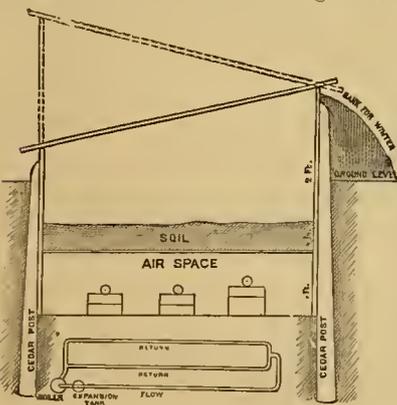
Within a few years the great business of evaporating fruit has grown up, almost revolutionizing the manner of disposing of fruit. With this step came the increased exportation of fruit, opening up the world as a market for fruit growers, instead of their depending on a near and limited one for fresh fruit. But the drying business has been largely in the hands of those who grow fruit on a big scale, the farmer or land owner with a small orchard not feeling, often, that there was anything in it for him, after counting the cost of the improved evaporators and equipments needed.

To meet the want of small growers there is now made a very handy and low-priced cook stove fruit-drier, which we take pleasure in calling attention to, also illustrating the same. This is made by the American Manufacturing Co., of Waynesboro, Pa., who, with being among our leading evaporator makers, have come to time with this small drier to meet the wide felt want referred to. We have tried this evaporator in our house, with such gratifying results that we would be very slow to part with it could another not be procured. For drying not only every kind of fruit, but such vegetables as Sweet Corn, Beans, Pumpkins and the like, it is quick, cleanly and effective in its action. A moderately hot stove or range is all that is needed to heat it.

As may be seen in the engraving, the drier consists of eight trays, arranged one above the other, over a metal base that stands on the stove. These trays have bottoms of galvanized wire screening, through which the heat from the stove draws upwards, this being also regulated by a damper in the base of the drier. Each tray holds from one and one-half to two quarts of fruit without obstructing the hot air current. It is said that with good management about two bushels of fresh Apples may be dried in 12 hours with this drier.

### A Hot-bed Heated with Pipes.

A chief obstacle to the making of ordinary hot-beds is the procuring of the needed manure for the heating. This is especially true in market gardens where the hot-bed area is not only in individual cases often large, but about most of our towns in the aggregate it is simply enormous. A regular skirmish, sometimes even assuming the aspect of a battle, for manure is, as a result of this, a common thing to see in



A HOT-BED HEATED WITH WATER PIPES.

every large town at the season when good hot-bed manure is most in demand.

But being the main use of the manure is to supply heat by fermentation, why should it be relied upon instead of regular fuel? We are pleased to answer that it is not in every case. Gardeners in many places are beginning to apply such heating apparatus as fine and furnace and hot water to hot-beds with the best of success. It is a step in the right direction, as all must admit.

As bearing upon this matter, we recently found in the *American Florist* an engraving of a hot-bed heated by hot water, together with a description of the same by the maker,

Mr. D. S. Heffron, Washington Heights, Ill. Through the courtesy of the paper named we are able to reproduce the same here: The bed is 80 feet long by 4 in width, and was constructed as follows: After excavating to the depth of 2 feet, cedar posts were set, and the sides constructed of 2-inch plank; the pipes were then laid as per diagram, on the downhill plan, 1-inch pipe being used, which was connected with a small self-feeding hot-water boiler at the end. One foot up a board bottom was built to receive 4 inches of soil.

The bed was used the past spring for growing Pansies, Violets and Daisies, the boiler consuming only one scuttle of coal per day when firing. This Mr. H. considers much less expensive than using manure for heating. The bed faces east. Another important use to be made of it this fall is boning Chrysanthemums. For this the intention is to build the front wall two feet higher, reverse the sash (see dotted lines), and the bed will be deep enough to hold the taller plants.

The boiler and piping for the 80-foot bed cost only \$75, and will in all probability last for many years. The advantage of the air space over laying the pipes in the soil is that the bottom heat is more evenly diffused from side to side of the bed.

Before long we shall illustrate a small-sized hot-bed for the amateur, heated by an ordinary kerosene lamp.

The "mystery" of pruning is a myth; let no one by it be kept from slashing around with saw and knife to clean up the fruit trees. One principle, easy to comprehend by any one, will, if kept in mind, always keep the tree-pruner on the right track. It is to prune for letting air and light freely into all parts of the top; without these fruit of the best quality and color are impossible. It may necessitate the cutting away of some large branches, but in so doing you also get rid of over-much top, and the natural bad consequence of overbearing. Of course all dead or dying branches are to come away. All limbs taken off should be cut close to the main parts. Large scars must be coated with a layer of thick paint or grafting wax. Go at the job any time between leaf-fall and the middle of March and you will not miss it as to season. But with Peach trees it is perhaps better to wait until the buds start to swell in the spring, for the fruit and leaf-buds of these can then be better distinguished.

**Asparagus.** We don't know of one good reason why every garden should not have a bed of Asparagus, and a large one, too. Still many homes are without this. Once planted in good garden soil, and the crop is certain for many years to come. The most suitable soil is a deep, light loam and it should be under-drained. Whatever labor and outlay is put into its preparation to have it deeply worked and manured will be returned again to the doer, and with a high rate of interest. The more manure the greater the product; at the rate of 50 two-horse loads to the acre would be the right thing. Salt is of no material good. Plant in rows 3 feet apart, with the plants at 20 inches from each other. The clumps should be set no less than 8 inches deep, spreading the roots out horizontally with much care. Fall planting answers well.

**Quality of Fruit Guaranteed.** Honesty, is certainly the fruit-grower's best policy. Tricks in packing, that a poor article may appear a better one, sooner or later revert upon the shipper himself. The Fruit Growers' Association of Berrien County, Michigan, desiring to have the full advantage of offering an honest article in market, have formed themselves into the Michigan Fruit Exchange, and label each package of their fruit with an inspectors stamp, which reads as follows:

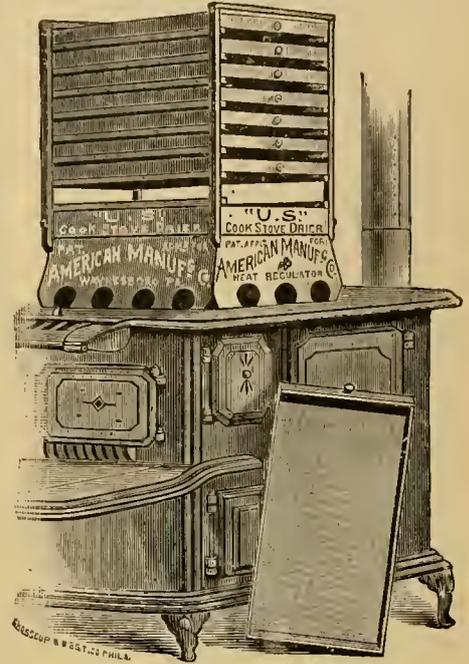
**INSPECTOR'S STAMP.**—The Michigan Exchange hereby guarantees the contents of this package to be uniform and true to appearance; and the buyer confer a favor by reporting any fraud detected in any package bearing this stamp. W. A. Brown, Inspector, Benton Harbor, Mich.

Those marvelous reports about new fruits and vegetables from their originators, but which then are not borne out in general culture, do not necessarily mark the introducers as scoundrels. The fact that a fruit may possess great merit in the locality of its origin, but nowhere else, may have to do with the matter. Then again let us not forget that such new pets receive a degree of care and culture from

their originators rarely bestowed by others. And this tells if anything will.

**A word to the inexperienced about starting a Strawberry bed:** Set out only plants that have white roots. In lifting plants, some with black roots, others with light-colored roots, will come up. The former are old; the latter young, and the only ones fit for use. We have heard of some short-sighted nurserymen sending out black-rooted old plants to customers; it is a shabby trick, and such plants will be refused by readers of *POPULAR GARDENING*.

**The enemy of the vine, Phylloxera,** is declared to be mightier in France than a German army, for



A HANDY SMALL-SIZED FRUIT DRIER.

the latter, once satisfied, goes home, but the former stays forever. Creatures unconscious of what they do terrify whole nations and give the lie to the arrogance of man.—*J. J. Smith.*

**To speak of Raspberries,** one point we do not get far from, and that is that the old Doolittle or American Black, still stands at the head for profit with many growers. It is as hard to crowd out as the Wilson among Strawberries.

**As to manures for Grapes,** the upshot of the matter is that stable dung incites a free growth of canes and leaves, but not much fruit, while potash and phosphate manures tend otherwise and to a superior article of fruit.

**Gooseberries** are not as a rule pruned close enough. They need sunlight in the head. A good deal of the old wood is better off than on the plants. Now is a capital time to prune them.

**This is an Illinois farmer's resource against moles:** Liver cut to the size of hickory nuts, with strychnine in each piece, and placed in their runs.

**The Celery row** neatly banked is a fine sight, well worth the neat gardener's pains to secure. In banking keep the stalks straight.

**Go to the market** to find out what varieties to plant for market, if you don't know. Those most called for are the safe ones.

**A sloven is bad enough anywhere;** as a planter of trees he is at his worst, making waste of labor, stock and the land as well.

**For a bruise or wound from a rusty nail** go to "Dr." Peach to be cured. The leaves mashed to a pulp help quickly.

**The Blackberry set** at three feet apart would answer for a hedge in some places.

**Thin-skinned fruits** as a rule are the poorer keepers, thick-skinned ones the better.

**Of good fruit** the people are not in danger of soon getting too much.

**Seeds** had better come up too thick than too thin.

**Grapes** must do their ripening on the vine.

**Manure** had better not touch the tree roots.

**Bean poles** represent value—shelter them.

**Beets** may stay out until hard frosts.

**A good time** for surface manuring.

**Fall spading** is a good course.

**Keep the Spinach bed** weeded.

**Rotten fruit** spoils the cider.

### Some Interesting Grape Talk Uttered at the Late Cleveland Convention.

George Husmann, of California, in a paper said he believed California to be pre-eminently the horticultural State of the country. Their wines are now competing with the best of the world; their raisins with London layers. The wine yield this year will reach 30,000,000 gallons. Apples grow to perfection side by side with the Orange and Lemon. . . . Mr. Cushman, of Ohio, paid a tribute to the Concord Grape. . . . Mr. Tryon resented a criticism on the Concord—the Grape of the million. . . . F. C. Miller: Worden, a seedling of the Coucord, was much superior to it. Had tried Worden and was much pleased. . . . Mr. Cushman: It has been reported that Worden does not hold to the stem. . . . T. S. Hubbard: Had traveled among Eastern vineyards, and his examinations had been very favorable to Worden. All reports were to the effect that the Worden clung to the stem. The original vine had yielded 110 pounds of Grapes during each of the past three years. The crops this year were the finest ever seen; there was no rot. Concord not as heavy as last year; Delaware doing well. The Worden is larger and more attractive than Concord, ripening a week or ten days earlier. . . . Mr. Greiner saw Wordens drop at Grand Rapids, but this was due to wood ashes around the vines. . . . Mr. Hollister, of Missouri: Crop in his State very short; fruit rotting badly. Depreciated raising early Grapes and selling them before ripe. . . . Mr. Albaugh said a grower in Ohio had sown Oats between the vines and had thus prevented rotting. . . . Dr. McKay, of Mississippi: Grapes had not done well this year. Concord had done the best. Some liked the Ives, but generally the Concord thrived the best. The Scuppernong never failed, but was not good for market. Thought the rot this year was caused by 30 days of constant showers. . . . Professor McKay, of Mississippi: In some parts the Delaware succeeded well. Trimming helped the fruit, the berry growing larger and of better color. . . . Mr. Miller, of Ohio: His Grapes were rotting badly; used sulphate of iron as a disinfectant, and it stopped the rot. From 1 to 3 lbs. put around each vine, in June or July, sufficed. Others had tried it with the same result. . . . Mr. Lindley, of North Carolina: Grape culture is increasing in that State. It is the home of the Scuppernong; sometimes one vine covers 3 acres of ground. Grow about 75 varieties, raising the finest Grapes in the country. Best paying fruits are the Ives and Champion. . . . Mr. Van Deman, of Kansas: Crop very good this year. Had been through Texas and Arkansas, and found all common varieties thriving. . . . Mr. Munsen, of Texas, was crossing of their wildlings with domestic Grapes, and has some of the finest Grapes I have seen. . . . G. W. Campbell, of Ohio: We have many amateur growers. This year is the best since 1849. The Tolman is an abomination, but it colors early, and gets good prices. Worden is superior to and earlier than Concord; it is a poor shipping grape. . . . Mr. Carpenter: High culture helped produce better fruit and prevented rot. . . . Mr. Timara spoke of Grape culture in Japan. . . . Mr. Cushman, Ohio: The Brighton had mildewed here; Pocklington is a slow grower, but the best of the whites. Loads of them are now sold in Cleveland. Early Victor is not very early; is small and unproductive; Jefferson not much thought of; Wyoming Red was favorably noticed; Vergennes promises well; Moore's Early the best early Grape for all regions; Montefiore is doing well about Cleveland; Niagara and Empire State reasonably promising. . . . President Earle: Where Grapes rot they can be grown by the bagging system. It improves the taste. Cost does not exceed one-half cent a pound for inclosing in paper bags. Ulster Prolific is promising for all regions. By cold storage Grapes can be kept almost the year round. . . . G. W. Campbell: Those who will not care for the vines must be content with inferior kinds. The best culture will give the best results. Thirty years ago planted a Delaware; with great care 3 years later there were 9 canes and about 300 clusters; 200 were cut off and all but 4 offshoots. The 100 bunches were as fine Delawares as I have ever seen. Some won a silver medal. Had the vine been without care, the fourth year would have seen 300 clusters all small and the vine exhausted. Have never seen Delaware rot. The Ives and others of that class in Central Ohio are in winter often injured, but with no indication of damage until the following season; winter protection is often the turning point between highest success and complete failure. Injured vines are susceptible to disease and mildew. Would advise planting the best varieties, for while the poorest are a drug, the best always bring good prices. . . . Mr. Green: Grapes as food are cheaper than any other food,

being also delicious and attractive. . . . Mr. Olmer: Should be grown by everybody. In cities vines would climb walls or trellises in the yard, with as little care as any vine needs. . . . Mr. Ford, of Ohio: Vines protect buildings; never had seen rot on vines on house walls. . . . Mr. Van Deman advised that all tender vines be grown on north side of buildings. Winter killing is the result of evaporating influences, and on the north side changes of temperature are small and evaporation less. Vines flourish here, but they are late in maturing. . . . Mr. Crawford: The only fruit that every man could cultivate; would plant on the east or south side of house, and train to north side. . . . Mr. Pierce: Grapes would not grow on the north side of the house. . . . Mr. Ward: Vines about houses absorbed some salt, and this prevented rot.

## Inquiry Column

*This being the People's Paper, it is open to all their Inquiries bearing on gardening. On the other hand, Answers to Inquiries are earnestly requested from readers.*

*The editors and special contributors are ready to do a large share of the answering, but the experience of many being more valuable than of the few, however varied that is, and conditions and localities being so different, they prefer to receive answers, even several of them to the same question, from readers everywhere. Don't hesitate to send answers because you may feel you are no fine writer; we will see that they appear in good shape.*

*In writing, give the number of the question you are answering, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.*

*Flowers gladly named, provided, first, that no more than three be sent at one time; second, that these be fully prepaid; third, that several specimens of each reach us in good shape. We cannot undertake to name florists' varieties.*

122. **Pomegranate not Blooming.** I got a plant in Laredo, Tex., said to be double, color salmon and pink. Have had it in a pot this summer; it is root-bound, has not bloomed, and seems to need pruning. Please give me full directions for treatment, winter and summer.

123. **Orange not Blooming.** I have a 5-year-old Orange plant which has been huddled. Have had it in open ground for two summers; the plant seems strong but does not grow very large and has never bloomed. What is the trouble? ZANESVILLE.

124. **Ivy Geraniums in Cellar.** Will some one please tell me if an Ivy Geranium will live in the cellar through the winter.

125. **Gloxinias Treatment.** Also, if I must keep Gloxinias growing until they bloom? I have some quite nice ones that have not bloomed yet, and I thought they ought not to be dried off until they did. LIDE PENS.

126. **Polyantha Roses South.** Will they succeed summer and winter in the open ground in middle Georgia?

127. **Begonias.** Do the plants require to be pot-bound for best results? When is the best time to repot? Mrs. B.

128. **Daphne odora.** I have had a nice looking plant, 1 foot or more high, for these 4 years. Good care through winters, planted out in summer, and it never has flowered yet, though looking very healthy. What is the reason of this? SARAH HINDEN.

129. **Planting Magnolias.** Will some one please tell me when to plant and how to treat Magnolia? A PENNSYLVANIA SUBSCRIBER.

130. **Scale on Plants.** Please inform me how to rid plants of scale. They are exceedingly troublesome. Mrs. LUCY M. CAREY.

131. **Wasps.** Can any one inform me as to the best mode of destroying their nests. We are overrun with them. N. M.

132. **Garden Walks.** What can be done with my walks? They have had no new gravel, or anything done to them for some years, and are full of holes, and the weeds grow through them. Any information as to the cheapest and best method will be gladly received. M. C. E.

133. **Lapageria not Blooming.** I have a fine Lapageria rosea. It is in its fourth year and has not flowered. It is growing up netting fixed to a glass partition between greenhouse andinery, and has plenty of light. Its stems are bare for about 3 or 4 feet, but its extremities are well covered with young leaves. Should I make cuttings of these, or cut the whole plant back, and if so, how much and when? BRNSIDE, Morgan Co., Ill.

134. **Turnips Decaying.** I send a sample of my Turnips as affected by rot. What cause can you ascribe? JOHN R. WALSH, Cuyahoga Co., Ohio.

135. **Concerning Amaryllis.** Are they to be put in the cellar during winter? Also what color is the Johnsonii, and where can we procure Amaryllis seeds? Mrs. A. E. D., Hastings, Mich.

### REPLIES TO INQUIRIES.

109. **Year-old Primrose.** Such may be treated for future use by soaking the ball of earth, remov-

ing a third or more of the soil and putting back in the same-sized pots or a size smaller, using light fresh earth. The pots must be perfectly clean. Remove some of the poorer leaves. Shade for a week.

110. **Clematis Protection.** Cut the growth down to within 2 feet of the soil late in autumn, then protect with a forkful of coarse litter. A. H. E.

111. **Well-water for Plants.** Rain-water is perhaps to be preferred, other things being equal. Still we may say, after having used tens of thousands of barrels of both on plants, that we have never been able to see any special gain from using rain-water.

112. **Roses for bloom** may be kept in either temperature (60° and 45°); the flowers will come sooner in the former, but be finer in the latter.

122. **Pomegranate not Blooming.** Perhaps it has too much shade. It doesn't like that. Given rich soil, good drainage, plenty of sunlight in the summer time, and then the protection of a cool greenhouse or of a cellar in the winter, and the plant should delight you with blossoms. They do not need much pruning, only enough to regulate the general shape,—more will be at the expense of bloom. The time to repot is just after being taken from the winter quarters.

126. **Polyantha Roses South.** These Roses are moderately hardy, hence should succeed readily in the open air the year through in Middle Georgia.

127. **Begonias,** like most other plants, flower finer for being in a measure pot-bound at the time. A better way of saying this is, that while plant growth is active the plants should be shifted into larger pots each time before they become much pot-bound, but when the flowering season is at hand, cease from this. Then after the flowering season is past, let the plants rest for a spell, by withholding free watering, after which shift up for a new season of growth and bloom. A. H. E.

129. **Planting Magnolias.** To insure success in their transplanting, they should be moved in the spring, never in the fall; and the Chinese varieties at that period when they are coming into bloom; and, consequently, before the leaves make their appearance. Great care should be exercised in their removal, the fibrous roots being preserved as nearly as possible, and carefully guarded from any exposure to wind or sun. While almost any good soil is sufficient to insure their growth, they succeed best in a soil which is warm, rich and dry.—Ellwanger & Barry's Catalogue.

106. **Artificial Fountain.** To make a fountain there must be a head of water, a flow pipe with discharging jet, a fountain basin and an overflow or waste pipe. The head of water may be found either in public water works having some force, or in water from an elevated tank, as in the loft of some adjoining building. This tank may be a common stove cistern, and should be large enough to hold water for a flow of a week or more. A force pump worked by hand or by a windmill should connect the supply tank with the well or cistern. Provision might also be made to conduct the water from the eaves of the roof to the tank. The higher this tank the stronger and more lively will be the fountain. The pipe should be ordinary 1-inch water pipe, extending underneath the ground from the tank or street water pipes to the fountain. Whether a regular fountain stand of fancy iron or copper be used, or instead simply a jet from the supply pipe, at the surface of the water in the tank, is a matter of taste; the latter is pleasing and inexpensive. In either case the pipe should terminate in a screw top to regulate the jet. The fountain basin should be made of brick laid in cement and resting on a stone foundation; the inside of the basin should be cemented smooth. The overflow may consist of an erect iron pipe extending from the bottom, or else from the side near the bottom of the basin, with a strainer top at the desired height of the water, and the lower end connecting with a drain to admit of the escape of the waste. Where these things can be provided it is easy to have a pleasing fountain.

131. **Wasps' Nests.** The best way of destroying these insects is with methylated chloroform or cyanide of potassium. One or two tablespoonfuls of the latter quietly injected into the entrance of the nest at night will not interfere with their entrance, and in 24 hours they will all be dead. Petroleum injected in and then ignited is good, but the potassium is the best. L. P. J.

134. **Turnips Decaying.** The symptoms are those of over-manuring. Turnips like liberal treatment; but when too much forced decay often sets in, and such is probably the cause of your failure.

135. **Concerning Amaryllis.** They may be kept in cellars during 3 months of the coldest weather. *Johnsonii spectabilis*, a quite common variety, is wine-red with white stripes. Seeds can be procured of John Saul, Washington, D. C. Should be sown as soon as ripe, or while fresh. W. F. L.

128. **Gloxinia Treatment.** They usually, but not always, flower the first season. In either case they should towards fall go to rest, by withholding water gradually, until the leaves turn yellow. Then they may be laid under the greenhouse pipes or place of about the same degree of heat, the pots turned on their sides, here to remain until spring. About the middle of March they should show signs of new growth, and then the old soil should be care-

fully removed and the bulbs be potted in two and three inch pots. The soil should be of equal parts good turfy loam, leaf mould and peat. Start them in a moist atmosphere, of 60° by night, afterwards increasing this to 70° for the main growth.

124. **Ivy Geranium.** It requires no special treatment different in winter from any other Geranium.

### GOOD THINGS GATHERED UP.

**Choice things** bring a great price. Let each of us see if we can produce what can't be excelled, and must be appreciated.—*Home and Farm.*

**Setting out Onions** for seed in the fall saves a great deal of time and is generally equally successful with setting in the spring.—*Am. Agriculturist.*

**Selection of Varieties.** The best writers upon fruit-growing say little or nothing about varieties, now, knowing choice to be a very local question, varying on each side of a road or creek, between two seasons, or two different and equally correct methods of treatment.—*The Courant*

**Stopping a Large Hole with Putty.** Take small tacks and drive them into the hole in all directions, the more crooks the better for the purpose wanted, and then take putty, mixed soft and pliable, forcing the same thoroughly all through and among the tacks, then letting the first dose dry hard, after which re-putty to the surface.—*Carriage Monthly.*

**Cabbage Flavoring Milk.** Do not believe the statement that cows can be fed on Cabbage leaves just after milking and the flavor of the Cabbage will not get into the butter. This is the best way to feed Cabbage to cows, but it is only a temporary relief. If the cows are thus fed for several days the flavor of Cabbage will get all through their system, and it will injure the butter; it will require another week to get it out again.—*Agriculture.*

**Rotating crops** and turning under vegetable matter is manuring in itself, and is the best manuring we can do; it is permanent if regularly kept up. We see land that has been annually heavily and extensively fertilized with commercial fertilizers that is getting more exhausted every year. I account for it in this way, that the land lacks humus (decayed vegetation), and without humus manures do but little good.—*Georgia Corr. Dicke Farmer.*

**The Apple Crop Abroad.** A London Apple circular, from entirely reliable parties, confirms what has already been published about the failure of the Apple crop in Europe. In England there will not be above a quarter of a crop. In France, though there is a good crop in some sections, there will be none to interfere with American Apples in England, Holland will have a good half crop, but they will be held at high prices all the season, by reason of the demand from Germany. In Belgium early Apples are in bad crop, late Apples in good crop, but a good many are likely to go to Germany, where the crop is a failure. From the above conclusions the circular ventures to say that the prospect for American Apples is exceptionally good this year.

**Orchard Success.** In three years I improved the production of my fruit trees from 15 to 200 bushels, as follows: I first reduced the top one-fourth; then in the fall I plowed the soil toward the trees. Between the trees I allowed the plow to run deep, so that the water would settle away from them. In the spring I hauled a fair quantity of manure, pulverized it well, and made up some hills, in which I planted some Corn and Beans and Pumpkins. The following spring I repeated this. My trees began to grow very fast, and that fall I harvested 70 bushels of very good Apples. The next spring I manured for the third time, planted it to Potatoes, and harvested 200 bushels of fruit. I changed the yield of a yellow Bell-flower tree from three-fourths of a bushel to seven bushels. From my experience I am of the opinion that most trees have too much top for the amount of roots, and a deficiency of nourishment. I like fall or winter pruning.—*Practical Farmer.*

**Hardy Flowers.** The first reason why they should be more cultivated is for their beauty. They afford not only a great variety in habit of the plant, but much diversity and beauty of foliage, while the flowers present an interminable variety in form and color. In time of blooming they range from the earliest spring to latest autumn, and by a proper selection a continuous bloom can be kept up during the entire season. Another reason is their permanence. When the foliage fades, or the frost ends their career, that is not the last of them, but we know that they will appear the following spring in new strength and beauty. Another reason is, they pay good dividends. One can give away the increase, and still be as rich as he was before; at the same time he can do good to his neighbors and friends by adding to their enjoyments. They are but little trouble is a reason that will commend

itself to many. When once planted they may usually be left for three or four years, and in some cases much longer. They are generally abundant bloomers, and many are excellent for cut flowers.—*Woolson & Co.'s Catalogue.*

**Oil and Sulphur for Mildew.** A paint of Linseed oil and sulphur applied to pipes and flues in the greenhouse is a safe and unfailing remedy for Rose mildew. Precisely how much more influence oil has over sulphur than water to prevent scorching we do not know, but that it has more cannot be successfully gainsaid. The facts which go to prove this have been collected from various quarters and are most convincing. The late W. Bennett, of Flatbush, informed me that in an extensive establishment, over which he had control, there was a collection of Rose-bushes literally infested with mildew. At his request, the oil and sulphur remedy was applied, and so strong that he feared every plant would be destroyed. Instead of this, no harm was done to a single leaf, whilst the mildew was utterly subdued. Quite a number of similar cases could be stated, all tending to show that there is greater safety in applying sulphur with oil to heated surfaces in greenhouses than with any other known substance. The effect is magical. The odor is peculiar, but not annoying, except perhaps to those of very acute smell.—*Corr. Gardeners' Monthly.*

**Study Your Plants.** To grow plants well it is necessary to study them. If you do this you will soon find out what treatment they need, and you will do this if you love flowers. If you do not love them, and try to grow them simply because it is "the style" to have plants in the house, the sooner you give up the attempt the better, for you will never succeed in having good plants. Be sure of that. House plants are generally put out-of-doors in the summer. Some turn them out of their pots into the open ground. Here they make a vigorous growth, but when it comes time to take them up and get them into pots for the house it will be found that the roots have made a rampant growth and a large share of them will have to be cut off. This necessitates a corresponding cutting-back of the top, and the plant is greatly injured at the very time when it should be strong and vigorous. I prefer to keep my plants growing in pots all summer. I put them on a veranda, shaded from the hot sun of mid-day and afternoon, and keep them there from May to the last of September. When it comes time to take them into the house they are not injured by any violent change, and are ready to begin their winter's work.—*Hammond's "House Plants."*

**Fig Culture in the North.** While I would not wish to discourage others from trying the above, it may not be out of place to give my experience at Bluffton, Mo., as much in reply to others, as to inform some correspondents why they need not expect plants from me, as was promised in case it proved a success. Last fall a year I had about a dozen trees from three to six feet high, of different varieties. When the leaves were killed with frosts, the trees were laid down and covered. In the spring they were all dead, excepting one, root and branch. The live one grew pretty well, and last fall had a nice crop of fruit on it. A French neighbor told me these would ripen in the spring. Had I dug up the tree and put it in a tub before any frost occurred perhaps they would have stuck; but it was left until a few sharp frosts before tubbing and putting it in the cellar. During the winter they all dropped off but one. This spring the tub was brought out and the tree soon started growing. Soon one new fig started, which is now the size of a small pear, and looks all right; but the old one dropped off a few days ago, but not ripe. This tree will most probably set a crop again in the fall, and if it does, we will endeavor to put it away in time. At best it is a mere matter of curiosity, and will never pay one for the trouble here.—*Judge Miller, in Rural World.*

**A Great School Garden.** The Arnold Arboretum of Harvard College, Boston, contains 165 acres of land, quite varied in character. This is within a few minutes' walk of the Forest Hills station on the Boston & Providence Railroad. The location is such that the experiments here made will be of general interest to a large portion of the whole country. The Arboretum is yet in its infancy, having been commenced only in 1874, when the seeds of the first trees were planted; the coming spring will see many of the botanical orders planted where they are to remain permanently, the planting being as far as possible in botanical sequence. Along the roadways will be planted both native and foreign species, including all the varieties, so that any one can at a glance see by comparison the plants which best endure our climate. The Arboretum will thus be a living museum, where all may come for trustworthy in-

formation regarding trees or shrubs. The collection of living plants at the Arboretum is richer in species than any other in the United States, numbering at the present time over 2,000 species and varieties of woody plants. Many of these may prove failures; but it is the work of the Arboretum to show by living illustrations what to select and what to avoid. The collection is being continually increased by a system of exchanges with gardens in every part of the world within the temperate zone. Experiments are being made, with the hope that our list of hardy trees may be increased, which has been done in several instances.—*Report of the Massachusetts Horticultural Society.*

**Cranberry Culture** stands prominently among our neglected industries. Consumers in the past have been satisfied with the yield from wild beds, but now with an increasing market at home and for exporting those who have suitable land should consider the advantages of cultivating them. The first requisite is to secure a piece of land that can be flooded in winter, but from which the water can be drawn in the spring. The plat should be sufficiently underdrained or ditched to avoid holding water stagnant near the surface. The surface should be nearly level. Peat or muck bottoms are the best; clay should be avoided. If there is a regular sod it should be removed and two inches of fine sand should be spread over the surface. If there is danger of weeds or grass this may be increased to four inches. It is not necessary to obtain rooted plants, as the Cranberry grows freely from cuttings. Some make small cuttings, broadcast them over the plat and roll; others advocate planting in rows. If the soil is clean, broadcasting is probably best, as the vines cover the surface sooner and thus prevent the growth of weeds. Spring is the best time to set the plants or cuttings. After setting, the water should be kept near the surface and gradually drawn off as they strike and grow. As to the annual flooding this should be done about the first of December, and the water drawn off gradually the following spring, from the first to the middle of May. If a stream runs through the marsh, then in dry weather the flood-gates can be closed for a couple of days, to supply needed moisture to the plants and destroy insect enemies. The favorites are the Cherry and the Bugle. A small crop is often reaped the second year from planting; a full crop the fourth. The yield varies from 100 to 200 bushels per acre. Large growers reap the crop with rakes, but hand-picking is preferable, as the berries bring a higher figure in market.—*A. M. Allan, in Canadian Horticulturist.*

**Autumn Planting.** If trees and shrubs are planted late in the fall the roots unavoidably broken in the digging will have time during the winter to become calloused, and will thus be ready to throw out fibres in the spring and to withstand later dry weather. If planted in October, the broken roots will not only callous, but may throw out small fibers, which will establish the tree or shrub and make it safe against the cold of the winter or the drought of the next season. To defer planting until spring, and even of those who do not delay their orders, some must inevitably be among the last to receive their trees. Then again, last spring there came in April unprecedented heat. From the 19th to the 25th the thermometer ranged from 77 to 88 degrees and deciduous plants sprang at once into full leaf. Many who had large grounds to plant and had not yet sent their orders for trees and shrubs were deterred from doing so and, with new houses occupied, were obliged to look upon naked grounds for a year. Had they ordered the previous autumn and, if not ready to plant, heeled in carefully until spring, they would not have been in this position. While the tree or shrub will callous and form roots if carefully [that is firmly] heeled in, as they will if planted permanently, yet, if everything be ready, it is better to plant permanently in autumn because the ensuing rains will settle the soil firmly about the roots and thus prevent access to them of the hot air of a spring drought. Autumn planting is especially necessary with Roses, Larches, Japan Quince, Evergreen Thorn, and other plants which become excited by the first mild days of spring and, in that condition, may die by transplanting. There are also a very few plants, like Magnolias, Tulip Trees, etc., the structural conditions of which make them succeed best with spring planting. Among Evergreens, Rhododendrons can always be planted advantageously during September. Coniferous trees can also be planted during the last days of August and the first days of September, provided the season be a moist one and the ground in which they are planted sufficiently near to the nursery for them to escape heating in transit. Other arguments in favor of fall planting are the comparative pressure of garden and other work in spring.—*S. B. Parsons, in New York Tribune.*

### An Old-Fashioned Garden.

A lovely place in the evening light  
Wherein to rest and be idle;  
Its borders so shadowy, yet so bright,  
Where old-fashioned Roses dwell by right,  
And queenly Lilies are clad in white,  
Like flowers adorned for a bridal.

Here Gillyflowers spread till their branches seem  
A brood of chicks round their mother;  
There, tender-eyed Pansies muse and dream,  
And Jasmine stars through the twilight gleam,  
And Sunflowers and Hollyhocks, grown supreme,  
Pay stately court to each other.

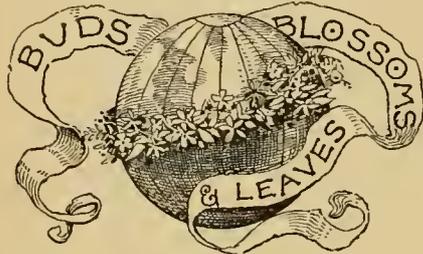
Here Wallflowers open with rich perfume  
Their velvety brown and yellow,  
And, taking more than their share of room,  
In far-spread patches Sweet-Williams bloom,  
And regal Dahlias their crowns assume  
When the year grows ruddy and mellow.

—Girls' Own Paper.

The scent of a flower is a wonderful thing!  
It plays round the heart like the zephyrs of spring;  
So subtle, so soft, so resistless its power,  
No monarchy rules like the scent of a flower.  
Some odors so blend with past happier years  
They move us like melodies breathing thro' tears;  
For they bring back the faces and forms that are  
cold,

And walks in the woods 'mid sunsets of gold.

—Jane C. Simpson.



Plant firmly.

Trench the soil deep.

Clear up after every crop.

A cheap county seat: A stump.

Acacia roots smell like Garlics.

Serpentine walks we don't like.

Try an Abutilon for the window.

What beauty the woods now show.

Horticulture should be a school study.

Tomato-red is a fashionable new shade.

Daisies need a moist but not a wet soil.

Grape branches 200 feet long are known.

Sweet Williams do fairly well in poor soil.

Plant Hyacinths and the like now or never.

October planting answers first rate for hardy  
Roses.

Tree Pæonies are grown as pot or box plants  
in Europe.

A bit of paraffin oil in the soapsuds for clean-  
ing plants helps.

Plums in the Buffalo market were never more  
abundant than this year.

What flower should be a favorite with singers?  
The Trilliums of course.

Calceolaria seedlings are offered by English  
florists at 35 cents a dozen.

Now mind and plant your bulbs, mainly in  
clumps, each sort by itself.

To find the age of a tree, a smart boy tells  
us, learn when it was planted.

Prompt renewals are a delight to any pub-  
lisher's heart. Think about this.

Poppy alcohol is a new German product. A  
good deal of it is being made, they say.

If flowers are nature's jewels, then garden-  
ers are jewelers, for they set the flowers.

"My Nose Garden" is what Mrs. G. S. R.  
calls a plat of all sweet-smelling flowers.

The Grape-vine is long-lived; with fair care  
it will outlive its planter. Treat the vines well.

As Onions induce sleep, let us suggest that  
they be eaten not early in the day, but about  
bed-time.

All these bits of information from readers  
help much to make this journal so bright  
and useful.

"It's an ill wind that blows no good," quoth  
the glazier, when called to repair the hail-  
damaged grapery.

The India Rubber tree fruits occasionally.  
It is a near relative to the Fig, and the fruit is  
somewhat similar.

Trees for Profit. Next to live-stock, tree  
raising is the most profitable product of  
Nebraska.—Higley.

Many subscriptions expire with this month.  
Need we say to such subscribers, renew? We  
expect you will do so of course.

"Popular Gardening" should now be more  
widely known than ever. Reader, will you  
speak a word for it as you can?

Striped Calceolarias. These novelties are  
from Benary of Erfurt, Germany, the flowers  
being striped instead of spotted.

Lime and soot dressings around the growing  
Celery will save it from slugs, worms, etc.,  
helping the growth at the same time.

A dollar-bill now pays for POPULAR GAR-  
DENING in its enlarged and improved state for  
one entire year. Less in clubs of five.

We think you must like the prominence we  
give Downing's apt words about fine fruit in  
the Fruit Head elsewhere in the paper.

The easiest raised flowers are often the most  
beautiful. The Pansy, Hardy Phlox, Weigelia,  
Mock Orange, and so on, are in our mind.

Charcoal. "I have a sack of charcoal and  
whenever I plant anything I put a little in the  
soil before inserting the plants," writes J. L.

Forget-me-nots. Do the readers know that  
those from seed are harder than those raised  
by division or cuttings?—P. E., Fishkill, N. Y.

The question as to whether window plants  
should be turned or not seems to be decided in  
favor of not turning them where bloom is the  
object.

We have been thinking that every subscriber  
could get one or more persons to take this paper  
if they tried for it. Will you, good reader,  
not try?

Rotten cheap—a basket of far-gone Pears in  
front of a huckster's stall, bearing this placard,  
"6 for 1 cent." A country boy wouldn't look  
at such fruit.

The Japan Quince sometimes takes a notion  
to bloom twice a year; just now a bush in a  
Delaware-avenue yard in this city is showing  
numerous flowers.

No *Trapæolum* will flower during midwinter  
in a house having a lower temperature than  
45° at night. In a heat of 60° they are pretty  
and free bloomers.

"Bridget" don't like the name of a certain gar-  
den flower. "Tisn't a nice name they have at  
all. I heard your own mother herself calling  
them spitunias," she said.

To bury large stones that are met is a  
good way of treating them. Their presence  
in the soil, even when deep down, helps to  
maintain moisture in dry weather.

When you renew, or at any time, couldn't  
you drop us some information on flowers, fruits  
or vegetables that would be of interest to the  
family at large? We would like this.

The threads of the Yucca or Spanish Bay-  
onet are made into brushes, which from their  
softness answer better than anything else in  
the apiary for brushing around bees.

Toads. Our old gardener used to years ago  
say "them venomous twoads." He is a citizen  
now and has learned many things, among  
others to call toads "gardeners' friends."

England Reports Again as Follows: Last  
number of POPULAR GARDENING received this  
morning. I like it very much and enclose a  
check, that it may be sent me constantly.

"Fruit Recorder" subscribers will receive  
this combined paper in place of the former

*Fruit Recorder* (now discontinued as such) for  
the terms of their respective subscriptions.

Grass Edges. Say what you will, it is hard  
to find a finer edge for between walk and  
flower bed than a strip of well-kept grass one  
foot in width.  
OLD GARDENER.

Crown Imperials, grand plants that they  
are, if at all to be re-set should have this  
attended to now. But let it be borne in mind  
that they do not like being moved about much.

Expensive "Floral Rugs." The actual value  
of the plants which this year entered into the  
"Floral Rugs," on the grounds of John Hoey  
Hollywood, N. J., it is said, reached \$100,000,  
and the labor half as much more.

The sale in the town markets of Narcissus  
and other spring bulbous flowers from country  
gardens each spring is now considerable.  
This might be kept in mind by many of our  
readers when fixing up the garden.

An amateur, according to the rulings of the  
American Institute's (New York) schedule of  
competitive articles for their October show, is  
the owner of any articles who does not make  
his living by growing them for sale.

Quiet Colors. "Elder's Wife" offers to the  
family of readers the sensible suggestion that  
by painting the plant pots with quiet grays or  
browns, instead of flaming reds or greens, the  
plants in them will show off better.

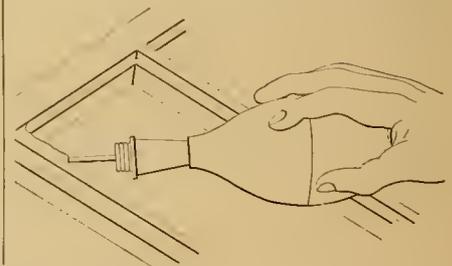
A Mammoth Orchid. Some time ago Mr.  
Hunnewell of Wellesley, Mass., showed it. The  
plant was a *Ceologyne cristata* and was three  
feet across, a perfect sheet of flowers. The  
*Ceologyne* was figured in our February issue.

A Meditation. No simple act that we com-  
mon mortals can do may be so fraught with  
future benefits as the act of tree-planting.  
Plant a tree to-day and generations to come  
may not live to see the end of its benign effects.

A word now to you who are growing Chrys-  
anthemums: Never allow them to want for  
water. For the best shaped plants, the shoots  
must be tied out to stakes projecting outwards  
from the soil. And do not overlook liquid  
manure for soil exhaustion.

A Fine Elm. The writer recently met a re-  
markably fine White Elm in the Chemung  
River flats near Elmira, N. Y. The trunk  
near the ground measured 16 feet in circum-  
ference; the branches spread across about 90  
feet in diameter of ground.

The Cuthbert. Do you hesitate over a Rasp-  
berry to plant for the family (or for market)?



A PUTTYING IMPLEMENT.—See opposite page.

Then try Cuthbert. It is a fine, large, sweet,  
firm Red, well suited to about all sections;  
hardy, but not so much so but that a slight  
cover over winter is of service.

What the POPULAR GARDENING tree now  
wants is a strong growth in the direction of  
clubs. Will our readers see to it that a good  
development comes along in this direction;  
it is a part they can well attend to. As the  
growth matures send in the names.

Now See to It! Last spring when you admired  
neighbor A's fine Tulips and other bulbs do  
you remember promising yourself that your  
own garden—then bare of flowers in the early  
spring—should next spring be in good array?  
Now is your season to fulfill the promise.

Central Park, New York, is soon to have  
twenty new propagating houses. More atten-

tion is to be paid to the bedding system of adornment in the future than has been done. The old park don't like to be left so far behind the parks of the younger cities. But can New York afford the extravagance?

**More Poetry Wanted.** Fine gardening has well been called the poetry of Nature. As *Lippincott's Magazine* well suggests, with the Bible, Shakespeare and the Brownings, the world is not greatly in need of more verse poetry; but it is greatly in need of more fruit, more flowers and more beautiful gardens.

**Gill-over-the-Ground.** This plant, also called Ground Ivy (*Nepeta glecoma*), is by some voted a nuisance. I, by my treatment, say otherwise. I set the plants in a vase and not another thing besides. Then they cannot spread beyond, and the growth droops gracefully and to a great length over the sides. My vases of these are things of real beauty. MAY.

Those who cannot grow Rhododendrons should take POPULAR GARDENING'S advice and plant Pæonies. These succeed in all sections, and while, to be sure, they are not Rhododendrons, a fine collection of sorts will afford almost as large a variety of color as will these, and the plants are quite as handsome in foliage after the flowers are gone. There is no better time to plant these than just now. Arrange the plants in bold masses for the best effects.

**Natural Gas** for heating and illuminating dwellings, factories, etc., is attracting much attention within a section some hundreds of miles from the oil and gas regions of Pennsylvania. Even the florists are getting interested. We learn that Paul Butz & Sons, New Castle, Pa., are to heat their entire greenhouse range with gas the coming winter. When in Buffalo we see how close the natural gas mains are laid to the lines of trees in some streets, our gravest apprehensions for the future welfare of the trees are aroused.

With a large increase of readers, the Inquiry Column is growing. That is right. But will not all our readers do a part in answering the questions? We just believe that what our large family don't know about gardening matters don't amount to much. But how shall all learn of what each member knows, unless each one speaks out? For this is POPULAR GARDENING published, that our family may have a medium of communication. So speak out, every one. Answer something. Ask something. Write about something.

**Good Reasons.** A tree expert was recently testifying in this city as to the value of trees on land to be taken for park purposes, when the following dialogue occurred: *Cross-examining Lawyer*—You say the tree is seven feet in circumference, at four feet from the ground. Why do you not give its diameter, which would be a smaller-sounding figure. *Tree Expert*—I can't measure through a tree, but I can measure around it. *C.-e. Lawyer*—Why do you take all measurements at four feet from the ground? *Tree Expert*—To keep the knees of my pants clean. *C.-e. Lawyer*—That will do.

Gardening is a healthy occupation, as is shown both by observation and statistics. According to figures compiled at the recent Health Exhibition in London, gardeners had a better chance of life than any other class out of some 80 classes, clergymen alone excepted. Taking 1,000 as an average standard number of deaths within a given period, among all the classes, then of gardeners included, who die, the number is hardly more than half the average, that is, 559; farm hands, 653; farmers, 675;

medical men a little above the average, namely, 1,125; while brewers come at 1,361; and inn-keepers, 1,521.

Advertising by means of a bed of Holland bulbs is done by one enterprising firm in this city. Adjoining the floral depot of this firm, in the heart of the town, is a small triangle of land owned by the city. This these florists have gained permission to adorn with flowers. Every fall they plant it with some imported Hyacinths, Tulips, Crocuses and so on, using perhaps a thousand bulbs each time. Then for some weeks during the following spring there



SOME BULBS NOT SO GENERALLY GROWN.

is a fine display of flowers, and which, from its close contact to and strong contrast with sidewalks, streets and buildings, commands the gaze of many thousands of passers-by. In the way of advertising the firm who plants the bed it no doubt pays well for its cost.

**Lily of the Palace** is one of the common, as it is a most appropriate name of the *Agapanthus*. Our wonder is that the plant is not more grown by amateurs, for it is perhaps without a single equal among summer pot-plants for adorning the veranda and plant stand. Beginning with June, its large clusters of Lily-shaped flowers borne on long stalks well above the leaves appear, the blooms lasting for many weeks. The color is blue, in various delicate shades on different plants. The plants are shapely growers always, and in time become noble specimens. As they may be wintered in a resting state, in any partly lighted place free from frost, and be grown most easily in the open air in summer, they are really an ideal house-plant for amateurs.

**A Puttying Implement.** While at the Philadelphia Convention of Florists we noticed a simple and inexpensive device of this kind exhibited by H. W. Williams & Sons, Batavia, Ill. Since then we have ordered one of the same, and are so much pleased with it that we had the accompanying engraving made for our readers' benefit. The bulb in the hand is rubber, and similar to that of the well-known flower sprinkler; fill this with soft putty and by compressing the hand the putty is forced out and

along the sash bar in a straight line just as wanted, and with the greatest ease. Mr. Peter Henderson was heard to say concerning it, that if he had had it in use for the past 15 years he would have saved many thousands of dollars in the cost of glazing. It is just as well adapted to the use of the owner of a single hot-bed or small glass house.

**What is in a Name.** The good old words garden and gardening should not be narrowed down to less than their full meaning. Judging by the frequency such names as *Floral Guide*, *Floral Magazine*, *Floral Instructor*, *Fruit Grower*, *Fruit Guide*, etc., are met, all of which are applied to publications or to matter relating to gardening in all departments, we think there is some danger of this. Then again we have noticed an inclination to consider only vegetable growers as gardeners. All this is wrong; the grower of either fruits, flowers, ornamental plants or esculents is a gardener. [See Webster and Worcester.] POPULAR GARDENING, in name as well as in fact, means to do its share always in retaining the right meaning for these words. In England they act wisely as to this—nearly every one of the numerous gardening journals there published embraces the word garden or gardening in the truest and widest sense.

**Soot-water for Plants.** Chas. A. Geist, of Luzerne Co., Pa., sends in the following valuable article: Soot-water as a fertilizer is unequaled for the amateur's use; always within reach, effective and not unpleasant to handle. To prepare: Gather a peck of soot, place it in a coarse bag and suspend this in a barrel of water. Work the bag about, once or twice a day, keeping it in the water for ten days, when the liquid is ready for use. Where there are many plants there should be two barrels of the water, the one in preparation while the other is being used. Use it clear. I don't know the plant it would injure if applied while growth is going on. Even such

delicate-rooted plants as *Erica* I have kept in splendid health in the same pots for seven and eight years by the aid of soot-water; and such plants as *Callas*, *Camellias*, *Azaleas* and *Roses* may have regular supplies the whole year round. Such subjects as *Fuchsias*, *Pelargoniums*, *Cyclamens*, *Frimulas* and *Ferns* are greatly benefited by it while they are in active growth.

#### Some Bulbs not so Generally Grown.

At this season of hardy bulb planting one must not forget that there are numerous fine kinds of bulbs besides those of the Holland class, which are entitled to attention. We will here name some of these. It may be necessary to say that of the kinds that follow some are not kept in stock by those dealers who handle dry bulbs, but are to be had from the hardy plant and bulb nurseries:

**GOLDEN OR WINTER ACONITE** (*Eranthis hyemalis*). This is one of the very earliest bulbs. The flowers are of a beautiful bright yellow, star-shaped, spreading out close to the ground. On this account they are even more showy than the *Crocuses*, which they precede by a few days. Perfectly hardy.

**SPRING STAR FLOWER** (*Tritelia uniflora*). This is shown in the lower half of the engraving on this page, (for the use of which engraving we are indebted to the courtesy of Messrs. Schlegel & Fötler, seed and bulb merchants of Boston, Mass.) The flowers are white, with a violet-blue line in each petal, of good sub-

stance, remaining in bloom for a considerable time. They are perfectly hardy and also well suited to pot culture.

**ALLIUMS.** This genus comprises numerous varieties, many of which produce beautifully colored blossoms, but some are rather ordinary wild flowers. The one shown in the upper part of the engraving (*Neapolitanum*) is one of the prettiest and gives a good idea of the flowers of this class. Of the easiest culture.

**WOOD HYACINTH** (*Scilla*). These are charming early-blooming bulbous plants of bright-colored flowers, chiefly blue. There are numerous sorts; they are perfectly hardy. Some of the best for common culture are *Amoena*, *trifolia* and *Campanulata*. Their colors are excellent for contrasting with other early-flowering bulbs.

**AUTUMN CROCUS** (*Colchicum*). A genus of profuse blooming plants, the flowers of which are similar to those of the Crocus. The prevailing colors are white, lilac and rose, and some are variegated. Of the easiest culture.

**FRITILLARIA.** This class embraces the old favorite Crown Imperial, as well as the Guineahen Flower and the Golden Fritillaria, which is a native of Oregon. They are a beautiful and showy class. A light soil suits them the best.

**THE MUSCARIAS.** One of the species of this genus, the Grape Hyacinth or Baby's Breath, is well known. The Feathered Hyacinth and the Musk Hyacinth are much more rare. The former especially is very ornamental, the petals of which are cut into filaments like hairs.

#### The Horticultural Convention at Cleveland, Sept. 7th to 10th.

A good number of the stanch men from all parts of the country, who have done, and are now doing, so much to make our horticulture what it is, gathered at the above named convention. Some ladies were present, but we should like to have seen more. The attendance of delegates would have been even larger had it not been that the meeting was held so late that the fall fairs prevented many from coming.

Then the railroads discriminated against this convention by refusing to carry delegates at reduced rates. They have declared that hereafter they will give reduced rates only to attend conventions either of a "religious, educational or benevolent nature". We have never heard of a more unjust ruling. Conventions of this character are not only educational in their character, but that, too, in a direction extending most benign influences on all classes, while tending directly to the increase of railway freights, benefiting the railroads. The association strongly condemned such a policy, and appointed Mr. Albaugh a committee of one to make a statement of the case to the proper authorities, and induce them if possible to change their rulings.

On the first day, after some preliminary matters, including an address of welcome by Mayor Gardner, the able address of President Parker Earle was delivered. It was a comprehensive paper, covering a wide field of horticultural observation. Following are some of the more prominent features of this admirable

#### ANNUAL ADDRESS:

We are glad to meet in this great vineyard and garden center. When we organized this society we included only the Mississippi States, but later we became both in name and in fact an American society. Societies bring people together for the comparison and enlargement of views. If you could take away horticulture from the world, you would have bare walls and scanty food. We have new ideas, new fruits, new flowers, new diseases, requiring our attention. No agency so quickens investigation as organized societies.

Horticulture has outgrown the old acceptance of the term; the word now relates to all that embellishes the home, the farm, the garden and the park. Horticulture has its aesthetic side, and its economic side, and which has developed most in the last 25 years would be hard to say. Horticulture co-operates with education, religion and moral culture.

A half century since how few and small were the nurseries of the country. All honor to the men who built up this business, and made our country the most fruitful and the most flowerful under the sun. Thirty years ago the fruit of the Chicago market could have been carried in a wagon; now it takes whole trains to supply that market.

The Wilson Strawberry marks the era when the first efforts were made toward modern horticulture. Thirty years ago the Peaches for the Chicago market came from our small orchards. Now Chicago receives Peaches from California and from Delaware, as well as from neighboring fields. Thirty years ago all the Grapes in America grew in the Ohio Valley. Now every man can eat Grapes from his own vines, and good fruit can be grown in every State and Territory.

One of the difficulties to overcome is to get equal distribution of our productions. I do not believe we are producing too much, but we are marketing too poorly. I think we should call for a Bureau of Pomology under the Department of Agriculture, as recommended by the Commissioner.

We should also know more about Russian and Asiatic fruit culture. The Government should take up and complete this work.

During the four days of the meeting a goodly number of papers were read, most of which were followed by lively and instructive discussions. We make room below and elsewhere in this issue for some of the remarks advanced, reserving some others for future issues. After Mr. M. J. Smith's paper (to appear later) on this subject, the following and some other information was advanced.

#### ON PROTECTION OF CROPS FROM DROUGHT:

Professor Claypole said that the carbonate of potash in ashes absorbed much moisture from the atmosphere, and would hold this despite the great heat of the sun. . . . Mr. Smith said he used both leached and dry ashes on his farm indiscriminately. . . . Mr. Caywood, of New York, advised that small tiles be used, on the principle that the smaller the drainage the better it will be for the grounds. . . . Professor McKay thought drainage was a big thing in rainy weather, but during the past summer the wet weather was succeeded by a dry month, and the tile-drained land did as well in the latter season as during the wet period. . . . Dr. Townsend was of the opinion that the smaller the tile, if it will carry the water, the better. His farm was drained with two-inch tile, with larger sizes for mains. Willow trees plugged up drains very effectually. Peach trees were bad for plugging drains, but Apple trees seldom stopped up the tiles.

#### ON NUT CULTURE FOR PLEASURE.

Mention was made that Patrick Barry had reported a heavy and regular yield of English Walnuts in gardens in the suburbs of Rochester, N. Y. . . . J. T. Lovett: I have seen trees in bearing in New Jersey and Pennsylvania. I fail to see why the English Walnut should not prove highly remunerative in any place where the tree thrives. . . . Mr. Earle said nut trees were fast disappearing, and this was especially true as regards the Pecan, which in the South was a paying investment. . . . Mr. Van Deman, said that the English Walnut was a failure in the West, and Mr. Lindley and others said that in the South, in his section the nut paid 300 per cent profit annually upon the cost of culture and land. . . . Mr. Albaugh said the sweet American Chestnut grows well in Miami County, Ohio, but ripens no nuts; the burr seems to blast. . . . Professor Claypole said the Spanish Chestnuts and English Walnuts in the experiments made did not seem able to stand the winters of the North. The Chestnut did not freely fruit except upon a sandstone or shale soil. Hickorynuts, he thought, were the kernels for Americans to make money from, if they could trim down the shell and enlarge the kernel without losing its sweetness so as to make it compete with the imported nuts of Europe. . . . Mr. Williams, of Lake County, O., said that the soil had much to do with the growth of trees. Butternuts would grow in Northern Ohio, while Walnuts flourish also. One of his neighbors sold many bushels every year, realizing good profits.

#### ON COMPARATIVE GROWTH OF TREES.

Professor Lazenby: I have made experiments with a number of common trees. The seeds were sown in the spring of 1881. Our Locust and Catalpa trees are fast growers and make good wood to cultivate for profit. For fence posts and like use the Locust is much superior to the Catalpa. I think that for profit the Ash is one of our most promising and most thrifty trees. The rows of Ash trees grew with great regularity and stood crowding

better than any other tree we have cultivated. There is a great demand for young Ash as well as old Ash. The Soft or Red Maple grows more rapidly than the Sugar Maple, but I noticed that the Sugar Maple grew well the third year. On the bottom lands of Ohio the Chestnut will not grow naturally and hence cannot be raised for profit. Our soil does not take kindly to it and our Chestnut trees are dwarfed. I do not think we would gain much by calling for forests on account of the climate. Cultivate for the money that is in timber, and if the forests help the climate so much the better. If you have land you don't cultivate, utilize it for timber. Plant seeds in the winter and let healthy young trees take the place of unprofitable timber that should be cut from the woodland.

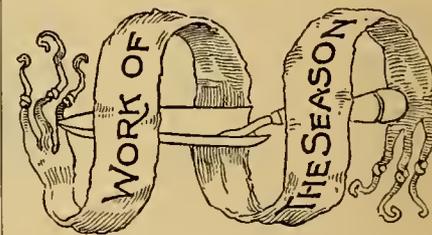
#### OFFICERS FOR ENSUING YEAR.

President—Parker Earle, of Cobden, Ill.  
First Vice-President—E. M. Hudson, of New Orleans, La.  
Secretary—W. H. Regau, of Greenville, Ind.  
Treasurer—J. C. Evans, of Harlem, Mo.

#### THE EXHIBITS

of Fruits, Flowers, etc., at the convention was large and attracted much attention, not only from the members, but from other visitors.

A pleasant termination to the business of the meeting was the visit to the vineyards of Euclid and vicinity, on Friday, as the guests of the Cuyahoga Horticultural Society.



#### THE HOUSE PLANTS.

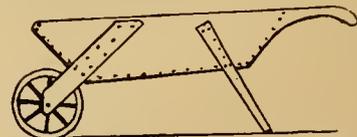
**Begonias** for winter flowers to be encouraged by liberal watering; plenty of light (not necessarily sunshine); let them be not unduly crowded.

The Rex or Show-leaf class, from now until after mid-winter, should be but lightly watered and may be kept in the shadiest part of the stand.

Tuberous ones now to be rested, those from the summer beds by lifting and covering with dry earth or sand where it does not freeze; the pot plants to be undisturbed except to dry them off, storing for the winter in some place like just named.

**Bulbs** of the Hyacinth class to be potted for winter bloom during the month. Pot firmly, but shallow, in light rich soil; set in cool dark quarters, or better yet, cover the pots six inches deep with coal ashes, soil or the like, for a spell of six weeks before bringing to light.

Hyacinths grown in glasses are very attractive. The glasses may be had of the bulb dealers, the cheapest ones being as good as any. The dark ones better than those of clear glass. As to bulbs, select such only as are solid and heavy; they must not come from the cheapest grades; only single ones should be used; the early bloomers are better than late ones. To start them, fill each glass with clear water to within  $\frac{1}{2}$  inch of the bulb in its place. Fertilizing substances or charcoal in the water are unnecessary. Wrap the glasses in paper or cloth and set in a cool, dark closet. When the roots are growing freely, as they will be in a few weeks, bring to the window. Give a light place; add water to make up for evaporation, but never to touch the bulb.



Barrow for Greenhouse use—See "Arranging" opp.

**Geraniums** are a main stand-by. Those kept from bloom up to this time may now go ahead for fall flowers. Those from the summer beds to have tops reduced one-third or more—hardly any danger of cutting too much. The Ivy-leaf class are especially fine for the house. Geraniums closely cut back and potted winter well in a good dry cellar; much growth left on leads to decay.

**Half-Hardy Plants** like Roses, Daphnes, Aucubas, Enonymus, Jasminums, Oleanders, Olives, Pittosporum, Pomegranate, Rosemary, etc., should be brought to winter quarters before hard frosts. A

good, dry, partly-lighted cellar is a suitable place for them, or a glass-covered pit in a sheltered spot outside will answer.

**Hanging Baskets** and interior window boxes to be started early and kept outdoors or under the veranda for a while, to become well established.

**Lifted plants** to be lightly sprinkled several times a day until flagging of the leaves ceases. It is not best to take the window plants in for final at once, but to gradually accustom them to shade and closeness by keeping them on the veranda or like place until the weather is too cold for this. Then when taken in keep away from much heat.

**Primroses** are good house plants, because rather liking dryness. They need light, and through blooming some weak liquid manure once a week.

**Tuberose**s that are late may be lifted and brought in for finishing the bloom. Lift main stock of tubers, dry and store in a decidedly warm place.

## LAWN AND FLOWER GARDEN.

**Dahlias.** Dig on a dry day, cut back the tops to 6 inches; invert the tubers to allow the moisture to drain out of the stem. When dry, store in dry earth, sand or coal ashes, away from the frost, or treat as you would common Potatoes.

**Hardy Flower Borders.** Clear off any frozen tender things, remove bad foliage etc., keep the edges trimmed, and they may look well yet for some time.

**Leaves.** Do not burn these as gathered if you can find a place to pile them for rotting and for use on the land later. Many trees are injured by the heat from fall leaf-burning. It is not the singeing of leaves that does harm, but injury to the bark.

**Lilies** to be reset about the end of the month, if at all. Plant at least 6 inches deep, and protect.

**Plant trees** early if at all, that the roots may get a start this fall while the ground is warm. To bank earth a foot high against them will steady the trees and keep mice from girdling them.

**Seed Beds.** Pansies, Hollyhocks and all hardy plants sown recently to be reset from the seed beds. Prick out when the second leaves show into prepared beds to two inches apart each way for small growers, and from this up for larger ones, watering the young seedlings later as needed.

**Sodding** may now be done. Work up the plat deeply, make even and roll or beat firmly. Take turf from common pasture ground that is free from weeds and coarse grasses, cut to 1½ inches thick, in squares of one foot or more, or in strips 4 feet long, rolling them up for handling. Lay evenly and with close joints, making up for any thin pieces by working fine soil underneath; for thick ones, by shaving down the bed, and finish with a thorough benting.

## PLANT CULTURE UNDER GLASS.

**Air and Heat.** Open ventilators full height on bright days, to admit free currents of air among the plants. To avoid fire heat, as far as possible consistent with the safety of the plants, should be the rule right along now and for weeks to come.

**Arranging.** The new season under glass begins as plants come in, study individual needs as to heat, light and so on—placing accordingly. Don't mix indiscriminately; keep hardwooded by hardwooded, those requiring much water by similar ones, etc. For aiding the handling of plants, soil, pots, etc., in the greenhouse, we find a barrow of our own construction, like the accompanying outline, and to be about 20 inches wide, for entering the walks, a great convenience. The wheel is an ordinary harrow wheel, to be slipped in and out as needed.

**Calceolarias,** and similar seed-grown plants, will be pushing lively under a fair chance. Shift promptly as needed, water well but do not over-water, keep near glass and clear of insects, provide air freely.

**Chrysanthemums.** Keep the plants uncrowded, well manured, and give liquid manure twice a week until bloom shows color, but no longer. Thin the buds where crowded, especially of large-flowered sorts. The house in which they are growing to be kept rather dry through the flowering season.

**Cinerarias.** Treat as directed for Calceolarias.

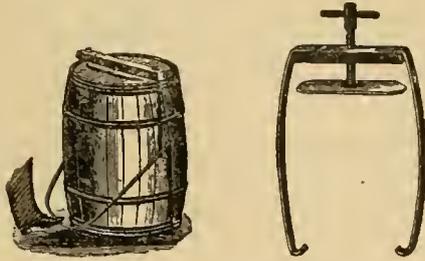
**Cyclamens** to be kept in a warm light place, and to be well encouraged for bloom.

**Lantanas.** By lifting the fine *Elegantissima* and potting, it forms an exquisite spring blooming plant.

**Mignonette.** For early spring, sow in pots of light, rich soil, which keep in a warm place.

**Orchids** generally are resting, in which case less water, a cooler and drier atmosphere and more ventilation is wanted than when growth is on. Those cases where growth is not yet done, it must not be checked or spot will result. Syringe and water

with much care, keeping in view individual needs. Keep everything about the plants scrupulously clean, not overlooking the glass overhead.



Lever and Screw Barrel Headers for Packing.

**Petunias.** The treatment for Calceolarias will suit. **Roses** for cut bloom to be syringed twice daily, and to have a temperature of 55° to 65° at night.

**Shrubs** for forcing, such as Lilacs, Daphnes, Weigelas, Deutzias, Flowering Plum, Spirea, Kalmias, and so on, to be potted by end of month.

**Violet** runners and weak shoots to be kept closely back, lifting and potting the forcing plants about the end of the month and standing them in an airy frame for a month longer. Give full air as long as possible. Keep clear of decaying leaves.

## FRUIT GARDEN AND ORCHARD.

**Bins for Fruit.** New ones to be built, old ones to be cleaned seasonably. Make them shallow and then more of them. Fruit picked early and binned will keep longer than that picked late.

**Borers** in Apples, Quinces, etc., to be dug out at the first leisure, and the sooner the better.

**Cuttings of Currants,** Gooseberries and Grapes to be put in, cutting them with 3 eyes. Plant an inch or two apart in rows, and these 2-1-2 to 3 feet apart. Set firmly with the top eye just even with the surface. Later cover with leaves, hay or straw; this to be removed in the spring. A. M. P.

**Evaporating of Fruit.** Give windfalls and refuse suitable for drying attention daily. Large fruits are scarce and good evaporated ones must bring money. Fruit from evaporators should be thoroughly cured, but not brittlely dry. It may feel damp and yet be dry enough to keep for years.

**Grapes.** Concord and other thin-skinned sorts to be marketed about as soon as ripe. The thick-skinned ones will keep well for months. With such let late use and marketing be taken advantage of, picking carefully, and after leaving in a cool room for several days to toughen the skin, wrap the clusters separately in paper or pack in small boxes and then store in a dry and cool place.

**Packing Apples.** For this use clean barrels, taking out one head and starting against the other end, which is to be opened first. Fill in without bruising the fruit, settling or shaking the barrel sometimes, and until it is above even full. Bring the head in place with a screw or a lever barrel header, such as we show in the engraving, to be bought for a dollar or upwards apiece. The fruit may be pressed even to bruise a little against the head to advantage.

**Pears.** Autumn sorts to be picked just before maturing; winter ones may be left on the trees until in danger of freezing. The latter can go to no better place for keeping well than to a cool cellar, so moist as to prevent shriveling, yet dry enough to prevent molding and finally rot.

**Picking of fruit** to go on lively now. A dry, clear day is the best for the work. After all the pains of growing fruit, don't spoil it by bad handling, or by poor sorting. Inferior fruit detracts vastly more from general appearance in the market than the bulk amounts to—leave it out. Never shake from the trees or pour around any but cider or paring fruit.

**Strawberries.** Planting should be hurried up rapidly. Keep off runners from plants set last month or the month before.

## VEGETABLE GARDEN.

**Asparagus.** Cut down when half withered. Clean up the bed with a hoe (spading is injurious) and apply a 4-inch coat of half rotten manure.

**Beets** to be taken up before hard frosts; cut the leaves an inch from the crown, store in sand or dry earth in a cool cellar. Or they may go into pits.

**Blanching Celery.** A good way to do this is to lift the plants from the ground, leaving a little soil adhering to the roots. Take common flour barrels, put about two inches of sand in the bottom and on this place your Celery in an upright position. Pack one layer in a barrel, as shown in the engraving. Then put the barrel in a cool cellar, cover it with a blanket, so that light is kept out, and in six weeks your Celery will be blanched to the tips. Examine it once in a while, and if it seems to be too dry and showing signs of wilting, sprinkle it with water. Care must be taken not to over wet it.

**Broccoli.** See directions below for Cauliflower.

**Cabbage** plants sowed last month to be pricked into cold frames, putting about 600 to a sash of 3x6, setting the plants rather deeply. Frames for this may be made of rough boards, to be 8 inches high in front and a foot at the rear, with cross rafters and cleats to support and fit close to the sash.

**Carrots.** Treat the crop as directed for Beets.

**Cauliflowers.** As they approach maturity, shade with paper or by turning down the leaves. For young plants see directions under Cabbage.

**Endive** to be blanched when the growth is well along, by gathering up the leaves and tying at the top. Blanching makes an end to growth.

**Lettuce and Tomato seed** sown in a well protected place this month and covered through winter will give early plants in the spring even to beat. It may be, those from a hot-bed. A. M. P.

**Potatoes** to be well dried, but not unnecessarily exposed to light, even for one day, before storing.

**Rhubarb.** Treat in general as for Asparagus.

**Spinach.** Till well, now that the growth is rapid.

**Turnips** now grow well; should be kept hoed.

## FRUIT AND VEGETABLES UNDER GLASS.

**Grapery.** After the fruit is ripe watering is to be withheld in part for a while. Later the borders should receive a fall dressing of bone dust and a thin layer of fresh loam. Houses in which Hamburgs and other thin-skinned kinds are hanging must be kept dry and cool. Remove faulty berries before they taint their neighbors. Prune after the crop is removed.

**Lettuce.** Plants from seed sown in August should be set out for the early crop under glass. Six or seven inches each way is enough room. The sash should be entirely off the house, except in the roughest weather for some time yet. Strew Tobacco stems between the plants to keep down aphid or green-fly, which is a chief enemy to the crop.

**Strawberries.** As soon as the young plants in pots show a mat of roots about the ball shift into six-inch pots and plunge in saw-dust or coal ashes outside in airy place, here to remain until November.

## Received at This Office.

### CATALOGUES.

Chas. A. Green, Rochester, N. Y., Fruits.  
Bristol Sisters, Topeka, Kansas, Bulbs, etc.  
American Manufacturing Co., Waynesboro, Pa., Evaporators.  
Eastern Manufacturing Co., Philadelphia, Pa., Evaporators.  
Ellwanger & Barry, Rochester, N. Y., Roses, etc.  
E. H. Krelage & Sons, Haarlem, Holland, Bulbs.  
F. M. Augur & Sons, Middlefield, Conn., Strawberries.  
Schultheis Bros., College Point, N. Y., Roses.  
Jenkin's Grape and Seedling Nursery, Winona, Ohio.  
Schlegel & Fottler, Boston, Mass., Bulbs, etc.  
Elschig & Meyer, Savannah, Ga., Roses, etc.  
R. Douglas & Son, Waukegan, Ill., Forest Trees.  
E. Bonner & Co., Xenia, Ohio, Roses.  
J. C. Vaughan, Chicago, Ill., Bulbs.  
Hammond's Slug Shot, Fishkill, N. Y.  
John Saul, Washington D. C., Bulbs, etc.  
C. M. Hovey, Boston, Mass., Bulbous Roots.  
D. M. Ferry & Co., Detroit, Mich., Bulbs, etc.  
L. W. Goodell, Dwight, Mass., Seeds.  
Joseph Breck & Sons, Boston, Mass., Bulbs, etc.  
Wm. C. Beckert, Allegheny, Pa., Bulbs, etc.  
Michel Plant and Seed Co., St. Louis, Mo.  
Wm. C. Wilson, Astoria, N. Y., Plants.  
Phoenix & Emerson, Bloomington, Ill., Nursery.

### MISCELLANEOUS.

Bulletin No. 18 and Catalogue Agricultural College, Lansing, Mich.

Planting and Managing Vineyards, E. Ashley Smith, Lockport, N. Y.

Elliott's Landscape Gardening, Cloth, 96 pp., Elliott's Hand-book for Fruit Growers, Cloth, 144 pp. D. M. Dewey, Rochester, N. Y.

Invitations to attend agricultural, horticultural, and other fairs and shows, with complimentary tickets of admission, were received from many societies. For these, whether they were made use of by ourselves or not, the societies who kindly sent them have our sincere thanks.



### What the Flowers Say.

The Red Rose says, "Be sweet,"  
And the Lily bids, "Be pure,"  
The hardy, brave Chrysanthemum,  
"Be patient and endure."

The Violet whispers, "Give,  
Nor grudge nor count the cost ;"  
The Woodbine, "Keep on blossoming,  
In spite of chill or frost."

—Philadelphia Call.

A single color for the best designs.

Corsage Bouquets are worn very large.

Dinner table decorations are kept even lower than in the past.

A window basket planted alone with Wandering Jew forms a fine ornament.

Large Palm leaves arranged in groups are being much used in room decoration.

A broad, low vase filled with shoots of the Snowberry, in leaf and fruit, forms a pretty table object.

Shells as flower holders are coming in vogue. They are pretty by having the flowers made up somewhat one sided, with trailers freely used.

The Panicked Hydrangea has been much used of late for wear and decorations. Nothing can exceed the beauty of a tall slender vase holding several fine specimens.

Sweet Brier roots perfectly cleansed are among the finest of rustic material for trimming baskets, window boxes and the like. Apply a coat of copal varnish after nailing in place.

Simplicity in the use of flowers has reached its extreme limit in the style adopted now for table decoration, of loosely scattering a few flowers of one or two kinds, say Roses and Valley Lilies, over the table without any effort at arrangement.

Would you like a handsome, picturesque table object? Then take a glass vase and fill it with spikes of the Tritoma or Flame Flower, cut two feet long, and some straggling sprays of Ampelopsis with the leaves changing to autumn tints, and you have it.

Faded Flowers. *Young lady (to Turnkey)*—Can I take these flowers in to the prisoners, sir? *Turnkey*—Yes, men; the thieves an' pickpockets will be glad to get 'em. They dot on flowers. But there ain't no murderers in now, men. The last one was pardoned out yesterday. *Young lady*—Oh, I'm so sorry.—N. Y. Times.

The Autumn wild and shrub fruits, such as those of the Thoms, Mountain Ash, Strawberry, Dogwood, Burning Bush, Snowberry, Bitter-sweet, Indian Currant, Viburnums afford along with their own foliage, as fine a kind of embellishing material for most occasions as may be wished for. It is better not to mix the different kinds, but arrange in heavy masses.

Newport florists are not conventional in their ways of serving their ultra-fashionable patrons, not they. At one dinner given recently a piece of sod, thick with grass and Wild Daisies, was used for a centre piece. Around the edges some Red Roses were placed. The effect is said to have been very pretty indeed. At another the leading floral piece was made from a Wild Carrot plant in bloom. It was real beautiful in its way.

A handsome piece as a leading one for a wedding is the Cornucopia. To start with a form 3 feet long and about 1 foot wide at the large end, is a good size. For the outside a simple covering of Adiantum fronds is very effective, but to make this surface of White Carnations or better yet of Golden Pansies Calendulas or Chrysanthemums, it would be still finer. Where the cost might be enlarged upon, to cover it with Golden Roses would be to reach the very height of beauty. The bouquet proper, in the large end, should be mainly of Roses, with some Violets or Lily of the Valley interspersed between. Let this part be devoid of all stiffness in its makeup.

Plant Auctions. New York took the lead in introducing this way of driving the plant trade; now many of the secondary cities have them also. The auctions afford a direct means of bringing seller and buyer together, and large sales often take place in a remarkably short time at the rooms. On sale days the auction rooms present the appearance of a flower show, much pains being taken in the arrangement of plants and flowers to create a fine effect. The stock for sale is packed in convenient lots to

suit the wants of all classes of buyers, and in a way to insure the safe carriage of the articles by express even to distant points. The people that are attracted to the auctions form some curious contrasts. Here you will find the practical florist, the lawyer and the merchant, competing keenly in the bidding. To the heavy purses of the monied men is to be attributed in a good degree the fair prices which so often prevail at these sales.

## Botanical Budget

Heart-wood is dead wood.

Germany has 8 schools of forestry.

Autumn flowers are scant of fragrance.

Peach root tea is a remedy for epilepsy.

Spines are in the nature of real branches.

Chinchona growing in hot-houses develop no quinine in the bark.

Do Plants Actually Feel? The Sensitive Plants would answer that they do.

The main stalks of Indian Corn bear only fertile or male flowers, while the suckers from near the ground have both fertile and sterile blooms.

A Warning to Collectors. Several specimens of the flora of England are said to have been exterminated by tourists, plant dealers and botanists. Such reports carry sorrow to all true plant lovers.

Tulips. There is this curious thing about them, when forced, that they do not turn their growth towards the light as other plants do. Even under the center of a wide greenhouse stage we have found that they grow straight up.

The tuber of the Potato is simply an enormously swollen mass of the underground stem. The central mass of starchy matter corresponds with the fruit of an ordinary stem, while the outer layers, constituting the skin, are equivalent to the bark or skin of the other.

Sunflowers are used in Wyoming Territory for fuel. The stalks when dry are as hard as maple-wood and make a hot fire, and the seed heads with the seeds in are said to burn better than the best hard coal. An acre of Sunflowers will furnish fuel for one stove a year.—Scientific American.

Moisture from Trees. A few years ago a number of scientists of New England made a careful calculation as to the amount of water given to the atmosphere by the "Washington Elm," Cambridge, Mass. They calculated that the leaves of the tree would cover 200,000 square feet of surface, and that they gave out every fair day during the growing season 15,500 lbs., or 7 3/4 tons of moisture.—J. B. P.

Experiments in Intergrafting. Some experiments in this direction are reported by Strausberger showing remarkable results. Among herbaceous kinds of Solanaceae, Datura, Tobacco, Henbane, etc., were grafted successfully upon the common Potato. In the case of the Datura graft, the Potatoes were impregnated with atropine. It is said that Tschudy long ago grafted Tomato upon a Potato stock, and "gathered Potatoes from the bottom and Tomatoes from the tops of the same plant."

Botanical Exhibits. A most instructive exhibit made at one of the winter shows of the Massachusetts Horticultural Society was that of Mrs. P. D. Richards, consisting of native Wild Flowers and Mosses. Every plant, flower, fern or moss had been gathered in its season, well dried and mounted at no inconsiderable outlay of time and trouble, and exhibited not only with the botanical name, but the popular English or local name appended. Such exhibits always prove exceedingly interesting; the materials for them are everywhere at hand.

A Prickly Grape-vine. There was sent to the Kew Herbarium, London, from China, in 1884, a dried specimen of *Vitis*, accompanied by the following note: "Thorny Vine; cultivated at Kinhua; bears large purple Grapes." The foliage is said to be so like that of *Vitis vinifera* that it might well be a variety of it, and Professor Oliver had named it "*Vitis vinifera* var?" But the prickles or bristles with which the stem is beset present a character unknown among all the numerous varieties of the common Grape-vine. It is at all events an interesting subject and attracts wide attention. It may possibly prove the progenitor of the common Grape-vine.

The Canterbury-bell. In the August *Botanical Gazette* B. W. Barton gives some interesting notes on the adaptation of this flower to cross-fertilization through the agency of insects. The flowers, as it is well known, are uniformly erect. The corolla on the inside is so smooth that even glass-climbing insects, such as flies, cannot cling to it. Most insects visiting the flower for the sweets in the bottom of the corolla, are unable therefore to escape by

climbing the sides of the erect blooms, but they find it easy to escape by passing out over the style and stigma. The plant being proterandrous (that is with the anthers of the flowers perfected before the stigmas), cross-fertilization thus becomes almost inevitable. Bumblebees, spiders, house flies and crickets placed in the flowers were, with all their ready ability to climb, unable to escape except in the way indicated. Some small ants, however, seemed to find it as easy to run over these smooth walls as if they had been sanded. How any considerable quantity of rain which might fall into these upright flowers could get out again the experimenter did not discover. He says it is not unlikely that when a certain quantity of water does collect either by its weight it will bend the flower over and escape, or else its presence may excite some movement causing the flower to nod and dump it out.

### ABOUT THE PLACE.

A good time for painting.

Poor fences make unruly live stock.

Dampness, more than cold, kills bees.

Animals suffer in cold rains; fall pasturage is in our mind.

We find sowed Corn cures and keeps the best in small bundles.

Milk is only a "complete food" when the cows are supplied with what is complete food for cows.

A rather dry cellar is desirable. To plaster the walls on the inside with water-lime cement will promote dryness.

Fattening Animals. If not more than one pig is to be fattened, remember this, to keep it in a warm, comfortable place will save feed and hasten matters.

Was the paint brush left to dry without cleaning? It is too bad, for it can never be quite as good as it was before. The one thing that will put it in shape is a turpentine bath, washing afterwards in warm soap-suds.

A shoe scraper made of a broken hoe or spade may not be of the most ornamental kind, but it answers its end as well as any. A scraper of some kind should certainly be at the back door, and one at the outside cellar door.

A seasonable job for now is to put all out-building windows needing it in repair. The breaking of glass lights is one of the commonest of accidents about stables; it may be largely prevented by covering each sash on the outside with some galvanized wire netting, say such as has a half-inch mesh. Bars of wood across the windows inside and out, at six inches apart, will help also.

The bane of many a home is the kitchen slop pipes, emitting a death-dealing smell. Now, harm from this can be in a large measure prevented by an occasional wash-out of the pipe with water in which chloride of lime or copperas (sulphate of iron) has been dissolved. These solutions will kill all bacterial life, the one thing to be aimed for. The cost is almost nothing; the saving may be beyond computation. Take the only safe course.

A hint for improving the cow stables, found in *Farm, Field and Fireside*, is so good, even for those who keep but one cow, that we offer it here: At a point just in front of the cow's feet when she stands eating from the rack (hence standing back pretty well), pin down across the stall a round stick 4 inches in diameter. In front of the stick keep plenty of dry bedding, for it will rarely be fouled, and the cow will quickly learn to bring her body just forward of the rail when laying down.

Greasing Wheels. There is a right way and there are wrong ways of doing it. A paper devoted to the coach-making industry gives some lessons on the subject that are worth repeating here: A well-made wheel will endure constant wear from 10 to 25 years, if care is taken to use the right kind and amount of grease; this not attended to, it may be used up in 5 years. Lard is not good wagon grease; it will penetrate the hub, and work its way out around the tenons of the spokes, thus spoiling the wheel. Tallow is the best lubricator for wooden axle-trees, and castor oil for iron ones, but many of the patent axle greases are also excellent, and have the merit of being cheaper and more convenient to handle. Just grease enough should be applied to the spindle of a wagon to give it a slight coating. This is better than more, for the surplus put on will work out at the ends, and be forced by the shoulder bands and nut washer into the hub around the outside of the boxes. To oil an iron axle-tree, first wipe the spindle clean with a cloth wet with spirits of turpentine, and then apply a few drops of castor oil near the shoulder and end. One teaspoonful is sufficient for the axle of each wheel.



### TREECLIMBER'S TALKS.

#### ABOUT MANGOES.

One wide-awake young reader of these talks, Letty N., of Green Co., Indiana, has lately been helping to make some Mango pickles. She writes that they gather green Musk-melons, the Citron variety preferred, and after removing the seeds,

#### STUFF THEM WITH CABBAGE,

and pickle them. This is the way many other people prepare the same article, and as pickles go, these Mangoes are much thought of by most housekeepers.

But Letty has been learning in her geography at school of

#### A TROPICAL FRUIT OF THE SAME NAME

as her pickles. So when recently she wrote a business letter to the publishers of POPULAR GARDENING for her mother she inclosed on another sheet, in a very proper manner, and written in a neat hand, a few notes as above, with the request that they ask Mr. Tree-climber to kindly tell about the Mango fruit in his column. The note being sent to me, I do this with real pleasure, as I am always glad to treat all similar inquiries that are handed in by young readers.

As to the true Mango, it is one of the useful fruits of the Tropics. It is most commonly found in India, the supposed place of its home, but it is also found over a large area of the Tropics of both Hemispheres.

#### AN ACQUAINTANCE OF MINE,

who has traveled in Brazil, says the Mango tree is quite common there, and the fruit is much seen in the markets, along with other tropical fruits.

In the engraving, which the publishers kindly had prepared for this article, is seen the fruit as a whole and a half—the flower, and a terminal blooming branch, showing also the magnificent large leaves of the tree.

#### WHY THE PICKLE MANGO

should be so called is easily imagined, as we learn that green real Mangoes are used as a pickle to a considerable extent where they are common. So if we cannot have the true Mango pickle we employ a substitute.

But the true Mango is far from Melon-like as to the character of the fruit. It is more

#### IN THE NATURE OF A PEACH,

being a stone fruit, as may be seen in the engraving. Although much thought of as a fruit to eat in the raw state, being luscious, perfumed and sweet, with an agreeable tendency to acidity, still it is less popular than some of its neighbor fruits, because a taste for it must be acquired—it is not altogether pleasant at first. This perhaps has to do with its being so rarely imported into Northern lands along with other tropical fruits. My friend who met the fruit so abundantly in the Brazilian markets said the peculiar flavor reminded him of resin or turpentine, although the natives did not seem to think so.

The Mango is much prized as a shade tree in the Tropics, its large leaves, closely arranged over the branches, forming an effective protection from the fierce sunshine of those regions. It is occasionally met in the hot-houses of England and America, but must be considered anything else than a common plant. I almost forgot to mention that the Mango is

#### A NEAR RELATIVE OF SEVERAL SHRUBS

or small trees well known in all parts of America. I refer to the Purple Fringe or Smoke Tree, and other species of the genus *Rhus*,

including the wild Sumachs, and the not pleasant relative known as Poison Ivy. You will want to know its botanical name also. This is *Mangifera Indica*.

In thus referring to one of the tropical fruits, I could have no better chance to call attention to another interesting matter, namely, the

VARYING SEASON OF THE RIPENING OF FRUIT, and of the harvest over the earth's surface. It is a fact that the full moon never fails to find in this fair world a ripe field of grain, or trees of ripening fruit to shine upon. For some time we have been in the midst of our harvest here in America—the time of reaping the



THE TRUE MANGO.

results of a season of labor—but it is not harvest time now everywhere.

Finding in a paper that I was reading a statement of the countries that have their harvest time in the different months, I give it here in substance for my numerous readers:

#### IN JANUARY

it is harvest time for Australia, New Zealand, Chili and Argentine; *February* and *March* for East India and Upper Egypt; *April* for Lower Egypt, Syria, Cyprus, Persia, Asia Minor, India, Mexico and Cuba; *May* for Algeria, Central Asia, China, Japan, Morocco, Texas and Florida; *June* for Turkey, Greece, Italy, Spain, Portugal, South of France, California, Oregon, Louisiana, Mississippi, Alabama, Georgia, Carolina, Tennessee, Virginia, Kentucky, Kansas, Utah, Colorado and Missouri; *July* for Roumania, Bulgaria, Anstro-Hungary, South of Russia, Germany, Switzerland, France, South of England, Nebraska, Minnesota, Wisconsin, Iowa, Illinois, Indiana, Michigan, Ohio, New York, New England and Upper Canada; *August* for Belgium, Holland, Great Britain, Denmark, Poland, Lower Canada, Columbia and Manitoba; *September* and *October* for Scotland, Sweden, Norway and North of Russia; *November* for Peru and South Africa; *December* for Burmah.

TIMOTHY TREECLIMBER.

#### Prospects Blighted in the Bud.

Those who happen to possess a fine patch of Melons in the vicinity of a town or any settled place know very well what a general but undesirable interest the matter excites in the minds of a certain class of people. All such persons will enjoy the following account of a conversation between two men concerning Melons, and taken from the *Detroit Free Press*:

"Erastus," said a citizen to a colored man on the market one day last spring, "you live out on Prospect Street, don't you?"

"Yes, sah."

"I've rented the five-acre field this side of the railroad tracks, and I think of planting it all to Water-melons."

"Yes, sah. Dat would be a boss spekulashun, sah. Dat's de bes' groun' in de hull State fur Water-melons. Bein' I lib elus by I'll watch de field fur you."

"While I did think of planting it to Melons, as I said, I've concluded to use it all for potatoes. I hope you are not disappointed, Erastus?"

"Oh, no; no, sah. I'ze allus bin about ekally divided 'tween 'taters an' melyons but I'ze feared if dar'l be one dissyappointed pusson it must be you sah, to let such a melyon-growing opputunite pass."

#### Free Giving in Fruit Time.

A store-keeper in New York, during the recent hot weather, devised a truly amiable mode of calling the attention of passers-by to his wares. "FREE ICE WATER" greeted the sweltering crowd upon a sign over a faucet, to which drinking-vessels were attached. By an apparatus that economizes the ice, he was able to supply three hundred thirsty souls with cool Croton every hour, at a total cost for the summer of seventy-five dollars.

We have seen something similar (but better, because disinterested) in a country town near Boston. In the fruit season, a few years ago, a lady who had more fruit than she needed, placed a large basket of Pears on the sidewalk in front of her house, with a label on which was printed—

"TAKE ONE."

The passing boys and girls accepted the invitation, and very rarely abused it by taking more than one. She repeated the experiment as long as the superabundance lasted. This was better than letting Pears and Peaches rot upon the ground—a common practice in good seasons.—*Companion*.

#### PET BIRDS, ANIMALS, ETC.

Cleanliness is of first importance.

For loss of voice give birds Lettuce Seed.

A draught on the cage may cause a fatal cold.

Overfeeding leads to stale food, and this is always objectionable.

Tie the green stuff for pigeons on nails a foot or so up from the cote floor.

For a mopish bird feed some finely chopped onions, new ones preferred, twice a month.

I find that by keeping a piece of rusty nail in the drinking cup the birds are kept brighter and healthier.

AUNT MARGARET.

A Billy-goat is said to have been sent to the poor-house, in Alexandria, the other day, there being nobody to claim him. Not but that he had taken care of himself well enough, only the authorities and Billy didn't seem to agree on the question of extent of his privileges.

Rabbits have a decided relish for Carrots, Turnips and the like, which things can now be well provided. But feed no more than will be eaten up clean. Or if this should happen, do not permit the leavings to lay and rot, the odor from such is not only most offensive, but it tends to breed disease.

Water. It is not pleasant to think that animal pets are at times made to suffer for want of water through the neglect of their young masters. So do, all of you, be very careful; one "forget" may cause hours of cruel suffering, not borne without real injury by the neglected pet, for the pang of thirst, as every one knows, is most aggravating to endure by flesh and blood of any kind. How bad indeed it is when inflicted on the helpless things in our charge, all because we didn't think. Whatever kinds may be your pets therefore, dogs, cats, guinea-pigs, rabbits, doves, birds, squirrels, remember always in attending them, the well known lines from "The Ancient Mariner," by Coleridge: "Water, water everywhere." Let it be fresh, clean and given as often as is necessary.

Ravens steal for the pure pleasure of hiding the stolen articles. An English gentleman who owned one cut down a hollow plum-tree, the hollow of which was discovered to be a sort of "robber's cave" for the use of the raven. Out of this hollow was taken a basketful of things—spoons, knives, thimbles and pens, a pair of scissors, a comb, a bundle of boot-laces, a meerschaum pipe, two vesta boxes, etc., that had been stolen and hidden away by the raven. Leaving the things on the ground beside the fallen tree the man got hold of the raven and laid him down beside these proofs of his dishonesty, wondering what he would have to say to it. Then the rascal assumed an aspect of perfect innocence and unconcern, as if to ask what in the world he had to do with the things spread upon the ground. Then the man hid himself. When the raven found that he was alone he looked keenly around, croaked twice a deep, guttural croak, and walked round and round the disinterred articles, as if admiring them; next he took up a spoon in his bill, and carrying it with quick, decided step to the opposite side of the garden, hid it carefully away under the broad leaves of a gigantic rhubarb plant, and this he did, and very quickly, with every article of the hoard. When he had finished the job he uttered a favorite exclamation of his when he imagined he had just done something exceedingly clever and was perfectly satisfied with himself.—*Whitehall Review*.

# The Household

## A Talk about Lamps.

Lamps when new, as every one knows, work better and give a finer light than when they become old. Let us look at some of the reasons why this is so, with a view to having them always work as near like new lamps as possible.

First as to the wick. This is the pump that conveys the oil to the flame, and it must be in good working order. After being used for a while it gets clogged with dirt and other substances that are in the oil, and failing to pump to its full capacity—a dim light follows. Remedy: wash the wick thoroughly once a week in hot soap-suds, or in water to which some sal-soda has been added, drying well before use.

Then, as the oil is consumed from the lamp the lightest part (of course at the top) is burned first, leaving the heavier at the bottom. By filling repeatedly whenever the lamp is about half empty, the oil gets so heavy that its course to the flame is slow and inadequate. To prevent this common trouble the lamp, especially if it be a large one, should be kept partly filled with water so that the body of the oil is kept near to the flame. And then it should be allowed to get very near empty before each new filling.

With use, the burners soon become gummed up and need to be cleaned. The wick passage should be scoured out about once a month with scouring dust or ashes, using a whale bone bound with woolen cloth for the purpose. The many small holes that admit external air must also be kept open to ensure free combustion. To boil the burner in soap-suds for an hour, occasionally, will tend to better work.

Without a clean chimney no lamp can be satisfactory. We have little to offer on this point to housekeepers. By cleaning the chimney every day soap is hardly required, but if long neglected some must be used. A sponge is very useful for working through the inside of the chimney in cleaning it. When glass lamps become clouded with a deposit on the inside some lime water will aid in cleaning them.

Why lamps explode is a very important question. Where the vapor of kerosene is mixed with a certain part of oil it becomes explosive. The poor oils throw off of this vapor freely. A lamp partly full is more in danger of exploding than a full one, because of the space filled with the mixture. To turn a lamp down when leaving the room is not a safe course, as the flame is in this way brought nearer to the confined air in the lamp. It should either be put out or be left to burn with near the usual blaze.

## Brieflets.

**Naphtha** will loosen up old paint.

**Coffee** unground improves with age.

**Steel-faced flat-irons** are labor savers.

**Salt with nuts** pleases most tastes, besides it aids digestion.

**In cleaning greasy pans,** some sal-soda in the water will help on.

**For turning whitewash to brown,** add brown sienna and a little alum.

**"Sally, what time do your folks dine?"** "Soon as you go away—that's missus' orders."

**A paste of emery powder and sweet oil,** applied with flannel, will clean steel perfectly. Polish with a piece of leather.

**To take paint smells away,** the English people tell about soaking a handful of hay in a pail of water, standing this in the room.

**For cleaning hair brushes,** I add a few drops of ammonia to a dipper of water and find this to do better than anything else. Mrs. G. C.

**In some homes** a close closet catches all the soiled clothing until washday. No worse plan could exist for health. An airy loft or room is the place for such clothing.

**Temper the glass and earthen ware,** Putting such in a boiler full of cold water, and heating to the boiling point, allowing it to cool again, will do it, to the saving of a good deal of breakage.

**A door or drawer** that sticks even a little may vex one a great deal; help any such holding place by rubbing the soap bar over it a few times. If it sticks much a plane must be employed; or, in case of a door, it might be re-hung.

**Can anything** be more uncleanly and disgusting than the kitchen apron used as a handkerchief, with factory at four cents a yard? Some people one runs across are guilty; point the present paragraph out to them. Let no child get into such a habit.

**Danger Ahead.** One housekeeper in Connecticut is said to have put a Squash into the oven to bake and it exploded with a loud noise, lifting the top off the stove. If this thing goes on in the Cucurbitaceae family the next thing we know Pumpkin pies will begin to blow up, and then what will become of the liberty for which our forefathers fought and bled.

**Walnut Stain.** You can turn Pine or Whitewood shelves, tables and the like, to a fine Walnut stain by applying with a brush the following preparation: Thin-sized shellac, 2 qts.; dry burnt umber, 1-2 lb.; dry burnt sienna, 1-2 lb.; lampblack, 1-8 lb. Shake well until mixed. This to be followed by a coat of shellac varnish. Such a stain and finish, give some very common home-made things quite a store-like appearance.

**The report** that physicians are in many cases prescribing light housework to women as a remedy for various complaints sounds well, especially in view of the great scarcity of efficient hired help. All fastidiousness aside, and it must be admitted that housework for girls and women is as beneficial in many respects as mild gymnastic practice. Sweeping rooms, beating beds, cleansing glass and paint, indoors and out, can every one of them be recommended for creating a wholesome glow and dispelling torpidity of circulation.

**Nasturtium Pickles.** Those who have never made or used them do not know what they have missed, as a relish with cold meats, oysters, etc. They are easily prepared. Seeds that are quite young and tender should be turned into a jar of cold vinegar. When the bottle is full pour out the vinegar into a pan on the stove, adding a little salt, some Pepper-corns, a bit of Ginger-root and also some sugar, but not much, and letting all come to a boil. Then pour this boiling hot over the seeds and cork tightly until used.

# Poultry.

## Some Important Points for Now.

Ventilation of the hen house is one of these. The fact that poultry is included among the "fowls of the air," that by nature choose to range at large and to roost in tree tops, shows their need of plenty of fresh air. Without it they cannot thrive in confinement. Bearing upon this matter the *Practical Farmer* offers some ideas as follows:

The lack of proper ventilation, together with filthiness, causes more disease in the flock than all other causes combined. Deprived of free air for any length of time and hens begin to droop, their eyes grow dull and they seem to take but little interest in life.

Feed fowls as well as one can, provide every luxury, apply every remedy of medical science, still without pure, unadulterated air you will be unable to induce them to lay an egg. In perhaps 99 cases in every 100 of failure in the poultry business we believe such failure is owing to the want of pure air.

One of the needs in producing eggs during the season of frost and snow is a good supply of green food. It is not at all difficult to have a supply on hand for the fowls. Cabbage, Turnips, Apples, etc., all easily preserved, are relished and serve to keep them healthy and sound, inducing them to furnish fresh-laid eggs when they are most appreciated. Generally in winter grain is the chief resort, with the evident result of the fowls becoming fat and having no inclination to lay. Comfortable quarters have much to do with the amount of eggs shelled out, yet this must be seconded by a supply of good green and other food.

Every careful poulturer should keep a stock of carbolic acid always on hand; it is as indispensable as Corn or Oats. It costs about 20

cents a quart in the crude state. It can be used by mixing a little of it with water in a watering pot and sprinkling it about the quarters. This will drive lice away if done often and will purify the atmosphere and surroundings of a fowl house, assisting thereby to ward off disease and impurities.

Another way to use the acid is to put a teaspoonful in a pail of whitewash and apply this to the walls of the house, letting no crack or opening be missed. Also apply to the nests, roosts, floor, and then the fowl house will be free from lice, bugs, and insects of all kinds.

## CONDENSED POULTRY NOTES.

**Feed wheat** for more albumen.

**The Dorking** is the oldest breed.

**Disease** is death to profits at least.

**Pepper** is the seasoning to go into hen food.

**Our small potatoes** are to make big-priced eggs, next winter.

**With wild birds,** molting takes place in the season of most food. Do you take the hint?

**"To be sure** those are Leghorns; don't you see the horns on the legs," quoth Uncle John at the fair.

**The earth is getting damp** outdoors now; this suggests that now the dust-bath under roof be put in order.

**A floor of earth,** the surface a foot higher than the land outside, is about as complete a floor as can be desired for the hen-house.

**One way of getting up** exercise in the winter quarters is to hang a sheaf of oats just high enough that the hens must jump to get the kernels.

**We prefer** to have the hen-house, that is, its main windows, facing a little east of south, rather than straight south, for we value early sunshine in it more than sunshine at the end of the day.

**The joints of my nest boxes** are now louse-proof, for when they were nailed together I first smeared the parts that were to meet with a mixture of lime, kerosene and sulphur. I applied the same stuff to the joints of the chicken coops. Louis.

**Don't.** Because a hen may be forced to eat almost anything, don't give her bad food and then look for good well flavored eggs. Because she will drink foul water when no other is to be had, don't force her to it, and then expect good health, eggs and flesh.

**Hens will pick up** a good deal of fine charcoal if given the chance. This shows that their systems crave, hence need it. Charred Corn is one of the best shapes in which to furnish it. Feed this once a week during fattening and it will improve the flavor of the meat also.

**Let there be Light.** That's what the windows are for in the poultry house. But if never cleaned, as is the case with one house we saw the other day, (and of very many we did not see) a desirable end is defeated. The hens are deserving of better treatment than to be kept behind such filth-clogged windows. In fact they will pay for the cleaning, if it must be put on such grounds. A whisk for the cobwebs and loose filth, and a cloth for polishing the glass, if rightly applied, may soon let daylight through. Next take hold of the dirty floor, if such a one exists.

**Are you fattening** some fowls for market? Then remember that buyers do not want poor stuff. The markets are overrun with half-fattened, poorly dressed, poor paying and poor eating poultry. You should aim to get way above this. A lean six-months' chicken is not as tender as a fattened year-old bird. When good healthy young fowls or turkeys are shut up close, regularly fed all the food they can digest, and given fresh water—or better, milk daily—they gain very fast. When they are fat it is time to market them. But even the choicest birds may be ruined by bad killing and preparation. There is no better way to go about this than to begin by fasting them for such a time as will give the food a chance to become digested and the bowels empty or nearly so before killing. Immediately they are killed they should be hung up by the feet, or they may be hung up before killing, bleeding them as they are suspended. Dry-pick while warm, singe over an alcohol lamp flame and lay on a table to cool, being trussed up nicely into shape, keeping them so by wrapping in strips of muslin until they get cold. In twelve hours they may be packed. The birds should be packed in layers and very close. They must be thoroughly cold before this. Clean Oats straw affords one of the best linings and layer materials that we know of for packing.

# POPULAR GARDENING

FOR TOWN AND COUNTRY.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

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NOVEMBER, 1886.

No. 2.

## Autumn Days.

Out in the sunny opens  
The Gentians are in blow,  
And 'neath the silver Aspens  
The royal Sunflowers glow.  
But shrill the wind is piping  
Out of the north for snow,  
And all the loitering Blue-birds  
Chirp softly, "We must go."  
—Elizabeth Cummings.

## Make the Horticultural Shows Educational.

The shows called forth at this season by the blooming of that queen of autumn flowers, the Chrysanthemum, are usually the most popular if not the only horticultural exhibitions occurring in the year in many places. Being as a rule well patronized by visitors, we desire to state some suggestions bearing upon their being made as educational as possible. Nothing can go farther in promoting a popular interest in horticulture than these displays of the best fruits of the art, and this chance at hand for advancing popular knowledge here should be made the most of.

Correct and readable labels for all flowers, plants, fruits, etc., are of the first importance. To exhibitors who may be as familiar with every name of the kinds shown as with their own names this is apt not to seem of much moment. But to the visitor desiring to enlarge on his or her knowledge of plants, as thousands of people in this day happily are, it is very different. The presence or absence of a plain label may just make the difference between such a one soon losing sight of a subject, or of fixing the name in the mind or note-book, to learn more about it by future study.

The label or card used should be large enough to contain the common name the botanical name, and the variety name—all three are important,—a line for each. Then there should be a line to state if the subject is hardy, greenhouse or stove, and one giving its native place. People are often brought to an interest in a plant, through knowing its home, when otherwise they would give it no further notice. Here is how the card may be arranged:

Class .....	No. ....
NAME:—Common .....	
Botanical .....	
Variety .....	
AS TO HARDINESS .....	
NATIVE PLACE .....	
EXHIBITOR .....	

By a systematic use of such labels a horticultural show would become a horticultural school, where "he who runs may read." The work of labeling should be in the hands of a competent committee, to be aided by the exhibitors. A round, plain style of writing should be employed for the inscriptions.

Another desirable aid to public instruction at such shows is a committee on information.

This is to be composed of competent persons whose duty it is to meet the wants of any visitors seeking special knowledge about flowers, fruits, etc. Each member of this committee should wear a distinguishing badge, which should be plainly described in the schedule of exhibit, so that there need be no hesitation between an inquirer and a member of the committee coming together.

The course here suggested will of course impose some trifling additional labor upon the societies giving shows; but it would meet a real need of the times, and would go farther towards promoting a genuine taste for horticulture than any one other thing else costing so little. In most cases sufficient appreciation for this would be shown by the public to largely swell the door receipts.

## What of the English Sparrows.

These lively little fellows were invited over from Europe a score or so of years ago to help us rid our trees of insects. As with foreigners generally they at once found things favorable to their stopping for good in this land of the free, and with the result, by this time, of spreading out so numerous that now no end of persons can be found who rue the day the birds first came to our shores.

But the sparrows are here and what are we going to do about it. To wholly exterminate them, were this desirable, seems out of the question, taking in view their rapid increase. One brood of young quickly follows another and the breeding season is prolonged over the whole summer. With the hold they now have we can expect nothing else than to see them remain here as fixed as the white man himself.

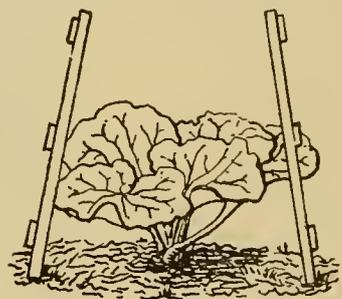
Having brought the sparrows from Europe, we may turn to Europe for some lessons on dealing with them. In the first place let us consider that, with all the faults belonging to this bold, saucy little fellow, it is not yet *proved* that we would be better off without than with him. Some years ago when thickly settled France undertook to carry out their destruction it was discovered that the decrease of the sparrows was followed by an increase of caterpillars that did vastly more injury to the crops than the birds themselves.

It is true that while many investigations recently made as to the food of sparrows show that in the case of adults a large share of the food is seeds and vegetable matter, but some insects also, on the other hand it is proved that the young, as in the case with robins, are fed almost wholly on insectivorous food. If therefore we could succeed early each season in working off any excess of adult birds, beyond what would be needed for raising the young broods as insect consumers, this would be very desirable.

In England they have found sparrow clubs an efficient means for thinning down these birds. To such an end prizes are offered by these clubs, not only for the

destruction of the greatest number of birds, but also of their eggs. Every member of one such club that has been reported to me is expected to produce 12 sparrows every month or forfeit one penny for every one deficient. Last year this one club succeeded in destroying more than 7,000 sparrows and eggs. The first prize was \$15, the second \$10 and the third \$6.

In connection with this idea of slaughtering a surplus of the sparrows the fact should not be overlooked that they are good



Advancing the Season of Rhubarb.

to eat, the sole objection to them being their small size. Those who speak from experience as to this say that a more savory dish than sparrow pie or dumpling can scarcely be found. Now that our National Thanksgiving day is near, we would suggest that the working of a great many of these into the feast would give additional cause for thankfulness. RUBUS.

## Advancing the Season.

We start hot-beds early in the year and give them close care in order to gain some weeks in the coming in of the first vegetables. This is well, but there are some other and even more simple means of gaining similar ends that are rarely seen in use.

One of these relates to the advancing of the Rhubarb and Asparagus season by some weeks. The course is a simple one and consists of first driving a line of stakes obliquely into the soil, as shown in the engraving, along a row of these vegetables any time now before the ground freezes. There may be as many stakes on each side of the line of plants as there are plants or clumps, having them come alternate.

Then, before winter sets in, the row should be covered with straw, evergreen branches or similar coarse material, and on top of this some boards to shed wetness, the object being to prevent deep freezing of the soil. In February or March this cover should be taken off, and the forcing be begun. To do this, first nail two narrow strips of board lengthwise against the stakes, the ends of such being shown in the figure. Then against this sort of railing, on each side of the row, a bank of fresh manure should be piled to the very top, tramping it somewhat as in hot-bed making. The larger the bulk of manure used the speedier will the crop come on. The winter cover of straw, as

well as of boards, may be laid over the manure for retaining the warmth from fermentation. One wide board laid over the opening that is formed between the manure lines, in severe weather, will also help matters much.

Strawberries or Asparagus may be had three or four weeks earlier than is natural, in another way. Set some low hot-bed frames upon the beds, sinking them a trifle, and banking up to their tops on the outside. In December fill in the frame over the plants with straw or other clean litter that has no weed seeds in it. Some boards or shutters may go on top of this to advantage. In March simply remove the covering and put glass sashes upon the frames. Give air freely on sunny and warm days, and keep down the weeds; then you may have Strawberries by the time those of your neighbors are fairly out in bloom.

Florists will find this latter course an excellent one for bringing on Lily of the Valley and similar flowers very early in the spring season.

#### The Queen of Autumn— The Chrysanthemum.

As if to compensate for the increasing gloom of these going-out months of the year Nature offers in this, her latest flower of the season, a great measure of brightness and of bloom. Whether this fact, or else the readiness of the plant to respond to common culture has the most to do with its popularity, it would be hard to tell. Certainly no flower leans more lightly on the purse, none demands less skill to produce satisfactory results to the grower than this noble late bloomer. And we may add that no other, as an exhibition flower, is capable of calling forth such a degree of enthusiasm from Americans as this one invariably does at the flower shows of the present month.

For this fine flower the world is indebted, as it is for many another, to the rich flora of the East—China and Japan. To the gardeners of Europe and America, also, great credit is due for the improvements they have wrought on the original types by selection and crossing. It is now well known that notwithstanding the skill of the Japs and the Chinese in the culture of Chrysanthemums, through many centuries, our own gardeners have achieved a much higher standard in its culture than they have.

The Chinese Chrysanthemum was brought to England in 1764, flowering there for the first time in the year following. Its name, meaning Golden Flower, was bestowed by the botanist Linnaeus, for at that time only those possessing yellow flowers were known. They were distinguished as two species, the one having the largest flowers being called *C. sinensis*; the other, with small flowers, *C. indicum*. Those early Chrysanthemums were about as far inferior in quality, size and color to the fine representatives of this genus, which we have in this day and which we

show in our engraving herewith, as could possibly be imagined.

What is now known as the Chinese group of Chrysanthemums is quite distinct in appearance from the Japanese and some other groups of the present day. The varieties of the former are smooth in outline and of regular shape, being shown by the flowers in the vase and partly back of it in the engraving. The class is divided into two forms: the Incurved, in which the "petals" are somewhat curved upwards and towards the center, partly showing their backs, as seen by those in the vase, and the Reflexed, in which these lay more flatly and overlap each

varieties represent much diversity of color.

Some of the newer classes of Chrysanthemums are the "single" Anemone-flowered, with a conspicuous cushion-like center of small tubular florets, and other so-called single and semi-double varieties. Among the latter are some of great size and beauty, reaching as much as six or seven inches in diameter. To the skill and perseverance of Hallock, Son & Thorpe, East Hinsdale, N. Y., is due, in a large measure, the marked improvements now met in this last-named class. These gentlemen by their enterprise have done a large amount of good work in giving to the Chrysanthemum the prominence it now enjoys in all parts of this country.

#### How to Grow the Perpetual Carnation.

BY JOSEPH TAILBY, WELLESLEY, MASS.

We will begin with the propagation; the best time for this is about the last week in February to the middle of March. I use 6-inch pans, three and one-half inches deep; but boxes will answer. Place crocks in the bottom, then about one inch of coal ashes and fill up with clean sand made firm.

Choose short-jointed tolerably firm cuttings, but not too hard and with one pair of fully developed leaves on each.

Keep them in water, as they should not be allowed to get dry; then dibble firm in the pans, give a good watering, place in a cool, shady position and sprinkle often; when well calloused give a little air. As soon as they are rooted shift to a more exposed position, so as to harden them off.

I plant these in boxes three inches deep, at about one and one-half inches apart. For compost take two parts of loam to one of well-rotted manure; if the loam is stiff add a little sand. After this give more air and not too much bright sun. If they are allowed to become dry or get scorched the rust or canker is sure to attack them. Keep from green fly and red spider. When established give all the air possible, but do not at any time let them freeze.

As soon as the weather and soil are fit plant out in rows 15 inches apart and 10 inches in the rows. The best soil is good yellow loam, rather light; they will make more fibrous roots, but not so much growth as in heavy soil. It is not robust growth we want but good, firm wood. For manure I find horse manure the best. If the soil is old give a good dressing of lime; too much manure and a deficiency of lime will produce an abundance of coarse growth and disease. New land is the best. The plants must be stopped during the season, so as to make them stocky.

Get the plants inside before the cold weather sets in, so as to have them well started before using fire heat. For compost use three or four parts of good maiden loam to one of rotten manure; plant about ten inches apart and give a good watering. Sprinkle two or three times a day until they begin to make new roots; check the green fly as soon as it appears. Keep the house not lower than 45° at night and from 55° to 65° by day. Give plenty of air, even at the expense of a bit of coal. Do not give too much water. Unless airing and



GROUPS OF VARIOUS TYPES OF CHRYSANTHEMUMS.

other; this form in the engraving being to the rear of the vase.

The Japanese group is more variable in its character than is the former. To describe this, beyond saying that the flowers are decidedly irregular in form, some showing "petals" much curled or fringed, others reflexed, and still others with these arranged in a whorl in the center, would be difficult. In our engraving this group is shown in the flowers on the table to the front of the vase. While this group with its fantastic forms may be the most admired in the show room, it is not as popular as are some others, because not so easily grown or so free of bloom.

The Pompon group (so named by the French from the resemblance of the flowers to the tuft or pompon on a soldier's cap) is a great favorite, for what they lack in size is made up by quantity. Single plants of this group have been grown to carry over 2,000 flowers to perfection. The flowers are about one inch across, and in the different

watering is properly attended to you cannot get good flowers or keep your plants healthy. From January 1st on, say once a month, dress with a good fertilizer or liquid manure.

In pot culture—the treatment is the same, only the compost should be made richer and coarser, with the turf chopped about half the size of an egg; pot firmly—a 6-inch pot is large

to the roots of growing plants. The garden becomes earlier and warmer in the spring, cooler in the summer, and more productive and comfortable in every way from the presence of good underdrainage.

THE KINDS, NUMBER AND DEPTH OF DRAINS. The best artificial land drain, as shown by much experience, is the round earthenware

drain for this length is wanted. To get this fall, we first drive a boning-rod at D, with its top just this three inches above the level mark made at C. With using the top of this boning-rod, just driven, as a sight here, and the point A at the other end of the line as one, it is easy, with one person to sight and another to drive the boning-rods, to bring the others at the de-

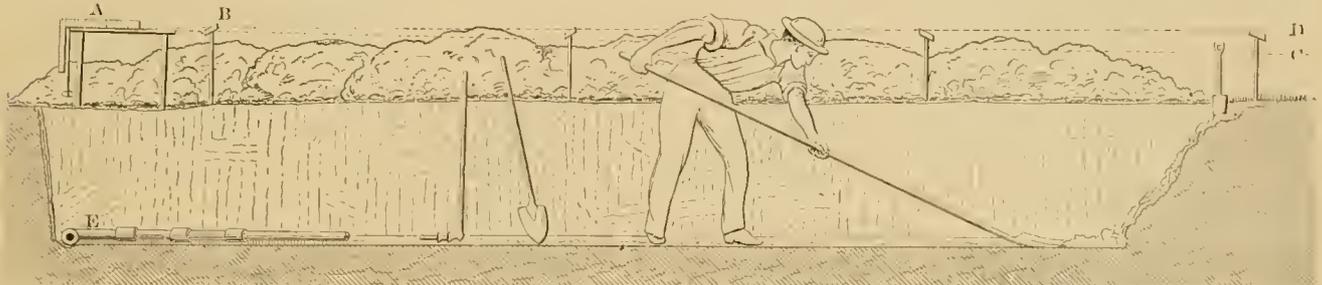


FIG. 1. HOW TO UNDERDRAIN A GARDEN.—DIFFERENT STAGES OF THE WORK ILLUSTRATED.

enough to grow them in; give one and a half inches of drainage. When the pots get tolerably full of roots give liquid manure once a week. A very good liquid is made by using one ounce of sulphate of ammonia to three gallons of water. This liquid is cleaner to handle than manure water, does not clog the soil, and answers the same purpose.

In regard to the disease of the Carnation, I am satisfied if the treatment as laid down is adhered to there will be no trouble.

The best houses to grow them in are large and roomy, with a southern aspect. In small houses you cannot give air so well as wanted. With a large house the weather outside may be dull and cold, but the air admitted is moderated to the temperature of the house before it gets to the plants. It will take a little more coal, but this is a slight matter when plant health and quality of bloom are considered.—*From Paper read at Philadelphia Convention.*

### How to Underdrain a Garden.

Does my place need draining is a first question. Land that is somewhat light on the surface, with a gravelly sub-soil or land that overlays at a near depth rocks in which there are seams not far apart, are rarely helped by underdrains. Rolling land that is light both as to surface soil and sub-soil seldom needs to be drained. Heavy soil with a sub-soil of stiff clay or any other hard pan that is slowly im-

tile or pipe drain with collars, as at E in Fig. 1, also in Fig. 2. Tiles that are either so soft burned that they will not give a clear ring when struck, or else too hard burned, warped or melted make defective drains; one bad, the drain is had. In case one cannot get tile, a fair substitute may be made of narrow strips of rough boards, nailed into either of the forms shown in Fig. 2, but they lack long durability. Tile drains well laid last a great length of time.

There must be a main drain and connecting with it at right angles a system of parallel branch drains, at about 20 feet apart and reaching to near the boundary of the piece to be drained. The former should have a diameter of 4 to 6 inches inside, the latter of 2 inches. A means of outlet lower than any part of the lot to be drained is necessary; the cellar drain might often be of service as to this. The general depth of the small pipes should be three feet. From the line of these at the highest point a general fall of one inch to the rod is desirable, throughout, but much less than this, say, one inch to four rods, can be made to answer along with the best kind of work in laying the tile.

LEVELS AND GRADIENT LINES. To determine these rightly calls for greater painstaking than any other part of the work of underdraining. Still it is not a very difficult task, and with the help of Fig. 1 we think we can make the way for this important part easy to any of our readers. To do so we start out with the most simple methods, such as all can command.

A main drain being shown at E, let us go through the steps of determining the grade for the branch leaving it here, which then will apply to all similar parts. A first step is to strike a level. For aiding in this we call in a carpenter's common square and a plumb-line—any cord weighted with a stone will answer for this. Two stakes are driven, a smooth sighting board is laid across the tops of these, upon and over the end of which are hung the square and plumb-line, all as shown at A. By tapping one or the other of these stakes lightly on the top, until the plumb-line agrees with the square, as in the cut, the sighting board across the stakes is brought to an exact level. A spirit-level could be used advantageously for gaining the same end. Then by sighting over this board towards a stake set at C, (the other end of the line), marking the level point on this, the level line A C is located.

This line, then, is to be taken as a basis for securing the fall of the drain from the C end to the main (E). Now let some boning-rods, one of which is shown at B, be provided, say enough to place at a rod apart along, or rather just at the side of the line of the drain. Let us suppose that it is a little more than three rods from A to C, and a fall of three inches in the

sired distance apart between, and with their tops to a line (A D). The tops of said boning-rods will then of course represent the grade of the drain, but at, say five feet, above where the drain itself will come.

Now, in the work of digging the trench and shaping it up to receive the tile, it only becomes necessary to measure down five feet from the top of each boning-rod to secure the right depth at those points. As the rods are but a rod apart, it then is no difficult matter to rightly even up the bottom of the trench between these points, as the man in the engraving is shown in the act of doing. A straight edge board 16 feet long is an excellent help for evening up the bottom in this respect all ready to receive the tile.

LAYING THE TILE. With a trench properly shaped up its entire length for receiving the tile, it is an easy matter to lay these. Whether to lay the mains and the branches at the same time is immaterial, if all the levels were previously obtained. The tile should be brought carefully into place, adjusting the collars and firmly settling them as the work goes on, filling the soil on top of them when a certain length of the tile is properly in place. The tile layer shown in the engraving is a convenient tool for handling the pipes as they are being put down. When tile are laid near trees, special pains should be taken to have them come tightly together, for keeping the roots from entering and clogging them.

### A Fine New Window Plant.

We refer to the *Taraxacum Deuss-leonis*. Although the name may not yet be a familiar one to the ears of most plant growers, it affords us pleasure to say that plants of it may even now be had very cheaply. Add to this the fact that they possess most attractive blooming qualities, and the greatest ease of culture in the window in winter, and we think enough has been said to at once attract favorable interest to our subject.

The flowers of the *Taraxacum* are of a singularly pleasing form and color. In some respects they resemble *Chrysanthemums*, being in size midway between the small and large flowering blooms of that genus. But in doubleness, symmetry (without stiffness) and fine coloring, they even exceed the *Chrysanthemum*, we think, while their season of bloom is longer. They are dwarfer in habit and are more easily grown. Although the color is yellow, it is strikingly bright, and affords as fine a bit of richness as we know of in the entire floral world. The leaves are of elegant form, with the teeth or lobes, which appear along their margins, bent downwards.

The culture of the *Taraxacum* as a pot plant, as intimated, is simple. Plants should be obtained during this month, potting them in ordinary soil of moderate richness. This should be pressed quite firmly against the roots. After

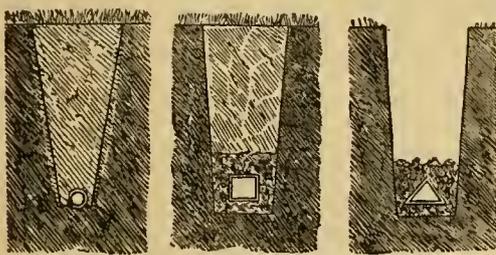


FIG. 2. CROSS SECTION OF DRAINS.

pervious to water requires drainage to fit it for the best use. Any soil that does not free itself perfectly and fall friably from the spade or mould board within thirty-six hours after a saturating rain requires draining, to be satisfactory either for useful or pleasure gardening.

GAINS THAT COME FROM A DRAINED SOIL. First the soil is relieved of the evil of stagnant water lying underneath the surface. If this is allowed to escape, all excessive surface moisture must follow, and its place in the pores of the soil be taken by fresh vaporized air. The air thus freely penetrating to the full depth of the drains serves to deepen and work healthful changes in the soil, converting inert matter into plant food, as well as to supply needed air

potting plunge the pots to the rims in earth or other material outdoors, and leave exposed to weather and frosts until the setting in of winter, when they should come to the cellar. At any time after this the pots may be brought to the window or the greenhouse for growth. If this is done at intervals of three or four weeks a long succession of the brightest bloom may be secured. The flowers will appear in about the same length of time after the plants begin to grow as Hyacinths require.

Nothing has been said as to the source of obtaining the plants. They may be procured at any roadside for the digging; or perhaps some young and plump ones that have strayed into the garden can be found—than such there could be none better. The plant we refer to is also known as the Common Dandelion.



#### A. M. PURDY'S DEPARTMENT.

Postoffice address, - - - Palmyra, N. Y.

To "Fruit Recorder" Subscribers. Hereafter all letters about missing numbers, specimens, etc., and all remittances for renewals, must be sent to the office of POPULAR GARDENING, Buffalo, N. Y.

#### Walks and Jottings About the Fruit Farm.

THERE IS THAT old Black Raspberry plantation cleaned and trimmed up for one more crop, and as they are to come off next season after fruiting, and the bushes are old and small, we have concluded to sow Corn half way between the rows in the spring, and will thus get a good crop of Corn and fodder.

WE ARE PLOUGHING our truck land this fall, and shall plough it again in the spring, as we find by so doing it makes it much more friable and easier to work next season, and not so liable to bake.

HERE ARE TWO rows of old Concord that we have allowed to grow every way, more to get wood for propagation than anything else. We are now renewing it for fruiting purposes, by cutting out all the old wood and leaving but two canes of three years' growth, four to six feet long, and by digging well around the roots and working into the soil plenty of compost we will make them productive again.

NO BETTER TIME in the whole year for trimming fruit trees than this month, and by the way, what horrible work is made by many in trimming,—no judgment as to how or what to trim; no knowledge as to the growth of different sorts, the same kind of trimming being given to the Rhode Island Greening, with its broad spreading branches, as to the Northern Spy, with its close top, or the Tompkins County King, with its long upright limbs. While the Northern Spy needs thinning out in the center, the Rhode Island Greening requires cutting back and not too many limbs allowed to grow.

THE FINEST crop of Strawberries we ever grew was a bed of Wilson's Albany, on about one third of an acre that we had manured well in the fall with well-rotted manure and ploughed under shallow, and the next spring, as soon as the frost was out and ground settled, we ploughed it deep, following the common turn plow with a subsoil plow that loosened the ground at least 18 inches below the surface, but not turning up the subsoil. After harrowing well, we set the plants one foot apart in the row, and rows three feet apart. We kept it well

cultivated and hoed and the ground well worked, and cut off all runners. Such fine berries and such a mass of them was certainly a sight to see. We are satisfied that one acre of ground thus prepared, planted and cared for would bring as much actual profit as five acres in the ordinary way. What was still better this bed yielded abundantly for two seasons after that.

THERE IS nothing better for giving an even, regular heat in a hot-bed than leaves, and these should be gathered in the fall and put away in a dry place. When used in the hot-bed mix them with half their bulk of fresh barn-yard manure and turn once or twice before using.

WE HAVE the best success with all kinds of cuttings by cutting in the fall, tying in bunches of 25 to 50, and leaving in a protected place through the winter where frost will not disturb them, and taking out and transplanting early in spring.

IT'S ASTONISHING how vigorous Grape-vines will grow where a few bones have been thrown into the hole when planted out.

THE SELF BLEACHING Dwarf Celery is fine for early fall use on the table, and we shall plant out more.

LESS LAND, less help and expense and more manure and better cultivation of fruit and the surplus land in farm crops is our motto hereafter. First-class fruit will sell at all times at paying rates, and so we propose to grow better fruit on less land.

#### Notes on Kinds, Culture, Etc.

Surprise (history unknown), Crimson Beauty, Superb, Brandywine, Cuthbert, Turner, Reder, all ripened nearly together within the next three or four days.

Hansel I shall abandon, as not earlier with me than several others, while it is comparatively unproductive, small, and not of high quality.

We clip the above from an article written by Lyon of Michigan to the *Rural New Yorker*. Mr. Lyon must certainly have strange soil, for on our grounds the Crimson Beauty is five to six days earlier than either kind he mentions except Hansel. The Hansel is certainly not less than six days earlier than any kind on our grounds except Crimson Beauty, and both are profitable because of their earliness.

Mr. Ohmer, of Ohio, had four acres of Kittatiny Blackberries that were just beginning to ripen, when the drouth began to dry them up. By cultivating once a week, he secured a crop of large, nice berries, that sold at enormous prices, because others had no berries to sell, they not so cultivating.

The above is from the *Michigan Farmer*. We have practiced cultivation for years in our small fruits of all kinds, where drought set in, with the most favorable and paying results.

Phelp's Iron Clad shows the most vigorous and thrifty foliage of any we have seen, even surpassing the Vick. The berry is large and lobe shaped, resembling the Sharpless or Parry. It is of excellent quality, sweet and agreeable. It seems to be fully up to the standard for yielding. We consider it one of the most promising of the newer sorts.

We agree with this writer in the *Orange County Farmer* concerning this variety, and can also say that on our grounds it grows as early as the Crescent. Judging by the numerous favorable testimonials we see of it and our experience we consider it the best large early sort on our grounds.

J. E. E., *Bucyrus, Ohio*. A liberal supply of superphosphate scattered around Strawberry plants is not only beneficial to the plant and fruit but drives the grub away. A trifle of salt, say a thimbleful, scattered around each plant is also a prevention to grubs.

H. G., *Salem, Va.* We have had best success in keeping Apples by wrapping paper around each Apple and packing closely in barrels. We prefer packing them in barrels and allowing them to stand outdoors in a cool shady place until freezing weather comes on, and then putting in the cellar.

E. W. M. We don't know that Gooseberries succeed better near the sea-shore than inland. Its a good plan to scatter salt around and under Gooseberries and Currants, as it keeps the surface moist. Gooseberries begin to yield a profitable crop on favorable soil the second or third year after planting.

M. B., *North Springfield*. Yes, the Dorchester Blackberry is an excellent variety to plant with the Brinton Early as a fertilizer. The Early Harvest is also good for that purpose.

T. N. F. Yes, Celery may be planted early in spring for early fall use if put on low, moist ground. We do not consider transplanted Blackberry roots equal to this season's layered plants. In fact would rather buy the latter at \$10 per 1,000 than take the first as a gift.

#### Mixed Plantations.

Fruit growers, like many farmers, make great mistakes in planting too largely of some kinds of fruits and none of others, and also depending entirely on such. There are thousands of localities through the country where a general assortment of "truck" or garden vegetables sell well, and especially where one sends out his own wagons and peddlers.

We have found early Peas, Potatoes, Corn, Radishes, Onions, Beets, Cabbage, Lettuce, Beans, etc., in good demand, and by keeping a wagon or two on the road have taken in a good deal of cash, which helps out on expenses amazingly.

An assortment of fruit grown properly is safer than making one kind, like Raspberries or Strawberries, a specialty, and the best only taken to market and the culls made into jelly, which sells well the following winter.

Too many ship to distant markets that are over-flooded and hardly pay expenses, while if they sold nearer home they would do much better. It does not take a large bed of Radishes, Onions and Beets to bring in fifty to one hundred dollars from the sale of the product, and that, too, with but little expense out. The fact is this "castle" building must cease and growers get down to rock-bottom.

#### Pruning Peach Trees.

The tendency is well known to throw out long branches, which lose their side-shoots and become bare poles, with fruit and leaves near the end only. Referring to this tendency, some cultivators do not allow any of the branches of their trees to extend more than five feet from the center, as hardly more than two feet, at the outside, ever bear fruit. With this care the trees at any age need never have a spread of more than ten feet under the management of careful pruning. Large orchardists, however, in regions of the country where the trees do not live long after coming into full bearing, let the trees take their own course, and do not give them this attention. Finer fruit would be had with good pruning, and when the trees continue healthy their vigorous growth and good bearing condition may be indefinitely prolonged by judicious pruning and proper cultivation. [We clip the above from the *Spirit of the Farm*, and can fully endorse from our own experience the same. A few days since we were in Cayuga Co., and a friend pointed out an orchard to us that had been closely pruned each year and had not failed a crop for five or six years, while orchards near by and under just as favorable circumstances had failed at least half the time and when fruiting gave only a light crop. He claimed that the shortening in made the wood harder, and trees being planted closely together in a bunch were considerable protection to themselves; we say plant close—not over 12 to 14 feet apart, and cut back strong and put only planted crops among them for a year or two, and then give the ground to the orchard, keeping it well cultivated.]

### Plum Curculio Nonsense.

Mr. John S. Fitzhugh, of Texas, writes to *Home and Farm*, and says: Rub the bodies of the trees with common soft soap, slightly diluted with warm water. This is recommended on his own discovery that the curculio beetle does not fly up into trees, as generally believed, but that it crawls up the trunk. This should be done about the time the trees are ready to cast their flowers, and to meet the appearance of the young fruit; but it is by no means certain that the beetle is not constantly depositing its eggs in the plum as long as there is green fruit upon the trees. If so, the fruit yet un-pierced may be saved, if it is true that the insect crawls up the trunk instead of flying.

In reply to the above, we would state that we know, of our own knowledge, that the Plum curculio beetle *does* fly. We have often taken it on the wing. In our opinion it never climbs the trunk of a tree save in cases where it has been by some means disabled so as to render it incapable of flying. Tapping on the trunk of a tree for the plum curculio would simply be persecuting the cripples.—*Mobile Register*. [The only way to head off the curculio is by jarring the tree, or spraying with poisoned water.]

### A Good Mexican Custom.

Wherever the Mexican is, whether on the prairie, forest, bottom or mountain, he buries the stone of every Peach he eats. The result is that Peach trees are found everywhere in that country. It makes no difference where the Mexican may be, he stops and plants the seed. If on foot or horseback, in stage or wagon, he keeps it until he can plant it. It is his creed, his religion, to help another. He plants, he says, for the stranger.

Why can not we do the same? A hole made by the thrust of a cane or the foot, a few handfuls of soil thrown over it, and the tree will come. If every one would follow this beautiful custom, what a country for fruit we would have in a few years. It is far better and more humane to do this than to cast it aside to be crushed by some passing hog.

The above is from the *Spirit of the Times*. This is a very commendable practice, and if carried out along the roadside and in the fence corners of yards and farms how many would soon be supplied with fruit that know not what it is to have it plentifully as an article of food.

Instead of selling old cast-iron at 1-2 cent per pound put small pieces near the roots of Grapes, Currants, Gooseberries and fruit trees. It is very beneficial.

Grapes grown on trees are free from disease and yield plentifully. Plant them a rod away from large trees and train them up to limbs and they will soon run through the trees.

The best way to use bone for immediate effect is to keep a barrel of lye on hand and put in this all bones. Soon phosphate of potash will be found, which is one of the best fertilizers.

It will be noticed that the sweetest and best crop of Plums are grown in dry seasons, thus showing that dry well drained upland locations are best for them. The same, too, with Grapes.

Many persons complain that they cannot grow good crisp Radishes. The trouble is the land is too heavy and rich, a load of clear sand worked into 10 to 12 feet square of ground will make good Radish soil.

To increase sucker plants, such as Blackberries and Red Raspberries, rapidly, cut rings around the old bushes, say the first 18 inches away and others at three or four inches apart, and you will have plants in abundance next spring.

Wherever we have Pear trees fail because of blight we are putting Plums in their place. The latter pay well to evaporate, and now since we have got the best of the curculio by spraying with Paris Green or London Purple water, we are getting wonderful crops.

The Russian Mulberry. This, we believe, will make one of the best hedges, not only for quickness of growth, beauty and hardness, but because of its sweet and abundant crop of fruit, which will draw the birds largely away from other crops, like Cherries and small fruits.

Keeping Celery. We have found the best plan is to take a box, sufficiently deep, packing closely in this, with the roots packed in four to six inches of earth, and in the center of the box put in a small round tile perpendicular, and through this occasionally during the winter force water. The water is then made to reach and run through the earth below without wetting the leaves and stalks, which should not be done when packed for keeping.

High Freight Rates. You High Point folks have very little to complain of, as compared with Arkansas fruit growers and farmers. Mr. Newcomb, the largest fruit grower in the State, pays \$1.25 per cwt. for fruit to St. Louis, a distance of 350 miles, and not in refrigerators either, and if we want to visit Chattanooga, a distance of 550 miles, we can pay \$19; thus we are compelled to find a more favorable fruit country than this, to make the business pay.—T. J. BULL.

Resetting old Strawberry Plants. An enquirer wants to know if she can take up plants from an old Strawberry bed and remove a few rods and get fruit the next season, as she desires to plow up the old bed. In answer we would say that we have had success in taking up with a spade sods of old plants and transferring to other places, and obtained good crops the following season. In doing so, pick out all grass and weeds, pack down firmly in their new place and manure liberally.

It's a good plan to grow a natural Peach orchard, and the best way is to get land ready this month and properly worked up, and at each crossing where trees are to come plant two or three pits this fall, and when they come up in the spring pull out all but one. We advise all who are intending to plant any kind of small fruit on sod land next spring to be sure and plough the ground this fall—leaving it without dragging. The grubs that such land is infested with will then not survive the winter.

Parties must not calculate on the hardness of any kind of fruit in sections where the mercury drops down to 25 to 30 because such prove hardy in the Middle and some of the Western States, and our advice is buy lightly of any new kind of Blackberry or Raspberry unless it can be sufficiently proven to have withstood the cold sections named above. And too many of them may stand two or three winters and the next be killed to the ground. The Snyder, Western Triumph, Taylor, Stone's Hardy and Wallace can be generally relied upon.

Strawberries, Wild and Tame. Your article on this is a good one to dispel the old idea of there being nothing like the old wild ones in point of flavor and fragrance, which they certainly possessed in a high degree. At this day I consider the Ladies' Pine the finest in flavor, but it is too small, too soft, and not productive enough to ever be a market berry. Pautuxet comes next, to my taste, but I have lost it. Your advice to let potted Strawberry plants alone I consider good. Have tried it just enough to learn that there is nouse in it. S.M.

The following we clip from a letter received from E. D. Buxton of Las Cruces, New Mexico, Sept. 6th, 1886. "We irrigate from the Rio Grande River, and the deposit is manure in itself—lacking some qualities that are supplied by commercial fertilizers. We raise enormous Onions—and enormous in productiveness. Raise the Mission Grape; has grown here for nearly 300 years. The Mexican labor, on which we largely depend, is low-priced but not cheap. For instance, in their own small farming, they plow still with the stick, cut wheat with the small sickle, thresh with animals treading on the grain, and cleaning this then in the wind."

### QUESTIONS AND ANSWERS.

136. **Sowing Tree Seeds.** Will you please give instructions for keeping and sowing Tree seeds, Walnut, Ash, Catalpa, and Box Alder, etc. C. BIRD, *Grainfield, Kan.* [These must be planted in the fall, or else mixed with earth and put out to freeze through the winter, and planted in early spring.]

137. **Unfruitful Pear Trees.** Three of mine about 12 years old, healthy and full of bloom in spring, bore only about 2 dozen Pears each last two seasons. Near by two Florida Beauties gave 6 bushels of fine Pears each year. What can I do for the unfruitful ones? In using wood ashes to fertilize fruit trees, when should it be applied? Spring or Fall? In using manure when? J. A., *Leaviston, Canada.* [Root pruning will often produce fruitfulness, and sometimes top pruning in March or early in April. We know some varieties of Pears and Apples require age before bearing. Over manuring and working among the trees will cause a strong growth of wood and but little fruit with some sorts, while with others its just what is needed. We do manuring in fall and winter rather than in spring.]

138. **Raising Pear Seedlings.** At what time is it best to sow the seed for seedlings to graft upon? [We usually sow in the spring.]

139. **Grafting Pear Seedlings.** At what age should they be grafted? [We have had such poor luck in grafting Pear seedlings that we do not now graft, but bud in August.]

140. **Pear Seeds.** Where can I procure the seed and at what price? [They are sold by dealers in fruit seeds. We think you had better buy the seedlings of some reliable nurseryman.]

141. **Soil for Seedlings.** What kind of soil is best adapted to the growing of seedlings? [Any good loamy soil.]

142. **Quince Seedlings.** Are these of any use? C. R., *Randall Road, N. Y.* [No.]

143. **Blackberries in Sod.** Is it better to cultivate Blackberries, or sow in Clover when old enough to bear? J. B. S., *Wyandotte, Kan.* [If tender sorts they will not stand if cultivated, but will only succeed in soil. But we prefer to plant hardy sorts like Snyder, Western Triumph, Wallace, Stone's Hardy and Taylor, and cultivate up to August.]

144. **Early Ohio Raspberry.** Is this Black Raspberry identical with the Miami? If not, which is the best of the two? A. B. [We presume what you call the Miami is the "McCormick" or Mammoth Cluster. It is not identical with this, but is the same as the old Miami of the Miami Valley.]

145. **Prunes from Seed.** Will they come true to name from the seed? [We think not.]

146. **Shumaker Peach.** Is the Shumaker a free-stone? How much earlier is it in ripening than Crawford's Early? H. A. K., *East Portland, Oregon.* [It is a free-stone and ripens about with Crawford's Early.]

147. **What can be done to prevent the ravages of the Currant Borer?** L. S. F., *Rockford, Ill.* [Scatter salt—say a teaspoonful—close around each bush two or three times through the season.]

148. **Is Superphosphate** especially beneficial to fruit? [On old land I have found it to be very valuable, but one must be careful about using it and not get on too much. Better a rather small allowance than an overdose.]

149. **Manuring Strawberries.** Which is the better manure, raw bone ground fine, or commercial superphosphate? Will either well supply the place of stable manure? Will it pay to use any commercial fertilizers—say one ton per acre, the land being already in good condition for corn and potatoes? J. H. B., *Woodstock, Ill.* [As it acts quicker, for immediate effect we prefer the superphosphate to raw bone. Of these the last will best supply the place of stable manure for lasting effect, but we prefer good rotted manure to either. Land in the condition of yours, if it be strong soil, we would not advise manuring, at least for most kinds, as it will push them more to growth of plant, to the falling off of fruit.]

150. **Grubs.** Is there a remedy for these? I planted 5,000 Strawberries last spring on Clover and Timothy sod and they have destroyed about half of my plants. Are they liable to be in the second year. Also, do the grubs come from the May beetle. J. K., *New Wilmington, Pa.* [Late fall plowing is the best remedy, and if a barrel or two of salt to the acre is scattered over the land all the better.]

151. **Cur in Grape Leaf.** What is the matter with, and the remedy as to this and the vine becoming coated with a kind of rust, the fruit also having black spots on? H. F., *Elgin, Ill.* [The disease which is affecting the Grape-vines plainly indicates that the trouble is caused by the *Peronospora viticola*, or the "Peronospora Mildew." A remedy which was proposed by Prof. Riley last year has since been used with gratifying success. This remedy is, in brief, a use of the ordinary kerosene-milk emulsion, prepared according to the formula given in the recent reports and bulletins of this division, with from 2 to 5 per cent of carbolic acid and the same per cent of glycerine added, and then diluted in 20 to 50 parts of water to one of emulsion, and sprayed upon the under surface of the leaves by means of a force pump with a cyclone nozzle, with a small aperture so as to render the spray as fine as possible. The dilution is sufficiently great to render the kerosene harmless to the leaves and the glycerine is added to prevent too rapid evaporation.—L. O. Howard, *Agricultural Department, Washington.*]

## Garden Notes From Lyndale.

BY A. H. E.

By a judicious use of late blooming hardy flowers the borders at Lyndale are yet full of attraction at the date of this writing, October 12th. The same cannot be said of all borders of hardy plants one may meet at this season.

At the head of such late bloomers I place without hesitation the Japan Anemones or Wind flowers. They are satisfactory plants in every way, succeeding with no more attention than Peonies and similar easily grown things need. Of two late sorts growing here, one has rose-colored flowers and the other pure white ones. The flowers are several inches across in size and well borne above the plants, which in themselves are among the finest in the garden. In coloring and texture the blooms are not excelled by those of any other class; and there is a conspicuous yellow center to each that serves to beautifully set off the flowers. Any of your readers who do not have these plants will be safe in putting them down among their next purchases in this line.

Our other decidedly late hardy bloomers are the Autumn Monk's-hoods, with beautiful large blue flowers; *Helianthus Maximiliani*, a tall, vigorous-growing perennial Sunflower, that only comes in bloom after all others of the same genus are done; the Closed and the White-flowered Gentians and the Autumn Crocuses. To this list may be added such late bloomers, still giving a good show of flowers, as the Perennial Phloxes, Yellow Chamomile, Double Perennial Sunflower, Rose Mallow, Snap-dragons, Asters, and the late-blooming annuals, especially the Marigolds.

My way of locating these late bloomers had to do with the aid they now give to general attractiveness. For instance, there is a strong clump of the White Anemone referred to located prominently in the first part of the border, the eye catching it from the moment one enters the gate. In front of this group there are some of the low-growing Colchicums. Then farther along an outward bend of the border holds a clump of the Rose-colored Anemone, and still farther down there is a mass larger than either of these of the matchless white variety already referred to. Taking these bright kinds as centers, the other late bloomers are brought more or less closely in conjunction with them in masses, with also some light scatterings of the plants more remote. I really took more pains in arranging this late class than any other, for the very fact that at this time there is such a general scarcity of bloom in the border, and this I am anxious they shall in part make up for. It has always been a hobby of mine to work for as complete a garden as possible at the extremes of the season, namely in the early spring and late autumn, when at best the garden is looking none too well.

It is undisputed that Parsnips, delicious vegetables that they are, when well cared for, are better for remaining in the ground until used, than to be lifted in the fall and stored. But they are wanted all through the winter, and if one has to dig them from frozen ground he finds a dreadfully hard task. I get around this for providing those needed in our family, and yet I leave them out until used.

In the first place I sow Parsnips in beds of three rows, at 15 inches inches between the rows, bringing the three rows within a space 30 inches or a little over in width. This space then in November I cover with leaves or straw a foot thick, on top of which I string along my three feet by six feet hot bed shutters. While such protection does not keep the roots free from frost, it does prevent hard freezing, and then I am able every few weeks, during win-

ter, to dig up a small fresh supply of the vegetable with but little trouble.

The propagation by cuttings of shrubs and such things needed in gardening is one of my delights, being easily done, and to me there is a great satisfaction in seeing young plants in their line coming along. So I have a spot of light sandy loam which I call my nursery, and in this I always have more shrubs,



THE GOLDEN-BANDED LILY AS A POT PLANT.

etc., coming on than I can actually find use for. Among kinds which I find may be increased readily in this way are the Currant, Gooseberry, Grape, Quince, Mulberry, with few exceptions all of the flowering shrubs, and such trees as the Willow, Poplar, *Elaeagnus*, Birch and so on. Many others can be raised from cuttings, but not well, by this easy course.

Just before winter I make the cuttings, using as a general thing a foot in length of well ripened young growth for each one. In trimming them I am particular to cut quite close to a bud both at the top and bottom. I do not plant the cutting directly out in the fall, although this could be done were they not liable to suffer from being displaced and hurt by freezing; instead I tie them in bunches, each kind by themselves, and bury these deeply under a mound of earth for the winter. I think there is some advantage in inverting them, that is, having the butts upwards during winter. Then in the spring as early as the soil works up dry the cuttings are set out in the "nursery," placing in trenches at an angle of 45°, with the top eye just even with the surface. At that time I am very careful to pack the

earth firmly against the cuttings, as making the rooting more certain to succeed; usually there is but little loss, and this representing no material outlay, in such propagation.

## On the Cultivation of Lilies.

Our engraving represents the famous Golden-banded Japan Lily, *Lilium auratum*, growing in an ornamental pot. By procuring plump, healthy bulbs of this or of any other sorts, including all the more delicate ones, it is almost as easy to have them bloom in this way as it is to succeed with the Tulip or Hyacinth thus. But while the latter are best adapted for winter bloom, the Lilies, being summer-flowering bulbs, should in the main be relied upon by amateurs for bloom in the summer or in the spring.

We introduce our subject in this way because almost all flower growers have a desire to raise some of the finer Lilies, and by pot culture they may at least be sure of one crop of flowers from their bulbs, which is more than can be said of such kinds when they are planted in the garden in the way Lilies are too often planted. For this the bulbs should be set in the pots in November, using for soil decayed fibrous turf and dry cow manure as the main ingredients, to which may be added some leaf earth, sharp sand and crushed charcoal. The pots or receptacles should be of ample size as to the earth they will hold, and this must be underlaid with plenty of clean potsherds for drainage. Put a handful of dry sand over each bulb, having them when done fairly covered. Set the pots in a cellar or coal-shed, but give no water until spring. In May they should start up fine sturdy shoots, and the culture should be mainly in the open air after this. Be very careful in watering, as stagnant water at the roots is a chief enemy to Lilies.

But after all we must expect our greatest success with Lilies in good assortment in our gardens. And this is possible if the culture be right—a matter too rarely seen. The thing of first importance in Lily culture in the garden is perfect drainage of the bed: moisture about the bulbs in winter being a most prolific cause of failure with them. This is why, in speaking of the more delicate sorts, we started off with pot culture, for by this too much moisture is easily obviated.

The soil of the Lily bed should be rich and friable to a depth of a foot if possible. As a rule the bulbs are not planted deep enough; they delight in the coolness that comes from being covered at least six inches over, if this reaches eight inches all the better. For providing fertility rank manure is to be avoided; it produces decay and disease; the manure should be well rotted. The addition of leaf mold, even to the extent of one-third of the soil, is of great value.

Transplanting is best done in October or November, setting the bulbs in clumps of about three each. The clumps should not, excepting in small growers, be nearer than from 24 to 30 inches apart, as the planting should be done with a view to not often moving them. On the approach of winter a coat of leaves or other litter over the bulbs will be of benefit.

A satisfactory way of growing the more delicate Lilies is in tubs or ample sized boxes, in which good drainage is provided. These should be large enough to hold at least a half bushel of soil, the idea being to have them form permanent clumps here. The tubs may be moved to a dry cellar during winter, where the bulbs will keep over to perfection. In the summer they may go to the lawn or veranda.

## A Fruit Picker with a Delivery Tube.

Of the various fruit pickers in use, handy as they are for reaching a few specimen fruits, etc., they are still, as to general use, open to several objections. If made to gather but a

single specimen, the picker must be raised into the tree and lowered again each time one is picked; if made to hold several apples, or the like, the weight at the end of the pole becomes increased, and in both cases the work, beyond a very limited degree, is slow and irksome.

Lately there has been invented, by W. B. Mayfield, of South West City, Mo., a picker that is designed to overcome the objections referred to. We show this picker in the accompanying engraving, which, without any words of ours, pretty well explains its form and working.

Aside from a very light contrivance of two bows, from one of which pins project for gathering the fruit, the essential feature of the picker is a tube made of any light fabric, and extending down the pole to a bag that hangs on the shoulder and for conveying the fruit from the tree to the bag. To check the passage of the fruit downwards somewhat it would be only necessary to have this tube pass over, instead of, as our artist has shown, under the arm.

Altogether the affair is very simple and light, the conducting tube adding but a trifle to the weight. The pole is made in two sections, connected by a ferule; when not in use the picker can be folded very compactly. We have not learned the price of this picker, but from its simplicity we should judge this ought easily to be within the reach of every fruit grower.

#### The Dewberry in Cultivation.

The question has more often been asked than answered, why the well known wild Dewberry or Trailing Blackberry, *Rubus Canadensis*, has not been brought into general cultivation and under the improver's hand. As ordinarily found it is quite a productive plant, bearing large, sweet, black fruit; it is indigenous to a great area of our country, and nothing would seem in the way of its development into a valuable garden fruit, if only it were given fair play. No doubt it has been unduly neglected.

But a change is now in the way of taking place regarding this plant, the indications being that hereafter it will have its due place in the catalogues. One thing pointing to this is the fact that a remarkably fine variety of the plant, that was some years ago discovered in the hills of Western Virginia, has been brought into cultivation, its merits throughout tested,

the Blackberry and Raspberry, more nearly resembling the former than the latter. Its requirements in cultivation are similar to those fruits. A peculiarity of the species is its trailing habit, in which respect the Lucretia variety is no exception. We saw some branches of the unripe fruit of this variety at the Nurserymen's Convention, in Washington, in June last, and while its botanical identity was at once apparent, we were astonished at its prolificacy for a Dewberry, and the large size of the fruit.

Those who have eaten of the ripe fruit of Lucretia say its quality, like that of the ordinary wild fruit, is very fine, being sweet and delicious throughout and having no hard center. The berries are of a bright, shiny black, and as to size it is no strange thing to find them even larger than those shown in the accompanying engraving. The Messrs. Albaugh claim that the Lucretia is as hardy as the Taylor Blackberry, as productive as Snyder, larger than Lawton, and as early as the earliest. Were there any danger whatever of its winter killing in any section, the fact of its being of low trailing habit would render covering one of the easiest of matters.

Inasmuch as this fruit is now attracting considerable attention, and the plants promise to have a wide sale, we would caution our readers who desire to grow it to procure their plants from nurserymen of known reliability. The wild form of the plant being so generally abundant, it would not be strange if some unscrupulous persons would be offering of those for the Lucretia. Indeed it has come to our ears that this has already been begun.

Jack Frost, so often a terror to the gardener and fruit grower, is also a friend if one but knows how best to use him. For instance, turn over the garden soil with plow or spade deep now before winter, and he will fine it up before next seeding time better than the best tool, patented or otherwise, that could be put to the same task. But his work will do more than this. The soil is a store-house of plant food, organic and chemical, and by the action of freezing and of exposure to the air and sun these elements as well as any newly added manure are reduced to available forms for the use of plants more rapidly than in any other way. One needs but to compare a newly worked-over piece of land, the surface in clods and rough loose ridges (the best form to leave it in before winter), with an unworked piece to see how much larger is the actual surface of soil particles exposed to the elements in the one case than in the other. In proportion as such exposure is greater through late plowing or spading the future benefits to the crops will also be greater. Nor are these all the gains. The best

remedy known to-day for destroying the common white grub (larva of the May beetle) and other larvae or "worms" is a late turning up of the soil; they are disturbed from their quarters and must die before spring. If sod is to be turned over there is some advantage in doing so early enough that the sod may partly rot this fall, but for cultivated land any time before the ground freezes hard will answer for this, in fact the later it is done the better. To work the

soil when it is wet so that it leaves the spade in clods is no detriment. Don't break up these clods.

Quince trees are ornamental in flower and fruit; they are sure bearers and the product of the trees is prized by all housewives. The fruit is also salable and bears shipment well. With careful hand-



THE DEWBERRY IN CULTIVATION: THE LUCRETIA.

ling there is no trouble in keeping it until Christmas. The variety generally grown is the Apple-shaped or Orange, the fruit being large and freely produced. The Angers, the sort used for budding the Pear on for dwarfing, is a stronger grower than the last. The tree does not bear as young, but once it begins is a good regular bearer. The Rea is one of the more recent varieties, and concerning which, good accounts reach us. There are some others also, but which call for no special notice. The trees should be planted to have from 8x8 to 8x12 feet of space each. In orchard culture for market on a small scale Quinces are most always profitable.

Nitrate of Soda in a liquid form is one of the most convenient fertilizers we know of for Strawberries and all garden crops, lawns, pot plants and so on. To make it, use one pound of nitrate to 12 gallons of water, and this quantity would for lawns or crops go over a square rod of earth. Applied even to vacant land it is of great service in destroying slugs and other garden pests.

We store our Cabbage for family use in a barrel set uprightly in a sheltered spot, and banked to its top with earth. All the cover given is two thicknesses of boards nailed together and laid on the top. The Cabbage is always accessible and there is little loss of any kind.

A SUBSCRIBER.

Freezing hurts Pears even more than Apples, and neither will stand handling in such a state. But Apples in a frozen condition, if kept so and not disturbed, will come out all right in the spring. Still POPULAR GARDENING cannot recommend this way of keeping Apples.

There are five musts in Apple growing for profit: Must cultivate well, must feed the land, must fight the codlin moth and other insects, must thin out the fruit when it sets too thick, must cull and pack with painstaking.

Seeds of root crops are among the easiest to raise. So gather out some of the finest specimens of the different kinds for this purpose now at the fall handling of these.

In burying roots, like Carrots, leave away the layer of straw usually recommended for next to them. The soil against the roots is better. OLD GARDENER.

One Cranberry marsh at Berlin, Wis., gives employment to 900 pickers. Fire has recently done much damage to the great fields of that State.

The Onion yield in many places is light enough so that prices can hardly be otherwise than good.

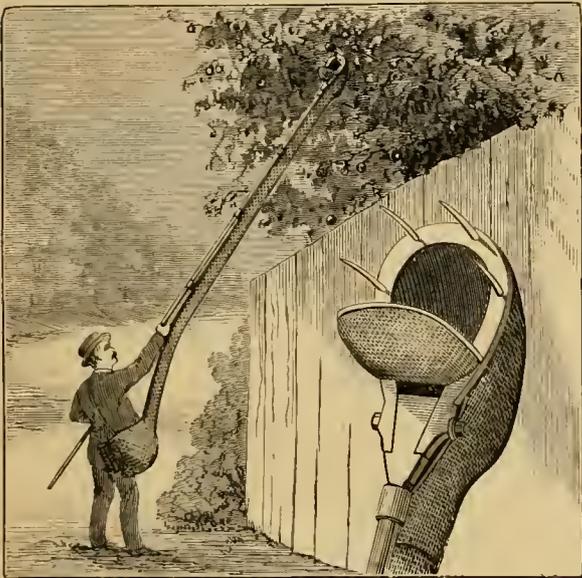
Celery keeps better for not being much blanched by the storing away time.

Horse-radish will be wanted. Get some roots into the cellar.

Even Cabbage sells better for careful sorting.

Plenty of manure makes tender Rhubarb.

Let neatness now adorn the garden.



FRUIT PICKER WITH A DELIVERY TUBE.

and it has received the endorsement of leading pomologists as an important addition to our garden fruits. The variety referred to has been named the Lucretia Dewberry, and Messrs. B. F. Albaugh & Sons, of Covington, Ky., are its introducers and disseminators.

The Dewberry, as our botanical readers no doubt all understand, is of the same genus as

### Work Ahead for the American Horticultural Society.—State Officers.

At the Cleveland meeting, in September, a committee, appointed for the purpose, deemed the points in President Earle's address, which follow, worthy of wide notice and future action:

First. The establishment of a bureau of pomology in connection with the Department of Agriculture at Washington.

Second. The creation of a commission of pomological experts to investigate the fruits and culture of foreign countries, especially the interior region of Europe and Asia, with the view of obtaining valuable products suited to the wants of this country.

Third. The endowment of experimental stations in connection with the agricultural colleges of the country.

Fourth. To call the attention of our people and their legislators to the overshadowing importance of some practical methods by which the cultivation of our remaining fruits may be attained and their destruction prevented, as well as to the needs of common systems of planting for the future.

Fifth. The devising of some practical method for the better and more equal distribution of our fruit crops to all parts of the country.

The names of the new president and chief officers of this society were published last month, but those of the

#### STATE VICE-PRESIDENTS

were crowded out of that issue. We now give them here, as follows:

Alabama, Dr. Charles Mohr of Mobile; Arkansas, W. R. Tipton, Little Rock; California, Professor E. W. Hilgard of Berkeley; Colorado, D. S. Grimes of Denver; Connecticut, P. M. Auger of Middlefield; Dakota, E. M. Fuller of Bismarck; District of Columbia, Norman J. Coleman of Washington; Delaware, W. P. Coosa; Florida, E. H. Hart of Federal Point; Georgia, Dr. Samuel Hope of Atlanta; Idaho, George L. Shoup of Salmon City; Illinois, Professor T. J. Burrill of Champaign; Indiana, C. M. Hobbs of Bridgeport; Iowa, Professor J. L. Budd of Ames; Kansas, F. Wellhouse of Fairmount; Kentucky, A. D. Webb of Bowling Green; Louisiana, John T. Hardie of New Orleans; Maryland, T. Davis of Baltimore; Massachusetts, W. C. Strong of Brighton; Michigan, J. T. Lyon of South Haven; Minnesota, J. S. Harris of La Crescent; Mississippi, Dr. H. E. McKay of Madison Station; Missouri, L. A. Goodman of Westport; Nebraska, R. W. Tumas of Brownville; Nevada, Ross Lewis of Franktown; New Jersey, John S. Collins of Moorestown; New York, S. D. Willard of Geneva; North Carolina, J. Van Lindley of Salem Junction; Ohio, N. Ohmer of Dayton; Ontario, Professor William Saunders of London; Oregon, E. W. Allen; Pennsylvania, H. B. Engle of Marietta; Quebec, Charles Gibb of Abbottsford; South Carolina, S. C. Satterthwaite of Aiken; Tennessee, C. M. Merwin of Medina; Texas, J. M. Howell of Dallas; Vermont, Dr. T. H. Hoskins of Newport; Wisconsin, J. M. Smith of Green Bay; Virginia, J. F. B. Leighton of Norfolk.

### A Reader Reports on Fruit in Eastern Tennessee.

Apple orchards here consist mainly of the leading varieties from Northern nurseries, but such are proving most discouraging. The longest keepers as well as the fall varieties drop before ripe, only to quickly rot, some showing rotten spots even before falling. Such varieties as the Winesap, Green Crank, Limber Twig and Neverfail do fairly some seasons, yet we rarely save one-third of a crop.

Thus the Apple crop, however promising early, ends in dead loss except what goes into cider. With this experience, I am grafting over most of my trees with Southern varieties that promise to "hold on" and be good keepers.

In Peaches we too find the usual standard varieties quite discouraging. The trees grow well, but the fruit is apt to set poorly or else rot. Seedlings around here fruit well. The very early Alexander, Amsden and Ashby do much better than later ones. We must select Apples and Peaches for our climate more carefully than in the past. In 1885 I grafted two large native Pear trees with improved varieties. Some of these grafts, among them LeConte and Keiffer, blighted some the past summer. But LeConte and Keiffer trees on LeConte stocks have grown well and without blight for two summers.

Grapes usually do well, but this year there has been general failure from mildew, rosehugs, etc. An exception was a three-year old Moore's Early, of which we enclosed most of the clusters in paper bags. Every berry of these ripened perfectly. The last cluster was cut Sept. 15th, about two months later than the first, and it was rich and delicious

This variety proves to be hardy, productive and excellent here, but no earlier than Hartford Prolific.

The Strawberry crop of this year was large. Of fifteen varieties cultivated, May King excelled in growth and uniformly large, delicious fruit. Next to it comes Crescent, with its vigorous growth and large crop of uniformly good sized and fine flavored berries. It ripened with the earliest and continued with the latest. The Great American bore moderately of medium sized rich flavored berries. It is a good hill sort, making few runners. Manchester was a failure. The plants grew well the first year and the second, until its large crop of berries were half grown, when rust set in badly. Triumph and Kentucky did well, the latter no later than Crescent. Jersey Queen and Sharpless bore fair crops of fine, very large fruit. James Vick does not promise well, but shall be tried further.

The Gregg Raspberry has with us borne its first crop of fine large fruit, and promises well for here. Colossal justified its name in strong growth, size and great abundance of fruit. For the family and near markets it leaves nothing to be desired. Souhegan very productive, firm, jet black, but small. Cuthbert, Marlboro and Hansel each bore well on young canes. These promise well, and all sorts named stood 12° below zero last winter without hurt.

J. E. A., Greenville, Tenn.

## Inquiry Column

This being the People's Paper, it is open to all their Inquiries bearing on gardening. On the other hand, Answers to Inquiries are earnestly requested from readers.

The editors and special contributors are ready to do a large share of the answering, but the experience of many being more valuable than of the few, however varied that is, and conditions and localities being so different, they prefer to receive answers, even several of them to the same question, from readers everywhere. Don't hesitate to send answers because you may feel you are no fine writer; we will see that they appear in good shape.

In writing, give the number of the question you are answering, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper. Flowers gladly named, provided, first, that no more than three be sent at one time; second, that these be fully prepaid; third, that several specimens of each reach us in good shape. We cannot undertake to name florists' varieties.

153. **Blight on Onions.** Can you give me any information in regard to this ailment? What causes it, and is there any way of preventing it? F. W. C., Sylvania, Pa.

154. **Keeping over Bedding Plants.** Mine are Geraniums, Petunias and Hydrangeas. I have a good cellar. Can I keep them in this? J. A. H., Derrick, Pa.

155. **Narcissus Blasting.** Can any one tell me why the various Narcissus bud and then blast instead of blooming? L. E. P., Ladora, Iowa.

156. **Gazania Culture, Etc.** Not having a greenhouse, please inform me how to propagate Gazania, and the best mode of preserving them during the winter? What white or gray leaved plants are handsomest for isolating on a lawn? A SUBSCRIBER.

157. **Raspberries Failing.** In my field of blackcaps, picked the second year, some of the bushes are dying. Their leaves shrivel and turn greenish yellow and look as if they had not fully expanded. The canes are strong and healthy. Some died down during fruiting. All are not affected, but I think it spreads. It is not the "red rust," but what is it and how should it be treated? My bushes are of the Gregg and Mammoth Cluster sorts. I. C. E., Garrettville, N. Y.

158. **Garlic Weed.** My land is considerably infested with Garlic or Wild Onion, and I would be glad for information to destroy it. G. I. U., Norfolk, Va.

159. **Japan Quince Fruit.** Is the fruit borne on Japan Quince shrubs edible, or poisonous? G. C. C.

160. **Work on Grape Culture.** Do you know of any good work on Grape cultivation? If you do, please let me know, and what the price is? Success to POPULAR GARDENING. A. S. ROUNDS, Bristol, E. I.

161. **Earth Worms in Flower Pots.** Will some one be kind enough to tell me how to get these out of my flower pots without injuring the plants.

162. **Best time to take Cuttings.** Please mention in which is the best time for this. Mrs. G. W. M., Sacramento, Cal.

163. **Insect on Honeysuckle.** My plants grow well, but are infested with a green louse or insect that gets in the tip end and destroys the blossoms. The leaf curls over and protects the insects from harm. Can you give me a remedy?

164. **Cheap Concord Vines.** Can you inform me where Concord Grape-vines can be bought for 10 cents 2 years old? F. C. D., Syracuse.

165. **Cinnamon Vine.** Will they have to be lifted in the fall, or do they live out of doors?

166. **Marguerites in the House.** Do Marguerites do well as house plants? BEATRICE.

167. **Kainite.** What is this article that I frequently see named among the commercial land fertilizers offered for sale? G. S., Rutland, Vt.

### REPLIES TO INQUIRIES.

121. **Daphne odora.** This plant is a slow-grower and somewhat tardy about bloom. If the drainage is imperfect that works against them. See article on potting in September issue. The soil preferred by the Daphne is one that is pretty sandy, rich and containing some fibrous peat or turf. If the young plants can be had to make two growths in a season that will hurry up bloom. For this they should be repotted as needed in February and kept in a moist atmosphere, in a heat of 55°, keeping them well watered. After the first growth is made, say in about ten weeks, the points of the young shoots may be pinched out, and the plants kept in drier and more airy quarters. Four or six weeks later they may go into increased heat and moisture for the second growth. After that remove to a drier atmosphere, so that the wood may be well ripened and the flower buds set.

132. **Garden Walks.** The best course will be to break the walks well up, and get all the weeds out possible. Take some of the old soil away, and fill in with dry builders' rubbish, ashes, or rough gravel stones, then finer gravel to the necessary level, but keeping the path slightly higher in the middle, covering with a coat of finely-sifted gravel for the surface. Gravel may be got in many localities cheaply. Gravel, with a little lime and cement, or burnt earth, with or without cement, lime, or tar, will make a good surface, free from weeds.—J. P. LAW.

133. **Lapageria not Blooming.** By no means cut the plant down; it ought to flower on the old shoots; but something must have been wrong for the leaves to fall off at the base. Lapagerias love a cool, moist atmosphere in summer, just about what a Fern delights in, with plenty of light, but scarcely any sun from May to September. In winter the soil should be only moist, but in summer liberal supplies should be given, especially if the soil has become full of roots. You will not succeed with cuttings; it is by layers Lapagerias are propagated.—J. C. B.

153. **Blight on Onions.** The Onion is sometimes attacked by two different diseases of fungus nature, one of which we believe preys chiefly upon the foliage, and the other upon the bulb. The first is known as the "Onion Blight," or "Onion Mildew," and the second as "Onion Smut." The two are probably often confused by Onion growers. In the case of our correspondent we cannot tell which is meant. It is as well, however, as no remedy for either is known. Changing the planting ground would perhaps be as likely to secure freedom from the disease in the future as anything we could recommend.—E. S. GORF.

154. **Keeping over Bedding Plants.** If by a good cellar you mean one that is moderately damp, frost-proof and lighted in one or more places, this should prove an excellent place to keep the kinds named. The soil at the roots should be kept just so dry that the foliage of the Geraniums and Petunias will all but wilt. In the case of the Hydrangea the leaves will drop, and this is natural.

157. **Raspberries Failing.** You fail to state whether the soil in which the Raspberries are planted is very rich, or otherwise, and whether the crops picked were very large, or not. On rich ground, Raspberry plants frequently overbear so much the first full crop, i. e., the second bearing year, that they are never worth much afterwards. If this has been the case, and the season during May and June was warm and dry, I think the shrivelled appearance of the foliage and the premature dying of the canes is fully explained. If, however, the soil is of only medium fertility, and the crops gathered have not been particularly large, I should not be able to assign the cause of the failure from the facts given.—E. S. GORF.

159. **Japan Quince Fruit.** Nothing poisonous about it. On the other hand, it has been used for culinary purposes, and might be quite desirable were it not so acid. We were some time ago shown a sample of jelly made from it, and acidity was the only defect we could find in it. But then we have a "sweet tooth." The jelly was handsome.

160. **Work on Grape Culture.** Fuller's Grape Culturist, Price, \$1.50, for sale at this office, is a standard work on the Grape. The Illustrated Catalogue of Bush, Son & Meissner, Bushberg, Mo., is a large and valuable work, costing \$1.00 in cloth; 25 cents in paper covers. This can be ordered from the firm named.

161. **Earth Worms in Flower Pots.** Angle-worms no doubt are meant; in which case use fresh lime, the size of a fist in a bucket of water, and after the solution settles, apply the clear water, to thoroughly soak the ball of earth.

162. **Best Time to take Cuttings.** When the cuttings are in the best condition for rooting is the best time. This is a matter more easily to ascertain than might be supposed. In the first place the cutting should come from a succulent shoot, one that is rather young, but not too young. Old and tough cuttings root slowly and as a rule make inferior plants. The place of taking off a cutting

when it is fit for propagation is important. Examine a young growing shoot and it may be seen that there are different degrees of hardness present in the wood, the youngest part being the softest, and from that back to where it is likely to be quite hard and fibrous. To sever the cutting at a point where it is too soft, and early decay is apt to set into the slip; if down in the tough and fibrous part it will, if it roots at all, do so slowly, and to the making of an inferior plant. The right place to take it off is at such a point back from the end where the growth is found to be somewhat hardened, but where it is still sufficiently brittle to snap with a clean break without bending, or without the fibres of the bark protruding. A little careful testing of cuttings will soon show the right place for this.

164. **Cheap Concord Vines.** E. Y. Teas, Dunreith, Indiana, and we presume others also, offers Concord 2 years old at 10½ cents each by the dozen; 6 cents each by the 100. We have seen them quoted even lower than this, but do not now recall where.

#### FROM VARIOUS SOURCES.

**The Mountain Ash Berries** can be kept quite fresh-looking by either sealing the stalk of each bunch or dipping the berries into spirits of wine.—*English Gardening Illustrated.*

**Hardy Roses,** to use a technical term, will "run out" in a few years, unless the young wood be renewed. Some growers cut their plants down each autumn to about twelve inches of the ground, with excellent results; and the entire tops of tender Roses are pruned away, and the roots well covered with manure. This process may be hard on the plant but it is certainly very productive of beautiful flowers for a few years. The Climbing Prairies do not need so much pruning as the other classes, as they are naturally strong growers, and in even moderately good soil will form an abundance of young wood each year, still even they require thinning out.—*Josiah Hoopes.*

**Where Tomatoes were First Eaten.** A Newport tradition says in that city in about 1823, in a house still standing on the corner of Corne and Mill streets. About that time there came here an eccentric Italian painter, Michele Felice Corne. Previous to his coming, and long after, Tomatoes, then called Love Apples, were thought to be poisonous. They were looked upon as curiosities, and prized for their beauty. They became later, however, a very unpleasant missile in the hands of the small boy. A charming old lady also told me to day that in 1824 she was sitting with a sick person when some one brought the invalid as a tempting delicacy, some Tomatoes. "Would you poison her?" was the exclamation of the astonished attendants; and yet Corne, in his section of the town, had been serving them for a year previous. As late as 1835 they were regarded as poisonous throughout Connecticut.—*Boston Transcript.*

**Fruit Cellars and Storage Houses.** T. S. Gold describes a refrigerating house near Meriden, Conn., as follows: It is of good size and so encaused by double walls as to preclude any danger from frost. A low temperature is secured in the summer by a large stock of ice, occupying one end of the fruit room. The Apples are brought in as picked from the trees and stored in slatted bins. No draft is allowed in the building. Pears may be retarded for a period without injury. The dampness from the ice is not injurious, and in some cases the drip from the ice falls on the fruit without harm. The fruit should be ripe and full grown, but picked while hard and firm. Fruit that is green will never ripen well. That which is too ripe will become discolored and lose flavor. Bruised and worm-eaten fruit is not worth the storage. An even temperature, just above freezing, not only prevents decay but favors an even degree of moisture, keeping the fruit plump. A common cellar, clean, sweet and not affected by a furnace, and that can be closed up, is a good place for keeping Apples. Next to Butter, Cream and Milk, Apples are the most sensitive to unpleasant odors and lose their own delicate aroma with the greatest facility. Kerosene, cod-fish, Cabbage, Turnips and Onions are all well enough in their places, but their place is not in a fruit cellar.

**Laying Down Peach Trees in Minnesota.** Of course we have to cover the trees in winter, a point of great interest to those in a cold climate who would like to grow this luxury. In the first place, we set the tree for laying it down with the least damage to the roots. We dig the hole the ordinary size and depth; then make a compact narrow ridge of dirt across the center in the direction that the tree is wanted to be laid down; divide the roots in two equal parts and straddle them across the ridge, keeping each parcel compact, and then fill in and pack the dirt as in planting any tree. To lay down

in the fall dig down on the side you want it to turn to, and it will drop over as if on a hinge; put the dirt back around the roots, and cover them and the entire top with hay, leaves or the like eight to twelve inches deep, and something to keep it there. Put no dirt on the top of the tree. We uncover in the spring as soon as all danger of hard freezing is over. We then remove the dirt and straighten the tree up and again pack the soil around the roots, taking care to cut off all roots that start out along the ridge. Keep the roots to each side and dig a little deeper in laying down, so as not to strain or hurt the bark on large roots. Never lay them down until after hard frosts, and remove all leaves if any remain when put down. By this simple process we grow as fine Peaches as are grown in the South.—*Minnesota Corr. Horticultural Art Journal.*

**Fruit Syrups.** Oppressive days, when strength and appetite fail alike, the best support is a glass of Orange or Grape syrup, with a dash of acid phosphate, taken every hour or two. It is more strengthening than wine, if it is pure, and if their value were known syrups would be as much part of family supplies as canned fruit and vegetables. But to be of real worth the syrups must be pure, and not mixed. To make fruit syrups the ripest fruit is crushed, and its juice squeezed through a strong, coarse cloth, then boiled in stone-ware, or enamel, till it thickens. It should be well skimmed, and a half pint of sugar added to the quart of juice when nearly done. When cold, bottle and seal. Raspberry, Blackberry, Peach and Grape syrups are nice, and made this way also syrup from sweet cider. The aim is to have the juice as purely condensed as possible, the small amount of sugar being to sweeten the acid set free by heat in boiling. The juice of Melons makes nearly as fine syrup as Maple sap, and sugar has been made from it in California. Good Pumpkins ground and pressed in a cider-mill make a rich syrup, and it is said sugar has been made from it on a large scale in Hungarian factories for Beet sugar. Syrup from Sweet Corn was made before the Spanish invasion of America, and has been made by many farmers since, says Johnston, and a factory near Toulouse, France, makes twenty thousand pounds a year from this plant.—*Youths' Companion.*

**Renovating an Orchard.** For years the College orchard has been in a state of constant reproach to the institution. Numerous futile attempts have been made to rescue it from blight and borers, but each time the trees obstinately refused to become healthy and fruitful. We were glad to see that at last it has been induced to bear, and really appears as if it might become a handsome, healthy orchard. Two years ago the limbs were all killed back, the trunks were scarred and scabby, and the roots were sod-bound. But since then the tops have been trimmed, the trunks scraped and the earth plowed and cultivated. The result is that, while heretofore the crop has scarcely been worth gathering, last year 25 barrels were obtained, and this year there is promise of 150 barrels. Two young orchards of Pears and Cherries have been similarly treated, and this year bear good crops. Of Pears the Barletts are bearing best, and of Cherries the May Dukes are most profitable, considering hardness. The Reine Hortense is the most productive Cherry in the orchard, but it is tender. The trees are marked with the usual zinc labels, attached at one end to the trunk by a nail. There are 50 varieties of Chickasaw Plums and 50 varieties of Crab Apples on the grounds, as well as 150 varieties of Apples recently root grafted. It is intended to plant all the varieties of Russian Apples. The work of the department is all done by students, who, with the instruction and oversight given them, must needs learn the methods of practical horticulture, as well as the reasons for them.—*Report from the Mich. Agricultural College.*

**Keeping Onions Through the Winter.** If the onions are ripe and dry it is an easy matter. If they are not ripe, or from any cause have commenced to grow, you have a difficult task before you. The great point is to keep them dry. But you must recollect that even a ripe, dry onion contains at least eighty per cent of water, and when a large mass of them are kept together they are liable to "sweat," and the skins and tops become damp; and if the temperature is above freezing they will throw out roots and commence to grow, just as they would in the damp soil. If it is necessary to keep them in a large mass, put them in a dry place, such as a shed or barn; then they will freeze solid, and stay frozen till wanted in spring. Cover well to keep them from thawing; avoid putting them over basements where animals are kept, as the warmth from the animals might thaw them out. We have kept them perfectly on the east side of a north and south wall, where the snow drifts in several feet high and remains till spring. They were simply covered

with Corn-stalks and leaves. They can be placed three or four inches deep on shelves in a dry cellar, or in slat boxes holding about a bushel each. Place on boards, and not on the cellar floor. But the boxes may be piled up one above another, in a way to break joints and admit air all round and through every box, leaving a space of two or three inches between. Give frequent ventilation and change of air by opening the doors and windows. Keep as near the freezing point as possible, and see that the cellar is clean and that there is no damp organic matter anywhere.—*Joseph Harris, in Agriculturist.*

**A Narcissus Essay 130 Years Old.** Narcissuses in a wild state are found almost in every part of Europe. They will, therefore, bear without danger the worst cold of our winters in the open borders of a garden; but as some care must have been taken to raise the flower so much above itself, the same attention must be allowed wherever it is propagated to continue in that lustre. This is the case in all these enriched varieties; if left unregarded, they by degrees shrink back into their original plainness. We mentioned this under an article wherein it is most plainly conspicuous—the degeneration of the *Proliferous Daisy*, which if left but a few years unregarded in the ground; though at first ever so well adapted to its nature, loses its irregular offspring first, and then its size and double rows of petals, till after four or five seasons, the same root bears a common py'd *Field Daisy*. 'Tis the same with the Daffodil. The foldings, curls, and colour of the nectarium will be lost unless care be taken of the roots, and the plant, showing most plainly its original, will sink into the common wild bastard Daffodil. Our gardener is by this time so well instructed in his principles that few words will inform him under this particular. To preserve the plant in its beauty the bed must be renewed once in two years, and to improve its lustre (for so far we would have him carry his art) it must be raised from seeds often for the sake of new varieties. The best compost for their success is fresh pasture earth with a very little cow-manure well mixed among it, and they should never be taken out of the ground except to part the offsets from them *once in three years.*—*From Hale's "Eden," Published in 1757.*

**Cold Storage for Grapes.** Cold storage is the prime factor in the solution of the problem how to market fruit profitably. Good Concord Grapes when not stored average not above three cents, while the prices realized when taken from store range from six to ten cents, or more. One cent per pound will cover all extra cost of storage. In the Hudson Valley it has been largely used for two or three years. Large cold-storage houses for general patronage will be among the factors of the fruit business in the near future. Grapes carefully cut out and laid in Grape crates in the vineyard and conveyed directly to the cold storeroom have in some instances kept in prime condition about three months. Success is not assured unless the room is kept at a uniform temperature. Thirty-six degrees has proved the best point, although in some instances a point higher or lower has given good results. Changes are destructive. Better a uniform 37° than a vacillating 35° to 37°. While filling the house 40° to 42° will be low enough. Of various methods of insulation that have been resorted to the unpatented system used by the writer of this paper may be briefly described as a wall of packed saw-dust 14 inches thick, enclosed by matched boards outside and inside. The paper system consists of a series of eight layers of asbestos paper enclosed in siding, ceiling and lining, and so disposed as to provide several dead-air chambers or spaces. The expense of this is greater than the saw-dust system, while good results have been attained with either. The saw-dust plan is the one very generally favored in the Hudson Valley. The largest grower in the Hudson Valley has two houses, one of saw-dust and the other paper walls. He prefers the saw-dust plan. Three systems or patents of refrigeration have been used in this vicinity with good results, the Ridgeway, the Fisher and the Gerald's. Experience has shown that dry, cold air is an essential condition for the preservation of Grapes. It is claimed for all of the above systems that this atmospheric condition is produced by them. For some fruits, however, as Apples, Pears, Peaches and the like, dryness may not be so essential. Indeed a strong array of opinion inclines to the belief that some of the fruits named would be benefited by a greater degree of moisture than is required by Grapes. Should this prove correct, separate compartments may be needed for special purposes. The ice-pan of refrigerator systems is a critical point, and no one should attempt its construction without experience or instructions from experienced workmen. A trifling leakage may materially damage the whole stock in store.—*W. D. Gunn, in N. Y. Independent.*

**Chrysanthemum.**

I bring you the latest blossoms  
Which summer has given to me.  
How white is her farewell token!  
How pure she would have us be!

She sent the Snowdrop and Wild-flower  
To herald her happy reign,  
And the Hawthorn's crown of beauty  
Was a fall of snow again.

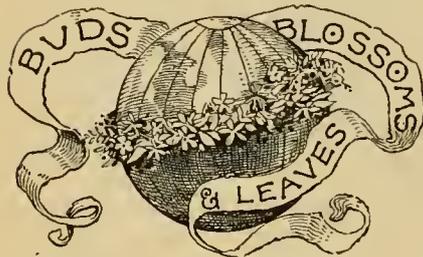
Oh! gaze at her latest blossoms,  
And ponder her gentle speech,  
And the voice of the passing summer  
Her lowliest thought shall teach.

—Clara Thwaites

**"It is Common!"**

So are the stars in the arching skies,  
So are the smiles in the children's eyes;  
Common the beautiful tints of the fall;  
Common the sun, which is over all;  
Common the rain with its pattering feet—  
So is the bread which we daily eat.  
Common is the grass in its glowing green,  
So is the water's glistening sheen;  
Common the fragrance of rosy June,  
So is the generous harvest moon;  
Common the life-giving breath of the spring,  
So are the songs which the wild birds sing.  
So unto all are the "promises" given;  
So unto all is the hope of heaven;  
Common the rest from the weary strife—  
So is the life which is after life—  
Blessed be God, it is common!

—Phrenological Journal.



Empty and store the vases.

Chrysanthemums now stand supreme.

For a good pot Fern try *Pteris tremula*.

The Primrose once was called Bear's Ear.

To arms! They come! the bugs, the bugs!

Trees with golden foliage need the full sun.

Dusty Millers should now get but little water.

As for Violets, they will not bear much heat.

Leaves are Nature's material for root protection.

Flowers and fruit are fit presents to make always.

All double flowers are monstrosities, strictly speaking.

Natural Selection. Taking the largest Apple on the plate.

Cut flowers are shipped from Boston to Chicago regularly.

Caladiums of much beauty are weeds in Brazilian gardens.

For the lately lifted plants a little extra nursing counts well.

It is surprising how few of our best Apples are of recent origin.

The pickers of Peaches in some districts go by the name of "Peach-plucks."

The Coral-like fruit of the Barberry bushes lends brilliancy to our shrubby clumps.

Vegetables are rarely classed among ornamental products, but Celery belongs here.

If well ripened, even sour Apples contain much sweet. The unripe produce the pucker.

"What is Costmary?" asks Mary G. Lewis, of Penobscot Co., Maine. It is the old name of Tansy.

Mere architecture will not adorn a place. But tree planting alone will give beauty to an humble home.—*Jessup*.The Evergreens on my grounds are worth hundreds of dollars in pleasure and comfort every year.—*I. H'looe*.

What a mirthful amusement for children is the gathering and husking of the various nuts. Do let them have their fill.

You can help to popularize improved gardening in your vicinity by getting neighbors and friends to subscribe for this paper.

"Popular Gardening" does not hesitate to judge the efficiency of a plant grower by the presence or absence of insects on his plants.

This department should be called our postal card catch-all; it is so convenient for the many little notes from our family of readers. Let these increase.

Newly-potted cuttings can't take up much water; so, after one good watering given to such, apply it quite moderately until the growth fairly starts.

Several of our readers report that they are going into the Chrysanthemum shows, as exhibitors, having grown fine plants by following POPULAR GARDENING directions.

Here is an idea about Primroses: Nip the flower shoots, when they first show plainly, from part of the plants. Such then will give a larger spread of bloom, but it will be later.

The early started Hyacinths may come to light and warmth now. But remember that where there is a lack of fresh air, and added to this there is much heat, fine spikes need hardly to be expected.

Oleander and Orange trees are quite subject to the White Scale. If they are thoroughly cleansed with warm soap suds and an old tooth brush now when going to winter rest a deal of future trouble may be saved.

Forest Trees by Mail. Of more than a dozen different deciduous and evergreen kinds, R. Douglas & Son, of Waukegan, Ill., will send 100 plants from 6 to 12 inches high, by mail post-paid, for one dollar.

Dr. Johnson's good advice to a friend was this: "If possible have a good orchard. I knew a clergyman of small income who brought up a family very respectably, which he chiefly fed on Apple dumplings."

There are flowers within the Arctic circle, hundreds of them, and some so far northward that they may well be called Polar flowers. But from within the Antarctic circle no flowering plant has ever been reported.

Fragrance Tells. At the Florists' Convention it was suggested that the Orchid would supplant the Rose as a fashionable flower. "Not while a woman has a nose!" was the emphatic argument of one horticulturist.

One house we pass often had its hanging baskets, with the old soil and dead plants in them, hanging out and swinging about all last winter. We are sure that such slack gardeners are not of the POPULAR GARDENING family.

True Enough. Each of us can make for ourselves a home, adorn it with the beautiful things Nature so lavishly offers in fine flowers and fruits. And all she asks in return is care and labor bestowed on her treasures. Mrs. R. H. M., *Montgomery Co., Mo.*

A word fitly spoken for POPULAR GARDENING by each one of its friends to each one of their friends will yield more than "Pictures of Apples"; it may yield the real article of a plenty of all fruits and flowers on many tables where these are too rarely seen.

A late swindling device is a powder sold by agents as "pelpneum," and which is warranted to keep fruit or green stuff fresh for any length of time. Those who purchase it, however, lose a large portion of their greenness with great forthwithness.—*Pittsburg Chronicle*.

Fall-sowing of Sweet Peas. Those who never have tried sowing Sweet Peas in the fall I advise to do so, and at once. Sow rather thinly in a sheltered spot and cover with coal ashes. Such plants bloom earlier and better than from spring sowings. "L. E.," *Lorain, Ohio*.

A hail-storm last summer helped me more than any damage it did, by clearing the ten-

der tops of a lot of Roses and Chrysanthemums I had of the aphid that had got on them thickly. Reading in POPULAR GARDENING about hail insurance, I thought to drop this note to show again that "'Tis a bad wind that blows no good."—*James Werkley*.

This paper should be in the hands of every grower of flowers, fruits and vegetables. Much could be done towards attaining this end if each one of our 50,000 readers would kindly call the attention of their friends who do not take it to its worth, beauty and cheapness. We are glad also to send specimen copies free to any names sent in by our subscribers, while the regular price for such is 10 cents.

Don't Count for Much Here. A candidate for "botanical gardener and horticulturist" in Prospect Park presents a card bearing after his name no less than seventeen titles. He remarks of the park that "the impressions are limited." The *New York Tribune* offers to tell him how to make the unfavorable impression which the public has formed of him less limited than it is. This by dropping a large majority of those superfluous titles.

Tulips in the House. "Meg," from Hartford Co., Conn., says in a letter to us that she finds Tulips are among her best winter flowers. She prefers the single to the double ones for window culture. She starts them along with the Hyacinth and Crocus. In planting them one bulb is set into a four-inch pot and all are put outdoors into a frame against the kitchen, and covered with litter for at least four weeks. The bulbs are cheaper to buy than Hyacinths, and come quicker into bloom.

Flue-heating. The question came to us the other day, whether this old system of heating glass houses possesses any worth side of hot water and steam. In answer we say yes, most decidedly. It is cheap, effective, and as capable of producing good results as any plan of heating. Even such a great establishment as that of the Dingee, Conard Co., Rose growers at West Grove, Pa., is heated with flues throughout. Take the country over and flues are in use in many greenhouses.

In the insect war no worse course can exist than to allow plants to become badly infested, thinking then to subject them to an extra



The Belmont Strawberry. (See opposite page.)

cleansing. Not only is the work thereby much increased, but the plants themselves, beyond the harm done by the insects, are more or less injured by whatever means are employed in the cleansing process. The best season to attack the enemy is in autumn or early winter, for now all kinds increase more slowly than at most other times, and there is also leisure.

Aquilegias, or Columbines, are plants of the easiest possible culture, and their blooms are excellent for cutting. A clump of the Golden-spurred species (*A. chrysantha*) in our grounds has not been without some of its fine flowers for one month since June. To set out the plants of this and others of the hardier species at once in good soil they will start up well in the spring, and soon send along a succession of beautiful flowers. The beautiful but somewhat rare sort named comes readily from the seed.

**Applies to Many.** Mrs. H. F. Jones, of Henry Co., Ill., in a letter to us, after referring in most complimentary terms to her appreciation of POPULAR GARDENING, asks quite naturally whether her paper, subscribed for at some time during the first volume, will come to the end of the time for which she subscribed, inasmuch as the price of the paper has been changed. Most certainly is our answer to her and to all similar subscribers, be they such as came direct, or through the *Floral World* or the *Fruit Recorder*.

**Pot-grown Strawberry Plants.** Mr. Peter Henderson in a note to us offers the statement that: "Much of the talk against such plants is all wrong and must be based upon some unfortunate experience, for certain it is that when we sell, as we have done for the past five or six years, from 150,000 to 200,000 pot-layered Strawberry plants annually we would not be able to do so unless they gave good results. Moreover in our own practice we never fail to get a full crop in 9 or 10 months from the time of planting, which cannot be done in any other way that is known to us."

**Shrub Flowers in Winter.** Miss Belle G., Niagara Co., N. Y., sends in the following interesting item to what she facetiously styles "Our Family's Knowledge Box." "From New Year's until April my window presents a fine show of Deutzia, Lilacs, Daphne and Bleeding Heart (*Dicentra spectabilis*) in flower. To have these I simply take up with care some of the off-sets of the lawn bushes, or else take young plants that were raised from cuttings, plant them in tobacco pails or large pots and keep them in the cellar until wanted. Brought to the window, they grow and bloom quickly."

Where do so many plant lice come from people often wonder. Those who have studied the lives of these little fellows have no trouble in accounting for their free presence. According to Alphonse Karr, the observing French naturalist, one of them will under favorable condition produce nearly twenty young in the course of a day. A single aphid which, at the beginning of the warm weather would bring into the world ninety aphides, and these then twelve days after, would each produce ninety more, would be, in the fifth generation, author of 5,904,000,000 aphides—which, he adds, "is a tolerable sum."

**Names and the Point of View.** The *Gardeners' Monthly* tells of a florist who is a German and who does not think the English names of plants any easier than Latin ones, and even the English names used in florists' work worry him considerably. He thinks Dutch names might be adopted with great advantage by those who think easy names a great desideratum. For instance, he thinks the common phrase, "Florists' Supplies," a terrible word for any one to pronounce, and he would substitute for this, *Gartenwerkzeugfabrik*. While the subject of short and easy names is up this simple word may be worth considering.

**The Rhynchospermum** is a handsome ever-green climber which will succeed tolerably well with house culture, and should be trained on a small trellis. In the greenhouse, however, it may be planted as a permanent rafter plant, succeeding as it does much better than in pots. The white Jasmine-like flowers fill the room completely with exquisite fragrance, and are produced very freely throughout the spring and early summer months. The flowers are handsome and are especially desirable for bouquets, the perfume being agreeable to all. There are two varieties, viz.: *R. jasminoides*, plain green foliage, and *R. jasminoides variegata*, with lovely leaves. This plant succeeds with a night temperature of only 40° to 50°, with proportionately higher day temperature.—W. F. L.

**The Wallflower.** Mrs. Geo. W. Bane, of Kent Co., Delaware, offers on a postal card, first the query why these old flowers are not more often seen, and then follows with this welcome statement concerning hers: "I have a

quantity at present in bloom, and a small bunch of the bloom is enough to perfume a whole house with a scent scarcely inferior to that of Violets. My varieties are the single clear yellow and the blood-red. For spring flowers I sow in February, as they need to grow



BLOOMS OF IMPROVED CYCLAMENS.

a year before blooming; for autumn flowers, as soon as the seeds are ripe. In summer I grow them on the cool side of the house, where the moisture from a well-watered lawn seems to suit them perfectly. I winter the plants under a cold-frame that opens into the cellar. I find the plants among the easiest I can grow.

**The Belmont.** This new Strawberry, of which we give an engraving, is attracting so much favorable notice in the East that we think it worthy of introduction to our readers. For several years it has received marked attention at the shows of the Massachusetts Horticultural Society. In 1883 the special prize of ten dollars, offered by Hon. Marshall P. Wilder, for the best four quarts of the variety of finest form, color and quality, was awarded to Belmont. It also took the first prize for best four quarts, and first prize for best two quarts, at Boston, June 22, 1886. The peculiarities set down for this variety are hardiness, lateness of the blooming, on which account it escapes late spring frosts, extra flavor, firmness and the peculiar oblong shape. Parker & Wood, of Boston, Mass., are agents for the Belmont.

**Lay in Some Potting Soil, Sand, Etc.** It is only for fear some of our readers might overlook this that we talk of it now, for all plant growers must know the need of having a supply in the cellar or greenhouse shed, accessible at any time in the winter. But many seem not to know the value of some sand in the soil, and this should come in now also. Sand in the soil makes it more porous, promotes drainage and tends to the preventing of scouring. It also makes the soil pleasanter to handle. Judgment is needed not to add too much sand, for sand is not plant food, and an excess of it destroys that firmness of soil particles which most kinds of roots enjoy; the proportion of one-sixth of the entire bulk is not far from right. By using sand for rooting cuttings in (and here it may be pure) better results would follow than from the use of soil for this purpose. Our choice for all purposes is a rather coarse, sharp article of sand.

**Roses in Pits.** A Missouri reader informs the POPULAR GARDENING family that there is no use of having from half success to entire failure in keeping Roses and other plants over winter in the cellar, when it can be done with complete success in a pit, even of cheap construction. Hers is simply a box 3x3x6 1-2 ft., sunk half its depth into the earth, in a place sheltered by buildings, and then banked up to the top with ground. The bank is not small and narrow, but enough earth is used to have an upper surface a foot or more wide, and from this receding gradually away. The size

of the box was governed by the size of a hot-bed sash that is used for covering it. One end of the box is five inches higher than the other, for shedding water on the sash. In cold weather old carpets are placed over the sash several thicknesses deep; when very cold, boards on top of these. In all fair weather, fall, winter and spring, the sash is opened daily. In such a pit Roses and other half-hardy plants wintered surprisingly well, being followed during the summer with great crops of bloom.

A complimentary dinner was given in honor of the 88th birthday of the venerable Marshall P. Wilder, of Dorchester, Mass., America's most eminent horticulturist, on Sept. 22d, by Mr. B. C. Clark, secretary of the Massachusetts Agricultural Club. In response to some remarks made by the host, Mr. Wilder gave expression to the following words among others: My love for rural life and the cultivation of the soil is well known to all of you. Oh! yes, I cannot remember the time, since my sainted mother took me into the garden to help dress and keep it, that I did not love the cultivation of the soil above all other pursuits. I love every thing that is beautiful in Nature—the balmy spring hedecking the earth with flowers scarcely less numerous or brilliant than the starry host above, the summer solstice rich with the verdure of the forest and field, the mellow autumn burnished with the golden harvest of the year, and I have always loved to commune with Nature in her secret laboratory, and learn from her how to produce those beautiful flowers and fruits with which she adorns the earth. Life at the longest is short. I have passed its summit. But if I can have the happiness to know that I have done anything to promote the comfort of mankind I shall feel that I have not lived in vain. And so I shall continue to work on in the same old way while life and strength shall last.

#### Persian and Some Other Cyclamens.

The genus *Cyclamen*, known more widely perhaps through the beautiful Persian species shown in the engravings than by any other, is a near relative of the Primroses. It contains, besides this favorite flower of the window garden and the greenhouse, a number of hardy kinds, and these are not so well known. The Persian species, however, is the most valuable one for growing in pots; the soil needs to be light and well enriched with leaf-mold and old manure; in potting place the crown of the bulb just above the earth, keeping in a cool place and watering but little until well started. Care should be taken that the earth under the bulb does not



A well-grown Plant of the Persian Cyclamen.

become hard before the roots are established. While these plants bloom they are benefited by frequent applications of liquid manure, and when through they may be planted in open ground from May until September, after which they are to be lifted and started into growth. If kept from cross-fertilization when in flower, all varieties reproduce themselves tolerably well from seed,

To insure a good per cent in coming up sow this as nearly fresh as possible.

By high culture and careful selection the Persian Cyclamen has been brought to a near state of perfection. In size of its florets *C. Persicum giganteum* is a decided improvement of this class, and it also possesses a robust habit, bearing its flowers upon short stems. Nearly all of the colors and shades known in the different species of this plant are to be found in *C. Persicum*, with its numerous varieties.

In Europe the native species are commonly called Sowbread, from the fact that the aerid stems are greedily eaten by swine.

To be successful in open air culture, good drainage, a rich, friable soil, protection from dry cutting winds and good covering in winter are the necessary points. Because there are hardy species is no reason why such should thrive in exposed places. Found in their native haunts they are in luxuriant growth among broken rocks, under the friendly shade and protection of low bushes and hill copses. They are fine for planting in rock-work, not too high, in warm, shady borders, and a fine collection of the autumn flowering varieties in full bloom is a sight not easily forgotten. *C. Africanum*, *C. hederifolium* (Ivy-leaved Cyclamen) and *C. Neapolitanum* are good representatives of this class, and *C. Atkinsii*, *C. Coum* and *C. Persicum*, the tender variety of the spring flowering section. As to the hardiness of Cyclamens, all but *C. Persicum* are said to withstand as much frost as the English Primroses; hence they require the same amount of winter protection in the United States. All lovers of choice flowers should grow this plant more extensively, and if outdoor culture is not desirable the hardy varieties will bloom quite as well in pots if given the same period of rest as they would get if growing in open ground. In American flower shows the Cyclamen should occupy a more prominent place than it now does, and if its true merits were more widely known, it would be more frequently seen enlivening our windows during the dull late fall, winter and early spring months. W. F. L.

#### Shrubs From The Wild.

In the Northern part of Ohio the swampy and low lands are filled with Red-branched Dogwood, *Cornus stolonifera*, or *C. sanguinea* of some nurserymen's catalogues. Crowded and neglected it may not seem that it would be an attractive shrub for the lawn, but remove a slip of it to this place, give it care and room and it speedily grows into the most beautiful winter ornament I know of, its branches being a crimson scarlet, and very pleasing when denuded of leaves. So says L. B. Pierce of Ohio. To which we are glad to add that this shrub is common both west and east of Ohio a great way, and also in Canada; further it is a fine shrub during summer, its flowers being white and freely produced. This leads us to state that many of our native shrubs are handsome for arranging in groups on the lawn, and in many cases costing nothing. In laying out the 600-acre park system of Buffalo thousands of such shrubs were procured at the expense of digging only, and planted along with other sorts from the nurseries. With intelligent pruning and care the former have developed as beautifully as the others, and now no one would by their looks dream of their humble source. There is nothing like making the most of one's opportunities in all these matters.

The New York Horticultural Society will give its great Chrysanthemum show at Cosmopoli-

tan Hall, New York, Nov. 2-6. It is expected to surpass all previous exhibitions of the kind. The secretary is John Thorpe, Queens, N. Y.

The Chrysanthemum and Fall Horticultural Show of the Buffalo Horticultural Society will be held on November 4-6, in Liedertafel Hall. Edward L. Mepsted, of this city, is the secretary.

#### Some Topics Discussed at the Niagara Falls Meeting of Seedsmen.

Valuable discussion was had in relation to the postage and tariff question. The committee appointed last year to wait upon the Secretary of the Treasury and present the views of the association in regard to the want of uniformity in the collection of duties made its report. The question of valuation was also discussed. It was shown that too much latitude was allowed the collector. The law seems clear enough, but some of the collectors base their assessment upon what they deem the correct value, in some cases going back to a time six months before the crop was grown. Some seed growers have been compelled to go to other parts, at great inconvenience and additional expense, in order to get fair play. The only equitable mode of adjustment was that present market prices only should be considered at the port of entry. A motion prevailed authorizing the president of the association to appoint committees as special cases arise, to whom tariff matters might be referred.

A very clear and elaborate paper was presented from the seed trade of Boston, showing what this association was doing in the interests of its members, and on motion it was ordered that the substance of the matter presented be embodied in the report of the association.

The question of responsibility of seedsmen was also discussed at length.

Papers which accept the money of seedsmen for advertising, and also devote their space and use their influence to divert business from the seedsmen through tempting offers made by the paper itself, were also discussed.

#### October Show of the Massachusetts Horticultural Society.

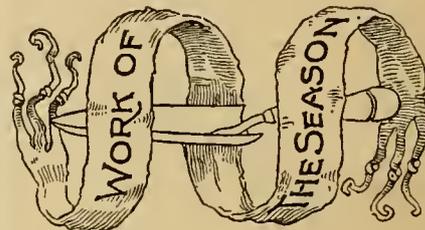
Among the Apples shown at the exhibition at Boston on October 2d the Gravensteins and the Hubbards were particularly handsome. Of Pears, many fine dishes of Bosc and Angouleme were shown, also some excellent Comice. Some of the dishes of Seckels contained some very large specimens, but they were not uniform in size. There was also a good exhibit of Superfins and Sheldons. The display of Quinces was believed to have been larger and better than any seen before; one from W. S. Janvrin weighed 21 1-2 ounces. There were good dishes of Peaches and Plums.

The show of the native Grapes was very fine. The Brightons, from Benjamin G. Smith, were much the best we have ever seen of that variety, and the same may be said of the Lindleys, from J. P. Hayward, who also exhibited very fine Niagaras. A. J. Bigelow exhibited very large bunches of Concord, and John B. Moor & Son handsome Eatons. Horace Eaton showed good specimens of Eaton and Iona. J. Q. Adams, some English Morello Cherries.

An excellent display of vegetables was made; the Cabbages, Cauliflowers, Tomatoes and Hubbard Squashes were particularly fine.

Although no prizes were offered for flowers, a very interesting display was made. W. H. Spooner again exhibited the perpetual Moss Rose, Salet, showing the long time that it continues in flower. M. B. Faxan exhibited several dishes of very handsome Pansies, the largest measuring 2 1-4 inches in diameter. Edwin Sheppard and John Parker had some fine Dahlias, and Mrs. E. M. Gill Nasturtiums and other flowers. L. H. Farlow showed a plant of *Odontoglossum grande* Orchid. Walter E. Coburn and Mrs. P. D. Richards showed

collections of native plants, the latter including two very fine specimens of *Genetiana crinita*, and one of Bear Berry, *Arctostaphylos Uva-ursi*. Others notable for more or less of rarity were Creeping Snowberry, *Chiozenes hispida*; Rattlebox, *Crotalaria sagittalis*; Labrador Tea, *Ledum latifolium*, and *Lycopodium annotinum*.



#### THE HOUSE PLANTS.

**Ardisia.** The red-fruited is one of the best of house plants. The only thing it will not stand is freezing. In heat it will hold its fruit a year.

**Cactuses** for the house to rest through the fall and up to February or March, keeping the soil all but dust dry. They need not go to the cellar, but may be kept on shelves or tables in the living room. A glass case over the more delicate ones will keep them bright and fine—a thing very desirable.

**Callas** should now be approaching bloom; at this stage they need a good deal of light, space and water for inducing a stocky growth and better flowers. If the soil lacks in richness a frequent dash of soot or other manure water will help them.

**Carnations** succeed in the window if kept near the glass and the place be cool and airy. Dryness rather suits them, but the soil must be kept moist.

**Cleanliness.** All subjects to be frequently cleansed of dust and impurities on the surface. If the plants are sponged off or are sprinkled lightly every day they will do the better for it.

**Ferneries.** The soil in these should be light and well drained. While Ferns and Selaginellas (*Lycopodiums*) are the plants most used, all moisture loving plants of a suitable size succeed well in them. Bulbs flower admirably in the case. Do not crowd the plants; one that has good space and is well developed is finer than a close crowd of many. A little sunshine on the Fern case at times is no detriment. Air should be admitted occasionally by tilting up the glass a little at one side.

**Freesias.** Start at intervals for succession.

**Forget-me-nots.** Lift good clumps, set into 6-inch pots, store in a cold pit until the Holidays, when they may be brought in for blooming.

**Habrothamnus elegans.** If this plant is kept within control by free pinching, it forms a fine window plant, making a great show of bloom.

**Heat.** Avoid extremes; from 45° to 60° at night is the safest temperature for most kinds. At the former there will be a handsomer plant growth; by the latter more flowers, but they not so fine as by the cooler treatment.

**Hydrangeas.** To be wintered in the cellar, keeping the earth rather dry about the roots.

**Oleanders.** Treat the plants the same as for Hydrangeas.

**Oxalis.** As the bulbs show signs of sprouting pot freshly and begin to water regularly right along.

**Potting** of young cuttings to be done as soon as they show small roots; to wait until these are large is to spoil many, and the plant will not do as well for this treatment.



Starting a Cutting Under Glass.—See Stipping.

**Slipping** of plants is always in order when material appears for it. We show in the engraving how the work may be made more certain in the case of some choice or hard-wooded slips by inverting an ordinary drinking glass over the cutting, in sand.

**Trimming.** Do not fear a too free use of the knife on all soft-wooded plants that were lifted. All yellow leaves and flower stems to come away.

**Watering.** In the anxiety to water enough it is often overdone; the surface of the soil should get quite dry, but before flagging of the leaves takes place in the least apply water and then enough to soak the ball of earth through and through. Some need more water than others; discriminate.

## LAWN AND FLOWER GARDEN.

Bulb planting may be kept up all through this month, and in fact until the ground freezes. The newly-planted beds of these should be covered with litter before the winter fairly sets in.

**Evergreens**, especially the large-leaved kinds like Mahonia and Rhododendron, are liable to sun scald and to injury from sweeping winter gales. A good protection is some Evergreen branches, with their butt ends set into the earth, the tops overhanging the bushes on the windward and south sides.

**Improvements**. There is no better time than now for grading, laying drains, making walks, drives etc. As to the first two, there will then be a chance for due settling by spring garden-making time.

**Lawns**. Continual mowing weakens the grass plants, to make up for which manuring becomes necessary. With poor soil the grass is liable to be crowded out by Moss, Veronicas and other minute weeds. This is the best season to apply. We prefer bone manures and guano to stable manures, because of the unsightliness of the latter.

**Leaves** are Nature's fertilizer; the richness of wood's earth is owing chiefly to these decaying on the ground year after year. The gardener who has no other resource for manure could depend on these alone, and by gathering a good heap annually into a low spot where they could be kept constantly moist, letting them rot down, would never need to want for manure. It will take several years' time before they become available, and one should calculate on this in deciding on the quantity to be collected. Those from Oak trees are considered the best, but none need be rejected. After leaves have laid for one year, by composting them with slaked lime, at the rate of 30 bushels to one, their fitness for use will be hastened.

**Protect trees** in streets and lawns by animal guards. We show by an engraving how this may be done most effectually with stakes and the use of barbed or other wire. The stakes can of course be brought closer together at the top if preferred. The number of trees that are injured, and we may add killed, by the gnawing of animals is a caution.

**Rockeries**. Delicate Alpine plants on these suffer more from wet than from frost; such had best be potted and put in frames until spring.

**Shrubby Beds**. To mulch these with a heavy coat of leaves at this season is good treatment, serving both to protect the roots and to supply needed fertility to the soil, as the leaves should not be removed in the spring following, but be then lightly turned under and allowed to decay.

## PLANT CULTURE UNDER GLASS.

**Cinerarias** sown in June to have final potting now. Such should bloom in January. Guard against fly and above 45° of heat; it will weaken the growth.

**Deutzias** are among the easiest plants to force for spring bloom, and provision for stock should be made in time. Two months will elapse between bringing to heat and flowers.

**Euphorbias** should now be in good growth, with brisk heat and with the heads near the glass.

**Geraniums** in all cases to be kept rather dry at the roots, and the plants near the glass. Much moisture now causes the disease known as "spot."

**Green-flies** or Aphid increase rapidly now if not checked. Burning ½ pound of refuse Tobacco stems to each 500 feet of glass once a week is the standard remedy. To strew Tobacco stems under any plants hedged out or between pots, keeping them moist, is an approved remedy.

**Hyacinths** that were started early, and having filled their pots with roots, may be brought to heat.

**Light** naturally fails now; don't add to its diminution by having the glass clouded with filth or whitewash, the former on the inside.

**Orchids**. Most kinds will now need rest, hence such as are still in a growing state may be moved to other quarters and the Orchid house be cooled down and be kept rather dry to suit the larger number. For Orchids at rest a temperature of 50° by night and ten degrees higher by day will be sufficient.

**Pelargoniums** (Lady Washingtons) that were cut down a while back to be repotted when new shoots an inch long are out. Reduce the ball to go into the pots occupied before, or in smaller ones. Plants potted a month back now need a shift.

**Poinsettia**. Treat as directed for Euphorbias.

**Remove** dead leaves and mildewed twigs at sight; these, besides looking bad, impede light and air, as well as contribute inurpities.

**Sowing** of Candytuft, Mignonette, Maurandia and so on for early spring bloom should be done.

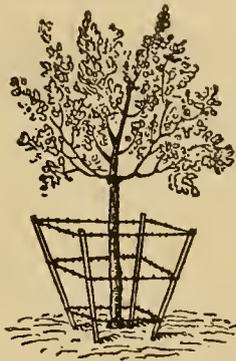
**Tubers** of the Dahlia and Tuberosa class that are now cured to be stored where dry under the stages.

**Verbenas** from fall cuttings to be kept cool and near the glass, with plenty of air in all suitable weather; fumigate with Tobacco once a week.

**Water** sparingly now as a rule. See that all plants have ample drainage. If the water stands in the pot for some time after watering, the drainage is imperfect; a probe of iron inserted up through the bottom will help; to shift into new soil is better.

## FRUIT GARDEN AND ORCHARD.

**Bark Washes**. Apply for killing eggs and insects that harbor in trees. Some believe washes also prevent a "hidebound" condition by protecting long trunks from exposure to hot suns and drying winds. Whitewash answers well, but some object to the color. Prof. Cook recommends 1 qt. of soft soap in a gallon of water, heated to boiling, when a pint of kerosene should be stirred in. Weak lye is a useful and perfectly safe wash.



Protecting Trees with Stakes and Barbed Wire.

to a row. See article elsewhere on underdraining.

**Fences and gates** to be kept in order, for at this season of brisk weather and scant feed any animal that gets out is liable to inflict injury to trees.

**Fruit**. Keep the windows and doors of the cellar or apartments where these are stored open during warm days and nights. As cold increases aim to keep the temperature of the place uniformly as low and just a little above the freezing point. Whenever such a temperature prevails outside, ventilation should be freely applied.

**Grape-vines** may be pruned at any time after the leaves fall; those of one year's growth to be cut back to about 3 buds, mulching afterwards with a forkful of straw manure and a cover of earth over all. For older vines it is hard to give directions for pruning in brief, save to cut close, leaving only enough buds to bear the fruit and leaves.

**Grafts** to be cut before hard freezing, packing them in soil or saw-dust and storing in a cool cellar until needed for grafting. This is a better course than the common one of not cutting until spring.

**Labels** on newly set or any trees should be looked after before the wintry gales set in. Those that come from the nursery are not to be trusted, as the wire, for one thing, is usually too light to be durable. A zinc or a white-painted pine label secured with a large loop, using No. 18 wire, is what is wanted.

**Manuring Orchards**. The amount of manure needed varies; some land may already be rich enough, but this not often the case. Let the growth be the gauge; if much less than 1 foot of new growth appears throughout the tree per season the soil is not rich enough; if above this, it is richer than it should be, winter killing being liable. Heavy manuring must never take the place of good tillage.

**Raspberries** of tender kinds should be covered before the month is out, by bending the canes along the line of the row and covering with soil.

**Records**. See to correcting the orchard records now that each tree has shown what its kind is.

**Seeds, pits and nuts** saved for spring planting to be mixed with sand and subjected to freezing.

**Stocks** for root grafting to be lifted this month, and stored in the cellar ready for use later.

**Strawberry beds** to be lightly covered between the plants rather than over them with leaves or straw before winter sets in. The next crop will show the wisdom of such a course.

**Young trees** to be banded up as directed on page 4 last month, for steadying them and to prevent girdling by mice after the snow falls.

## VEGETABLE GARDEN.

**Cabbage**. No better way for storing can be devised than to lay down two scantlings or rails, two or three feet apart, and between these place the heads closely together, roots up, afterwards covering them over with soil about four inches deep, but

not more. The covering is better deferred until cold weather is at hand.

**Carrots**. Store like common Potatoes, either in pits or the cellar, but keep in rather small lots.

**Celery** should be stored this month; a small amount for early use in the cellar, the main crop in trenches outside. These should be made about one foot wide, and of a depth to accommodate the length of the stalks, which are to be kept even with the regular surface. Set the plants, the tops of which should be dry, closely together in these, with nothing between them, cover with straw, and on this a few boards. Later, as the cold increases, the cover over the trenches should also be increased.

**Clear** the land as fast as crops mature, both for appearance sake and economy. Such others as are vacant may be manured and worked over roughly preparatory to next spring's use.

**Onions**. Store in a loft, even where it freezes, rather than in the cellar. In the latter they will sprout, to their injury; kept frozen this is prevented.

**Parsnips** for winter may be lifted, but they are more buttery and sweet if left out until used.

**Potatoes**. Store in the cellar in bins of 1 foot or 18 inches deep raised somewhat from the floor. Handle carefully to prevent bruises, for these lead to rot.

**Roots** in the nature of Salsify, Scorzonera, Horseradish and Parsnips freezing does not hurt, so the main lot may stay out where grown; but some to be dug and put in earth in the cellar for winter use.

**Spinach**. Cover lightly with litter before winter.

**Sweet Potatoes**. Pack in boxes of dry earth to not have the roots touch each other; then store the boxes where no frost can come to them.

**Turnips** to have earth or sand worked between them, for keeping them crisp and solid.

## FRUIT AND VEGETABLES UNDER GLASS.

**Asparagus** and similar vegetables may be forced under the greenhouse stages, or in pits or hot-beds in the spring, with the greatest ease. For this purpose lift old roots and store in any place so as to be easily reached by February or later for starting up.

**Lettuces**. Air the plants freely, even leaving off the sash in all but the roughest weather, and when it is freezing. See last month's notes.

**Mushrooms**. Beds made now under the stages or in warm sheds will soon begin to produce. Let the stuff be beaten firmly in making up the bed; a large bed is better than a small one; mix turfy loam with the dung, to secure moderate heat and longer bearing; do not spawn the bed till the heat has declined to a moderate point. Let the bed be never too wet and never too dry for good returns.

**Pine-apples**. Young plants require a moderately dry atmosphere, while good ventilation is needed to make them robust. Those in fruit, on the other hand, need plenty of moisture, both in the air and at the roots.

**Rhubarb**. See directions above for Asparagus.

**Strawberries** brought along in pots should now go into cold frames, plunging the pots to their rims in earth or coal ashes, in order that the roots shall not freeze; water sparingly. In about one month later they may come in to be forced.

## Received at this Office.

## CATALOGUES.

Chas. A. Reeser, Springfield, O., Bulbs.  
Joseph D. Fitts, Providence, R. I., Small Fruits.  
Wm. Baylor Hartland, Cork, Ireland, Daffodils.  
Haage & Schmidt, Erfurt, Prussia, Bulbs, etc.  
H. Cannell & Sons, Swanley, England, Plants, etc.  
Irving Allen, Springfield, Mass., Nursery.  
Harry Chaapel, Williamsport, Pa., Bulbs, etc.  
J. T. Lovett, Little Silver, N. J., Small Fruits.  
Brooklyn Nursery Co., Baltimore, Md., Small Fruits.

F. R. Pierson, Tarrytown, N. Y., Plants, etc.  
C. Hennecke & Co., Milwaukee, Wis., Statuary.  
F. W. Harold, Salisbury, Md., Bulbs, Plants, etc.  
E. Benard, Mesmin, Orleans, France, Nursery.  
J. M. Edwards, Fort Atkinson, Wis., Small Fruits.  
Ed. T. Dickinson, Chateaufay, France, Nursery.

## MISCELLANEOUS.

"Notes on Tomatoes and the Carpet Beetle," being Bulletins Nos. 11 and 19 of the Agricultural College of Michigan. Agricultural College Post-office, Mich.

"How to Raise Carp." Several valuable and interesting pamphlets on the utilizing of water by fish culture have reached us from Professor Baird, of the U. S. Fish Commission, Washington, D. C.

"Report of the Fruit Growers Association of Ontario, 1884," from Secretary L. Woolcotton, Grimsby, Ont. This is a large work of 277 pages. Besides containing the reports of the County Associations of Ontario, it gives the numerous valuable essays, covering a large range of Horticultural subjects, that have been presented at the various meetings of the Society for that year.



### Her Floral Highness.

She wore a corsage bouquet  
Just in the usual place  
But 'twas so large and spreading  
I could not see her face.  
And whether it was handsome,  
Or whether it was plain,  
I really cannot answer,  
For I dodged about in vain;  
But peeping through the Roses,  
One eye I did espy,  
While a little urchin shouted,  
"Now how is that for high?"

**Foliage Decorations** are on the increase.

**No one** tires of Lily of the Valley blooms.

**The True Lovers'-knot** is now made pure white.

**A Common Sell.** Perle Roses for Marechal Neil, the buyers knowing no difference.

**Autumn Leaves.** They are most handsome for all manner of designs and free to every one now.

**Ning-Poo** fans of heart shaped and curved surface are among the latest holders for souvenirs and favors.

**We have** no doubt but that Sunderbruck's (Cincinnati) floral alligator was of sweeter odor than the real article.

**A Chicago Florist** reports having sold 200,000 Pæony flowers during last June. This is a suitable time for setting out some roots of this flower.

**Since** the appreciation for simple forms of flowers has been so greatly revived, the sale of summer wild-flowers has been immense in the cities.

**Heliotrope** spoils quickly after cutting, as usually handled. But let it be kept in glasses, a few stems to ench, and uncrowded, and it keeps for a surprising length of time.

**A symbolic design** a little out of the usual was shown by Henry Gardner at the Cincinnati Exposition. It was a floral stump with an axe resting against it, representing "Rum and its Cure."

**I often keep Roses** for a week by gathering them when the buds are soft, and the first leaves are beginning to uncurl, and placing the stems in a shallow dish of cold water in a dark cellar, with moss over the stalks. "ONE OF THE FAMILY."

**Foliage bouquets** made of such exquisite materials as Maiden Hair and other fine Ferns, Asparagus plumosa, Lycopodium, Croton and other leaves are at present the most fashionable. Roses or Valley Lilies are occasionally placed in a bunch on one side of the bouquet, shading towards them.

**Placing Caskets** on a bank of flowers is in vogue in some cities; it being a pleasing change from the free use of the ordinary funeral designs and not more expensive. This is done by having a ground work of board under the casket and to project six inches or more beyond, on all sides, on which to bank flowers and leaves.

**In London** set ornaments or large plants are never seen now on the dinner table; the present fancy is for many little ornaments filled lightly with a few sprays. Often there will be twenty or thirty of these holders scattered with apparent carelessness over the table, some holding cut flowers and some tiny ferns.

**Flowers may be preserved** for months by dipping them carefully, as soon as gathered, in perfectly limpid gum water; after allowing them to drain for two or three minutes, arrange them in a vase. The gum forms a complete coating on the stems and petals, and preserves their shape and color long after they have become dry.—*English Paper.*

**Sale of Orange Blossoms at Paris.** The *Deutsche Garten Zeitung* says that, according to the ancient rule, the Orange blossoms of the gardens at the Luxembourg and the Tuilleries were on May 23d last sold by public auction in presence of the Inspectors of the Administrators of Domains, such being the property of the State. The 150 trees of the Tuilleries garden were taken into the garden rather late, namely, after the close of the Industrial Festival, which was held there. Of this number of trees forty of them date from the reign of Francis I, in the 16th century.

**The Floral Exhibits** of the Cincinnati Exposition have grown to be famous, and those of the present year made during September contributed even more

than usual towards keeping up the reputation of these shows. But then there was prize money to the amount of over \$2,000 offered in this department alone. If this, in addition to the honor of carrying off prizes, would not spur up the best efforts of florists, then what would? Among the leading prize designs were a G. A. R. monument 15 feet high, an army wagon and two tents, an engine and tender, the yacht Mayflower, a steamboat, a patrol wagon, a pedestal with a Roman chariot and horses, a huge nautilus, a Corliss engine, a baggage car, a secretary, lounge and billiard table of the ordinary size, an enormous Maltese cross, a life-size stag, swan, alligator, a stump surmounted by an owl, a fountain ten feet high and many of the more ordinary designs. The chief exhibitors were B. P. Critchell & Co., The Floral Co., Henry Gardner and Sanderbruch & Son.

## Botanical Budget

**Roots** absorb liquids, only as vapor.

**Green rind** does the duty of leaves.

**Cabbage** does not head in the Tropics.

**Italy** is to have a new botanical journal.

**Bees** visit only one kind of flowers on each trip.

**Quince trees** are evergreen in Southern Europe.

**Germany** has 34 botanic gardens; the United States five.

**Never before** has there been so much botanical activity in this country as at the present time.

**Nearly all** the rusts, smuts, mildews and rots that injure our crops are of fungoid growth, hence within the botanist's province.

**Crows** distribute many tree seeds, such as acorns and nuts, by plucking them and carrying them away, dropping them again at some distance from the place of starting.

**In and in breeding**, according to Professor Munson, dwarfs, weakens and sterilizes progeny; cross-breeding distinct varieties, as well as the hybridizing of nearly allied species, gives vigor and prolificacy, but that hybridizing distinct species or different genera produces sterile progeny.

**The work of forestry** the government should take in hand. Every year of timber waste makes our climate worse and we must look to the government to preserve our woodlands. This state in 1853 had 54 per cent of forest and in 1884 only 17 per cent remained. And Ohio speaks for all America.—*Parker Earle.*

**That** the well-known red-fruited *Solanum Dulcamara* (Woody Nightshade; Bittersweet) is of a poisonous nature H. U. Falkestone believes, as the following shows: One of my younger pupils some years ago ate of its bright berries, and it was scarcely thought he would recover. He had to be held down in bed, and the eyes were dilated, just as in Belladonna poisoning. In fact, the physician treated him for that, and successfully, though I knew the Belladonna did not grow in the neighborhood. The boy showed me the berries afterwards, and where he had gathered them.

**Raspberry and Blackberry Cross.** Prof. Saunders, of Canada, and perhaps others, have effected a cross between Raspberries and Blackberries, but the results are not known. It appears from Mr. Carman's experiments in this direction that the cross is a simple one to make. Both the Raspberry and Blackberry buds were opened and the anthers removed while green. Pollen from each was applied to the other, and carefully wrapped up in tissue paper to prevent contact of pollen from bees or wind. About fifteen berries formed from this hybridization, three-fourths on the Raspberry and the remainder on the Blackberry. The seeds of the Raspberry have been sown, and those of the Blackberries are to be when ripe.—*N. Y. World.*

**Wheat and Chess.** Even many intelligent people can be found who believe that Wheat sometimes turns to Chess, and they may seem to present the proofs. For instance some weeks ago a gentleman showed us a head of wheat from one side of which, between the glumes, there was a small branch of genuine Chess. It looked as if it had grown there true enough, but a careful examination showed otherwise. By taking away the Wheat kernels one by one it was soon seen that there was no union between the Wheat and the Chess. In some way the Chess must have been caught by the chaff of the Wheat, and crowded down into the head, where it was held quite firmly. Such specimens are, throughout the length and breadth of our land, constantly being discovered—often enough, in fact, to lead many superficial observers into the error referred to and strongly supporting it.

**Reference was made** in the May issue to the condition of the botanical part of the Department of Agriculture at Washington. Since that time the committee of the American Association on the health and diseases of plants addressed a memorial to Congress setting forth the desirability of investigations upon the fungous foes of the cultivator and asking for \$5,000 with which to carry on the work. To Prof. Riley and to Commissioner Colman the credit of finally securing the favorable action of Congress is largely due. The result has been that the work on the diseases of plants has been separated from the botanical part of the Department (now raised to the dignity of a division) and has been placed in full charge of Mr. Scribner, who reports directly to the Commissioner. Of the appropriation of \$5,000 obtained, \$840 goes to the Botanical Division, to be expended chiefly in studying the agricultural grasses of the West, and the balance to the study of the diseases of plants.—*Botanical Gazette.*

### ABOUT THE PLACE.

**Hogs** like clean water, too.

**Bees** are not taxable property.

**A good time** to destroy Sorrel patches.

**Bees left** on the summer stands should have some kind of a wind-break for their hives. A high tight fence about the bee yard is the right thing.

**As to fences** of barbed wire, what the statute of Connecticut recognize as a legal one is one having 4 strands of wire, the lowest within 12 inches of the ground, the highest at 4 feet, and all tightly stretched on posts not further than 16 feet apart. It is a good fence for anywhere.

**What we keep Cows for** is their milk. But if cows are not kept warm, and their systems are reduced by biting winds and beating storms, they will not secrete full udders of milk. So common prudence demands that now, before winter, the stables should be put in the best of order, to make the animals real comfortable during cold weather.

**Protecting Water Tanks.** Some people when they go about protecting the tanks in their barns or other buildings do so by packing saw-dust or tan-bark all about them, thinking they are doing the best kind of a job. Then later on they are surprised to find that frost has penetrated the tank, forming thick ice, and to its damage. A much better way than this is to have no packing material directly against the tank, but to surround this by a close rough box, three inches away all around, leaving an air space between the two. Then board up your saw-dust or other material outside of this if you like, but it will hardly be necessary. Protection by a belt of air is simple, effective and inexpensive.

**A Simple Ice-house.** Let me tell how I keep ice the summer through, without any outlay for a regular ice-house. In the corner of my barn is a room ten by twelve feet, having a window outside and a door into the feeding alley. This I pack full of ice excepting a space nine inches wide all around the sides and bottom and a foot on top which is filled with saw-dust, as the packing in of ice goes on. I slide the ice into this room through the outside window, which, when the filling is done I board over from the outside. I prefer to have cakes longer one way than the other to break joints. The saw-dust beneath rests on a plank floor, and into this some holes have been bored to make drainage. In this way we enjoy the luxury of ice the summer through.—*Gustave Bilgaster, Windsor Co., Vermont.*

**Protect the Wells.** The idea that the water of our wells is the purest obtainable, says the *American Cultivator*, was long ago exploded. Well water may be pure, but its degree of purity depends wholly upon its distance from all filth. It is now admitted that in many soils both air and water travel very freely under the surface. Some are so porous and deep that water will easily settle through them and the bulk of the filth be retained in the top loam; and in such cases it may be said that ordinary cultivation and the growing vegetation will absorb the objectionable element. Water in such locations is regarded pure and safe. But where wells are shallow and dug in clayey or impervious soil, having near to or at their bottom an impervious stratum, they are likely to be receptacles for filth contamination for many rods around. It does not follow that because the contents of sink drains soak out of sight that the deadly element therein is gotten rid of; it too frequently finds its way to the water which the family are prone to extol as the very perfection of purity. It is never safe to depend upon taste in this matter; if there is a source of contamination near the well, rid yourself of it without delay; at least do not rest content until you have had the water subjected to a thorough chemical analysis.



### TREECLIMBER'S TALKS.

ABOUT THE BANANA OR MUSA.

Last month an inquiry from a correspondent brought out some remarks about the Mangoes, a tropical fruit not much known by us; in this article I want to speak of the well known tropical fruit, the Banana. I easily remember when the Banana was but rarely seen in this country;

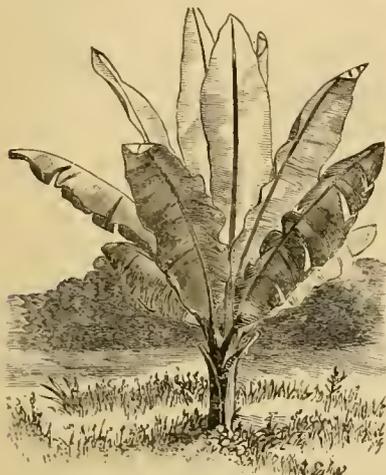


Fig. 1. A Banana Plant before the Fruiting Stage.

now it is one of the most common and cheapest of fruits everywhere with us, and this, too, notwithstanding the great distance it has to be brought. Most of our

BANANAS COME FROM THE WEST INDIES,

the Island of Jamaica being especially productive of them; but they grow freely in all tropical lands. The fact of their cheapness here shows that they must be very easily raised, and this is true, for even the wildest tribes in South America and elsewhere succeed well in raising them. All the labor needed in cultivating the fruit consists in setting out the suckers that form the trees, Nature being then left to do the rest until the time to cut the fruit arrives. This occurs within a year from planting, the plant, or perhaps I should say the tree, by this time having reached a height of about ten feet. Where considerable intelligence is brought to apply the suckers are set out regularly to make plantations, with the trees about 15 feet apart, something like our orchards. In case irrigation is practicable (for the plants do the best in a damp, cloggy soil) trenches are dug between the rows, for the water. The planting of the suckers is done with a primitive and ponderous hoe. The yield per acre, even with the most simple culture, is between 50 and 60 tons of ripe fruit. No wonder the natives can almost live on this fruit and then spare us large quantities for, to them, almost nothing.

But no doubt my young readers have noticed that there are

RED AND YELLOW VARIETIES

of the Banana in the markets. About this there is nothing more strange than is the finding of both red and yellow Apples, Cherries and other fruits in the markets. Botanically the species of Banana which gives us the most fruit is known as *Musa sapientum*, and of this there are now, as a result of long cultivation, really many varieties. These, by close looking, may be detected not only by the difference in color, but by variation in size, and in the quality of the fruit.

But the Banana is of considerable interest to the people of the North in another direction also. In the various species of the genus *Musa* we find some of our most

### ORNAMENTAL-LEAVED PLANTS

for cultivation in greenhouses, and also for planting in the garden for tropical effects. Some of the kinds grown in hot-houses also produce fruit that is most delicious. The dwarf one shown in figure 2, known as *M. Cavendishii*, is one of the best of these, as it is of low stature; hence easily accommodated. Should any of my young friends visit some large and complete greenhouse, or, in the summer, a fine ornamental garden, they would, no doubt, see some plants like the ones shown in the engravings, and then perhaps they will remember that they are Bananas of some sort.

### THE TABOOED BANANA PEEL.

A singular fact connected with the free use of Bananas is the number of accidents occurring from people slipping and falling by stepping on the peels, that are slung thoughtlessly about. This of course happens more often in the large towns than anywhere else. Indeed it has grown to be such a real evil in some places that it would seem from a quotation I will make from a New York letter that in that city ordinances have been passed against throwing these on the walks. Here is what the writer says:

A few years ago Banana peels were slung around New York about as recklessly as they are now everywhere else in the country, but one day a newspaper man in search of something or other to make a midsummer sensation took up the Banana peel. The horrors consequent upon the unrestricted throwing about of

### THE SLIPPERY SHREDS

were glowingly depicted whenever there was nothing more important to fill up yawning columns; then some alderman, anxious to curry favor with the newspaper, introduced an ordinance making it a misdemeanor, punishable by a heavy fine, to throw a Banana peel on the sidewalk. The law was passed; people laughed and said it wasn't a bad idea at all.

One or two people were arrested and fined, because they thought the new law was only a joke, and then the deed was done, and the nasty yellow bit of slipperiness was forever a thing of ill-repute on the streets of New York.

Every street fruit-stand has to have conspicuously posted on it a printed copy of the ordinance which taboos the offending peel, and the police keep as sharp a lookout for

### VIOLATORS OF THE BANANA LAW

as for pickpockets and fast drivers. All of which adds to pedestrianism in New York, one element of safety which probably is possessed by no other city in the country.

TIMOTHY TREECLIMBER.

### "Will You Walk into My Garden?"

This line we have been told in fable a spider said to a fly. Spiders are counted among the gardener's friends, because they are destroyers of insects. But who has not been unpleasantly reminded of their presence in the garden by coming in contact, face, hands and clothing, with their webs and threads, perhaps loaded with drops of dew? About these threads there have been some interesting things discovered that are worth noticing. Even as far back as 200 years ago Leuwenhoek had the following to say of them:

I have often compared the size of a spider's thread with a hair. For this purpose I placed the thickest part of the hair before the microscope, and from the most accurate judgment I could form, more than a hundred such threads placed side by side could not equal the diameter of one such hair.

If, then, we suppose such a hair to be of a round form, it follows that ten thousand of the threads spun by the full-grown spider, when taken together, will not be equal in substance to the size of one hair. To this if we add that four hundred young spiders, at the time when they begin to spin their webs, are not larger than a full-grown one, and that each of these miniantes spiders possesses the same organs as the larger ones, it follows that the exceedingly small threads spun by these little creatures must be still four hundred times slenderer, and consequently that four millions of these minute

spiders' threads cannot equal in substance the size of a single hair.

And if we further consider of how many filaments or parts each of these threads consists, to compose the size we have been computing, we are compelled to cry out, O what incredible minuteness is here; how little we know of the works of Nature!

### PET BIRDS, ANIMALS, ETC.

Large kinds of birds need large cages.

A shred of crisp Cabbage is enjoyed by Dick.

Dogs object to a real bath, but it is needed occasionally.

Pets belong to civilization, in barbarism they are unknown.

Jacobin doves are named after an order of hooded friars.

In the care of dogs a common trouble is the giving of too much meat.

"Ma, ma, kitty's eat so much she tan't shut her tail down" cried one Georgia 6-year old miss in alarm after feeding her young pussy to its full satisfaction.

In selecting rabbits look to the eye. It should be clear, round and full and large as possible. A small pig-eye gives the rabbit a sluggish and sleepy appearance, and is always to be avoided. H. A. P.

Do Gold-fish Sleep? From experiments made at the South Kensington (London) Aquarium it appears that while many fish sleep, just as land animals do, the gold-fish and some others never sleep, but rest periodically.

Is the dove-cote comfortable for winter? We often meet them otherwise than this. It is the keepers' duty to look to the general comfort in these. All the openings or places that can aid to produce draughts should be closed up tight.

Water for Canaries. Last month we touched upon giving plenty of fresh water to all pets; but, as Canary birds are so commonly kept, perhaps we should have said a little more about these as to this. One thing is certain, they too often are made to suffer for want of water. You will see bits of sugar and sponge cake and cracker and apple tucked all about the wires, while the drinking cup will be empty or filled with green water and "trash" which no bird can touch. If the abused pet could speak, he would say that he would like a little less grocery-store about him, and a good, square drink of clean water now and then.

Birds that Sing Tunes. It is very hard to make a Canary bird sing a tune, says a fancier. It takes a year of work to bring one to this state of musical perfection. In Germany there are families that do nothing else except train birds in this accomplishment. It is done in this way: They always have one bird that can sing a tune, and he is shut up in a



Fig. 2. The Dwarf Banana (*Musa Cavendishii*) in Fruit.

dark room with a young bird that has already shown some ability as a singer. After a while the young bird begins to imitate the other, and in the course of a couple of months he can sing the tune very well. Then he is taken away from his teacher and a music box that plays the same tune is put into the room. Very often the young bird is unable to learn a tune at all. Of course this makes the birds very expensive, and some bring readily \$50 to \$500, according to the extent and merit of its accomplishments. I have known of a Canary that could sing three tunes, but such birds are very rare indeed.

# The Household

## A Meat or Fruit Diet, Which?

If the meat packers' strike in Chicago, remarks a leading daily paper, has the immediate effect to put up the price of meats a good many consumers may improve the opportunity to become vegetarians, or at least to explode the doctrine that, with the bountiful fruits and vegetables of our gardens, with or without fish, eggs and poultry, the absence of the heavier albuminoid foods will be greatly missed.

A change in the food supply as referred to would without any doubt be an easy matter to effect in the overflowing abundance of the American food markets. The gardens of the people and the great orchards and market gardens of the country are offering to consumers the proper food to suit this country's climate between May and November at least.

One fact appears to be in the way of fast becoming established and that is that enlightenment tends to make men eat less food or lighter food. If this country, in its affluence of flesh meat, has looked down with scorn upon whole nations who feed upon succulent vegetables, fruit, vegetable oils, grains and fish, science now instructs us that this attitude of contempt is one of class ignorance.

People who work with their brain are advised to be light feeders. Those who by their occupation get but little exercise for their muscles are learning that heavy diet clogs their faculties and gives them the sensation of muscular fatigue for the unused supplies they have taken into the system. The magnificent muscular development in the peasants of Southern Europe is produced on mush, macaroni, Chestnuts, Grapes and the oily Olive, with cheese, eggs and the vegetable soups. The Hindoo and Chinese live in the main on rice and butter or rice and lard, a system which enables the American-Chinaman to add much market money to his savings in lieu of spending it. Many Americans could with advantage pattern after John with respect to this.

Let us take it for granted therefore that anything like a corner in meats would be very far from an alarming disaster. So long as we have the Apples and the Hominy we can forego the hog. With the vast supplies of the lighter and safe foods there are few physicians who would complain for their patients were the strikes in the meat-packing line long continued.

## Brieflets.

**Bill of fare** books are brain savers.

**For dusting** we use an old silk handkerchief.

**Rapid eating**; it is as unhealthy as it is vulgar.

**Pouring boiling** water over Raisins makes the stoning of them easier.

**Salt the spot** made by a spill of milk or anything else on the stove, and the suffocating smoke will be quenched.

**Powdered Borax.** A very small bit answers better than soap in water for washing milk bottles and milk utensils.

**Stove Cement.** It is a handy article often and easily made. Two parts fine ashes, one part salt and water, to make a mortar. Dry with slow fire.

**Cold Tea and Vinegar.** One of the best housekeepers of our acquaintance turns the tea left over into the vinegar barrel, claiming that it promotes acidity as well as a fine color.

**Have you** not noticed a smell of cooking in some peoples' clothing? Caused by their turning the kitchen into a wardrobe, or having freshly ironed clothes near the frying pan or vegetable pot.

**To polish glass,** and remove slight scratches, rub the surface gently, first with a clean pad of fine cotton wool, and afterwards with a similar pad covered with cotton-velvet which has been charged with fine rouge. The surface will, under this treatment, acquire a polish of great brilliancy, quite free from the presence of any scratches.

**We don't** buy the twine we have use for by the ball, neither do we depend on the bits that come

around store packages, but instead we buy warps by the half pound or more, from a carpet weaver and wind the contents into small balls for use. We find that it is both stronger and cheaper than ball twine.  
Mas. E., *Dansville, N. Y.*

**A Mending Basket.** When a market basket shows signs of age, but is yet strong and unbroken, remove the handle, line it neatly with calico, shir a cover of some contrasting color, (pink inside, and gray in small figure for outside is pretty) for it. Then when ironing lay all the pieces that need repairing by themselves, and as soon as aired put these into the basket, here to remain until they pass through the mender's hands.  
ELDER'S WIFE.

**To Disinfect a Room.** More attention is daily being given to approved sanitary methods, and this is right. After a room has been occupied by a person sick with a contagious disease it should be disinfected. To do this, remove the paper from the walls, the carpets, and the furniture, exposing them to the air and wind and giving the latter a fresh coat of varnish. Mattresses should be made over new and the hair boiled. The crowning act should be to burn several pounds of sulphur in an iron vessel in the room, having it tightly closed, and the cracks of doors, etc., packed with strips of cloth. Afterwards by whitewashing, painting and papering the room may be re-newed.

**This will Taste Good Thanksgiving**—chicken fried whole we mean. It should be a well-grown broiler, young and tender. Additional material: Sweet, salted lard or clarified drippings, flour, salt and Pepper, two or three slices of young Onions dropped in the hot fat. Draw and wash out the chicken with soda and water, rinse well and wipe dry. Steam for half an hour. If you have no steamer wrap the fowl in mosquito netting and lay in a colander, set over a pot of boiling water, fit a close cover on the colander and keep the water at a hard boil, but not touching the chicken, forty minutes. Wipe the fowl, roll in salted and Peppered flour until well coated and lay in the salted fat, enough to cover it, and boiling. When browned transfer to a hot dish, garnish with Parsley and serve.

**Money** is indeed "filthy lucre" and young people should be taught above all else never to take it in the mouth because of the filth, if not positively worse matter, that adheres to it. Only the other day a subscriber to POPULAR GARDENING, who is also a microscopist, informed us that even on coins, the darker lines that appear at the angles formed by the raised edge and figures may, under a powerful glass, be seen to harbor many forms of bacterial life. This being true of smooth metal coins, what can be said on the same score of paper money, that becomes loaded with filth and actually worn out as it passes from hand to hand, pocket to pocket of all classes of people, even those that are vile, and uncleanly in habits—and of the diseased, whose very touch is contamination. Money is really unclean; it should be handled accordingly.

# Poultry.

## Several Points in the Selection of Breeding Stock.

At the outset the question occurs, What is the best age to breed from? Those well up in experience claim, first of all, that it is better to have some variation in the age of hens and cock. It is now quite generally admitted that the strongest and best chickens are those reared from a cockerel about one year old, and hens in their second year.

One drawback, on some accounts, to such mating, may be raised to the effect that the offspring invariably have a large proportion of cocks. Most breeders therefore, for general purposes, prefer a two-year-old cock, and hens fully twelve months old. Fowls are good for breeding up to the age of four years, but are of little value beyond.

The avoiding of near relationship is of greater importance than seems to be generally recognized. Still much of the stress that is laid upon the matter of introducing what they call "fresh blood" by some authors, and especially by breeders, is uncalled for. It is certainly most destructive to breed from fowls that are closely related, and to go on promiscuously interbreeding in one yard is still worse, as must be obvious to every thoughtful mind.

Where provision is made for a number of separate runs, in which separate races can be reared, operations may be carried on for many successive years without any such undesirable crossing as has been referred to. The plan to be adopted is to note down carefully the parentage of every brood, and to keep the chickens from one community together until they are to be mated with others. The breeding yards for next year are then to be made up from the best specimens, taking care not only that the cocks and hens are not related, but that two runs at least are thus made up without any fraternal relationship between them. Unrelated chickens will thus be secured for next year also, and so the system can be carried on.

## CONDENSED POULTRY NOTES.

**Profits** go with personal supervision.

**Bores** roasted until brittle break much easier.

**Broomcorn** seed fed now and then is a treat for hens.

**Almost** any site but a low one for the poultry house.

**The Space for Hens.** To put it at 6 square feet of room (3 feet by 2 feet) for each one, in which to roost and exercise, will be not far from right.

**For a bracing tonic** in winter, and one that will in a measure guard against roup, it is only necessary to add to the water a few drops of a solution of sulphate of iron (green vitriol), to give it a slight mineral taste. The water will assume a rusty appearance but this is quite immaterial.

**Its a hen's** natural business to lay eggs, and a good many of them; if she does not it is because nature is hindered. Now in nature, hens get much green food, insect food and some meat, and if we would have them at their best for laying when eggs are high priced, then we must see to it that this part of the diet is all right.

**Feeding Egg-shells.** All that can be saved up should find their way to the feeding box, but see to it that they are well fined up first. Thrown out broken in halves only, with some of the albumen still retained, and the fowls devour them greedily, getting a taste of what is in an egg, and thus may be tempted into that worst of bad habits, egg eating.

**It would** in thousands of cases pay to work up a direct semi-weekly trade between the producer and consumer of eggs. Taken to customers twice a week regularly, so that they could depend on never having an egg beyond four days old, and you would have no trouble to get several cents per dozen more for such than the retail dealers ask for eggs that are as many weeks old. For instance, to save up eggs for two weeks and then deliver them to customers in lots that should last them two weeks, brings some of the eggs to four weeks old before being used, a thing very objectionable when the same product could as well be fresher.

**New Breeds.** The *Prairie Farmer* says: The "woods are full of" new breeds, which their admirers are booming with all the might of printer's ink. We have the White Plymouth Rocks, the White Wyandottes, Dingos, the Motley Bells, the Pea Comb Plymouth Rocks, and perhaps some others that are not yet named; and if we believe all that is claimed for them each one possesses more good qualities than any other breed of fowls on earth. But those who have no money to experiment with had better go slow; if you have fowls of a well established breed, such as give good returns for the food and care bestowed, don't trade them off until you know you are going to get something better. It often pays to "make haste slowly."

**Poultry on a Small Lot.** A correspondent desires information in regard to raising fowls on a small lot, 25x100; and as to how many chickens for a beginner, and which are the best for the purpose. We would suggest that 25 feet at the lower end be fenced off, making a lot 25x25. A house 8x8 should accommodate a flock consisting of a cock and 10 or 11 hens. If 25 feet more be taken up there can be double or changeable yards, each lot being 25x25. Then, while the hens are running in one yard, green food may be grown in the other, and if the house is on the line the hens can be changed from one yard to the other occasionally. The Brahmas are excellent, as they do not fly. If the fences are high the Leghorns will prove satisfactory. Do not feed too heavily, but rather keep the fowls hungry, in order to make them exercise at scratching. Give them all the feed they can eat at night, however. The main point is to keep them busy, and then size of yard is of but little consequence.—*Poultry Keeper.*

# POPULAR GARDENING

FOR TOWN AND COUNTRY.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

Vol. II.

DECEMBER, 1886.

No. 3.

## The Sunset of the Year.

Pale in her fading bowers the Summer stands,  
Like a new Niobe with clasped hands,  
Silent above the flowers, her children lost,  
Slain by the arrows of the early frost.  
The clouded heaven above is pale and gray,  
The misty earth below is wan and drear,  
The baying winds chase all the leaves away,  
As cruel hounds pursue the trembling deer;  
It is a solemn time, the sunset of the year.

HE WHO never protects his vines, plants and so on in the North has not the satisfaction of having the finer sorts of garden products of his own raising. Now, and even until quite a crust of earth is formed on the earth, is a good time for the work. Simply to cover the earth over the roots with leaves, coarse manure, potato tops, or what is quite as well, coal ashes, is all that is needed. It may not be known that all plants and roots are more or less active throughout the winter, and protection promotes this activity in a desirable way.

OUR CATALOGUE MAKERS would do well, in this day of reforms, to heed the cry for simplified names of kinds. To do so, calling attention to this fact, should find appreciation enough with buyers to tell well on increased orders for the initiators. For nurserymen the way is clear; follow the lead of the American Pomological Society in their catalogue. Seedsmen would have more trouble; they could for the present begin by leaving off their own names from standard kinds. The Extra-early Egyptian Blood Beet might also be cut down to Egyptian Beet, and so of others.

A LAWN-MOWER, indispensable implement that it is, will suffer as much when out as when in use, unless it be given some special care at the end of the season. Little further need be suggested on this point than to say that the kind of cleaning that occasionally suits a sewing machine is needed here. For removing the gum and dirt from bearings, cogs, etc., kerosene oil freely applied and then hard rubbing with a cloth will do the work. The wheels at the side, that are in some kinds of mowers encased, may easily be got at by removing one or several bolts that hold these parts together.

THE latest experiments in such a direction, show that plants growing in living rooms are health-givers, instead of health-destroyers, as was formerly supposed by some. Corenwinder has proved that all living parts of plants that are charged with the matter called chlorophyl, which gives the green color, throw off health-giving oxygen, but retain the objectionable carbonic acid gas for forming the structure of the plant. With a blanched colorless growth, such as Potatoes and other vegetables sprouting in dark cellars throw off, the case is reversed, and detrimentally to health, for here oxygen is absorbed and carbonic acid is exhaled, precisely as is done in the case of animals. The obvious lesson is: grow plenty of plants in windows and other light places; prevent as far as can be sprouting of vegetables in cellars.

THE demand for Roses and other fine flowers for the winter cut-flower trade in the large towns has grown to enormous proportions. To meet this call, hot-house establishments by

the hundred have sprung up in the vicinity of the cities, and also remote from them, and in these millions of blooms are in the aggregate raised annually for the trade. As an illustration of what many of these places are like, we may state the instance of one Rose grower in Oil City, Pennsylvania, who, following on a suggestion made by POPULAR GARDENING some time ago, has within a year put up nine immense houses, each 21 by 300 feet in size, and in which together there are now 20,000 plants covered with buds and blossoms. These are shipped to consumers, some at long distances away, day by day as they develop. His hot-houses crammed with luxuriant plants are a sight to the eye now at the approach of winter.

HAS the tree agent yet intruded his presence on you for spring orders? Perhaps not so early as this, for he is hardly more than done with his fall deliveries. But it is safe to count that in his winter campaign not one of our readers will miss his visits; some will see his face week after week, unless the house dog be properly trained. We are not down on all tree agents, —only the dishonest, irresponsible ones. But these, it is to be regretted, are in so large a majority that we must urge to extreme caution in dealing with any of the class. A trouble is that the greatest scamps are, as a rule, the smoothest talkers and tell the most plausible stories. One pretty sure sign of an impostor is the offering of wonderful new varieties, claiming unusual and valuable qualities and held at magnificent prices. Another is the parading of high-sounding, sensational names, just as if most good fruits and flowers had not simple ones. We may say that all reliable agents sent out by good houses carry certificates giving their proper identity, but the dishonest chaps so readily get up similar spurious papers that one must be sharp not to be imposed upon even as to this. The safe way: turn all agents off with the laconism, "We deal with no agents." Then buy through catalogues and correspondence, from nurserymen or florists of good repute, of which there are many.

## Rotation in the Garden.

Rotation or change of the garden crops—vegetables, fruits or flowers—on the same land should be looked upon as a corner-stone in all successful gardening. Still it is a principle much lost sight of, perhaps more through lack of study and thought directly given to the matter than aught else. Nature suggests the course, even in her forests, for it is seen, for example, that when Chestnut woods are cleared away Oak usually grows up, and *vice versa*. In New Jersey Oak is said to follow Pine and Pine on Oak.

The reason why a change of crops on the same land is advantageous must easily occur to the thoughtful cultivator. Farmers well know that land devoted to Beans, for example, will after a few years become "Bean sick;" the same is true of Corn, Clover or any other crop. After one kind of plants has occupied land for one or several years it is but reasonable that the properties in the soil specially adapted as food to that kind should run low—it certainly becomes reduced, while other elements that are suit-

able to other crops remain unused, or else go to waste. To neglect making due changes therefore in crops is to invite inferior results, when better ones might prevail.

Not only does this principle closely apply, but we may go further: There is good reason to believe that the nitrogen of the soil, that valuable element of fertility, although largely drawn upon by one class of crops, is in the process of the growth of such made more available for other crops to come than if the former had not first occupied the land. In other words, one kind of plants feeding on the soil by the act releases certain plant foods, which, although of little or no value to a succeeding crop of the same kind, become directly so to any other kind.

Perhaps no hard lines should be drawn as to the rotation to be observed in ordinary gardening; if there could approximately be, in every department of the garden, after any crop of a certain kind on the same soil, a rest to that soil for such a crop of from three to six years the main benefits of the system would be secured.

To outline a six years' course, or near to it, of rotation in the vegetable department, for example (Strawberries added), the following plan, supposing a garden to be divided into six equal sized plats, may be of use:

Plat A.	Plat D.
Potatoes. Parsnips. Salsify. Horse-radish. Turnips. Spinach.	Beets. Carrots. Lettuce and other Salads Radish. Herbs. Miscellaneous.
Plat B.	Plat E.
Onions and Leek. Beans, bush or running. Peas, early to late. Tomatoes. Sweet Potatoes.	Cabbage. Cauliflower. Celery. Borecole. Sea-Kale, &c.
Plat C.	Plat F.
Corn. Cucumbers. Squash. Melons. Peppers. Martynia, Egg Plant, &c.	(To occupy three years.) Rhubarb. Globe Artichoke. Strawberries.

The design in this case is to move the crops of each plat along to the next plat with each succeeding year, an exception being found in the case of the kinds in plat F, which should be moved one length only with every third year. By some calculation the same principle may be applied to the flower garden, fruit garden, and even to the orchard and the farm, allowing, as needed, for a greater or less length of time in the respective cases. We call to mind the fact that in the Peach-growing districts of Delaware and adjoining States the Peach is found to do best, and is the longest lived, when following on worn-out Corn ground.

The writer does not forget, however, that there are some seeming exceptions. Celery, for instance, is grown on certain low lands

for many years in succession; Onions too sometimes succeed well on the one plot year after year, and the same is sometimes found true of other crops. But these things only show that the conditions of the soil are exceptional, being singularly rich in the particular plant foods required in such cases respectively. It would not be wise to apply that which is exceptional to general practice.

### The Cold Grapery.

A fruit grower who had met with the usual easy success in raising foreign Grapes

credit of Americans. But with all this our Grapes are yet, at their best, much inferior to the magnificent foreign varieties at their best. And while we may reasonably enough expect to see further improvement in the former, it is but proper that we should give the culture of the superior foreigners, by such means as are easily at our command, the attention they deserve.

**THE MEANS TO THE END.** If we have not a climate suited to the foreign Grape, we at least have the sun and clear summer skies that are friendly to its growth. As a matter

the plate, and the upper ones meeting the ridge piece. Across these, between top and bottom, are strung two pieces about 3 by 4 inches in thickness and the entire length of the house, upon which the glass-bars, at 8 inches apart, rest.

A good width for the house would be 18 feet—it might be a little more or less. As to length, any size desired from 20 feet to 75 feet or more long would answer. A house 18 feet by 35 feet should be built in good style for \$400, and this, if properly planted, after the third year ought to easily bear at least 300 pounds of prime fruit annually. The house should stand north and south.

Where there is an available building or other wall located for forming a north or northeast rear part to a grapery, then a lean-to, like Figure 2, answers remarkably well and comes cheaper than the span-roof. We call to mind one rude structure of this kind, built, as to glass, of old hot-bed sash supported by rafters, for an outlay of \$60, that every year ripens about 200 pounds of splendid Black Hamburg Grapes.

**THE BORDER.** This should be made about two feet deep, and be so thoroughly underdrained that not a drop of water can find lodgment in it. Some think it best to have the border only on the outside of the walls; we are satisfied that with proper care in watering inside it is best to have both inside and outside borders. In either case the walls must be made with numerous openings below the surface, to admit of the roots freely passing through from side to side.

For soil there is nothing better than a compost made of four parts rotted turf from a pasture and one of well-rotted manure, to which is added a good sprinkling of bone manure. A little lime rubbish and broken bricks and stones also added will improve it somewhat.

**WHAT TO PLANT.** The best of all Cold-house Grapes for common culture is the famous Black Hamburg variety. It has large shouldered or branching bunches and large, sweet, rich berries. Where twenty vines are to be set, at least a dozen should be of this sort. Of other fine varieties for the amateur we can recommend the following: *Black or purple*—Lady Downes, Muscat Hamburg, Trentham Black; *red*—Grizzly Frontignan, Red Chasselas; *white*—Bowwood Muscat, Early Auvergne, Frontignan, Golden Hamburg, Royal Muscadine or Chasselas de Fontainbleau, White Frontignan.

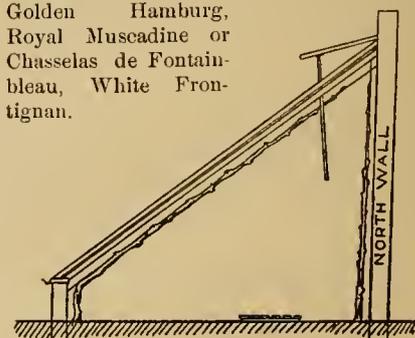


FIG 2. A LEAN-TO GRAPERY.

**VINE PLANTING AND EARLY CARE.** The vines may be one or two years old when set out, age maturing but little if there has been a good and well ripened growth. They may be procured from a number of our leading nurserymen. They should be planted in the spring, setting them at four feet apart, or one to each rafter, and cutting them back at the time to three or four eyes.

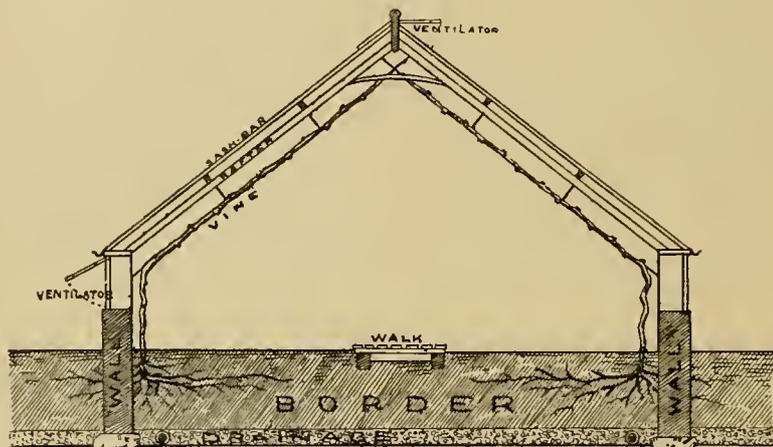


FIG. 1. SPAN-ROOF COLD GRAPERY—18 FEET WIDE.

under glass chiefly for his own use was heard to say: "If every person who liked good Grapes as I do knew how easily and cheaply they could be raised there would in a short time be a thousand Grape houses where now there is a single one." Certain it is that plenty of testimony could be produced to the fact that no addition to a home or fruit garden can for a small outlay be made that will yield such abundant returns as a cold house for raising foreign Grapes.

**ABOUT FOREIGN AND NATIVE GRAPES.** The Grape of the East has a history nearly as ancient as that of man. It stands almost without an equal among the fruits of earth for all that goes to make up delicacy, richness and beauty. It is entirely distinct from our American Grapes, the former being known botanically as *Vitis vinifera*; of the latter there are a number of species, the one of chief interest being *Vitis Labrusca*, and which is the parent of nearly all the Grapes grown in our country. In a dried state the foreign Grapes are well known as the raisins of commerce. The great excellence of these among all dried fruits at once prepares our minds to admit the superiority of the fresh fruit from which they come. No American Grape is capable of making a good raisin.

But unfortunately the climate of temperate America is wholly unsuited to the foreign Grape. Nearly every other fruit of foreign origin (in point of fact about all of our common fruits—Apple, Pear, Cherry, etc., are such) succeed to perfection here, the vine almost alone being exceptional. Its introduction has been attempted times without end, from the early colonial settlements down, and as often failing. To have any Grapes, therefore, suited to open air culture in America it was found necessary to turn to the acid, foxy and otherwise unpromising wild species at hand, making the best of these.

That such marked excellence in improving the wild Grapes of America has down to the present time been attained, as shown by our best native varieties to-day, is greatly to the

of fact it is found, that by putting up almost any kind of glass protection, however rude and inexpensive, and in this planting foreign Grapes, they will thrive here with the greatest ease, freely yielding a superior quality of fruit. Henderson tells of a German in Jersey City, who year after year grew a splendid crop of foreign Black Hamburgs on vines which had been planted against the rear fence of his lot. He did this by keeping over them, to lean against the fence, some old sashes eight feet long. The glass up, and it is barely more trouble to manage a certain number of vines here than in a vineyard.

A cheap or rude structure, however, is not always the most economical in the end. It may also not be adapted by its appearance to the surroundings, or it may be very awkward to manage. In this article, therefore, we confine our remarks and illustrations in the main to more substantial, but not needlessly expensive, structures of this kind.

**COLD GRAPE HOUSES.** First let it be understood that the Cold Grapery, a structure depending entirely upon the sun, and the natural protection of the glass for heat, is what we are here writing about, and recommending to Americans. This is distinct from the Early or Forcing Grape House, used for bringing along foreign Grapes by means of artificial heat early in the season merely for the sake of earliness. It is also distinct from the Late House, heated artificially to ripen during the winter the later varieties, and for the mere sake of extreme lateness.

The best Cold Grape Houses are those made with a span roof, as shown in the accompanying Figure 1. This structure is built in the most substantial style, with the sides resting on brick walls. The same house with Locust or Red Cedar posts set in the ground at four feet apart, as supports to the sides and rafter plates, would be much cheaper, although lacking somewhat in durability.

The roof is supported by rafters at about four feet apart, their lower ends resting on

As soon as new growth starts, all but the strongest shoot should be pinched out. This one should be trained to a thick wire attached to the rafter, and some 15 inches from the glass or wall. Besides this no other growth should be allowed. In September the top should be pinched to check the flow of sap, and strengthen the lateral buds. A little before winter of each season the vines should be taken down, pruned and laid on the ground, covering them lightly with straw or some other similar material.

Concerning the further care of the vines, all of which is a simple matter, we defer directions for some future issue of POPULAR GARDENING.

#### A Freak of the Calla Not Often Met.

At intervals not occurring at all often the well-known Calla produces more than one spathe, as the large white floral leaf, which is usually looked upon as the flower, is called. Very rarely the number of the spathes reach three, as in the case herewith illustrated. This occurred to one in Mr. Lampes' greenhouse, in Jersey City, N. J. The spathes measured eleven inches across, from tip to tip, and six inches across the face in the opposite direction—making quite a wonderful "flower," indeed.

One peculiarity of this form of the Calla is that it seems incapable of being perpetuated as a distinct form or variety. The freak appears like the flash of a meteor one time in ten thousand and perhaps; in no case which we have seen or of which we have heard has the same plant shown the same phenomenon again. All of our cultivated double flowers have originated through some such departures from the single forms, but which then became fixed and capable of reproduction and improvement. In such respects the staid old Calla seems willing to stand forth as a case of obstinacy.

Indeed we are not certain that flower lovers generally would vote that to have double or triple varieties of the Calla would be desirable. The very simplicity in the form and color of this flower as we all know it is its greatest charm; the double and single forms the writer has met have seemed to his eye much too stiff and angular to be considered really handsome. Like many another monstrosity, that of the double or triple Calla is interesting and welcome as a curiosity, but for true beauty it must stand in the shade of the single sort.

A florist in Indiana, who is also much of a botanist, in speaking of his experience with a triple Calla, says that the plant which bore one such flower soon afterwards, from some unknown cause, rotted to the ground. He dug down and took away the bulletts from the sides of the tuber and planted them. Such as grew produced single spathes similar to the ordinary form.

We have spoken of the Calla spathe as being looked upon as the flower of the plant; it is a mistake, howbeit a very common one, to so consider it. Let us get the right idea about this matter concerning our beautiful favorite.

The showy white spathe that looms up so prominently is nothing more than a modified leaf, botanically speaking, and has no relation to any individual blossom. The no less beautiful and delicately molded golden pillar, or spadix, in the center comes nearer to being the flower, for this is nothing other than a thick mass of small antheriferous flowers, so closely set together as to form almost a solid surface. These are the real blossoms. The well-known Indian Turnip and various other plants, form-

ing a distinct botanical section, possess the same peculiarity in their blossoming.

#### Something About Orchids.

BY MRS. E. A. RENDRICE.

The Orchids are now attracting much attention, and many persons are no doubt interested in learning more of their peculiarities.

Of the same type, broadly speaking, as the Lilies, the parts of the flowers, however, in-



A TRIPLE CALLA.

stead of being in threes are throughout the family erratic as to their formation. Two of the outer whorl (sepals) often unite into one, and together give the appearance of two sepals instead of three. These are petal-like in color and often of odd shape.

In the next petal whorl one of these differs greatly from the other two, and is called the labellum or lip. This we see as the pouch in the *Cypripedium* genus. The office of this peculiar part seems to be to secrete nectar, to model itself into various shapes for holding fluid and to render itself attractive to the eye of both man and insects. This remark may seem surprising, but it is a fact that unless the flowers are aided in fertilization by insects no seeds mature, and extinction might follow.

It is to be noticed that while in other flowers the stamens (pollen producers) and pistils (pollen receivers) are distinct, the former arranged conveniently around the pistils for depositing the pollen, in the Orchids these organs are greatly modified. In most of them there is but one fully developed stamen, and this uniting with two of the pistils, forms the column, the remaining stigma being modified into what is known as the rostellum. It is the curious combinations of labellum, column and rostellum that give these flowers their grotesque appearance, resembling as they do bees, butterflies, birds, spiders and even a dove in one, a frog in another, and yet another is like an ostrich feather, of rose and violet.

One of our Northern Orchids, the superb Showy Orchis (*O. spectabilis*), found growing in shady places from Canada to the Southern States, has the anther cells arranged under

the canopied sepals and petals in a way to suggest two clergymen under a sounding board, the rostellum being the pulpit. It is in some localities named Preachers in the Pulpit on this account. Among the numerous different species and varieties peculiar to the United States are such as bear the names of Whip-poor-will's Shoe, Venus Slipper, Old Goose, Lady's Slipper, Noah's Ark, Adam and Eve, Moccasin Flower, Ladies' Tresses, Three Birds, Dragon's Claw, and others, all of which names were suggested from some real or fancied resemblance, in many cases very marked.

In the Orchids, peculiar to the Tropics and grown under glass in the North, we find the family at its best and showing every conceivable color, except blue, which is never met with in the family, although violet, purple and lilac are. Brown, so rarely seen in flowers is in these quite common. Unlike with most plants, cultivation seems not to improve this family.

Roots and leaves, as well as the flowers, help maintain the reputation of this family for oddity. Some of the plants have genuine roots, fibrous, bulbous or coral-like, and grow in the ground like all well regulated vegetables, while others are epiphytic, some true air-plants, many parasitic and a few are saprophytic.

#### Fuchsias as House Plants.

The Fuchsia, or Lady's Eardrop, is one of the few house plants that may be depended upon to yield a good quantity of bloom throughout the winter. But not every one who raises house plants is successful in its culture, a reason for this being that the plant is a little delicate in some respects, although in others it is anything but this.

On the subject of attention to the peculiar wants of this plant in winter, a writer in the *Ohio Farmer* offers some useful ideas. Concerning the complaint of the plants dropping their leaves or flowers, he says there are several causes, a principal one of which

is the destruction of the roots, either with too much water, or they have been at times allowed to suffer from getting too dry.

Roots of Fuchsias, the same writer goes on to say, are very tender by being kept too wet or too dry, and just as certain as the roots get destroyed from any cause whatever the leaves and flowers drop off. An escape of gas from the burner or from the stove also makes the leaves drop off. By keeping watch of these evils there is not much trouble in growing and flowering some kinds of Fuchsias during winter.

There are, of course, certain varieties which will not flower during the winter season, even under the most favorable conditions given them in a greenhouse; therefore he would not advise such as these being tried in the house.

Fuchsias grow best in a mixture of good rich loam and decayed vegetable fibre, such as comes from an old turf heap, or else leaf mold from the woods, about equal parts of each. A sufficient mixture of sand to make the compost open and in a condition to allow the passing of the water freely is quite essential. If the pots used are four inches or more across the top, give drainage of pot-sherd or charcoal, until about one-fourth of the pot is filled, over which place some moss to prevent the soil from mixing with the drainage. After any shift, water sufficiently to thoroughly wet the soil and keep in a partially shaded position until fresh roots have made a start. After this care should be taken not to give too much water to the roots; a sprinkle overhead occasionally will do much good. Keep the plant in as sunny a position as available in winter, and sometimes turn it, that all sides may be benefited by the sun's rays.



### A. M. PURDY'S DEPARTMENT.

Postoffice address, - - - Palmyra, N. Y.

To "Fruit Recorder" Subscribers. Hereafter all letters about missing numbers, specimens, etc., and all remittances for renewals, must be sent to the office of POPULAR GARDENING, Buffalo, N. Y.

Most any kind of Grapes may be kept for months at a temperature of 38° with a dry atmosphere.

Slow-growing trees and vines should be set on richer soil and fast growing ones on the poorer ground.

Fay's Pacific Currant. We have fruited it for two years and do not hesitate to pronounce it the largest and most prolific Currant we have seen grown.

It is claimed that Cork-dust, a material in which the Malaga Grape is shipped to this country, is most excellent for keeping Grapes through the winter.

This is the time to take up sods of Strawberry plants to put away in the cellar for early forcing. We will write up an article soon on forcing such for early use.

Weeds for Protecting. In severe localities we do not recommend late clearing weeds out of Strawberries. It is better to let them remain till early spring as a protection through winter.

Peaches in the Bud. To H. G., Easton, Md., we would say that the best plan where the trees are set in the fall is to set deep and bank earth up around and over the bed, and draw this away in the spring.

Covering Strawberries. We caution our readers against mulching the plants before the ground freezes. Let the frost get well in and then cover well. It is not the cold weather so much as the repeated freezing and thawing when spring opens that kills plants.

Grafted Stone Fruits. We caution our readers against buying grafts of Peaches, Plums, Cherries or any stone fruit; not one-tenth can be made to grow. We have tried it time and again and failed. Apple and Quinces are all right when grafted, but only budded trees of stone fruit should be planted.

There is no question with us but that Grapevines of all kinds are better off and yield better crops laid down and covered with course material of any kind, or earth, than if left up on the trellis. In fact, if simply laid down on the ground and held to their place by a little earth at the end of the vines, it is better than leaving on the trellis.

Winter Protection. We find no better protection to Strawberries than drawing a little earth up around each plant and drawing it away in the spring. Raspberries are greatly helped and protected by ploughing furrows up to them. Banking up newly set trees with earth, as referred to last month, protects against winds as well the depredations of mice and rabbits.

Lucretia Dewberry. From all sources we bear high praise of this fruit (described last month), and we trust it has come to stay. Our own vines (we call them vines, as they are more than than bushes) were loaded with the largest and best Dewberry it has ever been our lot to grow. Such a Blackberry is greatly needed in extreme cold sections, as it is so easily protected.

Highways filled with snow banks! Whew! how it brings the cold chills over one to think of it, and yet how easily remedied by planting a hedge or screen of quick growing trees, like the Norway Spruce and other Evergreens, Russian Mulberry, Osage Orange, on a north and south road that drifts badly in places. But we notice wherever these protectors are on the west side, then there are no drifts, the snow lying level and evenly along the road.

### Small Farming and Fruit Growing.

It is well-known that the great West is so monopolizing grain growing as to make it a risky business for small farmers to continue longer in. "What shall be done?" is the enquiry that comes from thousands of these all through the country. We say look around you and see what's to be done—what use you can put your small farm to. Next to raising stock by feeding largely with Carrots, Beets, etc., grown on portions of the land, turn another portion to the growing of fruit.

If you have good sized towns near you which are not overstocked with fruits and vegetables you can make the growing of such pay. Our city and town populations are using more and more fruit every year to the exclusion of meats.

There are plenty of men that are actually making more money from ten to twenty acres planted out to fruit and garden crops than scores of farmers near them from one to two hundred acres of land. Many with but ten to fifteen acres are netting \$500 to \$1,000 per year when they have a market that is in any way favorable.

We know there are localities where the business is overdone, but even here, as a rule, if an assortment of truck and fruits is planted and properly grown, ten acres may bring in as much as a 100-acre farm. But where there is one locality where the business is overdone, there are three where it is not.

Take Red Raspberries of the more hardy and reliable sorts, and there are but few localities, outside of great fruit centers, where the market is fully supplied. The same is also true of Black Raspberries, and if over supplied, both are easily evaporated and at prices now selling for in our large cities they are good for at least 5 to 6 cents per quart, which is a net at least of \$75 to \$100 per acre. All these, if properly grown and cared for, can have Peas and early Potatoes, Cabbage, etc., planted half-way between them for two years at least, so that the use of ground is had even from the first year.

On our own farm we will continue to grow Strawberries so long as we can sell them to net us four cents per quart, for at this price we can make money. Then when canned they are sure of netting five to six cents per quart as measured from the field.

To those who have had no experience, we would say, do not rush into fruit growing largely at once, but by degrees—although it must be added that fruit plants are quite as easily grown as Corn or Potatoes. Men who have small places, and especially those having a family of children growing up to gather fruit, would in instances without end find fruit growing safer to engage in than growing grain.

### Currants and Gooseberries.

It is somewhat strange that while so many are planting largely of Strawberries, Raspberries, Blackberries and Grapes, the two fruits named in the head are so overlooked. At even 4 to 6 cents per lb. both pay well, and both are easily grown.

The main thing necessary to secure a good crop is to keep well trimmed and thinned out or "pruned," that they "may bear more fruit." In the South and West, where there is so much complaint as to non-bearing, protection from the hot south winds is also needed. As to this matter the *Farmer's Journal of Kansas* says:

Very little attention is paid to raising Currants in this State, and yet with proper care

in shading they will give results which will astonish those unacquainted with their requirements in our climate. The Currant never winter-kills and survives neglect better than almost any other plant, but to bear regularly it should have partial shade, like a stone wall or fence; they do not produce well on the north side of a building, nor with trees on the south of them. Take the form in which it is most commonly grown, the bush, and cut out the old stalks, thin out the spindling growth, cut back vigorous shoots, to make them stocky, keep weeds down, and you will have fruit.

That destructive pest of the Eastern States, the Currant Worm, has never been found in this State. We believe that with proper shade Currants can be grown on every farm in Kansas. Set them out this spring. The best varieties are the old well-known Red Dutch and White Grape, and these can be had for from \$5 to \$10 per hundred at almost any nursery.

### Drying Strawberries—Other Matters.

#### Friend Purdy:

The POPULAR GARDENING pleases me greatly, and with you at the horticultural helm we cannot so much miss the *Fruit Recorder*. I have tried drying Strawberries, but the result was by no means satisfactory. I hulled three quarts of Glendales which I thought would yield most when dry. When perfectly cured the lot did not weigh over a couple of ounces.

Puncturing the skin of a Grape with a pin or needle I have found will cause it to dry in less than half the time otherwise needed. I years ago saw that when wasps punctured the Concord they dried, and were more like Raisins than I ever saw in our native Grapes.

This season the Keiffer Pear is better than usual. If picked at the proper time and not eaten until quite soft it is pretty fair eating. For quality it stands among Pears fully up to the Ben Davis among Apples. Then the vigor of the tree and its remarkable productiveness are great points. For preserving it is equal to anything we have. Cockling Hybrid is of the same class, but a month earlier, and in my opinion of real value.

Bluffton, Mo.

S. MILLER.

### Asparagus Growing.

The demand for Asparagus is increasing in every market year by year. The reason why more do not go into its culture must be because of the false notion that it is costly to start.

We find no more expense to set out one acre than the same area of Strawberries. Here is our method of culture: We prepare the ground by thorough ploughing and harrowing, then plow furrows two to three feet apart, throwing furrows both ways and running in the bottom a sub-soil plow that simply loosens the sub-soil. We then put the roots, one or two years old, in bottom of these furrows, throw just enough soil in to cover the roots, and on this an inch or so of well rotted compost (or if this is not to be had a liberal sprinkling of phosphate), and then cover with earth.

Then in the spring when the Asparagus begins to show we run both ways over the place with cultivator and harrow, thus killing all weeds and giving the Asparagus a nice start of such. We run through once or twice afterwards with cultivator and hoe, and hoeing Asparagus off and killing all weeds. After June 1st we allow it to grow and then cultivate only between the rows and hoe out the rows. Salt scattered freely over the plantation twice a year is perhaps beneficial, but one thing is certain, the more rich compost there is scattered over the ground the better.

We allow Asparagus to get 6 to 8 inches high before breaking or cutting it off. This then we do just below the surface, finding that a large share of buyers were getting tired of the tough white stalks that appear when the cutting is done deep below the surface.

### Growing Red Raspberries.

We are more and more satisfied that the best way to grow these, for large crops and such large berries that the pickers will gladly pick them at same price paid for picking Black Raspberries, is in hills or stools and not in matted rows, filled up with sucker plants, large and small. If properly set they are more easily grown in this way than in the old matted row system, for the reason that they can be worked both ways with horse and cultivator.

From three to four stalks should be allowed to grow in a hill and all suckers cut down like weeds with hoe and cultivator, and if well cut down when they first make their appearance, for two or three times, or say till June, they grow but little after that.

Plant rows four to five feet apart and three to four feet in the row, owing to kinds, such dwarfish kinds as Hansel and Thwaack nearer, and Cathbert, Herstine and Crimson Beauty further apart.

If stakes are expensive and hard to get, the tops of two hills in the row can be tied together after they have been thoroughly cleaned out in the spring, but if stakes can be had they had better be employed.

### Will Apple Orchard Pay?

As well might one ask if it pays to grow any kind of crops. There may be years when in some sections they will "hardly pay to feed to hogs" (but even in this way they may be had to pay well.)

We know a party in Wayne County that bought a farm, running in debt \$1,600 on the same, 25 years ago. He had all he could do to pay taxes and keep up interest and support and educate his family for years. When he bought the farm there was a young Apple orchard on it. This required but little labor as compared with growing other crops, and besides he obtained from the land crops of Potatoes and Corn for years, putting back manure to make up for the produce annually removed. Things ran along in this way for years, when there was a general scarcity of Apples, except in a few favored localities, and his was one of these, and that year he sold fruit enough from that orchard to pay the mortgage of \$1,600.

A gentleman told us a few days since that from his orchard he sold last year over \$300 in fruit, at only 75 cents per barrel, and he added "that was more than I really made from all my former crops."

We feel quite certain that if Apple trees could be set along the fences and by the roadside much larger crops of much finer fruit would be obtained than from the old plau of setting closely in orchard form. If any one doubts this, let them compare the crops as they run that we gathered from the outside of the orchard row and those inside.

"Should Apple orchards be cultivated?" is a question often asked.

In the East, where land has been run for years and they are not liable to winter kill, we say yes—but in Western sections on rich virgin soil, no—not after the second or third year, as they get well to growing. After this, seed down, except in places where soil is light and not rich.

"When shall we trim?"

In sections where trees grow rapidly and do not fruit well we advise late winter or early spring pruning, but elsewhere summer pruning.

"Shall we enrich the soil?"

Yes, on poor land, or that that has been cropped for years, but not on rich land until after a few years of cropping.

"Shall we plant other trees with the Apple trees when set out?"

If land for that purpose is scarce short lived trees like the Peach may be planted, but no other kind.

"What varieties shall we plant?"

Look around you, and enquire of your neighbors. Take the opinion of a dozen or more

and plant largely of those that the largest number agree upon.

"Shall we grow low or high heads?"

For the rich soil, where they are not to be cultivated after the first three or four years, low heads—but where cultivated, high heads.

### Walks and Jottings About the Fruit Farm.

WE HAVE just back-land ploughed for young seedlings to be budded next season. Have left it "in the furrow" and scattered manure freely over the surface.

IN OUR orchard of Peach trees there are vacancies here and there. We are now digging out the earth where these occur and will leave holes open till spring before planting the trees, to let frost act on the same.

ONE HAS NO IDEA until it is tried how much compost can be made by keeping two or three pigs and throwing in to them, through the year, all weeds, vegetable tops, spoiled fruit, etc., etc. We have just hauled out from one pen 20 loads of the best compost we have ever handled. The droppings from two horses were also thrown into the yard, with refuse bedding and so on, and this has been worked over so much by the pigs that it is in best of shape to put right on the land.

AND HERE we would say that we heard a practical fruit grower in Ulster Co. remark that he could make compost enough from one pig to keep an acre of Grapes well fertilized—that is, by throwing in to the pig plenty of refuse stuff, leaves, weeds, etc., through the summer.

THIS is the time to save work for the spring when the teams are so driven with work. If ground is dry, run over it with cultivators and thus put back weeds that start so early in the spring.

ASPARAGUS SEED may be sown right where the bed is wanted now, and early in spring run over the surface with hoe or cultivator to put back weeds that start before Asparagus comes up.

WE HAVE BEEN filling up all vacancies of Raspberries and Blackberries the past month, and hauling leaves from the woods for bedding for hogs, cows and horses.

NOW THAT we have got rid of publishing the *Recorder* we propose to give our time more to outdoor duties, and through POPULAR GARDENING will give its readers the benefit of the same from month to month. We hope every old subscriber of the *Recorder* will renew for POPULAR GARDENING, and let us meet together in these "Walks and Jottings" from month to month.

OLD CURRANT bushes can be made as good as new by simply cutting away the old wood and leaving a bare stump and then digging the soil up thoroughly down to the roots, and working in plenty of well-rotted manure or superphosphate, with a good and full of salt for each bush.

AN EXPERIMENT in scattering phosphate on a few old Strawberry rows and leaving some without applying showed much larger berries and a much larger crop the first season. We put it on in the fall.

### MEAT FROM THE SHELL.

A correspondent of the *Rural New Yorker* says: "I save my Bartlett Pears so that they make fine eating two months after those of my neighbors have gone. I take a stout box and line it with paper; almost any kind will answer. The bottom is covered an inch deep with wheat bran. The Pears are carefully picked, wrapped separately in thin paper and packed deeply in the bran, until the bottom is covered; then this layer is covered with bran to the depth of an inch, and another layer of Pears is placed in the same way. This is continued until the box is full, when the cover is tacked on and the box set away in a cool, dry place. The Pears retain their fine flavor and color."

Packing fruit in the infusorial earth which is so abundant in certain sections of Canada, has been found to preserve it better than almost any other system. J. Fraser Torrence of Montreal, Canada, has patented a case in which fruits may be packed with this earth and be transported any distance, it is claimed, without damage. Secretary Gibb of the Canada Fruit Growers' Association says the finest manilla paper and the infusorial earth are the only two substances in which fruit can be packed without injury to the flavor. We believe there are extensive deposits of infusorial earth in Virginia and some of the other Southern States, and suggest that trials be made to see if it has the preservative fea-

ture that is claimed for the Canadian product. If so, and the Virginia infusorial earth can be sold at a low price, it may become a positive boon to fruit growers who are within reasonable freight distance of it.

A writer in the *Indiana Farmer* says: A cheap but effectual device for protecting young fruit trees from bark bursting by exposure to the sun is adopted by a fruit grower living a few miles east of the city. He plants a short row of Sugar Corn on the south side of each tree. The Corn, with its wide leaves and suckers, securely protects the trees from the hot rays of the sun in July and August, when the damage is usually done.

The *Farm Journal* says: Old Peter Tumbledown is quite a fruit grower and had a good crop of Apples this year. But he hadn't time to market them, nor to pick up the fallen ones for his horses and hogs. So he will have a good crop of worms next year. He bought a cider mill to utilize the wind-falls, but only worked it one day, making enough cider to keep himself going through the winter. He bought the mill with a promissory note.

The *Journal of Agriculture* says: Some one recommends this simple remedy for Cabbage Worms, which is well worth trying: Bruise a quantity of Tansy in a wooden bucket, over which pour cold water and let stand until the water is quite bitter and then sprinkle it over the plants, being sure to reach the worms with it. It is absolutely necessary that the water should be quite bitter.

The *German town Telegraph* advises gardeners, instead of trying to drive the striped bug away from their Melon and Cucumber vines, to furnish the bugs with food more to their taste by planting Radishes in the hills, and thus purchase exemption.

A. M. Pearson says in the *New York World*: The most successful young vineyard I have seen in Vineland was planted as follows. Holes were dug about three and a half feet in diameter and three and a half feet deep. The vines, one year old, three bud rooted cuttings, were planted at one side of the bottom of these holes and the roots covered with about six inches of soil mixed with a few handfuls of bone-dust. As the vine grew it was trained up towards the top of the pit, and when growth of weeds, etc., had formed a mat upon the soil, covering the vine roots, another layer of six inches of soil was filled in. This process was repeated at intervals until by August the holes were filled to the general level. These vines made vigorous growth and this season carried an enormous crop of fruit, resisting the influence of severe drought, from which other vineyards in the locality suffered.

Mr. F. K. Phenix, the veteran pomologist of Wisconsin, in relation to pruning trees says: "There are many tolerably thrifty Apple trees throughout the Northwest suffering for a thorough pruning out of dead branches and spurs. It is perfectly well known that dead wood is a deadly burden to a living tree. Letting the dead limbs remain only robs the live part of needed sap and greatly injures the fruit. A lively pruner can go over several large orchard trees in a day, but if it took a half day or more to prune thoroughly a large tree of choice fruit it will pay the owner most richly on the very next crop of fruit."

J. J. Harrison says in the *Ohio Horticultural Society*: "Three or four years ago we lost thousands of grape vines. Those vineyards where the Concord was deeply planted survived, while those that were planted shallow died. With us it is considered essential to plant deeply."

The *Geauga Bulletin* says: Do not be satisfied with putting a little fertilizer in the furrows or hill as the planting is being done. This will start the young plants, but as soon as the roots begin to grow they want to spread, and if the manure is but a handful, just beneath, the roots must remain crowded together or grow out where there is but little fertility. Roots want to spread over the entire surface and plant food should be so placed as to induce this.

The *American Stockman* says: A new method of preserving fruit is practiced in England. Pears, Apples and other fruits are reduced to a paste, which is then pressed into cakes and gently dried. When required for use it is only necessary to pour four times their weight of boiling water over them, and allow them to soak for 20 minutes and then add sugar to suit the taste. The fine flavor of the fruit is said to be retained to perfection. The cost of the prepared product is scarcely greater than the original fruit, differing with the supply and price of the latter; the keeping qualities are excellent, so that it may be had at any time of the year, and bears long sea voyages without detriment. No peeling or curing is required, so there is no waste.

### A Serial in "Popular Gardening" to run through 1887.

It affords the publishers of this paper much pleasure to announce that with the coming January issue there will appear in its pages the first chapter of an extended practical contribution in the nature of a serial, and which is to be continued from month to month, throughout the year. This work is entitled

#### "THE COMPLETE GARDEN:

*How to Make and to Manage It.*"

It is from the pen of a well-known practical horticulturist, and was written expressly for POPULAR GARDENING. It is copyrighted.

The aim of this serial is to furnish, in a connected form, the various details of making a complete garden in answer to a wide felt demand for such information. Commencing with the selection of the land it goes on through laying it out for use and for ornament, choosing trees and other stock, planting, cultivating, building glass-houses, etc., all to the end of producing an abundance of fruit, flowers, ornamental stock, vegetables, etc., for use and beauty the year round.

Although the ideal garden taken as a text by the writer is one that would require some four acres of land, the work deals so essentially in principles that it will prove of almost equal value to all cultivators, whether their stock consists of a single plant or acres of market crops. Copiously illustrated and to embrace a fine plan of "The Complete Garden."

This article, as one feature of next year's paper, should alone be worth far more than the subscription price of the paper for a year.

#### Garden Notes from Lyndale.

BY A. H. E.

I have just been reading one man's report on the use of petroleum for killing Plantains, Thistles and Dandelions in the lawn by applying the article through a can into the crown of the plants. For my part I want nothing of the kind; with a strong knife one can cut away the plant sufficiently below the crown so that it will not start again about as easily as to apply petroleum, acids and the like, and then you are done with the thing. Even though one succeeds with killing weeds thus, the dead remains are there to mar neatness in a way that no one wants to see. Besides this, petroleum and acids are unpleasant, or else dangerous to handle, and any drops scattered about accidentally on the grass plants, as easily happens, will kill these too.

\* \* \*

On last Tuesday—a pleasant autumn day—I went over the young Apple orchard, set out in October, and made a register of the trees. This was easily done so soon after planting, for all labels, just as they came from the nursery, were still on the trees. A sheet of smooth heavy manilla paper that a pen would readily pass over was used for the map. On this I drew as many lines and oblique cross lines as there were rows of trees, bringing those of the dwarfs closer together proportionately, and numbering all the rows at the edge of the map.

With this sheet, a light smooth board to support it and a pencil I went to the orchard. Then for each lot of trees, down to two of one kind (such having in each case been kept together), I drew a faint mark around the whole on the corresponding place on the map and wrote the name within the outline. For each single tree of a kind—and for the sake of variety I have 67 different sorts in the new orchard—I simply wrote the name to the corresponding cross place on the map. Then when I came to the house I wrote out the name clearly with pen and ink over the faint pencil lines. My map will outlast me, and for all time there will be a perfect record of every tree in this orchard, over three hundred altogether, to serve me and those coming after me.

A favorite shrub at Lyndale is the Holly-leaved Mahonia (*Mahonia aquifolium*), which stands in a close irregular clump, some 15 feet long and averaging half as wide, on the rear lawn. Why this is much thought of is because, for one thing, it is a rugged evergreen shrub, that never receives injury from cold. Then it has a pleasing Holly-like leaf, even to the prickles along the edge and the polished surface. Further than this it is one of the best early spring-flowering shrubs, being covered in May with great clusters of sweet yellow blossoms; last of all, few shrubs succeed any better than this one without petting, a thing very satisfactory when one thinks of its other good points.

If there is a single drawback to the Mahonia, it is that sometimes the sun in winter spots the leaves. But this is apt to occur to any other large-leaved evergreen. There is one advantage in this shrub over some others, however, and that is its free healthy growth soon enables it, in the spring, to out-grow the leaf spot, so that not a bit of it remains in sight shortly after growth begins. This, too, may be prevented by laying a few branches of Hemlock or similar evergreen trimmings over the bushes on the south side in the winter. In doing so I usually set the butt ends of the branches into the soil, to freeze fast and keep them in place, after the plan I saw suggested in your valuable paper over a year ago, I think.

\* \* \*

Perhaps some of your readers engage in the culture of Allamandas for summer decoration out-of-doors, a thing now quite common. Speaking for myself, I think that this we have no summer blooming plant that gives more satisfaction for less trouble. My way of treating the plants during winter to get the best condition for the next season's crop of bloom is to give them a partial rest from the time they are taken in until the time of pruning and re-potting in the spring. They require a light warm place, never below 55° during this time, and but little water. I know of no plant that is so remarkably free of insects as this one.

\* \* \*

With seed saving there must be seed cleaning. I now find leisure for getting all seeds in shape for next season's use. Many of the lighter seeds can, with a little patience, and for small quantities, such as the amateur saves, be perfectly cleaned by turning them repeatedly in a light stream from one dish to another where there is a slight breeze. Others, like Radish or Cabbage, I find may readily be cleaned in the main with a sieve of suitable-sized mesh, or else by shaking them well in a narrow vessel, when the lighter husks and seeds come to the top and can be picked off. With the smaller seeds a fine sieve is very useful for this work. After cleaning, I label every one of my kinds correctly, and store them away where they are secure from rats and mice, as well as dampness, and awaiting use in the spring.

#### Peach Selling by the Delaware Fruit Exchange.

This season makes the third year of active operations by the Delaware Fruit Exchange, with an annual increase of success for itself and those doing business through it, and also with innumerable converts to its theory, though it is not yet without opposition.

Growers found that the auction method, recommended by the Exchange, insured the best prices from the buyers brought together, but in turn were not yet ready to give fruit systematically graded and inspected at the Exchange. A few growers, however, carefully assorted their fruit, much to the satisfaction of buyers, and on the whole, the new principle made very natural, though slow, growth. Numerous pattern societies have been and are being established in Florida, California and other States.

Thus, the Exchange is a growing organization that is giving better distribution and more

uniform prices for fruit, while it has exercised a more marked influence upon the condition and grading of fruit. The benefits that are found in such public selling of fruit may be summed up as follows:

1. Until this method was adopted, growers were in continual controversy with transportation companies over real and fancied impositions and lack of accommodation. Now such controversies are unheard of.

2. The return of empty packages was an uncertain dependence that gave much annoyance. Now we sell the package with the Peaches, and from all distances where transportation does not eat up their worth they are returned in quicker time and better condition, to be sold for their worth by auction to growers again.

3. We have more general information of the market, get by competition a better daily distribution of fruit than ever before, and consequently better prices.

4. Heavy freights, commissions and cartages went with the end of the stick that farmers have thus cut off.

5. Cash is insured for all purchases. A buyer cannot cover a weak financial condition from the knowledge of many growers.

6. A personal acquaintance between dealer and grower.

7. If fruit has no value in the markets, the grower learns of it at the Exchange without the expense of freights to distant markets.

8. Last, though not least, a better condition of the fruit, and more satisfactory grading of it secured, making it possible for buyers to send long distances with hope of profit. I believe that if a determined effort could be made in many localities to improve the marketing methods of farm products, we would introduce a wholesome thrift into agriculture that would eliminate much of the lottery nature of our calling that now palsies effort.—*Read at the Cleveland Horticultural Convention.*

#### Improving Clay Soil.

The two substances—clay and sand—are destined by Nature to play respective parts, which may be thus described: the clay to store up and hold together those substances essential for plant food; the sand, to serve as a ventilator or conductor of air and water. The most favorable physical conditions of a fertile soil are found to exist in a nearly equal mixture of sand and clay. When it contains less than one-third sand it should cease to be classed among the best soils for regular crops, and should be turned to account in other directions, that of forestry being suggested as one.

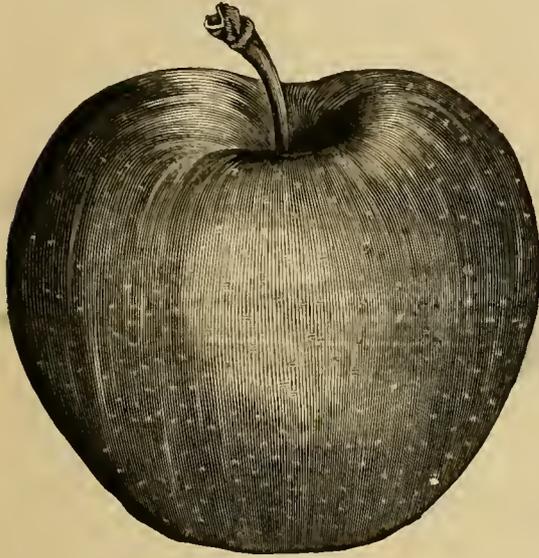
Commencing on a clayey soil with the removal of all excess of water, by a system of drainage, we must look around us for those substances which, by their addition, will communicate to the clay the necessary degree of porosity. Presuming the non-existence of any underground source of improvement, recourse must be had to outside means: the application of cinders, furnace refuse, coal dust, or ashes, the ashes of all kinds of burnt vegetable refuse, old and discarded building materials, lime, etc., all of which will have the desired effect.

But we can find in the clay itself a solution to the difficulty. First roughly shaped into balls or bricks and allowed to dry in the sun, the clay should be burnt in small piles made up of alternate layers of clay, wood, coal dust, or any other cheap and readily available combustible material. When the burning process, which generally lasts some days, is terminated, the bricks or balls must be broken up as finely as possible, and, together with the ashes of the combustibles, plowed, in a wholesale manner, deeply and thoroughly into the field.

Our object in burning the clay is to make it undergo a radical chemical change, in the course of which it loses its water of combination and its power of absorbing and retaining moisture.—*From Wyatt's "Modern High Farming."*

### Two Promising Apples.

**THE YELLOW TRANSPARENT.** This turns out to be the very earliest Summer Apple now in cultivation. On such a statement one is naturally disposed to compare it with that universal favorite, the Early Harvest. By all accounts that have come to us it is not only declared to be decidedly earlier than that early



FRUIT OF THE YELLOW TRANSPARENT APPLE.

variety, but superior in quality and appearance. It is ripe nearly two weeks earlier than the Red Astrachan, and not far from the same time ahead of the Tetofsky.

What serves to draw special attention to this variety is the fact that it is of Russian origin, now that there is so much stir about Russian fruits. It was imported from St. Petersburg in 1870, by William Saunders of the Department of Agriculture, Washington. It is as hardy as the Oldenburg (Duchess of), another valuable Russian sort now well known, and the indications are that it will, like that sort, be adapted to a wide range of our country, and be of especial worth in the Western and Northwestern States.

The fruit of the Yellow Transparent is of medium size, with a clear white skin, that changes to a beautiful pale yellow, somewhat sprinkled with light and greenish dots when fully ripe. Flesh white, tender, juicy, sprightly and sub-acid and undoubtedly the best early Apple. As a shipping fruit it is not surpassed among early varieties.

The tree, besides being of marked hardiness is fairly vigorous, bears young and produces good crops annually.

For the engraving we print herewith we are indebted to E. Y. Teas, Dunreith, Ind.

**THE SALOME.** This late-keeping Winter Apple, now attracting so much favorable attention, especially throughout the West, originated in Illinois some thirty years ago. Its chief characteristics are hardiness, vigor of the tree (although of moderate growth, owing to its great bearing proclivities), productiveness, uniformity in producing fine fruit and its good keeping qualities.

As early as 1879 the Illinois State Horticultural Society reported as follows on this variety: It is entirely hardy, bears large crops of fruit, which is all large and fair, and of excellent quality, having a peculiar, and to nearly all tastes, agreeable, slightly sub-acid and spicy flavor; color yellow, nearly overspread with red. It keeps as long as it is desirable to keep any Apple, having been kept in a tight barrel, entirely sound, for a whole year. A most valuable characteristic of this fruit is, that it ripens into fine condition in winter, and remains fresh, plump and juicy until summer, retaining its flavor till final consumption. Is not this "the coming Apple" for prairie lands?

A year ago now, at the American Pomological Society, Professor Budd of Iowa, said of the Salome, "I have been watching it for eighteen years. It is a good keeper and grower. It is fairly hardy—more so than Ben Davis, but not so hardy as Fameuse. Its season in the central part of Iowa is from January to March. It is of better quality than Ben Davis, but not as large,—not larger than a well-grown Winesap."

The Salome is an early and good bearer annually, but more abundant on alternate years. A chief peculiarity of this variety is the tenacity with which the fruit sticks to the tree; a wind sufficiently strong to strew the ground with most other sorts hardly affects this one.

### Do You Grow Okra?

Throughout our Southern States in almost every garden may be met a useful and delicious vegetable that is rarely seen elsewhere, if we except some countries yet beyond our Southern boundary. We refer to the Okra plant and its product. True, in some of the market gardens of the North, and here and there in private gardens, this same vegetable may be seen, but aside from this the plant is little known by the mass of Northern people. Across the water, and in England especially, it is not so much as named in the catalogues and books

devoted to seeds and vegetables.

Okra, one variety of which is shown in the engraving herewith, is an American plant. It is an annual, native to the West Indies and Central America. Although naturally liking warmth, it succeeds wherever the Lima and other pole Beans can be grown. It is, in fact, one of our easiest-raised vegetables. The parts used for food are the large pods, which are shown in the engraving. They are very wholesome, quite nutritious, very mucilaginous and impart an agreeable richness to soups and stews. The tender pods are also simply boiled in water, seasoning with salt, pepper and butter.

In the Southern States Okra also enters as one ingredient in a very popular dish called gumbo. This is made by boiling beef, chicken or other meat until it readily parts from the bone. Then it is taken from the water, chopped like mince-meat, and afterwards returned to the pot, adding to it new young Okra pods cut thinly crosswise and simmered for an hour, seasoning it to the taste. So generally is Okra used in making gumbo (not always, however) that the name of this soup is now very widely but incorrectly applied to the vegetable. Even our seedsmen in their catalogues, and some authors fall into this mistake of speaking of "Okra or gumbo" in referring to the vegetable, as if the names were synonymous.

Okra, like the Bean, does best in a warm, dry soil. It is a detriment to have this over-rich, the pods on such being neither so pleasant or so early. It should be sown the same time as the Bean, putting the seeds in drills two and a half feet apart for the dwarf, and a foot farther for the tall sorts. The plants should stand about one foot apart in the row. The dwarf variety is usually preferred to the tall. When the plants are well up, hoe carefully, hilling them up somewhat, as is done with Lima Beans. An ounce of seed should be enough to furnish a supply of Okra for one family's use.

The pods of Okra are gathered for use when so young and tender that they snap readily in the fingers. If they will not break they are past their time of usefulness. The pods can be preserved for winter use in brine the same as Cucumbers, or by cutting them in thin pieces and drying like fruit. Fresh Okra, Tomatoes and Green Corn, in equal parts, seasoned with butter, pepper and salt, and baked for about two hours, is a favorite Southern dish. This

vegetable should not be cooked in iron utensils, as these will turn it black.

Mention has been made of the mucilaginous properties of Okra. Botanically it belongs to the Mallow family or Malvaceae, a strong family mark of which throughout is the abundance of mucilage in the tissues. To this family belongs the Hollyhock, Abutilon, Althea, Mallows, Cotton and some other plants besides Okra. Those who have eaten the fleshy parts of Hollyhock flowers or the green carpel masses of the low Mallow or "Cheeses," which every child in the country well knows, can at once recall the pleasing viscous quality present, and which is so common also to Okra.

The close relationship between the subject of our sketch and the favorite plants named above should aid in giving it a favorable introduction to those unacquainted with its merits.

### A Righteous Retort.

The good women of our land do not think of denying having had a part in promoting the slaughter of birds for millinery purposes, but as before remarked in these columns, it was done through thoughtlessness, some one else being guilty before them. In answer to certain charges on this score the *Woman's Journal* puts the following apt queries in defence: "We should like to know: 1. Who shoot the little innocent, singing birds? 2. Who put them on the market, and tempt the unthinking ladies to buy them? Not one woman in a thousand would take the life of a bird for self-adornment. But tastefully prepared and offered for her approval she thoughtlessly buys and wears the beautiful wings and feathers of these little songsters. The demand is created by the supply in this as in many other cases. Let men desist from shooting, and women will desist from buying."

### Geraniums—Pelargoniums.

The following from Robinson's *Flower Garden* is worth noting: "Our so-called Geraniums are really *Pelargoniums*. The numerous species of the genus are all, or nearly all, natives of the Southern Hemisphere, or



PLANT OF DWARF OKRA.

have originated as hybrids or cross-bred varieties produced in this or other European countries. The true Geraniums, although allied, are totally distinct, Geraniums being chiefly indigenous to the northern half of the globe, some of them to England, a number to the United States, and all of them *hardy* herbaceous plants." To this may be added that the Pelargoniums are Storks'-bills, while the Geraniums are Cranes'-bills, the latter being well-known in their wild state under this name. As a matter of curiosity it would be interesting to know how and when this mistake of names arose.

### A Folding Crate for Long Distance Shipments.

When Mr. John Colville, of Brunswick, Georgia, set about getting up the fruit and vegetable crate herewith figured it was with a special view to reduced freights on the empty crates when returned over long distances. Being a resident of the Southern States, where the distances of the market and fruit gardens from the best markets are usually great and transportation charges enormously high, he felt the need of an improvement here, as many in the North do not where "empties" are returned free by the railroads.

The distinctive feature of this crate is that it may be taken down and folded up to occupy the least possible space in being returned to the original shipper. In the illustration one of the views is in perspective, showing the crate set up, while beneath is a representation of one of the sections as it appears when unpacked, to be folded for return to the shipper.

As may be seen the crate is composed of side and end bars, which meet at the four angles, where they are overlapped and held in place by a long rod which passes through the ends of the bars, being formed at one end with a head and passing through a plate on the other, above which plate the rod is flattened out by riveting, so that displacement will be prevented.

Upon either end of each set of side bars there are cleats which serve as braces and as retaining cleats for the bottom and cover of the crate. In the longitudinal center of the crate there is also a partition formed by bars inserted and held in place by rods after the same manner as the crate is otherwise held together by the rods at the corners. This crate has been patented.

### Mistakes in Fruit Raising.

The lighthouse guarding from danger is quite as important to the mariner as the compass which keeps him on his right course. So in fruit growing a holding up to the gaze of planters the mistakes that are apt to occur may be of as much or of even far greater value than to speak all the while of successes. From two valuable papers, the one read by A. M. Smith before the Fruit Growers' Association of Ontario, the other by D. P. True before the Maine State Pomological Society, and set forth in the reports of these societies respectively, we compile the following array of common mistakes:

It is a mistake to plant too many varieties—or only one variety—or a variety because some tree agent advises you to; or to plant every variety offered you before it has been thoroughly tested in your locality. Different locations require different varieties. It is a mistake to set cheap or poor trees, picked up from the culls or from neglected nursery stock, trees covered with bark lice or stunted. All such trees are very unprofitable.

It is a mistake to plant in "post holes." It is a mistake to put trees in old worn-out fields and neglect them. Such cases end in miserable failure. It is a mistake to place mulch so near the trunk of a tree and so much that it will heat and kill the tree.

Mistakes are common in the distance of planting. If one has much land do not set near; if land is costly set twice as thick as needed; when the trees cover the land remove half of them.

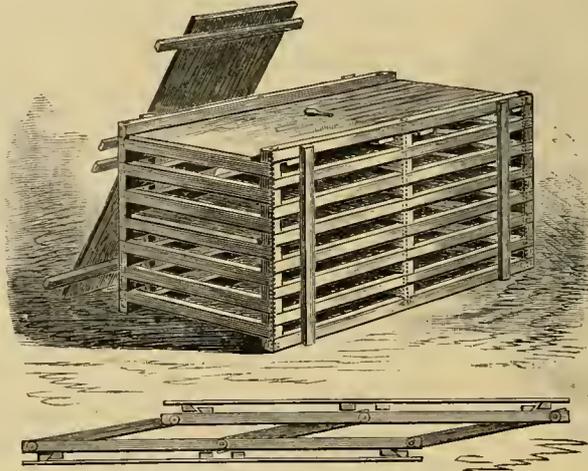
It is a mistake to think that trees once planted will care for themselves. It is a mistake to turn young trees out to grass. It is a mistake to think they don't want just as good cultivation as Corn or any other crop to succeed well. It is a mistake to try and raise crops year after year from an orchard without returning anything to the soil; trees want feeding just as well as pigs or cattle do.

It is a mistake to trim by horse or cattle power. It is a mistake not to trim when young,

to avoid removing large branches when the trees are large. It is a mistake to over prune; leaves are to a tree what lungs are to the body.

It is a mistake to let too much fruit grow on young trees or vines. It is a mistake not to thin out heavy crops on any trees; thin the fruit and then never prop a limb.

In grafting it is a mistake to saw off too large limbs or hubs, to set poor scions, to graft limbs in the center of the tree, to use poor wax, to neglect looking after the scions after the work has been performed. It is a mistake to



A FOLDING CRATE FOR LONG DISTANCE SHIPMENTS.

turn sheep and lambs into a young orchard without taking the precaution to coat the trunks of the trees with manure. Oxen and large cattle prove very fatal to young trees.

It is a mistake to market your fruits in flour or meal bags instead of putting in good clean baskets or barrels. It is a mistake to try to put a quart of berries in a pint and a half basket, or a half bushel of Peaches or Pears into a twelve-quart basket. It is a mistake to put all the small samples in the bottom of the basket; most people take them out as they use them. It is a mistake to send soft fruit to a distant market. It is a mistake to send fruit to a commission man whose honesty you know nothing about, or to expect prompt returns from every such man. It is a mistake to send off fruits to be sold if you can get a fair price near home.

It is a mistake to think that nurserymen never make mistakes, or that they are not willing to rectify them when they can. It is a mistake to think they are responsible for the death of all the trees that die before coming to maturity. It is a mistake to think they don't want to sell all their surplus stock, and that tree agents don't often buy it and without their knowledge, re-label it just what their orders call for and send it out, and when it bears nurserymen get the cursing. It is a mistake to think all tree agents are rascals.

It is a mistake not to clean all the rubbish away from your trees before winter and bank them up with earth to protect them.

It is the greatest mistake of all if you are not a member of a Fruit Growers' Association, and do not take a live horticultural journal.

### On Improving the Grape.

M. A. CAIN.

In its native state the Grape in some of its species is found growing in all kinds of soil and in all latitudes, and always healthy. Here it finds its own food and asks nothing more than to be let alone. It cannot be said even to be particular about the kind of soil, but will grow almost any place where the seed may happen to drop.

In subjecting the wild vines to cultivation it is seen that they undergo certain changes and suffer certain effects, indicating that the laws of Nature have been interfered with. I incline to believe that the proper way to grow iron-clad stock is to grow our roots from the wild Grape and then graft on them. This

plan is now in use with our friend, Mr. Packard, of California, who reports that it improves the fruit, makes the vine more hardy, and gives to it new life. With this system it is believed that we will be able to grow any American Grape in all parts of the United States.

I have been grafting some on the wild root and notice a great difference in favor of the grafted vines over those not grafted, both in vine and fruit. At present I am growing a large lot of stock from wild layers for grafting. If by cultivation we have run the vine down, we have also at the same time improved the fruit vastly. This much gained, we now want to bring the vine up again, and there is no better course for this than by grafting upon the wild or some other hardy, vigorous stock.

As to soil and fertility, any kind of the former will do, that is not wet or cold; if it is not naturally rich it can be made so. The most healthy vines I have ever seen were on lime-stone land, and this leads me to believe that lime is a good fertilizer for the vine. In manuring I have had better success with compost than with anything else ever used. It keeps the ground loose and don't wear out in a season. There is but little danger of too much.

In regard to Grape rot, I believe the cause lies much in crowding the vines and letting them run to the ground, filling all the space from the ground up, and sometimes a cluster of grass

and weeds mixed with it. I saw an example of this near me this summer, where there was a regular tangle of vines, grass and rotted Grapes. Let the vines be kept off the ground and let them have the morning sun and free circulation of air. The leaves should not be taken away from about the fruit, as they protect it from the dew.

If vines were given more room—not planted so close, as has been the custom—they would do better and last longer. I have at times taken up Grape-roots over 30 feet long, which convinces me that ample room is what they need. I give to each vine over 100 square feet of area.

### The Cultivation of Dwarf Apples.

As the *American Cultivator* remarks, since standard orchards have become so uncertain in bearing, dwarf Apples will often do much better than standards as usually managed. They can be readily planted ten feet apart each way, allowing more than four hundred per acre, and if the soil is well manured, as it should be, a crop of berries or other crops requiring cultivation may be better grown between the rows than in a young orchard of standard trees planted farther apart. A large collection of varieties, in cases where this is desirable, can also be grown on a small area by planting this class.

Dwarf Apples not only occupy but little space, but they come early in bearing, varying somewhat with the variety to which they are grafted. The fruit with proper attention to pruning and thinning out is superior to that of the standard; and the fruits are both easier to get at and less liable to damage from being blown from the trees. The Red Astrachan is one of the earliest bearers, and on Paradise stock it may produce a few fine specimens the third year after grafting.

The Apple is dwarfed by grafting on two different stocks, the French Paradise and the Doucin. Of these the former is considered by long odds the most valuable, and few nurserymen now keep trees of the other for sale. The Paradise stock of itself grows only three or four feet high and is usually propagated by layers. This makes it more expensive than stocks from seed, such as standard Apples are grown upon, and this fact disinclines nurserymen from urging the sale of dwarf Apples as their merits deserve. Another thing that has tended to hinder the culture of dwarf Apples is the ill-

success which many have had with dwarf Pear trees on account of their liability to blight. But there is no reason in this, for with dwarf Apples there is no danger whatever from this disease. As a class the trees prove perfectly hardy where the temperature falls twenty degrees below zero. The most suitable soil is one that is dry and warm.

To show what results may be expected from planting dwarf Apples, under fair conditions, we give some figures of an orchard of our acquaintance that embraces almost every known variety.

Trees that have been planted thirty years measure about as follows: Stem from six to eight inches in diameter, height six to eight feet, and branches about the same in diameter. These trees have frequently yielded in favorable seasons from three to four bushels per tree. Trees planted for twelve years will average as to stems four to five inches in diameter, height four to six feet and branches about the same in diameter. The largest of them will yield from one to two bushels per tree.

For a list of some of the most desirable varieties for dwarfing the following could hardly be improved upon: *Summer Apples*: Astrachan Red, Early Harvest, Keswick Codlin, large Sweet Bough. *Autumn Apples*: Alexander, Oldenburg, Gravenstein, St. Lawrence, Sherwood's Favorite. *Winter Apples*: Baldwin, Yellow Bell-flower, King, Lady Apple, Mother, Northern Spy, Reinette Canada, Red Canada, Melon, Spitzenburg, Esopus, Twenty Ounce, Wagener.

Dwarf Apples are especially desirable for small yards or gardens, where not much room can be spared, but where some Apples are wanted every year for home use. Mention must also be made of their ornamental value; few trees or shrubs have more claims to beauty than a well proportioned dwarf Apple tree, when in spring it is covered with a mass of bluish and white bloom, and again in autumn with its load of highly colored fruits.

#### An Easy Method of Keeping Parsnips for Winter Use.

Concerning the statement that Parsnips are better for remaining in the ground in winter until used, than to be lifted in the fall and stored, I beg to differ, and would like to tell what I know about Parsnips.

I raise them for our own use. I leave them in the ground as long as possible in the fall, and have them dug just before the ground freezes up, and am very careful that they are not cut or broken, as they will soon decay if they are. Then they are stored carefully in a box or barrel in the cellar, filling this to within about nine inches of the top with the Parsnips. To keep them fresh no dirt or sand is used, but I fill up this space of nine inches with Potatoes, always being particular when any Parsnips are taken out to cover them again to this depth with the Potatoes, as the moisture in the Potatoes keeps the Parsnips from drying up. In this way they can be kept till late in the spring, and they can be used all winter, and they will be found to be sweeter and dryer than those that remain in the ground until spring. When first taken up they are not so sweet, but by the 1st of January they are very sweet, and we seldom use them until then.

I think those who will try the experiment of taking them up in the fall will never again leave them in the ground until spring. Instead of planting them in a bed in rows I plant them along the wide paths in my vegetable garden. The seed is sown about six inches from the edge of the path, afterwards thinning out the plants when the latter are large enough. They make a fine bordering and add much to the looks of the garden. Here let me add also that the Fern-leaved Parsley makes a fine bordering plant to beds, and it grows most beautiful late in the season. I had about one hundred and fifty feet of it the past season, and enough of Parsnips to make about six or seven bushels.

As to the variety of Parsnips for planting I prefer Carter's New Maltese. It has a shorter root and is less trouble to dig than some others, and is of fine quality.

It may be stated that all roots, Turnips, Carrots, Beets, etc., can be kept through the winter in the same way, that is, by being well covered with Potatoes. We always keep our vegetables over in this way. E. W. L.

#### Growing Pot Roses for Market.

BY ROBERT CRAIG, BEFORE THE PHILADELPHIA FLORISTS' MEETING.

Roses in pots will always be of great importance to the market gardener, as they are one of the main sources of his revenue. The problem from a commercial view is to produce good plants by the best and quickest methods.

Most of the varieties, especially the Teas, Hybrid Teas and Hybrid Perpetuals can be grown more profitably under glass in summer than when planted outdoors. As usually the houses are empty in summer this use of them will not be costly.

I am aware that many good growers still plant in open ground most of the varieties, but how frequently they are disappointed in the size of the plants in the fall! Strong growers, such as Magna Charta, Jacqueminot, Hermosa, Agrippina and Madame Plantier may, under favorable conditions, grow to a sufficient size, but this is not the case with such valuable kinds as La France, Madame Charles Wood, Baroness Rothschild and many others, while all sorts worth growing at all, will, under glass, with suitable treatment, grow to a large size.

It is said that in the South Roses can be grown to large size in one season. It certainly cannot now be done about Philadelphia and many other sections northward. Take for example about New York, where Roses are extensively grown for market, ten or twelve years ago they would grow in one season large enough for 6-inch and 7-inch pots; now they do not attain one-fourth that size. This falling off is not caused by continual cropping; the failure is as great when land that has laid in sod for years is used. Whether this bad state of affairs is caused by "black spot" I cannot say. But at any rate I am satisfied the in-door treatment will insure better results.

What varieties should be grown? Many grand Roses are not suitable for market. The requisite qualities for this are, good habit, freedom of bloom, good constitution, vigorous growth, and the addition of fragrance. I will give further on a partial list of the best ones.

As to methods of culture, the best way to get healthy plants is to propagate from cuttings of well ripened wood (that grown under glass will usually root easiest) in November, or early in December. If the largest flowers are desired prune the old plants closely, put the cuttings in a cold house with slight bottom heat, maintained by three or four feet of fresh tan under the sand bed; one or two heating pipes running through the tan some two feet down will supply a little helpful additional heat, which should be turned on as soon as the callous is well formed. The main point in propagation is to keep the top of the cutting very cool without freezing.

By the first of March the cuttings should be well rooted and may be potted off and put into a cool house or frame; shade for a few days and give air and water as required, keeping them here until the houses are emptied by spring sales. Then shift into 4 or 5-inch pots, or plant out on benches, if possible, not later than June 15. For soil use five parts fibrous loam, one part well-rotted cow or horse manure, one part pure ground bone; if the soil be heavy, one part sharp sand or rotten micaceous rock.

A heavy clayey soil is usually good for Roses. The addition of some finely ground oyster shells, (carbonate of lime), one part to twenty-five, will keep the soil sweet. Burnt earth is also valuable, at the rate of one-quarter of the whole.

If the plants are potted, plunge half way up in old hops or other light material, and do not

over-water. Unless great care is taken in watering, better not plunge. Syringe and water regularly; keep the plants staked.

By October 1 such plants should be from one to four feet high, according to variety. Those in pots may then be put outside to make room for a crop of Chrysanthemums or other fall plants, and should, after being ripened by the frost and air, be plunged in frames or put into cold houses until it is time to force them into bloom. While in a dormant state little water is required. Those on benches should be potted the middle of October and treated likewise.

If the planting-out method is adopted it may be well to put such sorts as La France, Pierre Guillott and Malmaison in a house by themselves, keeping them growing here until after the holidays. When cold weather sets in they will, of course, require fire heat. The temperature should be kept at from 55° to 60° at night. The blooms obtained will pay for the expense of growing. The plants may be potted late in December or early in January, and after being kept a week or two in same temperature, to somewhat establish them in pots, may be put away in a very cold house or plunged in frame (taking care that severe frost does not injure the roots) until spring. With this treatment they will make fine plants for late spring sales.

If fine specimens are desired do not place the pots close together, but allow a space of at least one inch, so that the air may have access, causing the plants to swell their lower buds and become furnished with foliage from the rim of the pot upwards. If crowded, they will break only towards the top, the lower branches remaining bare and unsightly.

(To be concluded next month.)

#### The Poinsettia—A Fine Pot Plant.

Throughout this month, and even later, this remarkable plant will be in its most attractive season in our hot-houses, the gayest of early winter decorative plants. The plant also succeeds in window culture and here it is too rarely seen.

The splendid appearance of this plant while in bloom comes not from the flower, for this is inconspicuous, but from the fiery scarlet floral bracts surrounding the former. These possess the texture, as they do the appearance, of flowers; but being very large, often measuring more than one foot across, they are much in demand in all large towns for decorative purposes about the holidays. It may be added that the beauty of these will be longer preserved, either on the plants or when cut, if care be taken that no water or dust collects upon them.

While not classing the Poinsettia among plants difficult to grow even as a pot plant in a warm room, still there are some peculiar requirements which if attended to at the proper time will promote needfully the health and productiveness of the plant. For some time before they begin to flower, for one thing, the temperature ought to rarely, if ever, get below the sixties, and still higher up than this will be enjoyed. Watering freely at this time, and occasionally with liquid manure, which promotes a luxuriant growth, is also to be closely attended to. After the bloom is over only enough water should be given to prevent a dust-dry condition of the soil, and now the plants require no light beyond that received under the staging in the hot-house or any part of a living room.

The time for re-potting and pruning is in the spring. As to the former operation, the roots should have every bit of the old soil shook out; then use any good rich soil that is light, and if some old leaf mold be included all the better. The pots should be well drained. Cut back the plants to mere stumps of old wood. The young plants should be brought along in heat until June, when they should be plunged in a frame outside, here to remain until the cool nights of September are at hand, when they must go into warmer quarters, at least so far as the night time is concerned.

The Poinsettia is a native of Mexico. It was discovered as early as 1828 by, and was named in honor of, Joel R. Poinsette, a gentleman who was then the American minister to that country. The plant belongs to the natural Order Euphorbiaceæ, and is a member of the Spurge family, largely represented in warm climates, and containing many of our finest hot-house plants, among which are the Croton and Acalypha. W. F. L.

#### The Golden Star of Bethlehem.

The common but pretty little white-flowered Star of Bethlehem (*Ornithogalum umbellatum*) is one of our best known hardy garden flowers.



THE GOLDEN STAR OF BETHLEHEM.

Unlike that hardy species, the gold-colored species here figured is a half hardy or tender bulb, and usually is grown in pots. It is one of those handsome and rather easily grown Cape bulbs that is more often seen in greenhouses on the other side of the water than with us. Indeed, we do not know to-day of a single American catalogue that is offering it for sale, although some years ago that lover of fine plants, Robert Buist of Philadelphia, catalogued it. He styled it a "magnificent plant."

A gentleman who has this plant in his collection says it blooms during the early part of the season. The flowers, of which there are many, are star-like in form, and of an orange-golden color, with a lead-colored eye. There is an agreeable, delicate odor to the flower.

The plant is not large, the flower stalk rarely rising higher than from eight to ten inches. It is also of comparatively slow growth, both as to foliage and flowers, to compensate for which the blooms, when they do appear, last fully a month. Like those of its hardy sister, the flowers expand in the sun and close at night.

Another near and well-known relative of this pretty flower, and which is tender, is the Onion Lily, *O. maritimum* (*Scilla maritimum* of some); also known as the Squill of commerce. We have also heard it called Chinese Lily, but why, we do not know, for it is a native of Africa. The bulb, which is large, green, onion-shaped and watery, appears on the surface of the soil, on which account it is looked upon as something of a curiosity. This species bears white flowers on stalks some two feet high.

#### A Talk on Freesias, Preceded by Some other Matters.

Our esteemed friend and correspondent "L. S. H. G." of Newton, Mass., and a favorite writer for the former *Floral World*, in sending to us an article on Freesias, expresses herself as displeased at not meeting more of the names of former correspondents of that paper among those who contribute to POPULAR GARDENING. In this regret we ourselves share, and trust that many more of such than now write to us will follow the good example set by this enthusiastic writer, and make themselves often heard in our columns.

Right here let us say that no part of this paper is more generally valuable than the

numerous contributions, small and great, from our readers. With our correspondent, we want to see a great increase of these from our large family throughout, and especially from those who have come from the *Floral World*, the *Fruit Recorder*, and now the *Garden Review*. Whatever you meet, good reader, when at your work that will be of value to the family of readers scattered from Maine to California along with it: it will be welcome.

The only restriction we can think of naming is that of reasonable brevity, or else permission to allow of some editorial revision of what is sent in. This rule is necessary by no choice of our own, but because of the great press of matter on our columns; if not observed, something else of importance to many members of the family must be crowded out. We want to accommodate the needs of every reader.

Use patience also if your esteemed and welcome favors do not appear quite as soon as you would like to see them. We sometimes have to carry matter over from month to month before the space for it turns up. This is less apt to happen with the shorter and more pithy and seasonable articles. Another thing that helps—if the writing be in ink, in a fairly, uncrowded hand, and on only one side of the paper. Now for our correspondent's valued article:

There is but one opinion about the Freesia. Last year finding myself too late for the market in that line, I accepted a very generous offer from the florist and took all he had left over from the previous year. Congratulating myself on the opportunity to deal very liberally with my floral correspondents, I sent them (the bulbs, not the friends) broadcast over the land, planting at various seasons myself.

Being desirous of prolonging their season of bloom to its utmost this year, and wanting some early, on the 17th of June I planted a half dozen and watched and waited, intending to follow with others in five or six weeks. Their long delay in throwing up shoots cautioned me. On July 31st an examination showed them to be as plump as ever, with no sign of germinating. Aug. 13th I planted another pot for Christmas, which began coming up in about two weeks, although it was Sept. 18 before the last of these appeared. Now as to results. Those first planted (June 17th) greeted me with flowers as follows: Sept. 17, 23, 24; Oct. 9, 11 and 13. Moral: "Let patience have her perfect work." Oct. 4, two more pots were planted, a part of which surprised me by putting in an appearance in just a week; two days later all in one pot were above the ground; also one in the other.

I expect to continue planting them at intervals of a few weeks, so as to assure constant bloom until late in the spring. At the great show of Orchids in Boston, last spring, there were a few Freesias to be seen in bloom. Of the great variety of very beautiful Ranunculus and Anemones, single and double, I can heartily recommend both to all flower lovers. A cordial greeting to all flower-lovers in the P. G.

#### A Useful Plant Annex to the Cellar.

In last month's paper (page 27), Mrs. Geo. W. Bane, of Kent Co., Delaware, referred to a cold-pit connecting with her cellar and in which, as there alluded to, she winters her Wallflowers. A note addressed by us to our correspondent, asking for a further description of this plant annex for the benefit of the POPULAR GARDENING family, brought forth the handsome and telling sketch herewith figured. Accompanying her drawing was a note as follows, relating to the same:

"By the rough drawing you will see that this annex is a mere extension of the cellar five feet

beyond the line of the house wall, and covered with hot-bed sash, besides shutters for bad weather. The pit the other way is a little more than ten feet long. For this length the cellar is without a wall, a post rising midway in the opening, supporting the sill above.

"In this pit, during three years' time, I have never had frost once. Usually through the winter the temperature, as shown by a thermometer, ranges from 35° to 45° at night. A furnace in a division adjoining the plant quarters serves to keep down chill always. But, even if there was no heater, I should anticipate all trouble by using several lamps on the cellar floor in the colder weather.

"During the summer I keep the shutters down (they are neatly painted and not objectionable to looks). I also board up the opening between the annex and the cellar; then no outside heat enters through the pit into the cellar."

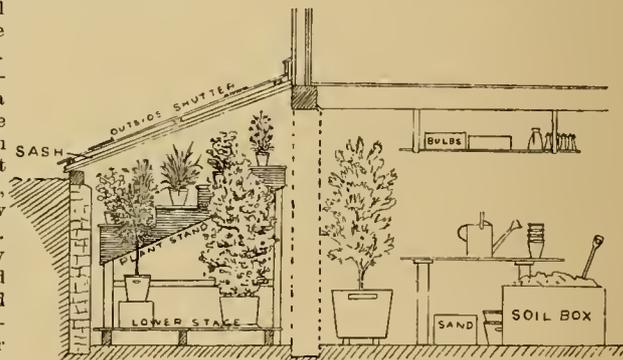
Not only does the sketch plainly show how the annex, together with the shelving in it, is constructed, but our correspondent also gives us an insight into the convenient appointments of the "plant quarters" in the cellar. We should judge that the large plant standing back in the cellar was an Oleander, receiving here all the light it needs in its winter state.

In this valuable communication we have the secret of providing the requirements of light and protection for tender plants, by means that are scarcely inferior to those presented by a regular greenhouse, and the cost of which is very slight. We are sure our readers will join us in thanking Mrs. Bane for her suggestions, and in the hope that we may often hear from her on such timely and practical topics.

#### Balsams in the House, and other Matters.

In the fall I potted a few late Balsams that were self sown. They did beautifully in the window, and are now in bloom. If an assortment of colors were used the effect would be very gay. Double Marigolds also grow nicely in the window garden, and give that touch of yellow that sets off the whole collection.

The rage to adorn everything fairly inundates the land. A lady called me in to see her "beautiful flower pots." It was a sight to make a florist merry. She had painted the pots red, green, grey and blue, and then pasted brilliant scrap pictures all over them. But the plants—they were long stalks with a miserable looking leaf or two on top. But "the pots were lovely."



A GLASS-COVERED PLANT ANNEX TO THE CELLAR.

Another lady moved into a house where there was a small glass conservatory. Did she fill it with blooming plants, and delight to care for them and keep them growing? Alas! No! She made a lot of wax flowers, stuck them in vases and thus desecrated her plant shelves.

In my pleasant bay, on an upper shelf, is a Cotton plant. The pod has parted and the white cotton is beginning to show. Last spring the seeds were sent from the South, I planted them and placed the pot in a sunny window.

To my surprise these seeds came up, and by June had grown into thrifty plants. Soon a very pretty cream white flower appeared, then the green pod gradually formed and was the

size of a walnut when I brought the plants into the house.

Very soon it will be time to commence "cotton picking" at my house. All this on the borders of Canada. It certainly has been a delightful experience to see this important Southern plant grow so far North.

SISTER GRACIOUS.

### Mr. Treeclimber Tells Young Gardeners of the Largest Flower in the World.

From the State of Indiana one of my young friends sends a letter, such as I am always glad to receive, for it shows that the writer has a desire to know more about the things concerning plant life of which he hears and reads. He says that in an old English book he has is the mention of a flower called *Rafflesia*, that grows on the island of Sumatra, and single specimens of which are computed to weigh fifteen pounds. He wants to know what "Mr. Treeclimber" thinks of the statement, and if true, would like to know more of it.

The statement to which he refers is essentially correct so far as given, and relates to what is undoubtedly the

#### LARGEST FLOWER IN THE WORLD.

the *Rafflesia Arnoldi*. That my young correspondent and others may get a good idea of this giant, the publishers have, at my request, kindly made an engraving of the flower, and which is given herewith. A scale of three feet is also marked beneath it, and this the bloom fits, for a diameter of three feet is not at all uncommon to the *Rafflesia*. What a monster it is indeed! The largest wash-tub you ever saw would not begin to hold a single open flower of it. To see how much the parts of one would spread beyond the edges of an open parlor table, lay a yard stick on it and then form your idea.

Or, here would be an interesting thing to do: Get some heavy manilla or white paper, pasting several sheets together if necessary to make an exact yard square of surface. On this draw the simple outlines of the flower as shown in the engraving, having the lines reach clear to the edges on four sides. Then cut the figure out, mark it with this inscription:

"FORM AND EXACT SIZE OF THE RAFFLESIA ARNOLDI, THE LARGEST FLOWER IN THE WORLD."

Attach it lightly to the wall of the study, dining room or hall. Such a model would prove quite interesting and to all who saw it would impart a good lesson in natural history.

But some further particulars of the plant are desirable. It was discovered in the jungles of Sumatra as early as 1828, an English woman by the name of Raffles being one of the earliest persons to see it, and in her honor it was named. In color the flower is yellow, flushed here and there with pink, the petals or floral leaves being marbled with lurid purple. One thing against the flower—it has a foetid

ODOR, BY WHICH INSECTS ARE ATTRACTED, as is done in the case of the curious *Stapelias* of our greenhouses.

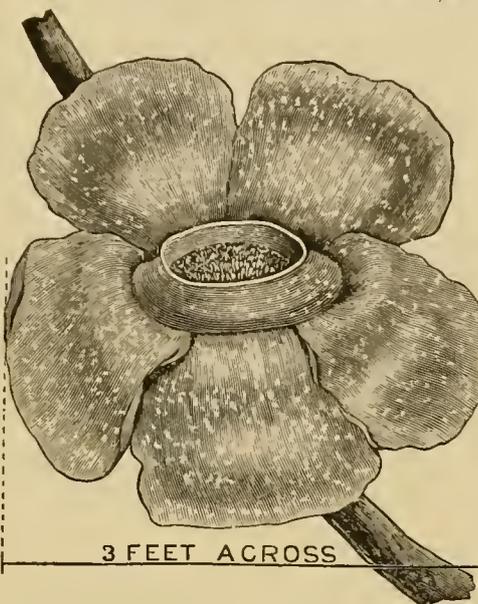
One peculiarity of the *Rafflesia* plant that must be mentioned is that it has neither stem nor leaves, for it is a parasite, that is, it feeds upon other plants, namely: on the roots of a species of trailing *Cissus* peculiar to Sumatra. In this respect it is identical with the various species of *Dodder* that are found growing on *Flax*, *Water Pepper*, and other plants in this country. The only evidence of the presence of a *Rafflesia* plant on its first appearance on the *Cissus* is a rounded bud the size of a marble and protruding through the bark. This gradually enlarges and in time

APPEARS LIKE A HEAD OF CABBAGE,

finally expanding its five thick, warted, wax-like petals, forming flowers from one to three feet across. The central cup of the flower is

sometimes large enough to contain two gallons of liquid. After remaining open for three or four days the flower gradually collapses and decays.

You will want to know whether this gigantic flower is ever cultivated. I must say it is not, and owing to its peculiarities, some of them not so pleasant, and its requirements, probably never will be. In the Botanical Museum, at



A GIGANTIC FLOWER:—RAFFLESIA ARNOLDI.

Kew, England, a few years ago, I saw an exact model of the flower. Now I think I have told about all that will interest you concerning the largest of known flowers.

TIMOTHY TREECLIMBER.

### An Accidental Lesson in Gardening.

The most important principles in gardening are often very simple in character, and easily understood, even by the young. In a private note from Mr. Peter Henderson of Jersey City, one of America's most successful gardeners and authors, he makes the remarkable statement that he believes the one chapter he wrote some years ago on firming the soil with the feet in planting and sowing has been of more benefit than all else he has ever written. This only shows how very highly he estimates this one simple principle in gardening. In the *American Agriculturist* he recently told how its value was on one occasion most amusingly set forth:

"It was on a truck farm of Charleston, S. C. It seems that a gentleman of color, having the constitutional weakness for chickens peculiar to some of his race, got into a hen-roost and helped himself bountifully. In evading the high-road, he struck a bee-line through a newly sowed turnip field, where he left tracks that led to his detection. But these tracks did more. They showed to Squire Buncombe, whose chickens had suffered, that wherever the foot of the colored citizen had fallen there had he a "stand" of turnips, and nowhere else (for they had been loosely sown and the weather was dry). The lesson was heeded and has been worth tens of thousands of dollars to the farmers of South Carolina, who, it seems, were never before sufficiently alive to the importance of firming the soil until the unfortunate negro showed them the way."

### Brief Notes Compiled by a Botanist.

A beautiful species of Mushroom is worshipped in Guinea.

The Scab on Apples is a miniature forest of plants of the Fungus family.

The idea of sex in plants was recognized as early as the days of Herodotus, 400 years before Christ.

When plants grow old, as has well been pointed out, they tend to protect themselves by reason of the density and hardness of the parts they develop.

Thorns, as a rule, are less abundant above the level commonly reached by animals in browsing, not being needed here to protect the crop of leaves from being consumed as food.

The botanic gardens of the world, most of them scientific in character, are reported to number 197, of which Germany has thirty-four, Italy twenty-three, France twenty, Great Britain and Ireland twelve, West Indies six and the United States five. More than half are supported by government and only five per cent by private enterprise.

A very large specimen of Bur-dock (*Lappa major*, Gaertn.), found at the intersection of two streets in Columbus was 7 1-2 feet high, and the branches spread 9 feet. It bore 720 large heads of flowers, likely to produce the average number of seeds; and 364 smaller heads, not mature enough to determine the quantity of seeds they might produce. The average number of seeds (akenes) produced by each head, determined the previous season, was 556, making a total of 400,328 seeds the second year of its existence, the plant being a biennial.—*Professor Lazenby, of the Ohio State Farm.*

Horticulture, remarks Trelase, is so closely related to botany that it is scarcely necessary to mention the dependence of the successful gardener, fruit-grower or florist upon an intelligent understanding of, and conformity to, the laws of vegetable physiology in the operations of his every-day life. The nurseryman and florist are, perforce, botanists. To them a general knowledge of systematic botany, and that careful development of the powers of observation which a close study of the characters of plants gives, goes far to assure success when combined with shrewd business tact and a practical familiarity with the manual processes of this vocation.

In the Tropics, often the finest Orchids are found in the tops of the highest trees, at such an elevation that they can only be reached by cutting down the tree, while few are seen in the lower shades of the forest, which are singularly bare of bloom. Perched high in air and shaded by the foliage of the tree upon which it grows, the orchid makes its home, and the perilous experiences of collectors in their attempts to find some new and rare species would fill volumes. Instances are not uncommon of expert collectors having been sent thousands of miles across the ocean to some remote part of South America, India, or the Malayan Archipelago, to secure some Orchid of which a specimen or two may have been brought home.

What is a flower? It is not essential, says Professor Bailey in "Talks Afield," that any flower have showy colors, or even the parts called sepals or petals, or stamens, or pistils. And we might even take exception to Webster's careful definition that the flower is "that part of a plant which is destined to produce seed," for the flowers of the cultivated Snowball and Hydrangea, and the outer ones on the heads of all Sunflowers, and the stamen-flowers, of the Willow cannot produce seeds. This definition may be regarded as in the main correct, however, and the so called neutral flowers (of Snowballs, etc.) are to be looked upon as anomalies. If our definition must include the stamen-bearing flowers of the Willow, we must modify it after this manner: The flower is that part of the plant which is destined to produce or aid in producing the seed.

Concerning a remarkable tree growth after girdling, M. E. S. writes that on his farm in Vermont, in June, 1884, he attempted to kill a Poplar tree by girdling. He removed a strip of bark about three inches wide entirely around the tree, at a place about four feet from the ground, scraping off the pulp that had formed between the wood and bark that year. The wood thus left bare seasoned over that summer, but the tree did not die, and has continued to grow till the present time, above the place where the bark was removed, but has not grown any below that. The measurements are given as 26 1-2 inches in circumference above the place where the bark was removed, and 21 inches in circumference below. The tree did not put out leaves quite as soon as the other trees near it, but it blossomed as full as any of the Poplars around, and is looking as healthy as they are.—*Scientific American.*

THE WINTER EXHIBITION of the Illinois Horticultural Society will be held during the meeting of the Society at Jacksonville, Ill., on December 14, 15 and 16 next. There is promise of a large and successful meeting. Reduced rates on railroads and at hotels.

THE ANNUAL MEETING of the Michigan State Horticultural Society will be held in Grand Rapids, Mich., on November 30th, and December 1st and 2d. The scheme of "Topics," to be brought forward and discussed is varied and rich. A great meeting is expected. Reduced railroad fares and hotel rates.

### The Trees.

All my Master's works are fair—  
No flaw in them is seen;  
And yet the dear trees best of all  
I love to see, I ween.

The Apple tree doth warning give—  
"Thy faith he no vain show;  
Let not the gardener come for fruit,  
And empty-handed go!"

The Lime says, "Be of gentle mind—  
Be peaceful, free from harm,  
Extend to every weary one  
Thy kind and sheltering arm."

The Fir tree whispereth, "O soul!  
Be true in joy and woe;  
Be thou the same in gentle May,  
The same in storm and snow!"

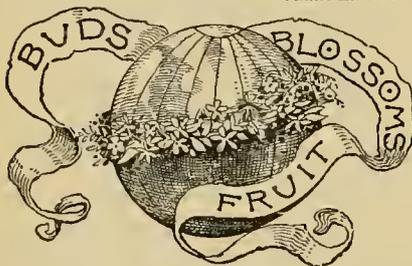
"Be strong and brave, O heart of man!  
The old Oak to me cries;  
"In faith stand firm and waver not,  
Look upward to the skies."

—From the German of Louis Hensel.

Why, Pansy, little Pansy! what a merry face you show,  
Out among the withered leaves, where the cold winds  
blow!

What you can be smiling at puzzles one to tell.  
Do you like to live and bloom all alone so well!  
Showing such a happy face, on the darkest day;  
Never frowning just because sunshine will not stay."  
Are you not afraid at all, staying here so long?  
Every summer bird has gone, with its merry song.  
You have got no almanac! Do you not remember,  
Pansy, little Pansy bright, that it is December.

—Jennie Harrison.



Orchids may last a month.

Quickly grown, quick to fade.

Are the seeds safe from mice?

A bit of salt will dissolve slugs.

Moisture hastens decay in fruit.

Study individual needs of plants.

Bennett Roses fade to a bluish hue.

Let every member write something.

The Bartlett Pear is of English origin.

Nuts of all kinds are abundant in market.

Years ago the Dogwood was called Garter Tree.

Over-heat weakens Carnations. Remember this.  
Roman Hyacinths open the season of that charming  
class.

A hearty welcome to every reader of the former  
Garden Review.

Bright, clean pots are good enough for our win-  
dow. So says MEG.

Plants are such tell-tales: a glance is enough to  
reveal just how they are cared for.

Help your favorite along by securing for it some  
subscribers; on such it must subsist.

The dried plumes of Zebra Eulalia are about as  
handsome as those of the Pampas Grass.

Chrysanthemum Mrs. Grover Cleveland is a  
new tubular flowered white, with twisted petals.

Few trees or shrubs thrive better for being  
planted close to buildings; the Tree Box is one such.

Tomato Rot. It is believed to prevail the most  
on plants of the greatest vigor, by Mr. E. S. Goff, of  
Geneva, N. Y.

Our paper is widely pronounced "the best;" it is  
not up to our ideal yet. More subscribers would  
help matters also.

Our German Ivy has bloomed. We mention this  
because it is a thing that don't very often happen.  
—S. C. R., Albion, N. Y.

All hail to the Garden Review household by the  
POPULAR GARDENING family. It is a happy combina-  
tion, promising well to all concerned.

Two years ago the entire Cranberry crop of  
Wisconsin was 6,300 barrels. Last year the Wis-  
consin Valley alone produced 49,500.

Baseless goblets and cracked tumblers are just  
the thing to root cuttings under. ELDER'S WIFE.

At this season of renewing family papers, may  
a person would subscribe for this journal if asked.  
Good reader, we trust you will act for us as this.

Where the desire is for a fine ornamental hedge  
try the Japan Quince; of neat growth, handsome

in leaf, handsomer in flower, hardy, and its prickles  
will turn away man or beast, no mistake.

**Honor to a Plant.** "Madam," said a celebrated  
physician once to a friend as they came across  
a Yarrow plant, "if you knew half the virtues of  
this plant you would make it a courtesy."

"Perhaps they were frost-bitten, it was so cold  
last night," is the way a little Danbury girl explained  
to her mother the presence of certain suspicious  
little bites in the sides of some choice Apples.

Many would come into the family if shown our  
handsome and useful dollar paper. Reader, think  
about it, whether you have not some work here in  
helping on the good cause this paper espouses.

**Grapes in New York City.** It is estimated that  
20,000 barrels of Concord and Catawba Grapes were  
received in that city during the last week in October.  
They are sold in great numbers in five-pound baskets  
for 50 cents a basket.

Is your garden of rather a stiff soil? Then get  
together all the coal ashes you can and apply next  
spring to improve it. Your neighbors would con-  
tribute—in some instances to their own relief—if  
asked. At least ours do. CHAS. J. HEWES.

Apples are plenty here and there. In Nova  
Scotia, for instance, the crop is said to be the larg-  
est this season for many years. The Annapolis  
Valley alone, it is believed, will turn out over 300,  
000 barrels, of which 40,000 barrels are Gravensteins.

**Gladiolus in Boxes.** As I did not have a good  
sunny place to plant my Gladiolus in the spring,  
I took a square box and a large flower pot, filled  
with good dirt and some well-rotted manure and  
planted them in these, and they did handsomely.  
LIDA, Perre, Indiana.

The serial, announced in another column to  
commence next month, will be one of the most  
valuable contributions to the horticultural litera-  
ture of this country ever made. Subscribe and get  
your friends to subscribe promptly, that you may  
have it from the start.

**Wanted,** at this office, 15,000 clubs of from two  
subscribers each upwards for POPULAR GARDENING.  
This means that we desire to have each present  
subscriber interest himself or herself in extending  
its circulation among their friends. We know you  
can easily do this with a little effort.

**A Flower-pot Hoe.** A short-handled pot skim-  
mer lost its handle. The skimmer part was thrown  
away, but the handle was inserted in the crack of  
the woodsbed door, and an inch of it bent at right  
angles with the remainder. This now is a very  
good tool to hoe around pot plants. ELDER'S WIFE.

**The Peach** is not naturally a short-lived tree.  
On Mount Vernon there are trees still in good condi-  
tion that bore fruit in Washington's time. Rich  
soil is one great cause of early decay; borers and  
disease another. The former can be controlled; if  
the latter can be kept away for three years the  
trees will usually do well for a long time.

**Hardiness of Ivies.** This, so far as the evergreen  
English Ivy is concerned, is not so much a question  
of thermometer as of freedom from the sun's rays  
in winter. On the south, west and east side of a  
house they fail, over a large part of our country,  
even far to the south. Growing on the north side  
of buildings (the coldest side) they do well even  
farther north than Buffalo.

**Cabbage "Greens."** You can have a fine lot of  
these next spring before Spinach comes in for only  
a bit of trouble. This is how: Save the Cabbage  
stocks after the heads are taken off, bury under a  
foot of earth, and then early next spring put them  
in some warm corner of the garden. In this way  
the Germans about our large towns raise an article  
of greens that finds a ready sale in the early  
markets. W. I. COLES, Hamilton Co., Ohio.

**More Good Roses.** To the lists of Mr. French,  
and others, we add a few more monthlies that have  
survived the past three winters here, with the  
mercury running to 20° below zero: Adam, Aurora  
(or Cells), Appoline, Agrippina, Clement, Marie Guil-  
lot, Madam Lombard, Madam Revoy, Jules Finger,  
Henri Plantier, Rubens, Safrano, Queen's Scarlet,  
White Tea, and the Polyantha family. Our plan of  
protecting is by mulching. S. H. B., Abilene, Kan.

**Sand.** Referring to our remarks last month about  
the free use of sand in plant growing and propaga-  
tion, our subscriber, J. M., of Erie County, Penn.,  
well adds that he puts the sand he gets into the cel-  
lar for such purposes, to the further use, until  
needed, of preserving his vegetables crisp and fresh.  
"In this sand I bury my Beets, Turnips, Radishes  
and similar roots, and then they come to the table  
tender and sweet at all times. The sand is nice to

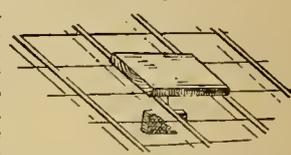
handle for burying them, and it is none the worse  
for this when put to any other use."

"**Popular Gardening**" is not given to "blowing  
its own horn," as every member of the family  
knows. But right here we want to say that if there  
is another paper in the land that gives an equal  
amount of useful and well prepared matter, and as  
fine engravings and as handsome, clean printing,  
and as good paper as POPULAR GARDENING does, all  
for one dollar a year, we want to learn of it that we  
may subscribe quick. Such a paper deserves to be  
well supported.

**Keep the vines down** by close pruning. Too  
much wood, foliage, and for that matter, fruit also,  
operate against the best quality of the latter.  
Where the vine has been longest in cultivation for  
profit, this matter is the best understood. In the  
great vineyards of France and Germany, which the  
writer visited in 1881, the vines were found so kept  
within bounds that a single stake four feet high  
answered as a support. Vineyards in the old coun-  
try, because of close pruning and stake training,  
look not unsimilar to our Raspberry fields.

### A Life Pre- server.

It consists of an inch-  
thick board that  
is made some  
larger than a  
pane of glass  
and which is  
weighted with a brick. Its use: to shut up, from  
the inside, any accidental breaks in glass roofs  
until the same can be repaired. A few of double  
size and larger for when more than one pane goes  
are also useful.



**Gloxinia from a Slip.** What was new to S. M.  
Burdin, Taylor County, Kentucky, no doubt will  
prove to be a new idea to many of our readers.  
This matter came to us on a postal card: "In an  
exchange of plants received through your valuable  
paper I got a Gloxinia. In potting it the stem and  
leaves broke completely off, so I put it down in my  
slip box, which I always keep on hand, and in a  
short time it commenced to grow. After a while I  
raised it from the soil, and to my surprise I found  
a new bulb the size nearly of a silver dime."

**Yellows in Peaches.** The use of sufficient potash  
and bone will grow healthy trees in all cases, as I  
know from a thorough trial. Much is said about  
the contagious nature of the yellows without any  
foundation, and many are scared thereby from  
growing Peaches. After a vast deal of trouble with  
the yellows, practical experience has taught me by  
the use of proper fertilizers there is no trouble in  
growing Peaches from the seeds of diseased trees,  
and I guarantee to grow healthy trees from the  
seeds from the fruits of trees affected with the yel-  
lows.—Eli Minch, in Rural New Yorker.

**How it Pays.** In renewing for POPULAR GAR-  
DENING, on the 4th of November, Mr. G. R. Grace of  
Chester Co., Pa., says: "An article in the last num-  
ber cleared up a matter of doubt in my mind in a  
way that will pay my subscription to POPULAR GAR-  
DENING as long as I live. I can't get on without a  
single issue." A few weeks further back Mr. W. A.  
T. Stratton, Sonora Co., Cal., wrote: "An item of  
10 lines the other month aroused a train of thoughts  
that promises hundreds of dollars in trade. If with  
all florists who read it like success results, you must  
certainly sweep the field." These will answer as  
samples of many similar letters that reach us. No  
comments needed.

**The Currant Tomato.** It is a native of Peru and  
Brazil. It has probably not been long in cultivation.  
The fruits are clear, bright red, somewhat larger  
than a very large Currant, and are borne in long,  
two-ranked clusters. The plant is very ornamental.  
If trained upon a trellis near a window it would  
make one of the most attractive screens. The whole  
aspect of the plant is delicate. The foregoing is  
what Professor Bailey, of the Michigan Agricultural  
College, has to say of this interesting species, in his  
recent valuable report on Tomatoes, received at this  
office. The plant is the *Lycopersicon racemosum*  
of the gardens, but more properly (if inconveniently)  
*Lycopersicon pimpinellifolium*.

**Successful Exhibitors.** As might be expected,  
readers of POPULAR GARDENING are often prize  
takers at the horticultural shows. Mrs. K. Green-  
wood, of Durham, Ontario, in renewing her sub-  
scription to this paper recently, spoke of the exhibi-  
tion held at their place as follows: "The exhibi-  
tion, if not so large, was very good in all products. I  
was fortunate enough to take eight first prizes on  
plants and flowers, and as many second prizes. I  
took also the first premium on hand bouquets, there  
having been six entries. We are sorry to see the  
cold weather at hand destroying our outdoor flowers,

but turn with pleasure to our small greenhouse, the care of which is my chief pleasure in winter.

**Pine Pillows.** The majority of pine pillows are made of the twig ends of the Balsam Fir, with buds and needles chopped up fine, say, about an inch long and all put in together. They require no special seasoning, as their resinous nature prevents them from smelling unpleasantly, as other leaves would under the circumstances. The main thing is to get the twigs and leaves of the genuine Fir Balsam; the needles or leaves of this tree are not very long, and are bright green on their upper surface and silvery-white beneath; the tree is pyramidal in shape. Chop small twigs in about one-inch lengths and place them in thin muslin bags exposed to the air for a few hours, but not to the sun.—*English Farm and Home.*

**Frost in Cellars.** Mr. Chas. Miner, of Berrien Co., Mich., sends on to our paper this useful hint: "My cellar is in every way complete for wintering vegetables, fruits and plants, excepting that in severely cold weather the mercury will creep a little below the safety point. But in this it probably does not differ from thousands of other cellars owned by your readers. What I do to prevent any injury to the tender things here is to get down and set agoing, in the colder nights, the four-burner kerosene oil-stove that does duty for cooking our meals in the summer. With the heat from the stove the cellar's temperature is kept from six to ten degrees higher than if it were not there, preventing injury and much anxiety at but little cost and trouble. To others similarly situated I say, go and do likewise."

**Rusty Tools.** It is stupid indeed to let clean, bright tools become rusty through neglect, calling for needless wear on muscles and spirits to bring them to shape again. Here is a matter in which a little prevention is worth vastly more than a laborious cure. Just before winter every implement from the trowel up to the plow should be examined, and if not in order, be rubbed up clean and dry and be coated with some preservative substance previous to storing them in dry winter quarters. As a metal preservative we see that the *Farmers' Advocate* recommends a coat of thick lime-wash. Another good article is made by dissolving an ounce of rosin in four ounces of linseed oil, and while hot mix this with a quart of kerosene and stir well. This is laid on to smooth iron with a paint brush or with a rag. To remove rust from tools nothing is better than a mixture consisting of a little oil of vitriol poured slowly into a pint of water, and apply this to the rusted metal. Wash off with water, following with the preservative.

**A Happy Family all Around.** One member of the *Floral World* branch writes: "Much as the members of my former club to the *Floral World* thought of that paper, it is no discredit to the dead to say that yours gives us a great deal more satisfaction. It is the most practical periodical published in America to day, while none is more interesting, and none more ably edited." Then Mr. Joshua Nickerson, of Chilton Co., O., voices the sentiments of many letters received at this office from the *Fruit Recorder* branch of our family, as follows: "I am delighted with POPULAR GARDENING, and believe Bro. Purdy, who has given so many good suggestions to us fruit growers, has done wisely and well for him and for us in this change. Here is my renewal; count me in the family as long as you publish such a valuable paper." Next, one of the *Garden Review* force hastens to speak for his brethren: "The first number of POPULAR GARDENING in place of the *Review* is at hand. To say I am delighted with such a useful and beautifully illustrated paper is not half expressing my joy. I think every subscriber will rejoice in the pastures new to which they have come."

**Great Berries; Great Pickers—West and East.** An eastern house, descending on the productive-ness of a new Strawberry, had this to say: "Three thousand plants set out the 15th of August, in ten months, averaged a quart to each plant or 3,000 quarts from the 3,000 plants, and pickers averaged 25 cents per hour at 2 cents per quart, or \$5 per day." To which a Princeton (Ill.) correspondent with a great Strawberry of his own, answers with true Western pride, as follows: "Now it is clear that the days must be longer in New York than with us, we only work 10 hours a day and that would only amount to \$2.50; but, my Eastern friend, I will take a given number of plants of my No. 5 and set them in August and take good care of them and I honestly believe I can grow twice the number of quarts of berries to the number of plants set 10 months before. And as to picking, just an ordinary hand picked 72 quarts of this sort in 2 hours, which at 1 cent per quart, my price, amounted to \$3.60 in ten hours,

one of our days, at 2 cents per quart, \$7.20. Another boy picked 8 quarts in 10 minutes, which at 2 cents per quart is \$9.60, and all this in the common course of picking without racing or the idea of making a large picking. I paid but 1 cent for picking No. 5, and 2 cents for picking every other."

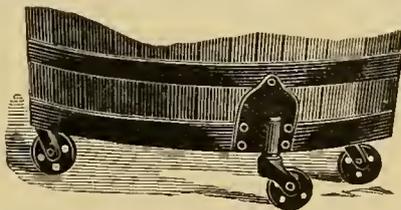
**Geranium or Verbena, Which?** The spirit that prompts the seeking of information about things unknown is to be encouraged. So POPULAR GARDENING has an Inquiry Department, and we are glad to see that it is appreciated by our readers, and is growing. One of our editors who sometimes answers inquiries in the paper happened into an inquiry department outside of the editorial office the other day. At least he was present when the matter referred to below transpired in one of our city seed stores. A gentleman and lady entered the store, and approaching a clerk the former said they would be much obliged if he would decide a question about a plant for them. The seed clerk was willing to the extent of his ability. This assurance brought a folded newspaper from the inquirer's pocket, which when unrolled revealed a small slip having a few leaves. "Now my wife says," the holder of the shoot remarked, "that this is a Geranium, and I tell her it's a Verbena; so we decided to have it out the first time we came to town. Which is it, if you please?" It was nothing else in the world than a Nutmeg Geranium, and so the seedsman said. The errand ended, to the discomfiture of the gentleman, they approached the door to leave when the woman was heard to remark: "Seth, I told you so all summer." Now one more man believes that it is safest to defer these little questions to a woman's judgment.

#### Casters for Plant Boxes or Tubs.

Why casters under heavy plant boxes and tubs should not be in use quite as much in proportion as the same are under tables, bureaux and the like we cannot tell, unless it is that heretofore nothing specially adapted to the purpose has been in the market. Recently we met the kind shown in our engraving at a hardware store, and were so much pleased with them that we had an illustration made for our columns.

As may be seen, these casters are of iron and attached to the sides of the box or tub with screws. They are quite as easily put on old boxes as on new ones. For plants that are kept in the house they provide not only for moving them about at pleasure but they keep them well up from the floor, a point all housekeepers will appreciate.

It is as aids to the handling of the larger kinds of plants, such as Oleanders, Hydrangeas, Evergreens,



CASTERS FOR PLANT BOXES, ETC.

Oranges and the like, and which are, at the least, moved in and out of the cellar or cold house each fall and spring, that such casters would prove especially useful. Provided with the wheels, and some boards, and then a little careful management should see the largest plants moved about with ease, leaving no one, as to this, at the mercy of bungling hired men for carrying them.

We are not aware that these casters are generally offered for sale as yet. If manufacturers would bring them to the notice of plant growers, through the advertising columns of this and other papers, no doubt they would meet with a considerable sale at once. The same casters would be found useful for various other purposes besides the one named.

#### Our New York Letter, in Which Is Told Something About the Use of Flowers in that Town.

The Gardenia is displacing the time-honored white Rose-bud as a wedding boutonniere. As this flower is a favorite abroad, it is sure to become popular here.

In spite of the Chrysanthemum craze, fashionable women have worn a simple bunch of Violets with their walking gowns all through the autumn, rather than the showy but scentless Japanese blossoms.

A London paper which would be accepted as an authority here says that the correct boutonniere on all ordinary occasions is a small pink or white

Camellia, with its own leaves, or about twenty Violets in a bunch. The tendency is certainly towards larger bunches for this purpose.

New York florists still tell us that Orchids will be the reigning flower this winter, but so far, at every notable wedding, the bride has carried a loose bunch of white Roses and Lily of the Valley.

Some florists here are trying to introduce Edelweiss as a bridal flower; it is being forced with that view. It is as shown here an insignificant little thing at best, little better than our common Mouse-ear, and chiefly remarkable from its habit of growing on inaccessible precipices. It has been brought here in a dried condition for some time, being steamed to restore its form, and then used with Cape Flowers and Everlastings.

A lovely funeral design at a recent exhibition was a scallop shell. It was made in Ivy leaves, and bore in the center some loose sprays of Lily of the Valley. Another design for the funeral of a child was a picture. The square frame was composed of little Adiantum plants in two-inch pots, plunged deep into the moss; within the frame was a graceful mass of white Roses, with their own foliage for backing. Hand bouquets still retain their loose, careless form.

Bouquets for carrying most frequently consist of a mass of Roses, one variety only, with a few sprays of some lighter flower at one side, immediately above the bow of the sash.

Fashion writers have much to say now about the Roman Cow-bell, which is having quite a run as a floral emblem. It is always alluded to as the Campanello Bell, rather a tautological term, since Campanello is merely the Italian diminutive for little bell. It is square in shape; you may see its counterpart on the necks of cattle, roaming through the pine barrens of South Jersey, only this is not so romantic as to refer it solely to the Campagna. William Black, the novelist, was the first to take up this fancy; he uses a Campanello as a dinner bell, which he wrote up in one of his novels. Then Queen Marguerite had a tiny Campanello fashioned in gold, which she wore as a talisman, and some of our society girls followed her example, only instead of using it as an ordinary hangle, as more plebeian damisels might have done, it adorned the left garter until the wearer became matrimonially engaged, when it was transferred to her fiance's watch-chain. Now it has appeared as a floral emblem. It is often laid upside down on a bank of blossoms, and then loosely filled with Lilies or Roses.

Dinner favors have been rather overdone, so there is now a reaction toward greater simplicity. They now usually consist of single, long-stemmed Roses, which are placed loosely in a silver flower holder.

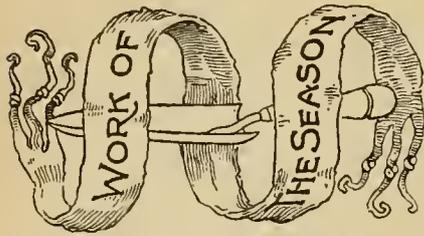
During the Chrysanthemum season the Queen of Autumn has been largely used in all sorts of work, and often rather inappropriately. It is beautiful in loose masses for bold effects, but it does not lend itself to admixture with any other flower, and must be used with great care in making designs. The recent Chrysanthemum show in New York exemplified this. The floral screens, for which a handsome prize was offered, were only moderately good. The center panel in one screen certainly deserves rather higher praise; the background was composed of crimson liquid amber leaves, bearing a graceful scroll of white Chrysanthemums. The remainder of the screen was commonplace, though well made—a solid yellow background, bearing a Japanese design in red. In spite of the public interest shown in the exhibition, the Chrysanthemum craze is certainly on the wane. The auction of prize plants after this exhibition netted a surprisingly small sum compared with that of last year. But then this season there was no "Mikado" Company to boom the dower by paying \$105 for a single plant of Golden Gloire de Rayonnaute, to use in the garden scene of that opera.

The new seedling Chrysanthemum, "Mrs. Cleveland," received a prodigious amount of anticipatory advertising through its taking name, but it was a disappointment when seen. In spite of its artistic setting of fairy ferns and patriotic tri-colored sash it showed up as a greenish-white blossom with rather thin petals. Of course it is pretty, but there are many prettier.

The most admired baskets now are those of irregular Rushes, coming in various colors. A popular style is like a broad-brimmed, deep-crowned hat. This is placed on a large easel, the brim brought up flat at the back, and pressed down in front. In dull yellow Rushes it is loosely filled with Hero of Magdala or Abd el Kader Chrysanthemums; a Sage-green basket is filled with *Gloriosum*.

Globular Japanese baskets of plaited Bamboo are filled with Chrysanthemums, and finished with a bow of contrasting ribbon. They make a more graceful gift than loose flowers or the old-fashioned bouquet.

EMILY LOUISE TAPLIN.



### THE HOUSE PLANTS.

**Airing.** Study this closely. What is right for human lungs is right for plants. Avoid drafts.

**Chrysanthemums.** On care now see page 48.

**Cinerarias** want a cool place, as heat spoils them. Re-pot as needed to keep up a constant growth.

**Cobæa Scandens.** This winter favorite has two enemies, green fly and red spider. Crush the former between thumb and finger; they can easily be seen towards the light. Sponge for the latter.

**Frosted plants** should in all cases be promptly moved to warmth of only a few degrees above the freezing point, say 36°; here to thaw out gradually. Nothing can be worse than to subject them in this state to high heat. Carefully dousing the frosted ones with cold water, taking pains not to handle the leaves, will help along the thawing well.

**Hyacinths** in glasses, the roots of which are well extended into the water, to be brought to light and warmth for flowering.

**Ivies.** The beauty of these lies in the leaf. Of all plants they should be kept absolutely clean of dust and insects for looks and for health.

**Light,** and all that can be had, is at this dark season needed; window curtains should be rolled to the very top through the day. No plant or other object should be placed against the glass of the upper window sash, unless to the extreme side.

**Lily of the Valley.** Some lifted clumps taken where the plants are strong will flower well in a warm light window.

**Mignonette** likes light; stir the soil occasionally.

**Oxalis.** Give a light position; increase the water.

**Primroses** need a rather warm corner, where they will be safe both from dampness and rough drafts.

**Solanums** of the berry class, including the old Jerusalem Cherry, are now at their best. But beauty here depends upon cleanliness; keep fruit and foliage clear of dust by covering when sweeping, building fires and so on; also wash sometimes.

### LAWN AND FLOWER GARDEN.

**Altheas** are not hardy at the North for one or two years after planting. Such to have the soil mounded up over the roots and the tops tied in straw or Evergreen boughs.

**Clematis.** To be cut back to within a foot or eighteen inches of the ground, protecting each plant with several forkfuls of manure.

**Compost Heap.** A good sized one for supplying material to fertilize beds, cover seeds, make hot-bed loam, potting soil, etc., should be found in every garden. Now is a good time to prepare such a one. The chief substances for it to be turf rich in vegetable fibre (such as has been plowed from a pasture or roadside), and manure, say two parts of the former to one of the latter. In addition there may go to it muck, wood's earth, road scrapings, leaves, soil siftings, old plaster or ashes, hen-manure and all like materials to be gathered about a place. These should be built up in regular layers to form a shapely pile. By making it now it will be frozen through and through during winter. Then in the spring with slicing it down finely, working from one end of the pile, all the matter will soon be in capital shape for use, especially should it be thrown over once or twice.

**Drains.** New ones may be laid in fair weather; old ones to be watched, seeing that they are in working shape. Sometimes drains become stopped near the mouth by the work of rats done in dry weather, or other causes. This must be corrected by following up the drain tile by tile from the opening back to the place of trouble.

**Lilies** like *Auratum* and other delicate sorts to be protected by a cone of earth or ashes over them.

**Protection.** Plants like Pampas Grass, Chrysanthemums, Tender Roses, etc., may in many places be wintered outdoors by treating as shown in the engraving on opposite page. The leaves to be so rounded up as to remain highest after settling.

**Rockerries.** Old ones to have some manure or litter strewn over the more exposed places, keeping

it down by brush or rails. New ones may be formed in the rough, to be finished next spring.

**Roses** should be prepared for winter if not yet done. Half-hardy monthlies of the Bourbon, Bengal, Polyantha and similar classes to be bent over, covering the bushes with soil or sods laid grass side up.

Hybrid Perpetuals and other hardy kinds, especially such as are designated in the catalogues as being delicate, to be protected with straight straw, tying this on with heavy twine.

The surface of all Rose beds to be heavily mulched with manure now before winter; that which is half-rotten or less than this answering even better than such as is thoroughly decayed, for this is not a desirable article as a Rose bed mulch.

**Staking Trees.** Under "Fruit Garden and Orchard" is shown the method of staking young trees having trunks; all such in exposed places to be thus treated. With Evergreen trees two, or better three, stakes should be driven at the circumference of the tree, and from each of them a coarse cord be brought to the stem and back again, protecting the bark of the latter where the cords come with a band of duck or leather. A mound of earth placed in addition around the base of the tree, as directed last month, will aid further in steadying it.

**Trellises** and supports that are moveable to be brought to shelter, repairing and painting if needed.

### PLANT CULTURE UNDER GLASS.

**Ageratams** to be raised from seed for fine early plants should have this sown during the month.

**Air-loving plants** like Azaleas, Camellias, Heaths, and so on, should be freely provided with this element in its purity daily when the state of the weather is favorable to its admission.

**Bulbs.** Hyacinths, Tulips, Narcissus, Crocuses and Scillas, to be brought into heat for a succession after the Roman Hyacinths, and the earliest larger kinds of this class are over.

**Calceolarias** will now be rapidly on the make. Such to have a cool atmosphere near the glass, but protected from cold winds, and above all else, frost. Ventilate above them only enough to keep down mildew. Avoid both the extremes of over-watering and of letting them suffer for want of water.

**Callas** are now going ahead rapidly. See that they be kept clear of aphid; no plant suffers more than this once it becomes infested. Avoid crowding; water freely, using liquid manure sometimes.

**Camellias** are apt to show white scale now, if at all; look over often, and cleanse with water and a cloth, or on parts hard to reach use a small brush. Water carefully and syringe lightly twice a week.

**Cannas.** Keep the roots of plants in pots dry, storing the pots one above another in a cool place.

**Centauras** for strong plants to be sown promptly. The *Candida* species is much the slowest grower.

**Cinerarias.** Directions for *Calceolarias* will suit.

**Cold Pits** in which half-hardy plants are stored, to be aired freely in all mild weather and covered well in cold nights. The plants will endure some cold, but illy stand sudden and extreme changes.

**Cyclamens** for young early plants may be sown now in greenhouse, keeping the pans near the glass.

**Fern spores** may be sown in rough peat, either in pans or pots under bell-glasses. We have known them to be grown to advantage when sown over the surface of a bud-producing Rose bed.

**Hellebores** (Christmas Roses) force well in a cool house, with flowers scarcely inferior to *Eucharis*.

**Mildew** is often present on Roses, Verbenas and so on at this season. The most simple remedy is a dusting of powdered sulphur over the plants in the morning of a sunny day, first wetting the foliage, and then keeping the house close for the day.

**Orchids** require careful management now, as any drip from the roof is likely to be highly injurious, and while many kinds are still at rest others are inclined to move and should be encouraged. Humor the latter ones by moving to the stove or forcing pit and let them go ahead. Re-potting or renewing the Sphagnum or baskets should not be attempted at this season.

**Roses.** Syringe blooming plants twice daily. Prune the "monthly" class, as the buds are taken, back to within two eyes of the base of the shoot. Once in a while go over the plants removing all "blind shoots," in other words, such as have ended their growth. A night heat of from 55° to 60° is the best suited to development of bloom.

**Verbenas.** Keep the plants cool and well aired. If mildew shows, apply sulphur; if moss on the soil, take off a little earth, replacing with fresh.

### FRUIT GARDEN AND ORCHARD.

**Clearing up.** There may be stakes, ladders, barrels, etc., out yet; all such to be sheltered, as exposure works more injury than ordinary wear does.

**Dwarf Pear** and other bush trees must not suffer from accumulated snow; shovel or shake it away.

**Fruit.** Aim to keep the storage room at a uniform temperature, a little above freezing. As the earlier varieties approach ripening bring to a warmer place to finish the process. Market before softening begins. Well kept Pears are sure to find a good market about the holidays.

**Grape-vines.** Finish pruning in mild days; those set out last spring to be cut back to three eyes; older ones to have the past season's canes cut back to six or eight buds, according to strength. Even hardy sorts are better for winter protection; lay the canes on the ground and cover with straw, branches or soil, having an eye to covering the roots well.

**Moss or vermin** on the bark to be dispelled by a wash of lime, soot and clay applied with a brush. Work the brush upwards, for if the reverse may fruit spurs may be destroyed.

**Pests.** Mice work under the cover of weeds, snow, etc., barking trees when other food is scarce. Clear the former away; tread down the latter. Rabbits are often destructive to young orchards. To wrap the trunks with tar felt, or cheaper yet, smear blood or fresh liver over them, will prevent this.

**Propagation** of young trees by root grafting can be done at any time during the winter. Clons should be cut in mild weather, choosing good ripened shoots, and paying close attention to labeling.

**Staking.** Young trees in the path of sweeping winds to be steadied by stakes. Our engraving shows, perhaps, the best way of securing a tree to a single stake. Drive the latter close to the tree, wind up a wisp of straw to place between the stake and tree; cut a piece of old heavy duck, or else leather, of a length to pass from the stake around the tree, and back; bring all to positions shown in the engraving, drawing the tree tightly against the wisp, and nailing through the duck into the stake.

**Water** in furrows must not be allowed to stand long; ditches should be opened to carry it off.

**Winter Study.** Now that there is comparative leisure, growers should study up improved methods and ideas, this by reading horticultural books and papers, visiting and consulting other growers, etc. In fruit localities fruit growers' meetings held monthly or oftener would be found profitable. Such should be rather informal as to character.

### VEGETABLE GARDEN.

**Cabbage** should receive final treatment for wintering over as directed in last month's paper.

**Cellars** for vegetables to be kept as near 35 degrees as possible—there should be a thermometer to keep one on the right track. In warm cellars all roots to be kept well covered with moist soil.

**Celery.** As the cold weather increases that in trenches should from time to time have additional protection, in the shape of leaves, litter and the like.

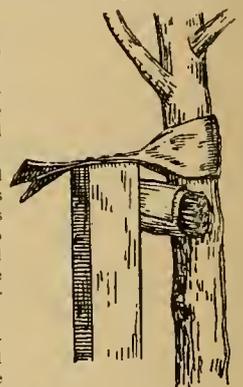
**Cold frames** containing Cabbage and other plants to be aired freely every day in mild weather.

but to be kept close and protected with shutters or mats at night and during severe spells. Cauliflower plants are less hardy than Cabbage or Lettuce. If mice trouble, trap or poison. Snow to be cleared from the sash promptly, unless the ground within is frozen, when if it lays a week no harm.

**Kale.** In the North treat as directed for Spinauch.

**Manure** is the foundation of all profitable vegetable gardening; it should be collected from all available sources. Have an eye to securing the waste from slaughter houses, breweries and the like.

**Ridging** the garden may be done any time before the ground freezes hard. If with the plow the ridges to be about four feet wide and as high as possible; by spade-work there would be less of a ridge, but the ground should be left laying uneven. If part of the garden is thus worked over and a part



not, much difference will be seen in earliness and quality of crops on the respective parts next year.

**Roots** in pits to be banked over with about two feet of earth as soon as winter fairly sets in.

**Spinach** is helped by a coat of an inch or two of hay or leaves just as hard weather sets in.

**Tools** as they pass out of use to be overhauled and put in order, awaiting use in the spring.

## FRUIT AND VEGETABLES UNDER GLASS.

**Dandelion** for winter salad may be treated as directed below for Parsley forcing.

**Grapery.** In the cold house vines after being pruned to be laid down and be covered completely over with soil until spring. In early houses vines



**Protection:** See under "Lawn and Flower Garden."

breaking to have a gradual rise of heat, beginning at an average of 65° with a rise of 10° in the sunshine. Too sudden a rise will make long joints and weak growth, not to mention inferiority of crop.

**Lettuce.** This is naturally a time of slow growth, and there may be days together when little air can be admitted. Water rather sparingly; too much wetness at root and top in dark, close weather may spoil the crop. Green-fly will be on the increase now; keep the house clean by smoking semi-weekly.

**Parsley** plants may yet be gotten in from the garden for winter or early spring use. Plant the roots in the soil, at a distance not to crowd them.

**Strawberries** prepared as directed in previous months may come to heat during December. Begin with about 50°, and as growth advances increase to 60° or 65°. Water amply; avoid flooding.

## The New York Chrysanthemum Show last Month.

This show, given by the New York Horticultural Society on November 2d, and the week out, was a great success in every way. The exhibit, embracing over 2,000 well grown Chrysanthemum plants, and cut blooms unlimited, was by far the largest, as well as the choicest, the society has ever furnished.

More than 700 varieties of this autumn favorite were shown. Among those most admired were the Nuit d'Hiver, a shining bronze; the Thorpe, a deep red, with ragged but picturesque looking petals; the Brazen Shield, a plant that glories in several shades, bronze predominating; the Princess of Wales, a delicate pinkish white; the Royal Walcott, a crimson that is almost saffron; and the Othello, of a deep crimson that is strikingly lovely.

The daisy-like Mary Anderson was an unpretentious Chrysanthemum in comparison with the Mrs. Langtry, a wonderful growth of a pale yellow color, with petals long, slender and waving, not straight like the petals of the Mrs. Grover Cleveland, a pure white Chrysanthemum named in honor of the President's wife.

Among standard Chrysanthemums there were some fine specimens. The tallest in the exhibit was named Sam Sloan, in honor of the society's president. It stood almost nine feet in height. The new Japanese seedlings and the fine standard plants were arranged in the Japanese garden.

The choicest Japanese varieties were the Admiration, rose; Blanche Neige, white; Belle Valantinoise, yellow; Comte de Germany, nankeen; Gorgeous, yellow; Lady Selborne, white; M. Shys, buff; M. Tarin, pink; Peter the Great, yellow; and William Robinson, bronze. Chief among the Chinese varieties were Brazen Shield, bronze; Chevalier Domage, gold; Golden Beverly, yellow; Jeanne d'Arc, bluish; Lord Wolseley, bronze; Prince Alfred, red; and Prince of Wales, peach.

Premiums to the amount of \$2,700 were awarded. In the florists' division the 21 first ones went to Hallock & Thorpe, of Queens, Long Island. This firm was awarded \$10 for the best six Chrysanthemums, \$10 for the best six Japanese Chrysanthemums, \$10 for the best six Pompons, \$10 for the best six Anemones (large or small), \$10 for the best single varieties of Anemone, \$5 for the best three Chinese varieties, \$5 for three best Japanese, \$5 for three best Pompons, \$4 for the best single Japanese, the same for the best single Pompon, and \$15 for the best six standards of any or all varieties.

In the division devoted to amateurs and gentlemen's gardens George Matthews, of New York, took first prize of \$10 for the best six Chinese varieties, \$10 for best six Japanese, \$5 for best three Chinese specimens, \$5 for best three Japanese and the same for best three Pompons, \$4 for a special Japanese, and \$4 for special Japanese, and \$4 for special Pompon. The plants were also in pots.

The grand prize of \$250 for 25 distinct varieties, double, in pots not exceeding 14 inches in diameter, one plant in each pot, each plant to have a single stem one inch or more above the surface of the ground, was awarded to Hallock & Thorpe, of Queen's County, Long Island.

Most of the flowers were sold before the close of the exhibition.

## INQUIRY COLUMN

This being the People's Paper, it is open to all their inquiries bearing on gardening. On the other hand, answers to inquiries are earnestly requested from readers.

The editors and special contributors are ready to do a large share of the answering, but the experience of many being more valuable than of the few, however varied that is, and conditions and localities being so different, they prefer to receive answers, even several of them to the same question, from readers everywhere. Don't hesitate to send answers because you may feel you are no fine writer; we will see that they appear in good shape.

In writing, give the number of the question you are answering, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.

Flowers gladly named, provided, first, that no more than three be sent at one time; second, that these be fully prepaid, third, that several specimens of each reach us in good shape. We cannot undertake to name florists' varieties.

168. **Asparagus Growing.** If you were going to plant five acres of Asparagus how would you proceed to get best results on sandy ground? Mention distance of rows apart and how far apart in rows; kind of manure and best time to apply it. There is a great deal said about salt being good for it, but some say it is useless. J. B., Morrisville, Pa.

169. **Raspberries Changing.** If Reds are planted along side of White ones will the latter change their color to red in time? H. F. HUST.

170. **Perennials for Continual Bloom.** I wish to plant a long flower bed with these—bulbs, plants, vines, etc.—to give a succession of bloom from spring until fall. Can you give me a list?

171. **Evergreen Hardy Plants.** My garden is fenced in with a nice picket fence, against which I would like to set some blooming and other plants that are green the year through.

172. **Cemetery Plants.** Would you oblige me with a list of those suitable for a fine effect from spring until fall? V. PITTHAN, Orangeburg, S. C.

173. **Scale, etc., on Oleander.** The enclosed leaf shows how my eight large Oleanders are affected with scale insect and black smut. Is there any way to clear them besides hand sponging? Mas. T. M. P., Castreville, Texas.

174. **Truffles and their Culture.** An underground Mushroom called Truffle (*Tuber cibarium*) is said to be an excellent and rare delicacy. Is there any known way to cultivate it? If so, will you please give full directions, and where spawn may be procured? N. B. A., Topeka, Kan.

175. **Ground Cherries.** (1.) Where can seed be obtained? (2.) Is the fruit much grown for and of ready sale in market? If so, at what price? (3.) What is the method of seed sowing and culture? (4.) Would it be remunerative to raise this fruit, say from one to five acres, for market? E. D., New Castle, Neb.

176. **Honey Dew.** Can you give an explanation of the presence of this sweet substance found on the leaves of trees. E. L. R., Rochester, Mich.

177. **Cold Water for Plants.** Is this in your opinion injurious? STELLA, Portland, Maine.

178. **Bark Lice on Apple Trees.** On my young trees and on the ends of the branches of some of the older trees there is a kind of insect, the bodies of which are closely crowded together, giving the branches a wrinkled appearance. Can you tell what they are and a good remedy to get rid of them? S. C. E., Orange Co., N. Y.

179. **Best Market Pears.** Desiring to engage in Pear culture for the Baltimore, Philadelphia and New York markets, I desire information as to some of the best varieties for the purpose. C. J. M., Frederick Co., Md.

180. **Chrysanthemums after Flowering.** Will some one kindly say what is best to be done with pot Chrysanthemums when they have done blooming? O. W. M., Oakfield, Pa.

181. **Thrips on Fuchsias.** My greenhouse Fuchsias are very subject to thrips. Would some one kindly let me know what I can do to get clear of this pest? W. F., Greenpoint, N. Y.

182. **Heat for Stove Plants.** At what heat should a house which contains Allamandas, Dipladenias, Stephanotis, Dracaenas, Crotons, Gardenias, Eucharis amazonica, and a few other things, but no Orchids, be usually kept, and what is the greatest

heat which would be necessary at any time? S. E. N., Cedar Rapids, Iowa.

183. **Cyclamens Dying.** On looking over my bulb box several weeks ago I noticed some of the Cyclamens growing, so I planted them in 4-inch pots, but they have since died instead of making any growth. Will some reader kindly give me cause, and a remedy, and how I shall treat them? I bought the plants last spring, and took them up when they died off. G. H. M., Fort Colborne, Ont.

184. **Amaryllis in Cellar.** I fear that I have been wrong in potting and placing in cellar, same as Hyacinths, some Amaryllis bulbs fresh from Holland. Please advise. J. A. H., Oil City, Pa.

185. **Plant Encyclopedia.** Is there a book published covering the nativity, uses and culture of all plants suited to this country? If so, I would like its name, price, etc. REV. H. J. S., Batine, Neb.

186. **Lye and Bone Manure.** In November number is an item on reducing bone with lye. Will you be kind enough to give the *modus operandi*? I can get several hundred bushels of ashes from a wood clearing, also many bones around town. J. A. T.

187. **Red Spider on Window Plants.** What shall we do to banish these? Frequent sprinkling is recommended, but a friend who has had much experience says they thrive with this treatment. A. F. D., Huntington, N. Y.

188. **Fall Sowing of Peas.** What time should this be done in our section to have an advanced spring crop? What variety is the best for the purpose and hardiest? Should they be mulched? M. K., Wellington, Kan.

## REPLIES TO INQUIRIES.

184. **Amaryllis in Cellar.** Amaryllis need 45° or 50° degrees of heat. Hyacinths get along with 10° less for coming on all right in their advance state of growth. This should help you to decide the matter as to the suitability of the cellar for the former. Our way of treating the bulbs has been to keep them in any part of the greenhouse, like under the stages, and in a newly dug state, until growth starts, when they are brought to more light and given more water. Those designed for flowering, say in June and later, need not be started until spring.

185. **Plant Encyclopedia.** Henderson's Handbook of Plants exactly covers the ground. It may be ordered through this office. Price \$3.00, post-paid.

186. **Lye and Bone Manure.** Make a large leach shaped like a V with a trough below and an opening along the lower end to allow lye to run into trough. At the lower end of this trough a large barrel or hoghead should be placed to receive the lye. Throw sticks and straw into bottom of leach, and on this the ashes packed hard. Leave the top basin shaped and this basin kept filled with water. As the lye is made, put it into barrels and throw into this bones and they will soon soften. A. M. P.

188. **Fall Sowing of Peas.** This is mostly practiced at the South, although we have heard favorable reports from the course as far north as New York. It is done in November and December—the farther south the later. By the course a crop may be had some earlier than by deferring the sowing until spring. For sowing at this season, we recommend the dwarfer kinds of earliest Peas, such as seldom rise over twelve inches and which are abundant bearers, and withal early. Tom Thumb and Wonder seem to be admirably adapted to Autumn sowing in the South, where, on apprehending frost, protection may be given. If planted on ground manured *excessively high* they will yield as much to a given area as any Peas known to us.

161. **Earth Worms in Flower Pots.** For the white worms a good remedy is a teaspoonful of Mustard in a pint of water. The only pot with worms in it that I have had this winter was filled from the barnyard. M. P. W.

165. **Cinnamon Vine.** One never needs to lift this vine, *Dioscorea batatas*; after once planting it takes care of itself. From either a last year's root left undug, or from some of the small tubers which are struck plentifully along its tendrils, it gives you a crop every year. I have not failed in 20 years of an annual supply without care since my first planting. N., Bridgeport, Conn.

166. **Marguerites in the House.** I have no trouble in growing this plant in a bay-window that suits Roses and Fuchsias. H. L., Dauphin Co., Pa.

173. **Scale, etc., on Oleanders.** We know of no effective remedy for the trouble referred to, beyond that of using strong whale-oil soap-suds, applied with a brush. This is the standard remedy with gardeners. But it takes work on large specimens.

174. **Truffles and their Culture.** Of this interesting Fungi there are a number of varieties, both useful and otherwise, found in various parts of Europe, but none, so far as is known, in this country, the various statements about the discovery of some notwithstanding. It is much esteemed as a rare dish, and its consumption, especially in France, is enormous. Most of the product is gathered where its growth is spontaneous, but at the present time its culture is also considerably engaged in. The Truffle is found growing in the shade of certain trees, those under the Oak, Hornbeam, Chestnut, Birch and Hazel seeming to do the best; hence, in

their culture, the element of shade has to be considered from the start. One account of the efforts in raising Truffles runs as follows: A compost is made of pure mold and vegetable soil mixed with dry leaves and sawdust, in which, when properly moistened, mature Truffles are placed, either whole or in fragments, and then after the lapse of some time small Truffles are found in the compost. The most successful plan, it is said, consists in sowing *Acorus* over a considerable extent of land of a calcareous nature, and when the young Oaks have attained the age of some years Truffles are grown in the soil about the trees. As the latter extend in size, they are thinned out at intervals of several years, and from such grounds these delicious fungi are gathered for a period of many years, but in time it is said that the soil seems incapable of further producing them. We are not aware that any attempt has been made in the cultivation of Truffles in this country. If there has been, we would, in common with many, be glad to hear of the matter. We do not know that spaw could be had short of Europe.

177. **Cold Water for Plants.** Water with the "chill" taken off and from that up to luke-warm is better than the same cold.

178. **Bark Lice on Apple Trees.** These are a kind of coccus that are very commonly found and capable of doing much injury through absorbing the sap of the plants. One of the oldest remedies for destroying them is to apply a wash to all affected parts, made by dissolving potash in water, at the rate of two pounds of the former to seven quarts of water. Prof. A. J. Cook, in his "Notes on Injurious Insects," remarks that he has tried, quite thoroughly, several insecticides for bark lice but he finds nothing equal to the kerosene mixture. He uses one quart of soft soap and two gallons of water heated to boiling, when a pint of kerosene is stirred in and well mixed. This does not injure foliage, but rather brightens it. It must be thrown on with a fountain pump or force pump with considerable force for killing scale lice, which it does effectually. The sooner the application is made after the lice are all hatched the better, which is usually early in July. To kill the mature lice in April or early in May a broom with a long handle must be used, dipped in the kerosene mixture, which will rub them off rapidly, and Prof. Cook says he could thus "destroy millions of eggs in a brief time." The mature lice cannot be killed by simple spraying.

179. **Best Market Pears.** To answer our correspondent's question we think we cannot do better than to give the accounts of some different growers of Delaware on this very question as found in Dr. Black's recent book on Peach and Pear Culture. "No. 1."—More money in Duchess than any Pear grown. "No. 2."—Bartlett all the time. "No. 3."—For 1,000 standards, 600 Bartlett, 300 Lawrence, 100 Kieffer; for same number of dwarfs, 500 Bartlett, 500 Duchess. "No. 4."—Duchess. "No. 5."—Bartlett, Lawrence, Early Sugar for standards; Duchess for dwarfs. "No. 6."—I value the Bartlett, Duchess, Lawrence, Howell, Buffum and Vicar very highly. The Louise Bonne needs hand-thinning to give good fruit. "No. 7."—Buerre Gifford, Manning's Elizabeth, Bartlett, Lawrence. "No. 8."—Bartlett and Lawrence for standards; Duchess for dwarfs. "No. 9."—For 2,000 trees, one-half to be standard Bartlett, the other half dwarf Duchess. "No. 10."—Three-quarters Bartlett, and the rest equally Howell and Lawrence, for standards. I would never plant any dwarf but Duchess. Of these named no others pay so well as the Bartlett. "No. 11."—Have rather limited experience with full standards, but would prefer Bartlett; For dwarfs I prefer Lawrence, Duchess, Flenish Beauty and Bartlett. "No. 12."—Standard: 50 Clapp's Favorite, 400 Bartlett, 150 Sheldon, 50 Duchess, 200 Seckel, 50 Buerre d'Anjou, 50 Howell, 50 Lawrence; 1,000 dwarfs, Duchess, Bartlett, Louise Bonne, Vicar.

180. **Chrysanthemums after Flowering.** Cut them down, and stand in a cool place, as the cellar or under the greenhouse stage. They will soon send up plenty of shoots from the base of the plant. These should be inserted singly in 3-inch pots in a mixture of turfy loam and leafy mold. As soon as they have made plenty of roots they should be shifted into larger pots. After potting, put them in a cold frame close to the glass, and keep them secure from frost. When they have commenced to grow give them more air, and pinch the tops off to make them branch out; shift into larger pots as needed up until June. After May they may stand outside on a bed of ashes. Do not let them want for water. Manure water may be given about twice a week. Take them inside where they are to flower in October, and give them plenty of light and air. C. E. BURNS.

183. **Cyclamens Dying.** You dried off the bulbs, and that is what did the mischief. When the corns are laid up dry for any time they sustain a loss of vitality, which prevents them making more than a spasmodic effort to grow, throwing out a few leaves, and then remaining stationary. The right way to treat old bulbs is to water only when dry after flowering until the foliage dies away; then bed them out during the summer or else shake all the old soil away, and re-pot in free soil with plenty of white sand in it. Give good drainage, and stand the pots where they can be shaded from hot sun, allowing the soil to dry out between each watering. This will cause them to break regularly and strongly, and as they advance in growth they may be watered more freely. By late autumn the soil in the pots will be full of roots, and the buds will be abundantly formed over the plants.

# The Household Poultry.

At early morn the air doth now  
A chilly feeling shed;  
And now the wakeful servant-maid  
Doth hate to leave her bed.  
She turns and turns, and in her mind  
The subject doth debate:  
And lucky 'tis if breakfast is  
But half an hour too late.

—Chicago Telegram.

Plain food is what the children need.

The darkest hour—when you can't find the matches.

A first duty of the winter; to see that all stove-pipes, stoves and fires are safe.

Would you save colds and bad health? Then protect the feet and ankles well.

Sunshine is cheap medicine; some take it as if it were disagreeable, like quinine.

**Our Christmas Story.** Recently a wealthy farmer brought his wife to one of our prominent physicians, with the remark: "Doctor cure her, and I will pay you any price." The prescription read as follows: R.—Plenty of flannels next to the skin, plenty of outside wraps, one pair overshoes, one pair leggings. Apply at once, for don't you see she is shivering from head to foot. Too thinly clad.

One trouble with the excessive Christmas present giving of this age is that we forget often to give where there is the most appropriateness in making presents. We are thinking of the poor washwoman with her orphan children who is hardly able to keep the wolf from the door, or that family on the back way that from death or sickness will know little of a "Merry Christmas," except as thoughtful outsiders may make the way clear.

**Apples as Food.** Professor Faraday says: "There is scarcely any fruit more widely useful than the Apple. The most healthful sweet that can be placed on the table is baked Apple. If taken freely at breakfast, with brown bread and butter, without meat or flesh of any kind, it has an admirable effect on the general system, often removing constipation, and cooling off febrile conditions more effectually than most approved medicines. If families could be induced to substitute the Apple—sound and ripe—for the pies and other sweetmeats with which children are too often stuffed there would be a diminution of doctors' bills.

**Cranberries** may now be classed among the cheap winter fruits. They are wholesome, and relished by most every one. Served with roast turkey and other meats they prove especially acceptable. They are much better when prepared as follows than when stewed in the ordinary way: Put them on the fire in a large kettle with cold water sufficient to cover them well, cover closely and stew until tender; then put through a sieve to remove the skins, return to the fire, and add enough sugar to sweeten to taste. Remove from the fire as soon as the sugar is thoroughly dissolved, which, unless it is in lumps, will be when the fruit boils.

A **twine holder** for the kitchen or hall is a very useful contrivance, and here is how one may be made from a broken goblet. Choose one that the cavity runs down into the stem somewhat. With the hammer carefully chip away as much of the stem as possible, then with the shank of a file, or something similar, give a sharp little tap in the bottom and you will usually find a small round hole there. Crochet a cover of some pretty zephyr, attach cords of the same to hang it by, put in a ball of twine, pass the end out through the hole in the bottom, and if the affair hangs in a convenient place, the common question, "Where is some string?" will seldom be asked. ELDER'S WIFE.

**Home-made Weather Strips.** Two of our doors shrank so badly that they did not meet the casing properly. We had a half-inch Basswood board ripped into pieces three-eighths of an inch in width and planed them. These strips we cut to fit the doors. Then the leg of an old rubber boot was taken and cut into strips five-eighths of an inch wide, beginning at the top and cutting around the leg, trimming the seam at the back of the leg off with the shears. This rubber we then tacked, felt side next the wood, to the three-eighths side of the strip, with the edges projecting. Then we laid the strip, rubber side down, upon a bench and trimmed off the edges with the small blade of a pocket knife. These strips we nailed to the jamb, closing the door, and all for making a tight job and keeping out the cold. Mas. G. E. L., Penobscot Co., Maine.

Geese lay from six to ten eggs a year.

A padlock is safer than counting your hens.

Hen dentistry: supplying sharp gravel for food grinding.

Should combs ever get touched with frost, apply to the affected parts a bit of glycerine and alcohol. Two parts glycerine to one of alcohol will be the right mixture.

The value of hen manure from a single bird for one year has been quoted at 15 cents. This is, we think, a very low estimate, and yet, as the *National Stockman* puts it, even at this rate, the total of the manure for all the poultry in the country in 1880 would be \$19,000,000.

Appearance is what selects the customer and fixes the price in selling fowls, as in selling everything else. Aim for the best appearance. A good looking article will bring a fair figure, when the same quality, but poorly prepared, will go begging for buyers. Its an important point.

Hens must come to the scratch to be healthy; exercise is as much needed as good feeding. A bin in some part of the quarters in which an inch or two of chaff, sawdust or similar material is kept, and on which a few handfuls of grain is scattered daily, working it in with the foot, is what is wanted to promote this. More eggs will follow if you attend regularly to this matter.

Sometimes in winter, unfortunately, the eggs get frozen and burst before coming to the house. If they can be kept frozen till used, no loss beyond that of not being able to market them will accrue. In such a state they would keep well for months. When wanted for use, thaw out in a warm room; they will then come in as good for heating, frying or any like purpose as if they were just laid. But once such eggs are thawed they should soon be used.

Roosts. To erect these as one may sometimes see them, in a sloping direction, low at first and rising at the back, is to invite, perpetual disquiet and fighting among the fowls at roosting time to secure the highest place. They should be placed on a level. Some erect the roosts up too high, ten or more feet above the floor. This is wrong, for in flying down from them, having no further space to sweep in the flight than the walls of the apartment admit of, is to bring the fowls on their breastbones when they alight, doing them injury.

**Charred Grain.** The benefit which fowls derive from eating charcoal is acknowledged. The method of putting it before them, however, is not well understood. Pounded charcoal is not in the shape in which fowls usually find their food, and consequently is not very enticing to them. Corn hurst on the cob, and the refuse, which consists almost entirely of the grains reduced to charcoal and still retaining their perfect shape, if placed before them is greedily eaten by them, and with a marked improvement in their health, as shown by the bright color of their combs and their sooner producing a greater average of eggs to the flock.—*Poultry Yard*.

**Stoves in the Hen House.** The principal value of artificial heat in the poultry house, observes the *Poultry Journal*, is when it is situated where it cannot get the full benefit of the winter sun and in such cases the use of a small heating stove, during the coldest weather will be found very beneficial to the fowls, and will guard against any danger from frost bitten combs and wattles, and will materially aid in producing a more satisfactory supply of eggs from the feathered stock. However, where the house is fitted up warm and comfortable, and there is plenty of glass (it should be double and tight) in the south side of the coop, which will give the fowls the full benefit of the winter's sun, there is but little need of artificial heat.

The **butchering season** is the lard crackling season, although cracklings may also be bought cheaply of the regular butchers at all times. Now one of the best diets we know of for fowls at this time of the year is cracklings and this is our way of treating them: A chunk the size of two fists is taken, on which is poured about a gallon of water. This is boiled for half an hour, when we commence stirring in cornmeal and wheat middlings, mixed, about half of each, keeping it up until a mush is formed so thick that it can hardly be stirred. Then it is allowed to cool. This is used as a morning feed along with a little green food, such as cabbage or chopped roots, and for evening we give grain, either wheat or corn, the latter being best in winter,

# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

Vol. II.

JANUARY, 1887.



### Snowed Under.

Of a thousand things that the year snowed under,  
The busy old year that has gone away—  
How many will rise in the Spring I wonder,  
Brought to life by the sun of May?  
Will the fair, green Earth, whose throbbing bosom  
Is hid 'neath a gown of snowy white,  
Wake out of her sleep, and with blade and blossom  
Gem her garments, to please my sight?  
O wise Young Year, with your hands held under  
Your mantle of ermine, tell me, I pray.

—Ella Wheeler Wilcox.

IT IS QUITE REMARKABLE how quickly plants improve in appearance, and how much more easily they are managed, after the sun begins to ascend, and the days lengthen in this month, than during early winter. With such improvement comes also the increased reward of fresh growth and flowers, and now most any one can be brought to find delight in their presence. It is a fit season to teach the children to love flowers and house plants and how to handle and care for them.

NOT A WINTER PASSES but the burning of some greenhouses, and with them often other structures, is reported. In this season of heavy firing, extra precautions should be taken against losses of this kind. A common cause of fires is to put on the invitingly dry and hot flues or furnaces of a plant-house such things as kindling, wet plant flats, cloth, frozen earth, etc., to dry. Then one time of forgetfulness may do the business. To place anything that is ignitable on flues, even forty feet from the furnace, is not safe, instances being on record of fires having been communicated as a result of such action.

GARDENING FOR JANUARY is mostly done around the sitting room heater. It is the time for the mind to work rather than the hands. How can the methods of work, and the kinds of fruits, flowers and vegetables be improved upon those of the past? Cannot the home be rendered vastly more valuable and attractive as a home by setting new trees, shrubs and plants? These are subjects now to be considered. The catalogues of the seedsmen, nurserymen and florists are in the main ready this month and easy to be had. They should be secured, carefully studied and compared one with another, that orders may be intelligently made out and placed to good advantage. The leisure season of winter should, to the gardener and fruit-grower, turn out in the end to be one of great profit, through the opportunities offered for making wise and paying plans.

THE KEEPING OF GRAPES in a fresh state as far into the winter as possible is a matter of interest to all fruit growers. Bearing upon this the experiments as to the keeping qualities of forty different sorts, as made by a member of the Montreal Horticultural Society, are of value. Of those which were found to keep well till February were the Rogers' hybrids known as Wilder, Hubert and No. 30. They were in good eating order up to that time, after which deterioration set in rapidly. Of other kinds, not such good keepers, he found that Salem and Vergennes kept well till the middle of January. A large number kept till January 1st, including Agawam, Duchess, Essex, Barry, Massasoit, and Allen's Hybrid. Among the poorer keepers were Concord, Dela-

ware, Lady Washington, Sensasqua and Worden. The common opinion that thick-skinned native sorts were the only long keepers, was found correct only so far as preserving the flavor was concerned.

WHEN THE YEAR 1886 launched out POPULAR GARDENING AND FRUIT GROWING was a three months' old youngster, modest as became its age, but firm in the belief that it had a mission in the world. The year had not yet seen its close, before our journal had by wide consent assumed the prominence of the leading paper of its class in America. To-day it starts out on a second new year, conscious of the vigor, in addition to its own inherent strength, that has come from four other journals of its line casting into it their strength and patronage. The growth of its own circulation entirely outside of these purchases has, for a young journal, been most remarkable thus far, especially in view of the general stringency of the times. But the secret of such success is not hard to divine. POPULAR GARDENING from the first has aimed to meet the want of the times for a periodical of horticultural information directly adapted to the needs, tastes and comprehensions of the people. It sought to be sound, practical and sensible in the style of its contents, and handsome in appearance as became a paper devoted to the art of horticulture. It asked the question why the American people, three out of every four of whom are in some degree interested in one or another branch of gardening, should be one whit behind their foreign cousins in the free support of the right kind of gardening periodicals. The answer has most forcibly come forth: the people are ready to support well a paper which meets their wants. Having faith in that reply we now shall proceed with renewed energy and increased strength to do our humble share in the fullest attainment of such an end. To our many able contributors old and new who have offered their help in this work, no less than to the kind words and support of our great army of readers, we shall largely look for aid and inspiration in our labors. POPULAR GARDENING AND FRUIT GROWING enters upon the year 1887 with a most hopeful outlook.

### Roadside Tree Planting.

Let us suppose the case of every land owner in America, whether his possessions lie in town or country, planting—and planting well—suitable trees along the roadside upon which his land borders, and seeing to it that all become well established. A child could not fail to discern the vast benefit that would accrue to the appearance of our country after a few years, and to clap its hands in joy over such a prospect.

Nor would the gains in mere beauty be of the most consequence. There would be miles innumerable of well shaded walks and drives, and protection from the heat of summer everywhere, promoting comfort and inviting to healthful out-door exercise. In the winter a gain of the greatest importance would come from the trees subduing the piercing winds, aiding directly to the comfort of man and beast alike. A great actual increase in the value of lands would attend re-

sults in this direction and life would certainly be better worth the living.

We have supposed the case; is it not a practicable one? Perhaps not at this day so far as all land owners are concerned, for the matter is not one receiving the thought it deserves. But there are enough appreciative tree-lovers in our country who if they would, to an individual, labor by example and by teaching, for securing such an end, might lead to the bringing in of great results. They could direct unthoughtful land-owners to thinking favorably of the matter and from thinking to acting. Here is a work well worthy of the special efforts of the vast POPULAR GARDENING family, extending as it does from Maine to California, to accomplish.

With the desire for increased tree planting there should be the knowledge of the best methods in the work. Two common errors are these: planting the trees too closely, and planting quick-growing, inferior sorts, like Poplars or Willows, for securing early effects.

As to distance apart this should be governed somewhat by kinds. The Elms, now fast superceding the Maples for street planting, should never be set closer than 25 feet apart, while 50 feet would be better. Maples, Horse-chestnuts, Oaks, Catalpas, Ailanthus, Tulip Tree, Basswoods and most other desirable sorts may be some closer, say 30 feet apart at the nearest, and from that up to 40 feet apart.

In general the aim should be to plant trees at such a distance from each other as to secure the development of the natural characteristics of the kind. A tree of any sort, cramped and distorted in appearance for want of space, is a sorry looking object side of a majestic specimen that has had ample room for development.

The desire for quick results from planting is one natural enough, but to plant the fast-growing kinds named is almost certain to bring regret at some future time. Our course, where a quick growth is specially wanted, is to secure this by extra care in planting the better sorts. Take the Elm. We find no difficulty in having trees with trunks one foot through a foot from the ground, and 25 to 30 feet high, in 12 or 14 years from planting, by setting each one in an excavation containing a load or two of good earth from a cultivated field. Most every other kind will do nearly or quite as well. Ample summer watering in time of drought is also most helpful in hastening early development of all street and lawn trees; fall top-dressing with manure is another great help.

A good way for soon having street shade after planting is to set the better kinds of trees named at the greater distance apart given, and then to set rapid-growing sorts midway between these, to be removed when the better kinds need the space. If in front of a village lot, for instance, but two trees are needed; plant three, the middle one a fast grower, to be taken out years later.

### Lilies and Lillies.—Two Classes of Good Plants.

To speak of Day Lilies apart from any descriptive clue as to the plants referred to is to leave many intelligent plant growers in



DAY LILIES GROWING AT THE WATER'S EDGE.

doubt concerning what is meant. This is because both of those valuable classes of hardy flowers, the Funkias and the Hemerocalises, receive very widely the same name, Day Lilies. Some years ago it was suggested by a prominent horticulturist to rename the former genus as the Plantain Lily, from the resemblance of its leaves to those of the common Plantain. The idea at once met with favor from leading nurserymen and botanists, and gradually now this very suitable name is coming into use. Neither of the flowers here referred to belong to the true Lilies, although both of them are near relations being of the Liliaceæ order.

The Day Lily, as a common name for the Hemerocalis genus, is quite as appropriate as the new name Plantain Lily is for the Funkias. The flowers of the former, as may be seen in the cut shown above, are decidedly Lily-like in appearance, if somewhat smaller than those of most of the true Lilies. The same thing is not true of the blooms of the Funkias, some of which are well shown in the larger engraving herewith. Then the fact that the Day Lilies are open only through the day, while the true Lilies are open day and night, shows the special fitness of the former name as the common one for the Hemerocalises.

We are thus at pains to rightly set forth this matter of common names, because no two classes of plants we can think of are

more worthy of wide culture than these; they deserve to be well and correctly named.

The Day Lilies (*Hemerocalis*), of which about a half a dozen varieties and species are named in the catalogues, are all free-growing and free-blooming hardy plants. They have elegant, strong, grass-like foliage, and the handsome flowers vary in hue from tawny orange to clear yellow. One of the finest species is the Yellow Day Lily, *Hemerocalis flava* a native of Siberia, and which has beautiful clear yellow flowers, borne in clusters on tall scapes. With many growers this handsome, hardy flower passes merely by the name of Yellow Lily, being perhaps incorrectly taken for a true Lily.

Of other Hemerocalises worthy of special mention, there may be named *H. fulva*, a free growing species, perfectly able to take care of itself without cultivation or in the wild garden, and having large coppery red flowers; *H. fulva fl. pl.* like the latter, but with partly double flowers, which endure for some time; Grass-like Day Lily (*H. graminea*) with deep yellow flowers and the narrowest leaves of all, and *H. disticha*, much like the first named, but of freer bloom.

There is also a variegated leaved Day Lily, *H. Kwanso variegata*, and a very ornamental plant it is when fully developed and the variegation well marked. Other names exist in the collections, but of kinds nearly or quite identical with the above. It should be said that the more robust growers, like *H. fulva* and *H. disticha*, are quite at home on the margins of ponds and rivers, and the entire class will bear some measure of shade, if must be, without complaint.

The Funkias are anything but Lily-like in appearance as the beautiful life-like engraving of the clumps of White Plantain Lily shows. Than this magnificent species, called botanically *Funkia subcordata*, there is not known a finer hardy plant for the flower garden or border. One is at a loss to know which to admire most, its handsome foliage which shows to advantage all through the season, or its beautiful pure white, fra-

but fewer flowers, and this is designated as *F. subcordata grandiflora*.

Of other Funkias some have narrower and others broader foliage than the one here illustrated, and there are some the leaves of which are variegated or mottled with yellow, and others with silver gray. A blue flowering sort in our collection and known as *F. carulea* has narrow, dark green, glossy foliage; another, *F. ovata*, has Lilac-blue flowers and broad shining leaves. Among the variegated leaved sorts we may mention *F. subcordata fol. var.*, with yellow markings, and *F. Fortuneii maculata* with the leaves broadly marked with golden yellow.

A good quality of the Plantain Lilies is that, like the Day Lilies, they will bear considerable shade without harm, hence they are of special value for planting in the near vicinity of buildings and trees. They do best when grown in well-drained deep soil. Plants may be procured from the leading nurseries, and once possessed they are easily increased by dividing the roots.

### A Window Box of Mignonette.

Nothing is more charming than a window box of growing and blooming Mignonette in early Spring. There are two ways of setting about securing this—the one, to wait until spring and then buy the plants when ready to bloom, of the florist, and the other to set one's self about growing plants from seed. For this purpose the seed may be sown at any time now. It is best to start it in pots first and keeping the plants here until just ready to bloom, when they can be transferred to the larger box, where a chance is afforded them to branch out and flower for a long time.

Use good fertile soil in the pots, such as can be procured of any plant-grower. Keep the earth moderately moist until the seeds are up, after which water may be increased slightly in quantity, but should be given in the forenoon, that the foliage may be dry by night. Thin out the plants as fast as they grow up until only five are left in a pot.

In culture it is well to shade the tender plants from the sun in the middle of the day, as other-



CLUMPS OF PLANTAIN LILIES OR FUNKIAS ON THE LAWN.

graut, bell-shaped flowers that appear throughout the summer. This species is known in some catalogues as *F. Japonica*. There is a variety of it also having larger

wise the foliage will be discolored. For training, some small stakes can be placed in the pot, and then later in the box at equal distances apart, to which to tie the plants.

### Marshall Pinckney Wilder.

On Thursday, December 16, the Hon. Marshall P. Wilder, America's greatest pomologist and horticulturist, died at his home in Dorchester, a suburb of Boston, Mass. He had reached the advanced age of 88 years. Less than two weeks previous to his death Mr. Wilder attended the special meeting of the Massachusetts Horticultural Society; then went to the meeting of the Agricultural Society, and made an address. On that day he took cold, which was followed by the fatal attack of rheumatism. On the day of his death as he was seated in his arm chair conversing, without a moment's premonition of any kind, he clapped his hand to his heart and in an instant he was dead.

Mr. Wilder was born at Rindge, N. H., Sept. 22, 1798. He had but such common school advantages as came from going to the public school and an academy. For this his love for agriculture largely accounted, as he early had the choice of going to college or farm work, and chose the latter. Later on he became a very successful merchant of Boston. The great work of his life, which gained the fame justly due him, both in this country and abroad, was in the field of horticulture and pomology. He has himself said of his work in these fields: "Endowed from my youth with a love for rural life and rural taste, I have only obeyed the instincts of my nature in devoting such time, ability and means as I could command to the cultivation of the earth." But it was in pomology that he was most successful and most widely known. His famous Pear orchard consisted of 2500 trees and 800 varieties, and from this more than 300 varieties of the Pear have been brought to a single exhibition, and for several years he took the first premium of the Massachusetts Horticultural Society for the best collection. He exhibited at the Bay State Cattle Show one hundred varieties of Pears and twenty of Grapes. Fruit trees and fruit culture, floriculture, flora-hybridizing, and a proper nomenclature in pomology, received his careful and assiduous attention, and these labors have been followed by the most satisfactory results.

Floriculture was one of Mr. Wilder's early and favorite pursuits. His Camellia house is supposed to have contained the best collection in the country, embracing at one time more than three hundred varieties, and it will now compare favorably with those at home or abroad. His later years have been given almost entirely to his favorite field of work. One of the most eminent agriculturists of England has spoken of him as "one who by his zeal, industry and determination has not only conferred lasting benefits on his country, but has, by careful researches in hybridization and fruit culture, laid the horticulturists of all nations under heavy obligations."

At the time of his death Mr. Wilder was president of the American Pomological Society, and this office he had, with the exception of a single term, held permanently from the organization of the Society in 1848. It was in this useful capacity that his name became the most widely known throughout our country. Either as president or as a trustee he was associated with a number of other societies, banks, etc., at all the later periods of his life.

Although so well known as a horticulturist, it was only in his 34th year that Mr. Wilder actively entered this field of labor, doing so out of a pure love for the calling, and as a relaxa-

tion from mercantile pursuits. For years previous he had been a Boston merchant, and in this he continued until within a few years of his death, when he retired. From horticulture he could never retire. His life in many respects was that of the model amateur gardener. It was his custom to rise early, to devote the morning to books and to the superintendence of his garden and orchards; the mid-

the upper bud of the scion, which sufficiently protects the tender roots. We even use safely seedlings of the Peach for the Chickasaw Plums in central and northern Iowa by grafting with rather long scions, while stocks budded at the crown usually root kill the first winter after setting. We find no trouble in securing a good stand of the stone fruits by crown grafting when the following simple rules are observed:

1. The scions must be kept quite dry. If slightly shriveled they are all right, but if buds are slightly started, and the bases of the scions show signs of callousing they will rarely unite with stock.

2. We practice what is known as "side grafting," with the wedge of the scion level. If the usual direction is followed of making the "outside of the wedge thickest" we cannot expect success.

3. We tie grafts firmly with waxed thread and coat the cut surfaces and points of union with cold "alcoholic plastic." We find the modern linseed oil plastic unfit for use on the stone fruits.

4. After grafting pack away so that the scions are left mainly exposed to the cellar air, so they will not absorb too much water.

5. Keep grafts in a cool cave with earth covering overhead. In a common cellar the changes of temperature and moisture of air is not favorable to any kind of grafts. If the cave is too warm open up when the air is cold, and keep carefully closed when external air is warmer than that of the cellar. If grafts can be kept *nearly dormant* it is best not to plant until the ground is settled and warm enough to plant early Corn. I will only add that the Plum and Apricot we find quite as easy to crown graft as the Apple, and far easier than the

Pear, but the Cherry and Peach need a careful compliance with the above simple rules.

### The Size of the Cluster.

D. L. MARVIN, WATERTOWN, N. Y.

The judges at our fairs have always awarded prizes to the largest clusters of Grapes, a custom that prevails in Europe as well. Is there a good reason for such action? It may be well enough in amateur competitions, but in general not, for a small, or medium-sized cluster is usually the preferred one with both producers and consumers. One of the most important demands for Grapes is that from hotels, restaurants, and boarding-houses, for dessert use, and here there is a decided preference for handsome, small clusters, as large ones for all guests cannot be so well afforded. And no one likes to destroy the beauty of such by dividing them up by cutting. Smallness of the clusters accounts in part for the great popularity of the Delaware.

Another objection to large clusters is that they are usually shouldered, and the shoulder seldom ripens with the other parts. Besides partial greenness of large shouldered clusters there is trouble in handling such, the berries often getting bruised or torn off in taking them from the basket or box, and the blossom getting rubbed off as well.

Perhaps our best Grapes for hotel purposes and general table use, are finally to come from the seedlings and descendants of the old Taylor Grape. The clusters of Elvira, one of the family, are the right shape and size to fill this demand. Unfortunately, the skin of this one is so tender, the berries usually bursting in ripening. But the defect is cured in several of the seedlings I have seen, and which have a tough skin and never crack.



THE LATE MARSHALL P. WILDER.  
Engraved expressly for POPULAR GARDENING.

dle of the day to mercantile business in the city; and the evening to his family and study.

Mr. Wilder believed above all else in the union of intelligence with horticulture. He was the warm friend of every effort made for the dissemination of gardening information. From the first he has given hearty encouragement and support to POPULAR GARDENING, expressing his faith in its successful future. When the paper was enlarged he was one of the first subscribers to renew at the present price. We have the pleasure of presenting a perfect facsimile in reduction of his brief note to us on that occasion, and this will be prized by all who cherish the memory of the great horticulturist. It was a pleasant thought to him, that while at his 27th year there was not a single horticultural society in America, his life had been spared to see more than 1500 of these and similar associations in existence. In the bringing about of such an improved state of things, and in the advancing of horticulture and pomology among the masses in general, no one man, by direct or indirect means, has done more for America than Marshall Pinckney Wilder.

### Grafted Stone Fruits.

J. L. RUDD, AMES, IOWA.

From a Western standpoint we feel like scolding about friend Purdy's positive statement that only budded trees of the stone fruits should be planted, and that not one root graft in ten of the Peach, Plum, Apricot or Cherry can be made to grow.

On account of tendency in our soil to root killing we often lose thousands of Eastern trees of hardy varieties budded on such tender sorts as Mazzard and Myrobolan. We are often forced to use such stocks when harder ones are not obtainable, but we set the grafts down to

## Notes from Western Michigan.

C. W. GARFIELD, GRAND RAPIDS, MICH.

There is a word not often used, but to me very expressive, and as defining a certain faculty of the greatest importance to the ruralist, it must not be lost. I mean "gumption." The ability to get out of a tight spot without calling in a specialist; the knowledge of how to turn if things do not move as expected.

So much depends upon circumstances that "no feller can find out" in advance. I have seen ground well prepared at a large expense, lying wholly useless, because the seed failed; I have seen a man waste a half-day, in the busiest season, going to a harness shop, when a rivet would have mended the break. If gumption were intuitive, there would be no hope for a very large class, but fortunately, we know it is largely a habit of preparing for emergencies; an acquirement that any of us can "nibble at with a prospect of getting some off."

Absolute honesty of observation by those who are performing agricultural experiments is the prime requisite, but my experience is that it is so choice a commodity, that a good many who are engaged in such work use very little of it, and it is surprising to see how smoothly things will work without employing it; and again, when used freely, how much trouble it begets.

I mean to say that the man who writes experiments up at his desk has an easier time of it than one who waits for facts that develop in the garden, orchard and on the farm.

It is so hard to be honest when we want things to come out a certain way. I have even caught myself writing an indication down for a fact, and rubbed it out, finding that a little more waiting dissolved the promise. I have caught myself favoring the conditions of a variety that, it seemed to me, ought to come out ahead. It was not wilful dishonesty I think, but a hint of natural depravity, at least I can account for it in no other way.

We often hear men talking about how certain ministers of the Gospel have left an impress upon communities, the importance of which could not be computed by any known method, and the wide-reaching influence of which there was no means of measuring. There is no doubt about it at all, but I wish to suggest that the same expressions ought to apply to the nurseryman of any community, if he is built on the right plan. No man can grow trees, shrubs, vines and other plants for a people, if he studies their uses and illustrates their usefulness, but can be a power for inestimable good, not only in his own community, but wherever his products and his catalogues are sent. If he enters upon the occupation of a nurseryman in the right spirit, the spirit that we expect to exist in our pastors, I incline to think his moral work would approximate that of his clerical brother.

The trouble is that the most of those who enter the list of nurserymen are ready to answer the loudest call in dollars and cents, and make every effort serve the pocket-book. I can only assert my opinion of such, that no matter what they profess otherwise, they are not now living close by the kingdom of Heaven.

been so great that over a thousand kinds have been tested; many have proved of no value, but others stand out like stars in American pomology. The old Baronne de Mello, a variety of high quality, was discovered last season by persons who thought it new. Among other fine varieties which have not been appreciated are the Emile d'Heyst and the

Waterloo; the General Warren is identical with the latter.

Mr. Wilder suggested that premiums should be offered for the re-suscitation of fine old varieties. He considered the Washington Strawberry Apple fully equal in beauty to the Gravenstein, and only second to it in quality. As to the Rogers Grapes, Barry, Wilder, and others succeed with him almost as well as any varieties except the Concord and Moore's Early. Charles Downing preferred the Wilder to any other native Grape. The Lindley is superior even to the Delaware; we cannot dispense with it. In some seasons the Rogers Hybrids may mildew, but in others they do not; his Grapes, however, have a very favorable location.

Mr. Wilder approved of retaining the Davis, Hervey and Wilder Strawberries. The Jewell is a very remarkable variety; one plant had fifteen fruit stems, averaging ten berries to a stem. The Prince is probably a parent of the Jewell; it is as high flavored as any variety makes a large stool, and bears an abundance

of fruit. The Triomphe de Gand continues to grow with him as well as any other kind; a neighbor cultivates half an acre and has no other. The Parry is promising.

Of Raspberries the Souchetti, imported thirty years ago, took the first prize last year, and is perhaps the most valuable kind for family use. The Marlborough is a remarkable grower; he had exhibited here a cane nine feet in length. It is not of the highest quality, but is very productive and seems perfectly hardy. It produces a host of suckers—sometimes fifty to a stool—which must be kept down or the crop will fail. The Caroline, which is a true hybrid between the Brinckle's Orange and a Blackcap, is hardy and valuable.

## Lime Water for Pot-plants.

In soil that is properly enriched for pot-plants the angle and some other soft-skinned worms find a congenial home and food. Even if none were present in the soil when the plants were potted, their eggs may have been there and since yielding worms. To guard against the evil effects of any such it is well once or twice during the winter to water all plants with lime water, the caustic qualities of which will kill all soft-skinned worms it touches. A lump of lime the size of one's fist would suffice to make eight or more gallons of the water. After it is slacked let the water stand until it becomes clear before using. Then apply once, and enough to thoroughly soak the ball of earth.

## American Pomological Society.

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GRAND RAPIDS, MICH.

TREASURER:  
BENJ. G. SMITH,  
CAMBRIDGE, MASS.

Rochester Boston, Aug 17 1886

My Dear Sir

I see that you have added another wheel to the machinery which is to propel the press of Popular Gardening, and which I hope ~~is~~ is to give us a perpetual feast of good things, fruits without faults, facts without fancies, I enclose \$1.-

Marshall P. Wilder

Mr. Cong.

MARSHALL P. WILDER: REDUCED FAC-SIMILE OF A RECENT LETTER FROM HIS PEN.

I am certain from some years of observation and one pretty rich streak of experience, that it is impossible to make men honest by any force there is in "Be it enacted." But over in Western Michigan the horticulturists have adopted a method that seems to be "making for righteousness." They organized a fruit exchange last summer, allowing a few of the best growers to form its membership, and adopted a seal which is placed upon the packages of its members, each package so sealed is guaranteed to contain full measure of first quality of fruit. The seal at once made a reputation.

But the point I wish to emphasize is the method of maintaining the standard of the seal. The exchange requests of its patrons to return any packages not up to standard; the money will be refunded and the purchaser reimbursed in every way. Now as one rule of the exchange requires every man using the trade-mark to place his name upon his package, a delinquent is traced out more easily than an embezzeling postal clerk, and he is expelled from the organization. The scheme seems to be working like a charm and should be adopted elsewhere.

## President Wilder on Fruits that Promise Well.

At the first meeting of the Massachusetts Horticultural Society, in the present year, this subject was brought up and discussed.

Hon. Marshall P. Wilder said that in New England the interest in collecting Pears has

### On the Pruning of Trees.

At the outset it is easy to conclude that the pruning of both fruit and shade trees is a practice much neglected and abused. Many orchards consist of trees so dense with brush as to shut out light and sun from the interior of the heads, causing the fruit to be both small and of poor quality. In others the pruning has been done to excess, and with poor judgment, leaving the trees trimmed up with long weak trunks, or else to be one-sided. Perhaps more common than any other fault in this line is the one shown in the first figure herewith.

This is of an Apple tree maimed and reduced in vigor by an excessive cutting of large branches, and this done very badly, leaving many ugly stumps. In cases of this kind it is

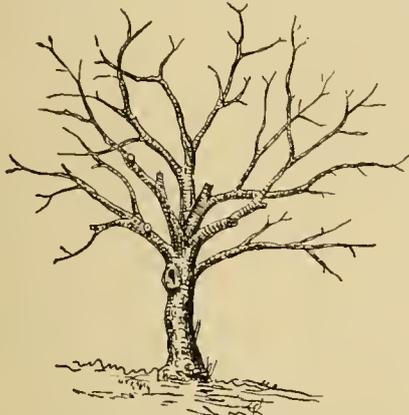


Fig 1. An Apple Tree showing bad effects of Pruning large branches and leaving ugly stumps.

impossible for the pruning scars to bark over, and in time decay must set in, leading to vital injury by moisture and air entering the tree.

That which is true of orchard trees in the last respect named, is no less true in many cases in the pruning of shade and street trees to have high trunks—in itself a thing quite desirable. As to these, hardly any sight is more common than that of Maple and other trees, badly mutilated, not only by over-severe cutting, but by the wretched practice of leaving limb stumps from a few inches to a foot long, as indicated in figure 2. Such treatment inevitably leads to unsightly imperfections on the trunks, and worse yet, to heart decay and premature death.

To have a standard fruit tree so open throughout the top as to be accessible both to sunlight from the outside and to the person who picks the fruit from the interior is an important end to secure. So in the case of shade trees, it is best for comfort and health that these should be clear of branches and foliage for at least ten feet from the ground, and also that undue closeness throughout the head be prevented. But such desirable ends can be reached and to the best possible advantage, without, in any case, ever pruning a large branch, and to this subject we shall now devote attention.

The secret of this matter is, to begin the pruning rightly and at the right time, namely, on the young tree just from the nursery, and then conduct all pruning as nearly as possible on the principle of *never cutting a branch that is larger through than a man's thumb*. This might be styled the thumb-gauge system of pruning trees. Let us first, in its application, take the case of an Apple tree. What we want to secure in this is a healthy, prolific tree, having a well balanced head and the best possible form for admitting light to all parts of the interior, without ever sacrificing one large branch in the pruning. A tree of this description is shown in figure 4, and we will presume it is the outgrowth of a young tree having the appearance of the one in figure 3, as it came from the nursery. Taking in hand a tree like the latter, we start off on the basis that all trees need pruning at the time of transplanting, to offset the "pruning" the roots received in the process of digging. At this first pruning is

the time to lay out with great care the frame of branches of the future tree. A study of the head is made and about six of the leading shoots, starting out in different directions at about an equal distance apart, are chosen for the future ground work. All the other shoots (those in the case referred to being marked by a cross line near the main part) are to be cut entirely away. The reserved ones also need, as shown, cutting back about one-half.

With foundation branches thus provided, the future pruning should be directed for their preservation and development, seeing that year by year they become amply, but not too densely, furnished with branches. Being guided by the thumb gauge in pruning, by going over the tree annually its form may with light work be controlled, and the tree never be brought to suffer cutting so severe as to greatly tax its vitality. Indeed on this plan much of the pruning could be done in the summer, by a mere rubbing off of such shoots as appear where they are not wanted.

With shade trees the same rule of early providing a frame work of branches, and then pruning by the thumb gauge should be aimed for. Here there may often be more difficulty, because the branches of such trees as they come from the nursery are seldom as high as ten feet from the ground for the lowest ones. One should then wait for the growth of new branches farther up, to be treated as the permanent ones, in the meantime cutting the larger ones—those as large as a thumb—and leaving some that are smaller, temporarily along the trunk, to excite activity of growth and development in those parts. As any of the latter reach the thumb size, let them be pruned completely away, and finally when the frame branches above are established, all such lower ones should be removed.

Beyond getting the frame work of street and shade trees thus started well up and on the thumb-gauge system, little if any systematic training is needed for these. Certain kinds may grow very dense and would be better off for some interior thinning. Others, like the Silver Maple, often produce long slender branches that should be headed back occasionally, to induce greater compactness. Still, in pruning any trees of this class, the distinct character of the growth of each kind should never be much interfered with, although it may at times be modified with benefit.

Most of the foregoing directions apply to trees in which a right principle in pruning was applied from the time they were small. But, as already stated, trees without number exist which are now in bad shape from lack of

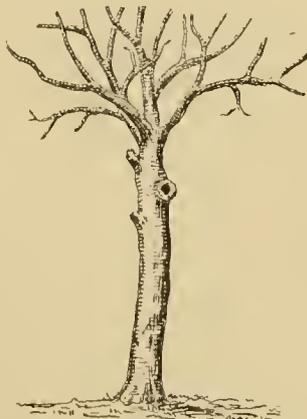


Fig. 2. A Street Tree badly pruned, leaving stumps.

good treatment as to this. While our directions thus far will serve to give an idea of what is desirable as the end of all standard tree pruning, some general remarks will now be advanced to apply to all work in this line.

First of all, let tree pruning of every kind be looked upon as a mere expedient to certain desirable ends, such as directing a better form, forcing vigor into certain parts by removing

others, but at the same time, as one *in itself tending to impair rather than increase vitality*. While a thrifty tree, vine or plant may bear a good deal of pruning, if this be confined to green shoots or young branches, with

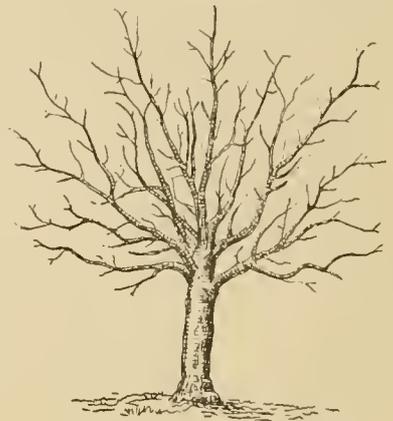


Fig 4. A well-pruned Apple Tree.

general benefit, the taking off of large branches should as a rule be looked upon as a severe tax on life. When therefore a tree for any reason requires heavy pruning it should not all be done at once, but through several years.

While at any time between leaf-fall and the starting of new leaves is a suitable season for general pruning, heavy branches should not be removed previous to or during the colder weather, as the lack of their shelter and the presence of large wounds, renders the tree more susceptible to injury from cold. Wait with pruning such until towards Spring.

The place to cut a branch, large or small, is just where the swelling at the base begins.

Then if the surface be heavily coated with paint of good body, to keep out air and moisture, the scar will, in vigorous trees, bark completely over in the best possible manner. To leave, in pruning, stumps of any length is a practice as abominable as it is without excuse; the presence of such entirely prevents the healing up of the wound, while the old wood must in time decay, leading to an opening into the heart of the tree, as alluded to before.



Fig. 3. A Young Tree.

A sufficient cause for the cutting of a branch should be found if it is dead or dying (such being in a great degree exhaustive to the tree), or if it chafes or crosses another branch, or if detracting badly from a proper balance of parts, or if its absence is required for admitting sun into the tree, or to allow the picker of fruit to move readily among the branches.

In pruning to regulate general symmetry, one should be careful as to the position of the last remaining bud or branch of any part. If the growth in general is too upright, cut back to buds or branches that point outwards; if too spreading, then to such as point upwards or inwards. Long pole-like branches should be guarded against.

Let it always be remembered that the object of pruning is to give direction to growth, not to promote it. For promoting growth dependence should be had on cultivation and top dressing with manure.

WHERE THERE are ample sized patches of hardy flowers and plants such as Pinks, Lilies, Dutch Bulbs, Valley Lilies, Strawberries, Rhubarb, etc., or a number of any one kind of flowering or fruit-bearing shrubs, by applying a heavy mulch over the roots of a part of these in the winter when the ground is frozen at its deepest, for the purpose of causing it to thaw out slowly in places next spring, a difference of more than a week in favor of lateness may be had in the maturity of the product from such mulched parts. By this means the season of any one kind may be considerably extended.



I trust will incite a still greater interest in this fascinating subject. Then he who follows me in the progress of my work will, I trust, find some help which cannot fail to be of service, regardless of the size or nature of his garden.

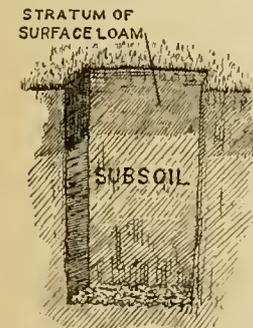
#### THE GARDEN COURSE.

The approximately complete garden is not one that for one or several months of the year may be a blaze of floriferous glory, or for a similar period rich in fruits and vegetables, and then at other times producing nothing. It is rather the garden that is made to yield the largest variety of products, useful and beautiful, throughout the whole year. So varied, however, are the numerous flowers, fruits, vegetables, etc., in respect to their season, that the gardener would, in some degree, show his incapacity did he not, when such opportunities exist, furnish himself with an unbroken supply the year throughout. To convey an idea of the continued fruitfulness of which a garden is capable we present herewith a large engraving of the true idea of the garden course. This sets forth clearly the season and course through the different months of some of the principle products of the garden in its several departments. Its incompleteness lies in the fact that only the principle kinds could well be named in the limited space at our command. In the ornamental section but the merest fraction of kinds are named. With this course before the eye, there need be no difficulty in arriving at a good idea of the selections of stock required for any but the most limited garden and orchard, to keep the table constantly supplied with fresh fruits and vegetables, and the grounds, house and plant-house always beautiful. Through the progress of this work there will be taken up the details of the best varieties suited to a succession of the kinds named, as well as others. Even for the smallest garden the diagram and subsequent directions should prove of much use in determining the few kinds that could be accommodated, and the best and most continuous selection for the year.

#### THE SOIL OF THE GARDEN.

In the making of a garden the points of suitable soil and location are among the greatest. It is too apt to be imagined that soil is soil, and there end the matter. In our towns, and their suburbs especially, homes are bought and improved, into which has entered every other consideration than that of soil. Then when the garden is started, and trees and vines are set out, but which prove unproductive, the owner becomes discouraged and is ready to consign to nothingness this feature of an improved home. The presence of a kindly soil has been the making of many a good and happy gardener; its absence has spoiled many another. A more unwise policy than to invest in costly trees, shrubs, vines, etc., plant and care for them in a luxurious manner, and have all result in a failure through the natural poverty and unfitness of the soil, can scarcely be imagined. Instances of this kind, however, are abundant everywhere.

It is important here, especially for the beginner, to take a glance at the soil and comprehend a few common terms relating to it. In choosing garden land the work would be incomplete without making some thorough tests by digging at intervals of ten yards apart over the plot holes of not less than half a yard square for well examining the soil. One of these should appear somewhat like the accompanying figure.



Pit dug for Testing the Soil.

There should be seen in such, at and near the top, a dark stratum of earth which is called surface soil or loam. Beneath this, having an

unmistakable difference of appearance, may be seen what is called the subsoil. The dark top soil is, in the main, the product of decayed vegetation and worm casts, representing the accumulation of ages, and is the true rooting medium for plants. Upon the nature and depth of the surface loam and the porosity of the subsoil, depends very much the question as to whether a certain piece is, or is not, suitable garden land. What I should regard as the best soil for the general average of plants is one in which the surface stratum, to the depth of ten or more inches, is a loam of light texture which will rub up finely between the fingers and showing something of an admixture of sand. Such would be called a strong sandy loam. Should the surface soil measure but eight inches in depth, it could by improving be made to answer fairly well. I would greatly prefer a full foot in depth. A subsoil of sand, gravel or slate, more or less open, would render such a loam of good depth the perfection of a garden soil. Very light sandy soil often strikes the inexperienced as being the best for a garden, because so easily worked. This is a mistake. The bad features about light sands are, first: the surface stratum is usually shallow; second, they dry out quickly in times of drought, not being of a retentive nature, and third, fertilizing matter leaches through it in times of rain, rendering it what some term "hungry stuff."

A clay loam, overlaying a clay subsoil, if not the best land for a garden, can be made very good if it is not too heavy, and, provided the subsoil be thoroughly underdrained. Such soil, if properly tilled and fertilized, will work up finely and retain moisture well. Usually it holds an enormous store of vegetable food, which is a great advantage in itself. The one thing a clay loam never will tolerate if it is to be in its best state, is working while it is wet. Those possessing such land who will always heed this truth will save themselves much needless vexation, through never having a rough soil to till during the season of growth.

#### On Manuring Lawns.

S. Q. LENT.

I knew it would be so when I was talking about it last summer, yet it is discouraging when one contemplates how little influence he has. I refer now to the turning of a beautiful lawn into a barnyard. I proved, beyond a question, that a top-dressing of ashes and bone-dust, the application of which would not disfigure the lawn, was a perfect fertilizer for lawn grass; yet these same people that I was trying to educate, are giving their yards a heavy coat of the vilest smelling manure they can find.

Now I am a friend of barnyard manure, and can endure the odor of it with complacency when it is in its "proper sphere." But I don't want to sit in church or the opera beside a man who has the odor of the cow-barn about him; nor do I want to hold my nose when I step into my neighbor's beautiful house in order to keep out the smell of the barnyard, into which he has turned his velvet lawn.

The reason that people do not learn the better way is not because they are wilfully ignorant, but, in a majority of instances, because their attention has not been directed to their blunder. The newspaper in which good advice has been given has been read with another purpose than securing lawn hints; and the horticultural meeting in which the whole matter of care of lawns has been discussed, was not attended by these people, because they were laboring under the delusion that they were not interested in discussions at such conventions.

Our duty, as horticulturists, is to volunteer information to our acquaintances, and induce those the nearest to us, to accept the better method. Preach the gospel of horticultural improvement on the streets and in the households, not waiting for an opportunity to shout from a rostrum, or proclaim it from a housetop.

#### Is the Chrysanthemum Craze on the Wane?

PETER HENDERSON, JERSEY CITY, N. J.

Not a bit of it. When your correspondent, Emily L. Taplin, in the November number, bases that opinion on the fact that the plants that were sold at the New York exhibition sold at such low rates as compared with the prices received last year, she probably was not aware that the plants this season were nearly all of them in a miserable condition, withered and wilted, a consequence of a week's exposure to gas-light and neglect in watering. I was there the greater part of the time the plants were being sold at auction, and was surprised that many of them could have been sold at all, yet I believe all were sold at some price. Had such a lot of poor looking plants of Chrysanthemums been offered for sale five years ago, not ten per cent of them would have found purchasers. But the Chrysanthemum craze is still on, and in my opinion has come to stay for a good many years to come. No plant is so easy of culture; in no family of plants have we such variety of contrasting colors or such symmetry and yet eccentricity of form. Coming at a season when nearly all other flowers are gone, hardy, so that it can be grown by the most humble owner of a cottage, yet gorgeous enough to make splendid the conservatory or the drawing-room.

For thirty years the Chrysanthemum has been yearly increasing in favor in England, and the wonder is that we have taken so long to wake up to this most valuable of all autumn flowers. A plant to become popular must be a plant for the million, something that the peasant can enjoy as well as the prince, and particularly in this democratic land of ours, where as yet the worship of an article because it is costly is not so common as it is in England. Note the Orchid craze, if craze it can be called, for it is yet, and deservedly so I think, confined to a very limited number here—the few who are able to have something that the masses cannot, and who value it by the old Scotchwoman's verdict, because it is "nice and expensive." Yes, expensive. That is the point. Were the Orchid not expensive and difficult to get at, I am afraid the admiration for it would be lessened. I am well aware of the gorgeous beauty of many of our Orchids. But when we have to look at a houseful of dried-up looking old sticks for twelve months for the sake of being regaled now and then by the sight of a dozen or two floral gems for a few weeks, taken from thousands that do not condescend to show a flower, I for one believe that for that reason the Orchid can never be popular for many years to come in a utilitarian country like ours; while the Chrysanthemum that fills every line of the bill is certain to be (like the Rose) even more popular than it is as the years roll on.

#### Growing Pot Roses for Market.

ROBERT CRAIG, PHILADELPHIA.

(Continued from last month.)

When the Rose plants are brought into the house they will require more room as growth advances. Lift those grown out-doors as soon as slight frost has checked the growth. The first crop for selling is usually not wanted before Easter and should be brought in from cold frame seven to nine weeks earlier. The temperature should, for three weeks, not exceed 40° at night, and then gradually reach 55°. Other lots may be brought in at intervals for succession.

A critical period occurs when firing ceases for the season; many houses are ruined by mildew at this time. An effectual remedy is made by boiling five pounds tobacco stems and ten pounds flower of sulphur in thirty gallons water until it is reduced to ten gallons. Apply with syringe, using one pint to two gallons of clear water. While firing, the occasional sprinkling of the pipes with sulphur, and preventing cold drafts, will be sufficient for red spider.

An occasional watering with weak guano or manure water after the plants have set buds will improve the blooms. Before taking the plants to market it is well to tie the blooms in tissue paper to prevent injury from jolting on the journey. If the buds (particularly of the teas) are tied in stiff paper, leaving one end open, when they first show color, they will attain greater size.

Among the best Hybrid Perpetuals to grow are Gen. Jacqueminot, Magna Charta, Paul Neyron, Merveille de Lyons, Baroness de Rothschild, John Hopper, Anna de Diesbach, Madame Masson, Queen of Queens, Pæonia, and Duchesse de Morny; the latter two varieties do not produce particularly fine flowers, but they are of such good habit and freedom of bloom as to merit growing in large quantities.

Of the Hybrid Teas none are superior to La France, Pierre Guillott, Lady Mary Fitzwilliams, Antoine Verdier, and Countess of Pembroke.

In the Teas, none are better than Perle des Jardin, Madame Welch, Marie Van Houtte, Etoile de Lyons, Madame de Vetry, Madame Cusin, Coquette de Lyon and Marie Guillott. The latter variety is one of the most profitable; its flowers are of pure white and of good substance: it pays to grow it for flowers in summer alone, and it is the best white tea for pots in spring; it requires a stoney, clayey soil. Coquette de Lyon also deserves special mention; it has been called the "Yellow Hermosa," and the name is appropriate, for it flowers as constantly and free as that well-known sort.

In the Bourbon and Chinese classes we may grow Hermosa, Agrippina, Archduke Charles, Souv. de Malmaison, Bourbon Queen and Queen of Bedders.

Climbers, Tennessee Belle, Gem of the Prairies, Baltimore Belle, Reine Marie Henrietta, Glorie de Dijon and Marechal Neil. With the exception of the three last named, they should be planted outdoors in summer. Very strong plants make a fine appearance when trained on trellises in oval form.

The Polyanthus Roses are dainty little beauties and well worth growing. The best are Mignonette, Madam Cecil Bruner, Little Pet and Perle d'Oro.

A few of the Moss Roses are desirable; the best for pot culture are Countess Mmirain, Glory of Mosses, Crestata, Princess Adelaide and Henry Martin. The latter, although not producing first-class flowers, blooms so easily and freely as to well merit a place on the list. If grown under glass in pots they will bloom well the first spring, which is not the case (excepting Henry Martin) if they have been planted outdoors; under the latter treatment, they are likely to produce only blind shoots.

Coquette des Alps (Hybrid Noisette) is not only first-class in pots, but will give satisfaction as a vigorous grower and bloomer when planted out. It is surprising that it is not more largely grown. Coquette des Blanchés is also distinct and good. American Beauty promises to be very valuable, but has not yet been sufficiently tested as a market pot Rose. Of one thing I am thoroughly convinced, and that is, that the operator confining himself to eight or ten varieties in the Hybrids and to twelve or fifteen in the Teas will realize more money than one endeavoring to grow a greater number of kinds.

In growing cut flowers for winter bloom, the growers have been compelled to drop all but less than a dozen in each class, and those of us who grow for market in pots will be wise if we take the hint and reduce our lists accordingly; remember, I speak of Roses for market purposes. I can readily understand how those who publish catalogues and minister to the wants of educated amateurs can afford to grow more kinds, for their patrons are more or less familiar with future results. Such stock may be sold either as very small plants or even in an entirely dormant state and still give satisfaction, but the successful market plant must be a "thing of beauty" on the day of its sale.

### A. M. PURDY'S DEPARTMENT.

Postoffice address, Palmyra, N. Y.

#### Brief Fruit Notes.

We prefer pruning Grapes now to waiting until in April.

There is enough waste from houses of liquids which, if properly saved, would give sufficient fertilizers for an acre of ground.

Don't throw away the waste water. It's one of the best of fertilizers—especially if thrown over a pile of coal ashes, basin shaped at the top.

A good time to haul out manure and throw a little around each Raspberry plant or scatter under the fruit trees. A fine place for wood ashes is over the Strawberry beds.

A correspondent asks us how it will do to set out Strawberry plants on ridges. It will not do except on low, wet soil. As a rule set on level ground and they will get ridged up enough in a few years.

It is found that Peach trees growing near the house where dish and wash-water are thrown out are long-lived, free from worms, disease, etc. A hint can be had from this, showing that salt and alkali are what gives the result.

Berry Baskets South. Inquiries as to where these are manufactured and sold at Southern points are coming in. If our readers know of such, tell the manufacturers it will pay them to put a card in the advertising department of this paper.

Currants Running Out. In our boyhood days we remember of removing an old Currant plantation from our father's back yard, dividing the bushes and cutting back well and transplanting in a single row along one side of the garden. They done splendidly, and seemed to renew their vigor and production.

A Florida correspondent writes us he has ordered Strawberry plants from the North to be sent in April, and has had a nice supply of strawberries for his own use months after plants there had fruited. Of course it would not pay to practice this on a large scale, unless they sold for at least 25 cents per quart in the home market.

Will Blackberries and Raspberries yield the first year after setting out? asks Wm. J. Johnston, of Ohio. No; not to speak of. The plants or canes should be cut back when set to at least one foot of the root, and this stub may have a few berries. It's better not to set too much wood at the start if strong, healthy growth is wanted.

Different Kinds of Storage. From the *Vineyardist* we make the following pointed extract: "We caution our friends against 'cold' and 'air-tight' storage, so much talked of; there is a great difference between this and cool, well ventilated storage. In the one case the fruit spoils quickly after being removed into a warmer temperature, while in the other it does not suffer from the sudden change of temperature."

The "Best." It's getting to be too common to grasp at a conclusion and to say this or that sort is "the best," when perhaps it may prove a perfect failure on other soils in other climates. Then, too, what one might think the best, ten others might disagree with such an opinion. We remember a well-known writer saying once that all good judges of fruit would prefer the Peach to all other fruits. At our table were some nine good judges, yet only two preferred the Peach above all other fruits.

Grapes that Will Stand. Many kinds have to be renewed and re-set, especially of the more delicate ones, but such vigorous growers as Concord, Diana, Rogers 4 and 15 and Worden will stand in the same place for years. Fully twenty years ago we set a vineyard of all the leading new and old sorts of that day, and of all these the four sorts first named above are all that are left, and these are productive every year. The Worden was planted some four years after. For those wanting hardy, reliable sorts, they will not miss it to set out the above.

Worden and Concord. The *Rural New-Yorker* says: "If any one were to eat first a Worden, then a Concord Grape he could not tell which from the other. As to the time of ripening there is very little difference. The Worden bunch will not average so large as the Concord bunch." We cannot believe the *R. N.-Y.* has got the genuine Worden. With us it colors at least a week to ten days before the Concord and is good to eat as soon as it turns, while the Concord is not fit to eat for a week or ten days after it turns, thus making the Worden from two to three weeks earlier than the Concord.

The Pumpkin Hive. While Mr. Shuman, of Santa Maria, Cal., was gathering his Pumpkins he loaded one on the wagon from which he noticed bees issuing. It was a veritable bee-hive. The bees

had gained access through a crack in one side of the vegetable and taken up permanent quarters. Mr. Shuman took out eight pounds of fine honey. Is there any other land under the sun where the farmer can raise his own Pumpkins and bring on his honey on the same vine?

[We clip the above from the *Orange County Farmer*. Would it not be a good idea to bore holes in a lot of Pumpkins so that the bee-hives could be scattered around? They would certainly be preferable to Samson's bee-hive.]

Evaporated Fruit. "Where there is an excess of fruit, especially Apples, there is profit in evaporating it. Evaporated Apples sell at from eight to eighteen cents, according to supply, quality, price of green fruit, etc., but average from eleven to thirteen cents. A bushel of Apples will average about six and a half pounds of evaporated fruit, making at the average price from seventy to eighty-four cents a bushel. The cost of evaporating is slight."

[The above is going the rounds of the papers and is misleading. We have had evaporated Apples for years and in all our experience never succeeding in getting over ten to twelve cents per pound, and then we had to pay thirty to fifty cents per bushel for the green fruit. Instead of a bushel averaging six and a half pounds it averages but five pounds. Instead of the cost being "slight" to evaporate, help, coal, machinery, etc., costs at least fifteen cents per bushel. For five or six years past we have obtained but six to eight cents per pound, so that our readers can see that the above is something of an "air castle."]

Hen Manure for Strawberries. Hen manure is excellent for Strawberries, but it should not be used in its crude state. If ashes can be had at a reasonable price, then, for an acre, crush down 300 pounds of hen manure with the same amount of ashes. If ashes cannot be had use a like amount of gypsum (land plaster). Then mix all intimately with a wagon load of dry muck or good loam and apply the whole broadcast over the bed, or if the Strawberries are in rows apply to the cultivable spaces and cultivate in slightly. When necessary to mulch at all on account of severe winters it is as valuable on a bed two years old as on one of one year.

[The *Farm, Field and Stockman* is decidedly off the track in giving the foregoing advice. If you wish to make fowl or animal manure worthless mix it with wood ashes. If the writer means coal ashes all right. We have applied hen manure freely direct to a Strawberry bed after bearing and the next year and the year following obtained splendid crops. However, it is well to mix it with five times its bulk of dry earth.]

#### FRUIT CRATES INSTEAD OF BASKETS.

There is perhaps nothing connected with the growing of small fruits that is more trying than the loss of baskets and boxes. Now especially, when berries are down to a price that every little expense makes it the more questionable as to any profits therefrom, it behooves the grower to try and adopt some plan for shipping to save on baskets—most of which are not returned to him by the time the season is over.

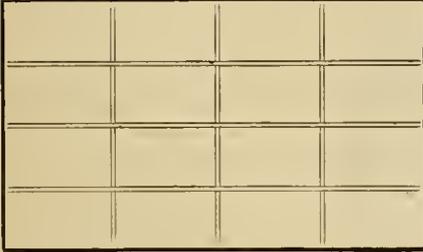
We remember well when the old "Cincinnati Stand" of four drawers was most exclusively used at not to exceed one third the expense that crates and baskets now cost. The great objection to these was that in careless handling by expressmen they would get tipped on the side, thus bringing down the entire bulk of berries in each drawer on top of one another, and rendering many worthless by the time they reached market. Then again, even without being tipped the jarring and shaking about of such a quantity of berries in each drawer of about 15 quarts, would shake them to one side or the other, and they would thus be badly bruised and damaged.

Now, while such serious objection can be raised to these drawers and stands for shipping, yet they had some advantages over the present system of picking and shipping in baskets: first, their use prevented dishonesty on the part of pickers in filling up with green fruit, stems and leaves, a thing impossible to prevent in the great drive of picking, packing and shipping, for as the fruit was then brought in from the fields by the pickers, it was emptied from their picking stands into the drawer and the one who had the charge could quickly detect any such cheating. Second, buyers knew just what they were getting, and by the dealer scooping out the berries with a latel and putting them

into paper bags, or even baskets of their own finding and at their own expense, they were saved the trouble of returning empty baskets.

Now, our object in writing this article is to show that there is a way that berries may be shipped safely in the Cincinnati or any other style of drawers and stands. We refer to the making of bottomless pigeon-hole divisions as shown by the light lines in the accompanying diagram, and to snugly fit the drawers at the sides and to be of the same height. Each part should be made to hold a quart, or if to be used with Red Raspberries, a pint.

In using such a rack, it should be in its place when the berries are emptied into the drawer, placing as nearly as possible the same quantity in each part. When the seller receives these berries he has only to lift out the division, when



Pigeon-hole divisions for Crate Drawers.

he will find the fruit laying loosely and easy to be ladeled out.

We believe if growers would combine on some such a plan, the dealers could be forced into selling the fruit from these drawers, thus saving a great loss on baskets.

#### RUSSIAN APPLES AND THE AGENTS.

Tree agents are in every section of the country with their pictures and big stories about the Russian Apples. Now the facts are nurserymen have grown and sold varieties of the Russian Apple, such as the Red Astrachan, Alexander, and so on, for years, and while many new sorts are being tested, many of which will no doubt prove valuable, and especially for extreme cold sections, yet just now scarcely an agent has them for sale.

One story they tell is that the Apple trees they are selling are grafted on the "hardy, wild French stock," and that any sort thus grafted will prove hardy. This is not the case. The Rhode Island Greening can never be made a success in Northern Illinois, Wisconsin, Iowa, etc., budded or grafted on such stock, and in fact it makes but little difference as to hardiness of sorts grafted into it; not one nurseryman in fifty uses such stock generally, and not one agent in fifty sells trees grafted into such stock.

We say keep a good distance from those tree agents that are always telling big stories, and in a half hour's conversation with them you can't get them to cross themselves we are greatly mistaken.

#### A VARIETY AND SUCCESSION OF FRUITS.

It is just as easy to have fruits the year around in some shape as Potatoes or bread.

By planting the earliest Strawberries like May King, Phelps ("Old Iron Clad") and Crescent, and the latest, like Vineland, Manchester or Cornelia; and of Red Raspberries, Hansel and Crimson Beauty for early, and Cuthbert and Herstine for late; and of Black Raspberries, Davison's Thornless for extreme early, Tyler for early, and Gregg or Seneca for late, mixed in with Currants and Cherries. And of Blackberries, Brinton's Early, Early Harvest, Dorchester, Kittatinny, Snyder, Western Triumph and Taylor, ripening in succession as named. Of Grapes, Worden's Seeding, Moore's Early, Concord, Rogers 4 and 15, Catawba, ripening in succession; and interspersed among these Plums and Peaches, and Summer, Autumn and Winter Pears and Apples.

Such an assortment can be grown in any good garden of one-fourth to one-half an acre.

The writer is not theorizing, but practises what he preaches. Not a day or scarcely a meal from the beginning to the end of the year, but he has some of these fruits on his table, and many times two and even three kinds—yes we have had Strawberries, Raspberries and Blackberries grown on our own ground all on the table at one time and we have had to smile when asking the question, "Which do you prefer?" to see them stop and think before deciding which was their choice. The truth is, earth is nearer a paradise than many families are willing to believe, or at least than they make it.

#### STRAWBERRY RUST.

Several pages are occupied in the last volume of the transactions of the Wisconsin Horticultural Society, with discussions on Strawberry rust, which has become a formidable evil in that State, as well as elsewhere. President Smith ascribed it to wet weather; his sons think it the result of too heavy manuring and with this idea, several other members agreed. A Mr. Adams had found the rust to occur frequently on poor ground; Professor Trelease said it occurred on both rich and poor land; one member thought it was caused by too much sun, and where planted in alternating rows with Corn to shade it, it was a success, but failed under full sunshine; another found rust to be caused by a want of manure, and by great and sudden changes of temperature; others ascribed its prevalence to muggy weather. Here was certainly enough diversity of opinion to take in all the reported cases; and under all the difficulties the best remedy, other things being equal, would be to select those varieties which experience has shown to be least affected, as diseases coming from parasitic fungi are usually the most difficult to cure.

The foregoing is from an exchange and to which we would add that what is called rust and blight will be found in many instances to be the work of a minute worm. As a rule no better remedy can be found than burning over the plantations by putting a light coat of straw just after fruiting season.

#### MORE SPACE FOR FRUIT TREES.

We have become satisfied that the old way of setting and growing orchards is proving a failure, and that trees to yield an abundance of fruit must have room.

Sixteen years ago we set an Apple orchard of six hundred trees. For three summers before they fruited, we had dry seasons, and the orchard fruitless therefrom. The past winter we cut down three out of four of the trees, leaving the trees four rods apart instead of but two rods as originally planted out.

The past season the trees have reciprocated and made a splendid growth. We have small fruits planted among them, which have been kept well fertilized, and as they come into bearing, we shall fertilize them to make up for all they take from the soil. We believe not only trees require sunshine, but the soil also, and then if properly worked there will be plenty of growth and fruit in proportion.

One needs but to see the Apple tree that stands alone, to be well satisfied of its superiority over the usual orchard tree.

We believe a revolution is coming in regard to the way of growing fruit trees to have them bear well. Of course they may be planted close when young, but as they grow older and larger they must be thinned out, not only the trees but the branches. The tree must have room to grow and to grow vigorously; not only the trunk but the head must have the sunshine.

#### JOHNSTON'S SWEET RASPBERRY.

This new Black Cap variety has been grown four years in Central New York, and is the product of a few plants received by mail for

trial. It has proved hardy, a strong grower, and ranks with the standard sorts in productiveness. Season about the same as Tyler, a little smaller than Gregg and very productive and hardy. The best to our taste for table use of any black cap grown. The berry is perfectly black, and claimed to be very superior in quality and sweetness; on this point we give the testimony of T. T. Lyon, President of Michigan Horticultural Society. Mr. Lyon says "The sample of evaporated fruit has just been tested against some of other varieties similarly prepared. I regard the fruit as far superior to any-



Johnston's Sweet Raspberry.

thing of its class with which I am acquainted; less seely, far sweeter, and yet of sprightly flavor and rich."

#### MEAT FROM THE SHELL.

The *Journal of Agriculture* says: It is not always the richest soil which produces the healthiest vines and the finest Grapes. There are places where the land is not worth \$5 an acre, yet the climate may be worth \$100 an acre and Grape-growing very profitable.

The *Orange Co. Farmer* says: This year a Mr. Eltinge, of New Paltz, picked from his vineyard a cluster of Concord Grapes that weighed nearly a pound and a half. The largest clusters ever shown at the Southern Ulster Fair did not exceed one pound and four ounces. From this it is inferred that there are clusters growing in some vineyards the weight of which, if known, would astonish even a native.

The *Rural New-Yorker* says: If you plant the Taylor or Snyder Blackberry you will get about everything there is in this fruit except size. The Taylor is a little later than the Snyder, and the berry averages a little larger. If you plant the Kittatinny you will get about everything except the extreme hardness of the Snyder and Taylor. If you plant the Wilson Junior you will get more berries perhaps than from any other kind, if the plant will endure your climate, which, if severer than that at the *Rural* grounds, it will not do more than two years in five. It is, however, harder than its parent the Wilson. If you want a curiosity in the Blackberry way that needs protection, try the Crystal White. The berry is white and sweet like a Mulberry.

The *Rural and Workman* says: In forming the fruit tree, it is best not to let the limbs come out all together, but rather that those which are to form the top, or head of the trunk, but that these limbs should put out three or four inches above or below each other; this will prevent the splitting at the point of junction, when heavily loaded with fruit. This is a good time to regulate these matters and it can be done without injury to the growing tree. A well formed head to a young tree is all important, and in order to secure this it must be attended to during the first and second years.

The *Country Gentleman* says: We have often had occasion to observe the benefit derived from laying down the most commonly cultivated Grapevines on the approach of winter, even of such sorts as are reputed hardy in localities where they are not winter-killed. The work has been easily done by holding them in their prostrate position with short sticks of wood, and without covering, and where they obtained some warmth from the earth and were out of reach of severe winds. A vineyardist once informed us that if he had expended a week's work in laying down his vines it would have saved him from a loss of \$1,200 in one winter.

### High Culture for the Strawberry.

BY P. M. AUGUR.

The old saying, "whatever is worth doing is worth doing well," is specially true of Strawberry culture. As illustrative of what may and has been done in this direction, I give a few notes. The last week in July, 1884, my sons took a piece of ground two years under garden culture, previously in grass yielding about three-fourths ton to the acre. This patch had been liberally manured both years with stable manure, ashes, bone, hen manure, etc., and was planted each spring with Peas. After the last crop had been gathered at the time referred to, the ground was well prepared and planted with Strawberries as follows: 1st, 1 row Cumberland Triumph, then 4 rows Jewell, then 1 row Seneca Queen, then 4 Jewell, and so on, with Jewells alternating in each 5 rows with a good bisexual variety, the Jewell being pistillate, until the Jewells aggregated just 1-22d of an acre.

The plants of the piece stood in rows 2 feet apart and 18 inches in the row. The runners of all were nipped off as they started. The ground was frequently hoed and the growth of plants became specially heavy, with numerous crowns upon all the varieties. When the ground was well frozen, the patch was covered with a mulch of coarse hay.

In the spring of 1885, as soon as the ground was well settled, the mulch was removed and the patch carefully hoed shallow, every weed having been removed. Then came a wonderful profusion of flowers. Until near the last of May the ground was free from mulch, but at that time after a careful removal of all weeds part of the mulch was restored to keep the fruit clean.

On June 26, following, the public were invited to see the plot and judge for themselves as to the merits of high culture. The amount, size and beauty of the fruit caused many exclamations of wonder. All the kinds were remarkably loaded, the Jewell taking the lead, with a wonderful show of fruit. Many individual plants contained a quart of ripe berries beside numerous green ones. Altogether the number of picked quarts was 678, or at the rate of 466 bushels per acre.

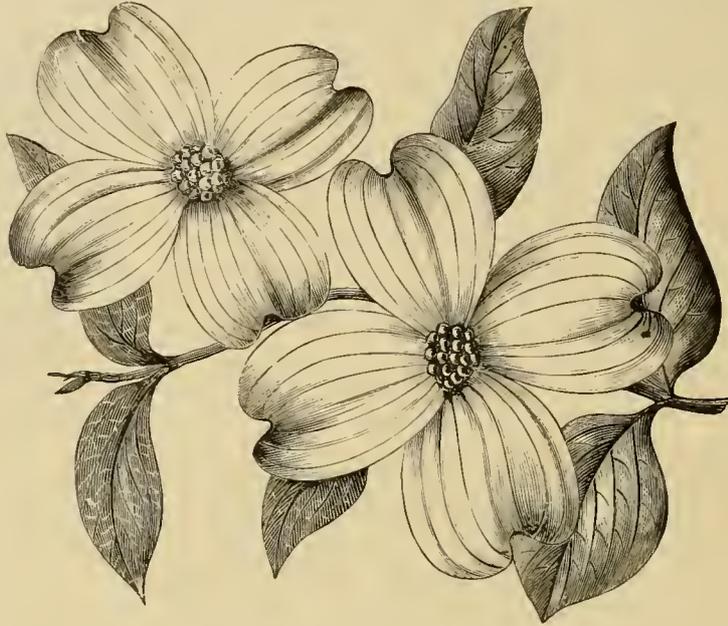
This experiment shows conclusively that Strawberry plants set August 1st will, under favorable conditions, give a full crop the following June; that single hill culture for heavy plants is practicable; that a maximum of two quarts to a plant and an average of more than a quart is attainable. It suggests that only those varieties best adapted to the hill system of management should be chosen; that a good pistillate when properly coupled with good bisexuals will out yield the latter, as the Jewell did in every instance, and as the past season has specially emphasized; that careful, liberal culture is generously rewarded. Again, as a chemical experiment fails if any important detail is omitted, so in horticulture success demands close attention to all the details each in its proper time and manner.

### A Remarkably Fine Flowering Tree.

Along with the healthy tendency of the day, to appreciate single flowers quite as much as (or now perhaps more than) double ones, the charms of the white-flowering Dogwood, illustrated herewith, have found increasing favor. The tree is a native one, rather scarcely distributed over the United States, with an increase southward, and also found in Canada,

but which is much too rarely met in cultivation. Of its two most striking qualities, freedom of bloom in the early Spring, or the rich deep red garb of beauty its foliage assumes in the fall, there is a perpetual question as to which excels in attractiveness.

In the matter of bloom, a well-grown Dogwood is for beauty excelled by no other hardy tree, not even by the beautiful Magnolias. The white blossoms make their appearance in the spring before the leaves are out, and for a short time cover the tree like immense snow-



SPRIG OF THE WHITE-FLOWERING DOGWOOD.

flakes. In size they vary from two to three inches across. Before proceeding further, we should, to save ourselves from criticism by botanists, say that what is looked upon as the flower of this Dogwood, is not really such, but is a very large four-leaved involucre, in the midst of which is situated the true flowers, of an inconspicuous greenish yellow color.

There are two things that have had much to do with the fact of this beautiful tree being so seldom cultivated. One of these is that it grows wild and has but single flowers, hence for a long time was not properly appreciated; the other is that the tree is with difficulty transplanted from the woods.

Those who are familiar with it only in the woods can form but a faint idea of its beauty when grown in rich, deep soil, and where there is ample room for development. Not only are the flowers finer here, but the tree itself assumes a most attractive umbrella form of growth. As to size, it often reaches from 15 to 20 feet in height, and may attain to a diameter nearly twice as great.

In transplanting the Dogwood, two points are important: first, to obtain trees of small size, and second, to procure such as have been grown in cultivated soil, with a view to plenty of small fibrous roots. The latter are apt to be very few in numbers on trees taken from the woods. Where one can get seed of the Dogwood it might be sown in the garden and the trees be raised thus without further outlay.

For the use of our illustration we are indebted to Ellwanger & Barry, of Rochester, N. Y.

### Inexpensive Heating of a Greenhouse.

MRS. J. S. R. THOMSON.

In August 1885 I had built me quite a large greenhouse for an amateur—fifteen feet wide and 35 feet long—which I had filled to crowding with a grand collection of plants, many of them 12 to 15 years old. Here in the South, (Spartensburg, S. C.) it has usually been unnecessary to have fire heat. A close well-built

brick and glass structure with some added cloth (usually discarded carpet) cover in coldest weather sufficed to keep plants alive during the coldest winters. But last winter was a surprise to all the dwellers of the Sunny South, and caused the loss of many fine collections of plants, mine amongst them, which, with the exception of about 30 pot plants, were killed outright.

Nothing daunted, I this past season collected again by purchase and exchange, and put on my thinking cap to gain additional heat for it.

I purchased two small oil stoves—called "The Florence," costing me \$1.00 each. I up to date have kept my flowers in beautiful growing and blooming condition. I have had hundreds, nay thousands of blooms from lifted bulbs of Pearl Tuberose, which had advanced flower heads formed before lifting.

I place one of these heaters near the door in the centre of the pit—the other at the rear end. During our recent storm, in which eight inches of snow fell, the house showed no sign of frosting. I hope to be able to carry it safely through the winter. I have the small oil stoves sitting in tin coffee canisters, the kind grocers buy 100 pounds of parched coffee in. This is to catch the oil in case of leakage. They are 18 inches deep by 14 square. The tops of course are turned back to allow free escape of heat. Daily attention is given to filling the lamps and trimming

the wicks, this being about the extent of the attention the heating part requires.

### Popcorn a Novelty in England.

I am going over to England next year to introduce Popcorn to the unfortunate natives, who have been brought up to regard corn as food for horses and chickens only. Every English visitor to the exposition goes wild over Popcorn and declares he never saw it before. So I have taken the contract for the American exposition in London next spring and have 5,000 bushels of corn ready to ship over.

It has always been supposed that corn wouldn't pop if it got damp, and to try how a sea voyage would affect it I sent some over to London and wrote the consigner to send it back. It popped nicely.—*St. Louis Globe-Democrat.*

### A Handsome Little Hardy Shrub. The Garland Flower.

This pretty dwarf evergreen, known botanically as *Daphne Cneorum*, is not so well known by flower lovers as it deserves to be. It is especially suited to planting on rockwork, delighting as it does in light soil and dry situations. In a paper by G. F. Newton, of Millersburg, Ohio, on the subject of Flowers for the Garden, and which appeared in the last volume of the proceedings of the State Horticultural Society of Ohio, we find the following interesting reference to the plant.

This exquisitely beautiful little plant is a low growing hardy shrub, and entirely different from the classes of plants here spoken of. It flowers freely, early in the spring, and also at intervals throughout the summer and quite late in the fall. The flowers which are very fragrant, are bright pink, borne in a small number; somewhat resembling a minute bunch of Honeysuckle, their pink flowers contrasting beautifully with their dark green foliage.

This plant must be grown in a deep rich sandy loam, and the bed be elevated. The plant does best when a few evergreen branches are stuck in the ground about it in the fall, so as to

shade it a little from the bright sun in winter. When so treated the foliage retains its rich dark green color, and the flowers are more abundant in spring.

Not having seen this plant in any of the nurseries excepting that of The Storrs-Harrison Co., of Painesville, Ohio, [It is kept by a number of our nurserymen.—EDITOR], we think it is not in general cultivation. We have grown it about 15 years, during which time it has given perfect satisfaction, and has had many admirers. One cyme of this flower and a blossom of the Tuberosa makes a charming little bouquet.

#### Mr. Treeclimber Talks about a Very Useful Palm.

Last month I brought to your attention a most wonderful flower; now I wish to speak of one of the most useful plants in the world, namely, the Cocoanut. Of course you all know the Cocoanut of the Tropics as well as you know the Apple of more temperate climes, but it may not be so well known that the former product is from a Palm, *Cocos nucifera*, and that this is sometimes met in greenhouses, where it is grown along with other Palms for ornament. Still it is less in its element here than are many other Palms, including even some from the same genus *Cocos*, as if it would say, just as some



THE COCOANUT PALM.

bustling laboring man might in a fine drawing-room, "I am for use and not much on show."

The Cocoanuts we meet in America come chiefly from Brazil and the West Indies. On the island of Trinidad alone

3,000 ACRES ARE PLANTED

with Cocoanut Palms. In 1884 about five and a half millions Cocoanuts were shipped from Jamaica, which realized nearly \$100,000. In many parts of the Eastern Continent they form a most important product. From Ceylon it is officially stated that the cultivation of the Cocoanut Palm with its multifarious uses is the most important in the life of the lower natives.

To show my young readers the great worth of this plant, I have been at some pains to look up the many

#### DIFFERENT WAYS IN WHICH IT FINDS USE.

The kernel of the ripe nut, the part which all American children appreciate, forms a very essential element in the food of vast numbers of people in the Tropics. The children in the Cocoanut regions, it is said, are fond of the green nut, just like many of our own boys who manuch down green fruit, for all the world as if it tasted better than the ripe. The "milk" of the fruit is used for slaking the thirst and as a pleasant beverage. For their spirituous liquors the natives also look to this tree; several kinds are distilled from the sap of the tree. A sweet meat is prepared from the kernel of the nut, while an astringent medicine useful as a throat gargle is extracted from the root. Vinegar is made of the juice or sap of the Palm, and pickles of the pith of the fresh growth.

#### THE HOUSE AND HOUSEKEEPING APPLIANCES

of those who lean chiefly on this plant for existence are by it also supplied. Beams and rafters come from the light, tough exterior of the trunk, and the thatch of the roof and the window blinds from the leaves. Troughs are made of the tree for catching water. Nets for fishing are manufactured from the fibre, as is also the rope which keeps the native's cow or goat from straying. Crab traps are made of the stems of the leaf, and fish traps of the ribs. Bird cages are made of the same material. Mats of many different kinds are woven out of the fibre, while the same article is used for stuffing cushions, beds, etc.

Besides the use of the shell as a vessel for water, milk and all liquids, there is made of it ladels, spoons, strainers and drainers, all of which possess the advantage of never corroding.

#### SUCH THINGS OF USE AND ORNAMENT

as chains, rings, whips, rattles, beads, crosses, puzzles, toys, are made of the same material. The burnt and charred shell is used for preparing a colored wash for the houses. The natives also make the resonant part of a violin, and of another instrument called turtuna, from the shell; for a drum they use a section of a tree, and horns are made in all sizes by rolling up the leaves. Abortive Cocoanuts are used as floats by beginners in swimming.

Brooms and brushes of a most serviceable kind, such as are used for sweeping roads and stables, are made of the ribs of the leaf, while something finer of the same kind, and

#### EVEN DOWN TO TOOTH BRUSHES,

is made of the stems of the blossoms. The oil is used as hair-oil. Soap is made from the oil, which holds a larger percentage of water than any other soap, and potash comes from the stem of the leaves. Flesh-gloves and currying brushes are made of the husk of the nuts, tar and acetic acid by burning the shells under a certain process. Oil-cake is used for feeding poultry and to manure the land.

Such a useful plant is not raised even in the Tropics to a bearing size without considerable care and cost. The plants are started from the seed.

#### THE NUTS ARE OF COURSE THE SEED,

and those for tree raising are gathered of good size from old trees, and are kept in a well of water for three months until they germinate. This is soaking seeds for a good while isn't it? After that they are put into the ground in beds of fifty or a hundred, and are watered every day, when they soon germinate. In three months more they begin to grow up, and after three years or more they may be transplanted in regular spaces of from 15 to 20 feet, watered regularly every other day, and manured occasionally. In about twelve or fifteen years they come to bearing, but the yield is in proportion to the care taken to water and manure; at this stage the value of the trees is from \$12 to \$15 each.

After the Cocoanuts are formed on the tree it takes a full year for them to ripen. You may say, no wonder the children take to eating the unripe fruit.

TIMOTHY TREECLIMBER.

#### Begonias of Winter.

A great many of the more shrubby class yield a profusion of blossoms during the dull season of the year; indeed, they form just now a very attractive feature in stove and greenhouses, as well as in the window.

Foremost amongst those in bloom now may be mentioned *Begonia fuchsoides*, which, treated as a pillar-plant, has been in flower for months, and is likely to continue so for a long time yet to come. *B. insignis* is also now laden with its pretty pink blossoms, and *B. ascotensis*, with flowers of a deeper hue, is also in bloom. *B. Ingrami*, something like an enlarged *Fuchsoides*, with blossoms of a paler hue than those of that kind, is also conspicuous; and *B. Lynchiana*, better known by the name of *B. Roezli*, produces freely its large clusters of

coral-red blossoms during the winter months.

*B. Carrierei* is a pretty, much-branched kind, and bears clusters of pure-white flowers. This one is well suited for culture in small pots, though there is sometimes a difficulty in inducing the young plants to become bushy.

A good way to induce compactness of growth in Begonias, is to give them a rest by keeping them rather short of water for a time; then, if cut down, they will often push out many shoots from the base, and thus form bushy plants.

*Begonia semperflorens* is a well-known common kind, varying in color from white to deep rosy-pink. It will grow and flower freely under anything like favorable conditions, and can be raised in any quantity from seeds, as well as propagated by means of cuttings. *B. nitida*, an old and well-known kind, is just commencing to bloom, and will, in all probability, continue to flower till spring. The peculiar round-leaved *B. socotrana*, which remains in a dormant state throughout the summer, starts into growth with the commencement of autumn, and flowers continuously during the winter, is a very beautiful plant, and may be readily increased by planting the small bulblets that form around the base of the stem.

A great point in favor of Begonias for confined culture is their almost total immunity from the attacks of insect pests. They are occasionally affected by aphides, but a fumigation or two will soon clear these away.—T., in *London Gardening Illustrated*.

#### It is a Right Step.

The step taken by the New Jersey State Horticultural Society at its recent meeting, of requesting the New Jersey members of Congress to oppose any further appropriation for the Seed Bureau of the United States Agricultural Department while it is conducted on its present basis, is a timely one, that should be followed by many other societies. The purpose of this bureau as originally defined and carried out, was to test new plants, with a view to ascertaining whether they were worthy or not, and the good work it has done in the past is a sufficient index of what might perpetually be accomplished to the great benefit of all engaged in soil culture. But now the department annually wastes over \$100,000 in flooding the country with seeds that are seldom of any real use, bringing discredit upon the entire department, and thrusting a direct blow at the legitimate seed trade. Let the people demand a halt to this gross perversion.

#### To be Enlarged Again.

We knew it must come. POPULAR GARDENING contains too little space for printing all of its good things. Four pages more hereafter. Same price.

#### Received at this Office.

##### CATALOGUES.

H. J. Weber, Gardenville, Mo., Trees, etc.  
C. Platz & Son, Erfurt, Prussia, Seeds, etc.  
D. Landreth & Sons, Philadelphia, Pa., Seeds.  
Pierre Sebire, Ussy, France, Nursery.  
J. K. Nevins, Montague, Mass., Nursery.  
C. G. Van Tubergen, Zwanenburg, Holland, Bulbs.  
Cameron, Amberg & Co., Chicago, Ill., Letter Files.  
Ernest Riemschneider, Altona, Germany, Bulbs.  
John Saul, Washington, D. C., Fruit Trees, etc.  
E. Vervae De Vos, Swynaerde, Belgium, Plants.  
Lenant-Huet, Ussy, France, Nursery.  
Levasseur & Son, Ussy, France, Nursery.

##### MISCELLANEOUS.

"Transactions of the Massachusetts Horticultural Society for the Year 1886, Part 1," from Robert Mauney, Secretary, Boston, Mass.  
"Report of the Fruit Growers' Association of Ontario for the Year 1885," from Secretary L. Wolverton, Grimsby, Ont.  
"Transactions of the Maine State Pomological Society for the Year 1885," forwarded by Samuel L. Boardman, Secretary, Augusta, Maine.  
"Seventh Annual Report of the Entomological Society of Ontario."  
"Analysis of Commercial Fertilizers," being Bulletin No. 20 of the Agricultural College of Michigan—Agricultural College Postoffice, Mich.  
"Annual report of the Ohio State Horticultural Society for the Year 1885-86," from Secretary George W. Campbell, Delaware, O.  
"Miscellaneous Essays on Economic Entomology, by the State Entomologist of Illinois," from Prof. S. A. Forbes, Champaign, Ill.

### Crocuses.

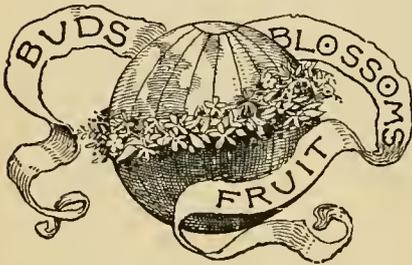
I love their faces when by one  
And two they're looking out;  
I love them when the spreading field  
Is purple all about.  
I loved them in the bygone years  
Of childhood's thoughtless laughter,  
When I marvelled why the flowers came first,  
And the leaves the season after.  
I loved them then, I love them now—  
The gentle and the bright;  
I love them for the thoughts they bring  
Of Spring's returning light;  
When first-born of the waking earth  
Their kindred gay appear.  
And with the Snowdrop nisher in  
The hope-invested year.

—L. A. Twamley.

"What kind of fruit do you like the best?"  
He questioned the maiden fair,  
"The juicy Apple with rosy cheeks,  
Or the sweet and luscious Pear?"  
The gentle maiden smiled and said:  
"The fruit that pleases me  
Better than all the fruits I know  
Is the fruit of the Christmas tree."

Bleak wintry winds and moaning blasts  
Sweep o'er the snow-clad fields,  
Yet Nature's hands are fashioning,  
Hid from all curious questioning,  
The flowers that summer yields.

—Charlotte M. Palmer.



More sun, more Violets.  
Now put the sash in order.  
Give thought to the garden.  
Trees are God's architecture.  
Pot Tulips should be in bloom.  
Use fertilizers sparingly on pot plants.  
1887 should see the family trebled in size.  
Five papers in one. Price \$1.00 a year. See?  
Sweet Alyssum signifies worth beyond beauty.  
Onion seed cannot be trusted beyond two years.  
Are the cellars and root pits secure against frost?  
House plants appear glad for the lengthening days.

Too much water for plants is quite as bad as too little.

Kid glove gardening don't deserve to amount to much.

If one must have knock-about plants, take the dwarfier Cactuses.

In fruit growing nothing is so really expensive as a poorly prepared soil.

"I've turned over a new leaf." January 1st entry in *Rose Geranium's new Diary*.

Sorrel can be eradicated from fields by generous applications of unleached wood ashes.

Remember the 15,000 clubs referred to last month. We count you in that calculation.

"There is 'a lesson in each flower,' sure enough," sighed the tired student in the botany class.

Ferns because they need no sunshine should not be thrust into a dark place. They need light.

**What Flower Pots Do.** In Nature plants are fixed in habit; flower pots endow them with locomotive powers.

Is the mind tired and harassed by cares? Turn to the contemplation of fresh flowers and plants, and it will be refreshed.

The American Horticulturist joins hands with our family. Welcome! every reader of that sterling journal into our ranks.

For a small plot the Sharpless Strawberry, grown by keeping all runners cut, can be recommended. The soil should be rich.

*Asclepias tuberosa* (Pleurisy Root) is a valuable honey plant, at the same time that it is one of our most ornamental native perennials.

The people are ready to stand by POPULAR GARDENING if invited. Invite the people that are included among your friends, reader.

That kind of love for gardening which is fruitful of good and patient work in the care of each subject is what brings success and pleasure

"No luck" are words made to shield a deal of bad management in gardening. Of course this applies to no POPULAR GARDENING readers.

**Queer?** A man who will swallow any kind of a dish with an imposing French name will steer way to one side of the Latin name of a plant.

Now study up the benefits of and plan for an evergreen screen on the cold-wind side of the home. Later in the season see that it gets planted.

**Large Pots.** My idea is that as a rule when people complain of failure in flower culture it is owing to the use of too large pots.—*Gilchrist*.

**Currant Trees.** To grow such having trunks, the buds from that part of the cutting that goes into the ground should be removed.—*J. J. Robinson*.

Let the first crop of the new year be a crop of good, well-matured plans for a fine 1887 garden, POPULAR GARDENING could suggest nothing better.

**Cost of Growing Strawberries.** Mr. Farnsworth, of Lucas Co., Ohio, puts this, in a certain case of his own of two acres, at \$125 when the fruit was ready to pick.

**One Chrysanthemum,** a bloom of the M. Guys variety, in the Japanese section at the recent New York Flower Show measured nine inches in diameter. It was a fantastic monster.

People who have no real taste and never did have any are the ones who try to make certain flowers fashionable to the exclusion of all other kinds.—*Frederick Mitchell*.

The gardening journals have not yet properly occupied their field, when a noted clergyman could ask, in all earnestness, "How many seeds does it take to produce a tree?" as one did of a prominent fruit grower some time ago.

**Popular Gardening,** unlike a garden crop, should make its greatest growth in mid-winter. But like good garden and orchard crops, to grow well it needs the help of good gardeners and fruit growers. Garden lovers will you help this crop?

Many holiday gifts are old and forgotten before two months have passed. This is not true of POPULAR GARDENING when sent as a gift for a year. It comes around fresh and new every month, and is quite certain to increase in appreciation with each issue. Such a present does the giver great credit.

In gardening poor and rich occupy common grounds. We are thinking of a magnificent Ivy-leaved Geranium that we lately saw in a poor laborer's widow. It was the result of a woman's work of love. It is our opinion that not the best hot-house in the land could show a better specimen.

**Florists** have one knack in prolonging the freshness of flowers with which few amateurs seem to be familiar. It is to cut off a bit of the stem with a sharp knife after the flowers have been in the water for a day or more. This has the effect of bringing fresh cells in direct contact with the water, and the flowers as a result put on a new brightness.

**Groups on the lawn.** To make these satisfactory, study Nature's groups along the borders of streams swamps, and along fence rows. Nature does things well, and the highest skill in this direction is only acquired by long study and the most careful observation. The main difficulty lies in the fact that shrubs grow and one needs a prophetic eye in planning his plantation.—*Charles A. Garfield*.

**Apples for Missouri.** E. P. Henry, of Butler Co., in that State recommends as the best six for profit the following, in the order named: Ben Davis, Willow Twig, Jonathan, Grimes Golden, Minkler, Huntsman. For the Family, Early Harvest, Sweet June, Sops of Wine, Lowell, Maiden's Blush, Red Streak, Fameuse, Grimes' Golden, Minkler, Jonathan, Huntsman, and Lady Sweet.

**Salt Water for Mildew.** The venerable horticulturist, Jean Sisley, Lyons, France, recommends this to Americans in the proportion of six pounds of salt to 25½ gallons of water. It is used in France, he tells us, to destroy mildew on Roses and Peach trees, and he thinks it possible that it will also destroy the black spot with which Roses in America are affected, as that is possibly a fungus as well.

A rapid growing tree with great spreading branches should show many newly-formed clubs each season. Do you catch the idea? The tree is POPULAR GARDENING; the great branches are its acquisition of other papers; the clubs refer to the vigorous new growth taking place as the result of good tillage. The implied husbandman is the garden-lover of the land, who work hard among their friends everywhere to aid the growth of the tree.

**Two Good Lindens.** As a class the Lindens, of which the Basswood is the well-known American representative, should be oftener used in ornamental planting in America. Of these the European White-leaved and the White-leaved Weeping are really very superior trees. They are hardy, and injurious insects and destructive diseases appear to pass them by. Their growth is rapid, the form beautiful and majestic, while the foliage of each is singularly handsome and tenacious.

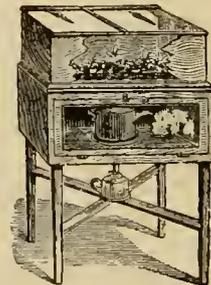
**The best Tomatoes.** As the result of experiments on a large scale, during the past season at the Michigan Agricultural College, the following six varieties would be selected by their projectors as the choice: Boston Market, Conqueror, Red Valencia Cluster, Trophy, Livingston's Beauty, and Paragon. While with growers for market the variety grown is a matter of no little importance, for the family garden simply any one of the standard sorts will be found to meet all requirements.

**Miniature Cactuses.** The writer has heard much about miniature tree-growing in China, but he has seen the growing of miniature Cactuses in Germany, and this has impressed him far more favorably. It is an act which all plant lovers can readily adopt. It consists of the use of the smallest sized flower pots, say one and one-half inches across, and in these growing any of the smaller sized Cactuses, in almost pure sand, keeping them rather dry. The little pots are painted vermilion, and with the plants in them present a decidedly unique appearance on the table or mantle.

**A Blade of Grass.** "Gather," says Ruskin, "a single blade of grass, and examine for a moment, quietly, its narrow, sword-shaped strip of fluted green. Think of it well, and judge whether, of all the gorgeous flowers that beam in summer air, and of all strong and goodly trees pleasant to the eyes or good for food, there be any by God more highly graced, by man more deeply loved, than that narrow point of feeble green. Consider what we owe to the meadow grass, to the covering of the ground by that glorious enamel, by the companies of those soft and countless and peaceful spears."

**Liquid Manure for Pot Plants.** The idea of liquid manure in the house for the plants is naturally distasteful, while its efficacy on many plants as they are coming into bloom is nowhere questioned. So when M. E. S. of Livingston Co., Mo., sends by postal card her directions for making this by a decidedly neat course, we are glad to give them place here: "Into a thin muslin bag I place a ladleful of dry chicken manure and a small bit of super-phosphate. This I suspend a day and a night in a bucket of water, after which the water is used sparingly on the plants twice each week."

**Amaryllis Culture.** At a Horticultural meeting in Woodstock, Ontario, a Mr. Gilchrist said that with regard to the blooming of these plants there is very little difference between success and failure. "A few years ago a lot of gentlemen in Guelph sent to Germany for Amaryllis, very expensive ones. They could not get them to bloom, and they sent them to us to see what we could do with them, and we put them in the greenhouse. In every case they had the Amaryllis in the centre of the pot with the earth raised away up around them. They would never grow in that way. All we did was to plant them just on the top of the soil, and we succeeded well with them."



A Rapid Propagator.

especially where the number of plants cultivated is for want of space restricted to a few. They are beautiful both in leaf and flower, require but little care, and are remarkable for their freedom of bloom. Mine last winter were covered with blossoms from the last of November until May. An added charm is their novelty, as they are so different from all our ordinary blooming plants. Geraniums, for example, while richer in coloring, are seen so constantly that they appear common indeed alongside of this favorite.

**A Rapid Propagator.** A case similar to the one here shown is considerably in use throughout England, and the same principle might, in one form or another, often be found valuable whenever plants are propagated. As is well known where the sand or other medium in which cuttings are rooted is some

15° warmer than the atmosphere above, rooting is much accelerated. By the apparatus illustrated it is seen that this desirable condition of bottom heat is provided by the use of a heating kettle in a closed apartment beneath the cuttings. This kettle receives its heat from a lamp beneath. The advantage of employing a kettle for diffusing the heat instead of the lamp is that by this means the warmth is moist, and this is an advantage. A case like our figure should be built all complete for \$10 or \$12.

**Culture of the Peach and the Pear.** A large work of nearly 400 pages on this subject, by Dr. J. J. Black, New Castle, Delaware, has reached our table. It deals chiefly with the methods of culture, varieties, etc., peculiar to the Delaware peninsula, and as such will be welcomed by fruit growers of all sections. The author is free to intimate that in writing this book he had in mind the wants of the novice more than those of the veteran, but as many of the usages of fruit growing in the famous Delaware regions are new to those outside, this peculiarity should prove widely acceptable. There is also a chapter on the culture of the Quince and of nut-bearing trees. Illustrated with eight full page plates. The James & Webb Printing Co., Wilmington, Del., are the publishers.

**A Charming White Violet.** One finds it difficult to think of the Violet as being any other color than violet of some shade, but in the lovely Swanley White (herewith illustrated) we find the color wholly untrue to the name of the genus. To be sure there are so-called white Violets, but the trouble with these is that they are far from being white. In the Swanley we have a veritable snow-white bloom that is not only exquisite in color, but perfect in form, richly fragrant and quite productive. The fact that it is the offspring of the well-known forcing Violet, Marie Louise, should perhaps sufficiently indicate its robustness and worth. Those who have not seen or grown this recent variety would enjoy a rich treat with the coming in of the first bloom on any plants they might undertake to cultivate.

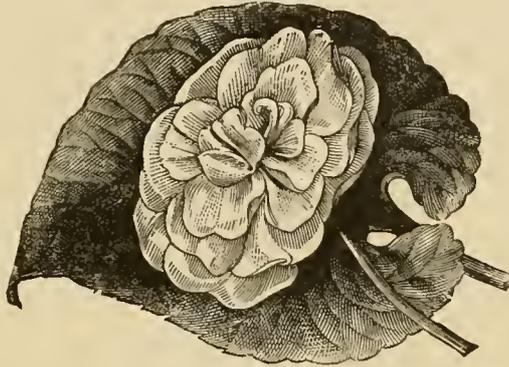
**Have You a Muck Field?** If so, and it is susceptible to being drained, and you are near a shipping point to good markets, you might make much money by putting it to Celery culture. If this is not a feasible course you can still make money, whether the field be wet or dry, by hauling good quantities of the muck to the high ground in the winter's leisure, and from here disposing of it by composting with lime, drying it for use in the stable, or even spreading it directly on the orchard or garden soil. How muck helps all crops is by affording organic matter to their needs. It possesses nearly the same elements as cow dung. It consists largely of the accumulated remains of dead plants; hence by composting becomes almost a perfect plant food.

**Roses under Glass.** The crops of flowers that may be taken from a given number of plants under glass with high culture is enormous. R. J. Mendenhall, of Minneapolis, Minn., writes to us that from two houses 15 by 100 feet he cut during October 9,021 Roses, and on the first Monday in November 519 buds alone. Some leading and favorite kinds with him are Perle, Sunset and Bennett. How much of an area out-of-doors devoted to Roses would be required to yield returns month after month like these? A very large one, indeed. The advantage of under-glass culture over that of outdoors is, that with the former all the essentials of success—fertility, moisture, wetness, heat, insect-destroying—are almost absolutely under one's control. This fact accounts largely for the peculiar charm there is in the possession and management of an amateur plant house.

**"Modern High Farming"** is a treatise of 94 pages on the subjects of soils, plants and manures, and which would make good reading for any cultivator of the soil now in the between-season. It is from the pen of Francis Wyatt, Ph. D., and treats of its subjects from a chemical standpoint in a plain and comprehensive style. The chemistry of soils and growing crops is one that no intelligent cultivator will in this day think of ignoring. An advantage of this work is that it brings the essence of this field of information into very compact shape for the general reader's use. While, as the authority says in his preface, he has sought not to deviate one inch from the broad line of agricultural chemistry, he has also sought, and we think successfully, in treating each subject in the plainest language possible. The book is published by C. E. Bartholomew, 22 College Place, New York.

**Wild Yellow Lily in a Town Garden.** S. T. W., Brooklyn, N. Y., has our thanks for a brief account below of the cultivation of this showy, nod-

ding Yellow Lily (*Lilium Canadense*) in the garden. It is one of the easiest of the Northern wild Lilies to cultivate, and as our correspondent so well learned, it grows stronger and produces more flowers in cultivation than in its wild state. "I procured some of the bulbs two years ago in Dutchess County, and a few last year among the White Mountains. I planted them in my city garden, where they have the sun up to about noon. The soil is deep and well enriched with cow manure. I wish you could have seen them this year. The two Dutchess County bulbs produced plants over eight feet in height and each had 13 Lilies. The bulbs I got in New Hampshire did not do quite as well,



THE SWANLEY WHITE VIOLET.

which I lay to the fact that they were dug while in flower. Next year I expect they will be better."

**Dexterity of hand movements** should be cultivated by all gardeners in every department of the art. It is true some operations, like spading, manure handling, etc., are heavy to perform and in these comparatively slow movements are desirable. But work of this nature is the exception and not the rule. Most other operations, such as grafting, budding, propagating, potting, weeding, watering with hose, and the like, are light to perform, and here is where quick movements stand at a premium. The writer has seen a man and boy poke away all day setting 600 or 700 root grafts, when 1500 to 2000 should have been a day's work. Their movements were spiritless, and the work seemed heavy and uninteresting, when it should have been just the reverse, light and pleasant, as it would have been with quick movements. Or who has not seen a plant-grower putter over potting 800 or 1000 cuttings in a day of ten hours, where the potting of 3000 or 4000 is no more than a good day's work. To move at the slow rate instead of the fast one also makes a great difference in profits. And you may be sure if the proprietor does no better than this, his workmen will fall into the same slow methods. Horticulture in nearly all its departments is a light and cheerful art; let one's habits of work be consistent with the character of the work.

**"What is Costmary?"** Our brief answer to this question in the November number was perhaps too brief, for it may have conveyed the idea that the common Tansy was the plant referred to, when another species of Tansy is really the one to which the old name Costmary belongs. Our correspondent, Fannie E. Briggs, of Clarke Co., Washington Territory, has in a very neat way set forth the matter rightly as follows, giving some other information also: "I would re-answer this question by saying that a London encyclopædia of gardening of 1825 gives this name, not to the common but to the Balsam Tansy (*Tanacetum balsamea*). The same authority says it was named in honor of the Virgin, and describes it so exactly that I recognized the plant at once. It has flowers like the well-known Tansy, but the leaves are large, handsome, entire, thin, smooth, the edges slightly, but regularly dentate, and the odor mild and agreeable. It was known in New England forty years ago as Patagonian Mint; in the Western States as Rosemary, and Sweet Mary, names no doubt derived from Costmary." It is recommended that the stems be broken off as they appear, for inducing larger leaves from the base. This old plant can be procured of Woolson & Co., Passaic, N. J., and perhaps of other nurserymen.

#### The Use of Flowers in New York, as Noted by Our Correspondent.

Daphnes are being recognized again, though they are not likely to be a very remunerative crop to the grower.

The handsome foliage of both Camellia and Gardenia is used in conjunction with heavier flowers, such as Orchids.

The large varieties of Mignonette are in high favor, as they well deserve to be. Their modest blooms combined with Roses or Violets are indescribably charming.

The newest variation of the ever-popular wreath is like a crescent tied together at the tips with a ribbon sash. It is pretty made solely in foliage, but lovelier still in loosely arranged shaded Roses.

Some of our florists are making a floral divan, the cushions bound together by the inevitable sash. It is pretty, when made by an artist, but, according to Ruskin's ideas, it is not really artistic, because it has no *raison d'être*.

There is some attempt being made to popularize the Lichen-covered vases shown at the American Institute as flower holders. They are of picturesque shape, covered with soft greenish gray Lichen, with some additional rustic adornments.

The use of ribbon in floral decorations is now almost unlimited; in fact, sometimes one is tempted to say there is almost too much of it. A design without a sash of some sort will soon be a wild novelty, and admirable on that account.

Orchids are now looked upon as the floral aristocracy, and as such, are costly and unique in bouquets and designs. But the most popular of all flowers is undoubtedly the Rose, and the fancy for high-priced Orchids does not in reality lower the demand for the Queen of Flowers.

The Makart wall bouquets, which attracted great favor abroad when made of grasses, dried flowers and peacock feathers, are very effective when arranged in fresh flowers. A large Palm leaf is the best backing; on this is a fan-shaped bunch of bold, effective foliage and flowers.

The flowers at Ex-President Arthur's funeral displayed some exquisite work. Much notice was attracted by a cross in two shades of Heliotrope, so artistically arranged that half the design seemed to be in shadow. Funeral flowers are certainly not out of date, and they now give the florist a better chance to exercise his taste, since bright-hued blossoms are admissible.

Asparagus tenuissimus grows in favor; it has quite supplanted Smilax for the finest class of work. At a recent wedding, remarkable for the beauty of the decorations, the great bay window had a festoon of Asparagus, caught in the middle and at each end by starry bunches of Eucharis. The Ivy-covered pillars at each end were dotted with La France and Niphetos Roses. All the floral decorations were bound together by festoons of pink ribbon.

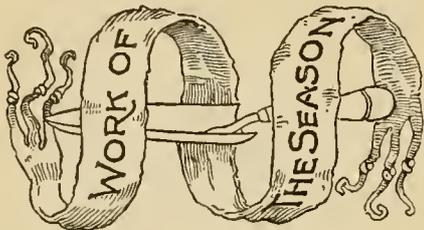
Bouvardia is very much in demand, though it will always be an inexpensive flower. It combines very well with Orchids; the pink variety has a very happy effect with the pale greenish hue of *Cypripedium* insigne. This last named orchid is effective in combination with La France or *Mermet*; a loose nosegay of the Roses will have a few blooms of the *Cypripedium* at one side, over the sash, with fronds of *Adiantum Farleyense* caught in the ribbon.

There are no startling novelties in designs. In decorating, the tendency is to arrange plaques, shields, hearts, and such studdings on the walls; this was the arrangement at the Junior Patriarchs' ball. On the same occasion the belles displayed fewer flowers than in former seasons. It was not unusual to see a popular girl completely loaded with bouquets, like an Indian brave with his display of scalps, but either economy or good taste has now decided that such ostentation is rather vulgar.

Some of our florists are endeavoring to restore the Camellia to its former glory, and to replace the Rose with the waxy Gardenia. The latter flower seems to take not very well with Americans, in spite of the favor with which it is regarded by our English cousins. It is extremely improbable that it will ever be a favorite in bouquets, though it is worn as a boutonniere, and produces some very charming effects in table decorations. It must, however, be used sparingly in the latter case, as the heavy odor is positively sickening to many.

It is impossible to give the palm of favoritism to any special Rose. The Bride has quietly taken its place side by side with Niphetos, and Papa Gontier is meeting with much favor. It somewhat suggests the Bennett, though its vivid crimson has a different shade, and the foliage is like a vigorous *Bon Silene*. Next season we shall probably have to enumerate the triumphs of the Puritan and Mrs. John Laing, our latest candidates for public favor. Both are most charming, and both possess the crowning glory lacking in too many hybrids; they are exquisitely fragrant.

EMILY LOUISE TAPLIN.



### THE HOUSE PLANTS.

**Allyssum** is so useful a house and garden plant that attention should be given to propagating a good stock in season. This may be done at any time now, either by sowing the seed or by slipping.

**Begonias.** After any heavy crop of bloom is over, prune out the older growth and keep rather dry at the roots. Sometime later they will start new shoots, then shake out the present soil, repotting into the same-sized pots, using fresh soil.

**Callas** ought now to be coming in with vigor. Let us not forget that they are sub-aquatic, hence in but little danger of receiving too much water. Still it will never do to have them in water-tight casks, or in crocks without drainage, the soil of which can be little else than sour mud. Their wants are easily summed up: A very rich soil, good drainage, plenty of water and not to be much crowded.

**Camellias** thrive in the window only on the condition of having their leaves almost daily sponged off with water. They dislike high heat.

**Fern Cases** are often over-watered, causing the soil to become sour, a thing always to be guarded against. After watering do not for several days keep the case quite as close as usual, in order that an excessive state of moisture within the case may be obviated. Air should be daily admitted by tilting up the glass, but not when dust is in motion.

**Fuchsias** may be brought from the cellar at intervals, to provide for a succession of bloom. Prune as needed at such a time; a week or more later, when new leaves show, repot into fresh soil that abounds in richness and is porous, using at the first shift clean pots of the size they were taken from.

**Heat.** Jack Frost must be kept at bay by all means. With coal-burning there is not much trouble to keep up continuous warmth. A screen consisting of a light wooden frame the size of a sash, and covered with paper on both sides, to set between the plants and the glass, will do much to keep out cold. A kerosene lamp kept burning through the night near the plants may make the difference in a severe night of life and death. On severely cold nights it should occur to any one to place all movable plants back in the room on a table (not on the colder floor) and shelter with newspapers and sheets.

**Hydrangeas.** Where early bloom is wanted, plants for this may now come from the cellar or pit. For bringing in, to suit general purposes, a month or six weeks later would be better.

**Insects.** For a small collection the thumb-nail remedy applied under the direction of a vigilant eye answers admirably in the case of the larger kinds like aphid, scale and mealy bug. Red spider is quite a common enemy and can only be well dealt with by free applications of water with a sponge or otherwise. Its presence is noticeable by a grayish discoloration on the under side of the leaves; then if one looks sharp they may see the very minute and sprightly insects, of a brown color. Their presence must not be tolerated.

**Lemon Verbena.** Grown for its pleasing foliage, some plants of this may as well be brought from the cellar and be started into growth now. They make the finer plants for also being severely pruned.

**Primroses** should soon be at their best. They are plants that easily suffer from over-watering.

**Propagation.** As slips of suitable size appear let them go into sand for rooting, with a view to strong plants for spring use.

**Stocks of the Ten Week class** sown now will come on to a flowering size by May.

**Sponging off the leaves of India-rubber Plants, Dracaenas, Palms, Callas,** in fact of all Plants, but especially those of large leaves, should be done at least once a week, using tepid water. Thus moistening the foliage not only benefits the health of the plants but keeps them free of accumulated dust.

### LAWN AND FLOWER GARDEN.

**Borders.** Manure roughly spread over them will both protect the roots and provide needed food to make up the exhaustion caused by the past season's growth. Such treatment will be repaid with finer bloom on the plants next year.

**Equipments** such as trellises, stakes, labels, hand glasses, arbors, rustic vases, etc., which enter as elements into every good garden, should be made during the season of outdoor inactivity. Where Cedar is wanted for rustic arbors, gates and the like, the winter season when the swamps are frozen up affords the best time to gather a supply, and these articles may now be constructed.

**Hedges** of deciduous kinds might now be clipped in fine weather for keeping hands occupied.

**Perennials.** If the sowing of the seeds of Delphiniums, Sweet Williams, Hollyhocks, etc., was neglected last summer, by starting them now in the window or greenhouse, and treating for fair growth inside until spring they may usually be had in bloom by September. Young plants from summer seeding should have winter protection.

**Plans.** Now there should be time to thoroughly study up ways and means of making improvements about the place. The best gardens are not the result of plans made in the haste of spring work, but of such as are well considered beforehand. Catalogues should be ordered and stock selected. Bear in mind that early orders receive the first attention at the nurseries, so it is well to get them made out and sent on a month or two in advance of planting time, that the stock may be at hand early.

**Snow** will often break down deciduous and Evergreen shrubs or part the heads of dense globe-shaped ones of the latter, to prevent which shake it out or invert a V-shaped board affair over each.

**Walks** neatly shoveled or scraped with a horse scraper after each snow storm, both about the house and in the highway, are sure of being generally appreciated. To be prompt in scattering ashes over these where they are slippery is also a good way of winning the gratitude of all who use them.

### PLANT CULTURE UNDER GLASS.

**Azaleas.** Early plants as they go out of bloom to have a warmer place and frequent syringing, to induce free growth for next season's bloom.

**Carnations.** After a heavy crop of bloom, clean out the old stalks, retying at the same time. If red spider has affected them, syringe in bright weather. Water the soil occasionally with lime water.

**Geraniums** of all classes should be advancing rapidly now. Old plants may need repotting, doing this in each case a few days after they have been relieved of cuttings. The tri-colored section will bear some petting; nothing suiting them better than shelves near the glass in a warm rather dry house.

**Hyacinths** and other Dutch Bulbs should contribute liberally to the show of bloom in this month. They like sun, and an abundance of water, the latter fact being clearly shown by their readiness to grow and bloom with the roots in no other element than water. As any pass out of bloom, remove the flower stalks and set the pots in a cool but not dark place, keeping moderately watered until spring, when they may go to the beds for future use there.

**Ice and Snow** are on the whole a fruitful source of glass breakage. Where the edge of a roof overhangs any kind of lean-to or the end of an abutting glass house, an ice shield as figured herewith should be provided for the winter. For removing soft snow the use of a light scraper, some three feet long to ride on the glass bars is an excellent tool. For a shovel, one that is not considerably wider than the distance between two sash bars should never be used; one having a blade fully 18 inches wide, is the best of all.

**Lily of the Valley.** The pips that were started earlier in sand (they might also be started yet) to be brought in twice a month from now on. This plant, if the clumps are of good quality and rightly started, will bear as much heat as anything in cultivation, say above 80° bottom heat, and nearly as high for the house. By shading with cloth to keep off sunlight and cold air, the flowers will be finer.

**Mignonette** from early sown seed should now be in bloom. A temperature of 45° to 50° is the most suitable for flowers. Plants from later sowings for spring bloom to be kept somewhat cooler than indicated, having only enough heat to keep out frost. They should stand near to the glass.

**Orchids.** These when resting should be provided with not a drop more of water than is absolutely needed to keep the bulbs from shriveling. Cattleyas, Oncidiums and others with large fleshy bulbs, need less water than the Vandas, Saccolabiums, Aerides and others of a similar character. When water is demanded, let it be given early in the day and without splashing the tender foliage. The temperature to be kept as regular as possible from day to day.

**Petunias.** Where to be raised from seed, this should be sown during January. Slip propagation should go on as suitable young growth appears.

**Pots.** The season's stock of these should be promptly engaged. It is well to make a careful estimate of the number wanted, judging by the plants coming on, and then order somewhat beyond this; nothing is so aggravating as to have cuttings ready for pots and the latter not on hand. The capacity of the potteries is severely tested during the next five months; if necessary, insist on all pots being delivered within certain safe dates, under penalty of a definite curtailment of the bills.

**Primroses.** Plants of the Double White, to be kept clean of dead leaves, and to have more space if needed, looking to having them in order later on for propagation. Wash any pots that are soiled.

**Propagation.** Before the month is out this should go on rapidly for Verbenas, Geraniums, Heliotrope, Roses, Carnations and most other summer plants. Favor any kinds the stock of which is short. In slipping Geraniums you lose less by potting the cuttings at once into two-inch pots giving them close attention as to watering.

**Seed sowing** should commence in this month for Mignonette, Maurandia, Lobelia, Petunia, Centaurea gymnocarpa, Golden Feather, Stocks, etc.

**Schizanthus.** Stake as the growth proceeds. They like moderate heat, plenty of light and air.

**Spacing.** A right distance apart for plants, when growth is inactive, is too close for them as this starts up with the coming in of better sunshine. Nothing hurts plants more than over crowding, a condition the good plant grower will aim to avoid.

### FRUIT GARDEN AND ORCHARD.

**Cuttings** of Grapes or Currants made in the fall, and outside, to have some protection. Several inches in thickness of straw should answer.

**Fruit** in storage to be kept as cool as possible without frost, aiming at a uniform temperature.

**Grafts** for spring setting to be cut during any spell of mild weather. The greatest care should be observed to label each kind correctly, trusting nothing to appearances or memory. Such should be packed in saw-dust or sand until used, the former preferable, as then there will be no danger of grit on them to dull the grafting knife.

**Insects.** In mild weather is a good time to look for and destroy the eggs of certain insects. A sharp eye run over the young twigs should detect the rings of tent caterpillar eggs on them near their ends, also of cocoon insects, when present. Remove all that can be found; each ring of caterpillars eggs destroyed now is equivalent to lessening the next seasons caterpillar crop by some hundreds.

**Labels** and labeling should receive attention in the winter's leisure. The labels that are on the trees when purchased must not be trusted, but something more durable be provided. For ordinary purposes a heavy pine label, well painted and written upon with soft lead before dry, is excellent; while one made of zinc and similarly written upon is still better. In either case fasten to the trees by use of No. 16 copper or brass wire, making loops so large that years of growth will not fill them out.

**Manure** may be carted out much better over frozen ground than to wait until soft spring weather. By spreading at the same time under trees, extra protection is provided and with benefit to the roots.

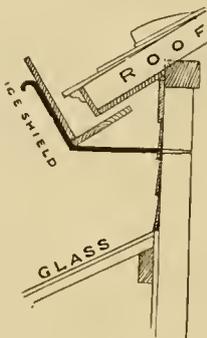
**Orders** for trees and plants that are wanted for spring setting, should early be made out and sent to the nursery. As a rule give little ear to the peddlers. Even if they are reliable (so many times they are not) there is almost always an advantage in dealing with the nurseries direct.

**Protecting material** on Strawberry and other plants if blown off, to be replaced, securing the new with branches or boards in exposed places.

**Pruning** of the hardier kinds of trees may go on in all suitable weather. See article on page 53.

**Root-graft** during the winter, packing the grafts in sand or saw-dust awaiting the spring setting.

**Scraping** the trunks of trees of their loose bark is good winter work. By the means the retreats of many insects are removed, and with benefit to the trees. For a bark wash that is most effective and



AN ICE SHIELD.

not distasteful to the eye one made of lime, soot and clay, stirred up with water can be recommended. In applying work the brush well, that the liquid may get into every crevice.

### VEGETABLE GARDEN.

**Frames** containing Cabbage, Cauliflower or Lettuce plants to be well aired daily when the temperature is above the freezing point; below this, no harm can come if they are kept closed for some days.

**Hot-beds.** It must be seen to in time that fresh horse manure for these is gathered. Such should lay in a dry place where there is no danger of becoming water-soaked. It must not lay in deep heaps, whereby free heating is induced. Some rails laid up slanting where the manure is deposited, to prevent close settling, will aid in this.

**Mice** are often troublesome in frames, pits, root cellars and the like, now that their food is scarce. Fix up some "pills" for them, by soaking Peas in water until swelled, then roll in arsenic and bury just below the surface in some light earth. They will take such and leave the plants, and it is better that they should.

**Straw Mats** will be needed where there are sash beds. A good size is to make them the width of a sash and a half, and of a length to hang down half a foot at top and bottom of sash over edges of bed.

**Sowing** of garden seeds is begun in the Southern tier of States usually in this month, thence proceeding Northward as the sun rises higher. Vegetables may roughly be classed as hardy and tender, and regard must be had to the distinction in whatever climate or State gardening is done. The hardier class embraces Peas, Onions, Leeks, Parsnips, Parsley, Salsify, Lettuce, Cabbage, Cauliflower, Cress, Spinach, Beets, Brussels Sprouts, Broccoli, Celery, Potatoes, Radishes, Turnip, Sage, Asparagus, etc., and these may, without regard to the region, be sown as early as the soil admits of being worked up mellow. The more tender kinds, such as Beans, Sweet Corn, Cucumbers, Melons, Squashes, Tomatoes, and most kinds of Herbs, can be sown with safety little if any before Cherry-blossoming time, whether North or South. With these points in mind, there cannot be much danger in going amiss as to this matter of suitable time for sowing.

**Squashes** of the Hubbard class may, in a dry place, having a temperature between 40° and 60°, be kept safely until April or May. A cellar is too damp. If frost threatens blanket them.

**Tools.** Put in order. New ones that are needed may be made or ordered in the winter's leisure.

### FRUIT AND VEGETABLES UNDER GLASS.

**Cucumbers.** Their culture in winter requires a heat of 70° at night and 80° in the day, with somewhat above this in the sun. The plants should not be encouraged too much with stimulants, unless they are strong. Train the leaders to their entire length before stopping, then stop all side shoots at the second joint.

**Graperies** now being started should not have above 55° of heat at the outset, and be well syringed twice a day to assist the breaking of the buds. As the young growth appears, enough air must be admitted to prevent the growth from being weak and the foliage thin. Advantage should be taken of mild days to air the structure freely.

**Mushrooms.** The nearer the temperature of heating beds can be kept to 60° the better. A steady temperature will greatly prolong the bearing of the beds. Manure should be saved up for new beds.

**Rhubarb** under glass must be kept well watered.

**Strawberries,** in forcing, must not be allowed to overbear, or the fruit will be small; a moderate number of large berries are much more satisfactory than any number of small ones. Apply the syringe to keep down red spider. For the best results avoid both drouth and over-watering at the root.

THE WINTER MEETING of the Western New York Horticultural Society will be held in Rochester, N. Y., commencing on Wednesday, Jan. 29th, at 11 o'clock, a. m. It promises to be one of much interest. Papers by such prominent horticulturists as J. J. Thomas, Dr. E. L. Sturtevant, Dr. J. A. Linter, C. A. Green, J. H. Butler, Prof. E. S. Goff and others will be read and discussed. Besides these, there is a long list of questions prepared to be discussed. A general invitation is given to all who are interested in Horticulture and Fruit Culture to attend the meeting and participate in the proceedings. A circular setting forth full particulars may be had by addressing Secretary P. C. Reynolds, Rochester, N. Y.

## Inquiry Column

This being the People's Paper, it is open to all their Inquiries bearing on gardening.

Replies to Inquiries are earnestly requested from readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.

189. **Eupatoriums, etc.** Will some one tell me if Eupatoriums and Stevias will live in the cellar after they are through blooming, and should they be cut back then, or in the spring? Line, Peru, Ind.

190. **Calla Culture.** Is pruning away the suckers good for Callas? Mine send up suckers, which must take nourishment from the plant and cause less flowers. L. C. D., Great Bend, Pa.

191. **Fall Bloom on Strawberries.** My Miners and Cumberlands bloomed abundantly in September. I picked the flower stems all off. Was this right, and how will next year's crop be affected?

192. **Early Covering of Strawberries.** Will it harm them to have been covered with cut straw before the ground froze? I put it on November 14. Mas. A. P., Poughquag, N. Y.

193. **Strawberries and Gregg Raspberries.** I have not pruned my piece since a year ago in the fall. What is the best treatment you can suggest? Will it do to trim Gregg Raspberries that have not been pruned since July? C. F., Olin, Iowa.

194. **Boxwood for Hedges.** If you have not got the plants please tell me where I can get them. I want to make a Hedge around my cemetery lot. Will they answer? Jas. E. KEVIL.

195. **Knots on Prune Roots.** On my trees budded on Apricot stocks some of these are present, most of them solid and green, others are on the decay and have a fungoid appearance. Some of the trees have died. What can be done? W. S. VANCOUVER, Wash. Ter.

196. **Autumn-bearing Raspberries.** I have a Raspberry plant that bore in early summer, and now (Oct. 23) is full of bloom and berries. It did the same thing last year, and beats all I ever saw. Is this something new? J. N. A., Lebanon, Mo.

197. **Peach Yellows.** Please describe so that I and others may know when our trees have it.

198. **Waterloo Peach.** Does this resemble the Amsden June as to time of ripening, taste, etc.?

199. **English Walnuts.** Where can one get the trees, and how long before they should bear? F. M. B., Iliia, Wash. Ter.

200. **Azalea Blasting.** Please tell me why my large Lady Easthope Azalea budded profusely, but lately the buds have become dry and brown and little leaf shoots have started beside the buds. Has it been kept too dry, or did the frost touch it before it was brought in? Or, isn't the pot large enough?

201. **Hydrangea Budding in the Cellar.** One of my plants down cellar has a bud cluster on it. Is it time to bring it up? It bloomed last season.

202. **Sunlight for Palms, etc.** Do Seafortia Palms specially need sun? The leaves at tip are so apt to turn brown. Does a Jerusalem Cherry need sun and much water? NEW ENGLAND.

203. **Trees for the Atlantic Coast.** What would you recommend as the quickest growing and best shade trees to set out around my house, standing about one-fourth of a mile back from the water? The soil is very stony, and from nine to twelve inches deep, overlying sand chiefly. Also what kind of fruit would do best under these conditions. Jno. C., North Eastham, Mass.

204. **Protecting Large Trees.** The Peach winter-kills badly here. I have some too big to bury. How can I best winter them? C. P. D., Beda, Ills.

205. **Saw-dust for Mulching.** I have plenty of saw-dust handy. How will it do to mulch trees, Grape-vines, Currants, etc? L. C. S., Teanaway, W. T.

206. **Starting Milla and Freesia Bulbs.** In planting I covered the bulbs only in part and kept them in a cool, dark place for the roots to develop. Is that right? Mrs. J. C. HUBBELL, Lee Co., Ill.

207. **Cardinal Flower.** For three years in succession I have brought home clumps and set them out in a moist, partly shaded place, protecting with covering in the winter, and have every time lost my plants. How can I secure it? S. T., Brooklyn, N. Y.

### REPLIES TO INQUIRIES.

170. **Perennials for Continual Bloom.** For 60 of these, including bulbs, and covering a period in the year from March or April until October, we would name the following as being most excellent: Eranthis hyemalis, Hellebores, Lily of the Valley, Snowdrops, Adonis vernalis, Crown Imperials, Tulips, Hyacinths, Narcissus, Pansies, Violets, Bleeding Heart, Bloodroot, Hardy Candytuft, Blue Bells, Forget-me-nots, Low Phloxes, Lungworts, Ragged Robin, Saxifragas, Woodruff, Columbins, Irises, Paeonies, Periwinkle, Pinks, Poppies, Spireas,

Star of Bethlehem, Thrift, Achillea, Aconitums, Asclepias tuberosa, Day Lilies, Plantain Lilies, Delphiniums, Lychnis, Monarda, Lilies, Perennial Pea, Sweet Williams, Yuccas, Spirantes, Hollyhocks, Upright Phloxes, Centaurea montana, Hardy Asters, Echinacea, Eupatoriums, Rudbeckias, Sunflowers, White Plantain Lily, Autumn Aconite, Japan Anemone, Gentian, Sedum Sieboldi, Colchicum autumnalis, Oenothera, Veronica.

172. **Cemetery Plants.** If V. P. will plant any or all of the following list he no doubt will be pleased, as they are in nearly every case handsome, both in foliage and flower, and of dwarf growth: Dutch Bulbs, Woodruff, White and Blue Periwinkle, White Plantain Lily (Funkia), Sanguinaria Canadensis, Lily of the Valley, Japan Lilies, White Phlox, Japan Anemone, Forget-me-nots. JAS. D. HUDSON, Ingham Co., Mich.

187. **Red Spider on Window Plants.** Red spider thrives in a warm dry atmosphere, but detests moisture. Ordinarily the living room suits them well, because of the former conditions here prevailing; if the sprinkling remedy seems to fail, it is because it is not sufficiently persisted in. Washing the leaves with a sponge several times daily would be better and should dispel them.

195. **Knots on Prune Roots.** A stroog coating of soap-suds or whitewash applied twice a year will act as a preventive. A. M. PRUDY.

196. **Autumn-bearing Raspberries.** It is a very common occurrence to find Red Raspberries bearing the second crop in the fall. As a rule such are of no practical value. The season has much to do with the second crop, whether heavy or light. Some kinds are more disposed this way than others. In Black Caps the best fall bearing one we have grown is the Lum's Ever-bearing; of the red or purple, Catawissa. A. M. PRUDY.

155. **One cause of non-blooming or blasting of buds of Narcissus** is moving them after growth has begun. One would suppose that all knew when to move bulbs, but I meet often with those who move in spring with other plants. Sometimes they never bud again; sometimes bud only to blast. F. E. BRIGGS, La Center, Wash. Ter.

176. **Honey Dew.** By some its origin is attributed to insects, and by others it is held that insects have no agency in the matter. It would appear that both parties are correct. That plant lice or aphides do excrete a saccharine liquid is a well established fact. On the other hand, it seems to be equally well established that sometimes this liquid is exuded by the leaves of trees, without any insect being concerned in the operation. What causes the plant to throw off sugar in this manner, and always upon the upper surface of the leaves, is a question needing further investigation. Dry weather is most favorable to its production. It has been observed to reappear upon the same tree several times in succession. T. B.

204. **Protecting large Peach Trees.** We know of no way to protect large full grown trees more than to mulch heavy under tree as far out as the branches extend, and to set around the body and cover limbs as much as possible with plenty of corn-stalks, leaving them there till spring. A. M. PRUDY.

205. **Saw-dust for Mulching.** It must not be put on small plants fresh or new, but must be thoroughly rotted. The best way to use it is first as bedding to horses or cows. It may be piled up around trees that are half to full grown, even in a green state. It is well to scatter say a half bushel of salt to every large wagon-load of saw-dust. A. M. PRUDY.

157. **Raspberries Failing.** There is a disease among mine, and also reported elsewhere, that I have battled against for several years. I call it Black Blight. It resembles the Pear Blight, but is sure death if not cleaned out. The Yellow Rust is quite different, and as this can be readily seen, dug out and burned, it may soon be disposed of. The Black Blight shows itself first by the center stalk turning black at the tip on young plants in August or September. If left to stand over winter it will increase; the stalks turn black or streaked. I know of no remedy but to cut off on the young bushes all the dead tips well down on the live part and burn the clippings. If it advances far there is no remedy but to dig up and burn. It will spread rapidly, and if the season is wet and growth rapid, as on the strong growing kinds like the Gregg, Ohio and Mammoth Cluster, the damage will be large. With me the Shafers is entirely free of this blight; the Tyler nearly so. CHAS. MILLS, Fairmount, N. Y.

169. **Raspberries Changing.** Do they mix by being planted near together? We answer no, only by allowing plants to run and grow together so that they cannot be divided. The only way the fruit will mix or change into a new sort is through sowing seed, and seedlings from these will be different, as a rule, from the old parent sort. A. M. P.

206. **Starting Milla and Freesia Bulbs.** In both instances the bulbs would do better for being covered at least one and one-half inches above their tips. We prefer not to put them into the dark, like Hyacinths, but keep them in a shady place keeping a temperature of not over 50°, and the soil rather dry until the leaves appear, when both water and light should be increased.

156. **Gazania Culture.** These plants propagate and succeed with the most ordinary care, such as would suit Geraniums. About the same heat also.

158. **Garlic or Wild Onion.** Two courses are open for clearing land of this weed. First, take care to cut the flower-stalks before the seed is formed; and secondly, in showery weather, when the soil is moist, the plants themselves should be pulled up and burnt. It is not only for the sake of appearances that the extermination of such weed pests is to be desired, but in the interest of the dairy as well, for the products of the latter are sometimes injured through the cows using them as food.

163. **Insect on Honeysuckle.** If F. C. D. will hang some small bundles of moistened Tobacco stems, such as he can get of any cigar-maker for the asking, here and there underneath the foliage, in summer, I think he will not be troubled again. If the stems are not to be had, some small bags filled with cheap smoking Tobacco would answer quite as well, first soaking these in water before hanging in the vine. CONSTANT READER.

167. **Kainit.** This is a mineral deposit consisting of a compound of the sulphates of potash and magnesia, with the chlorides of magnesia and of sodium (salt), and is largely used as a source of potash for fertilizing and other purposes. It is found near Stassfurt, Lepaldshall, etc., in Germany, in which country its use as a fertilizer has become almost universal. Thousands of tons are now also exported to all parts of the world, including America. The chief value of this fertilizer is found in the potash it contains, and which constitutes one-fourth per cent. of the article. In the use of Kainit, in order to allow the chlorine combinations contained, which may be injurious to some plants, to lose its effect, it is recommended that the fertilizer be applied some months at least before the seed is sown, as for instance, in the late fall for the following season's crop, thereby securing the benefit of all rain or snow falling in the meantime, and a consequent deep and thorough incorporation of the Kainit ingredients through the soil—those which are beneficial and nourishing being within ready access of all the roots and not confined in single places. This method of applying Kainit will prove itself highly advantageous, whether alone, or in combination with stable manure, farm refuse, phosphates or other fertilizing materials, and should be strictly adhered to, unless quite impracticable.

168. **Asparagus Growing.** We should plow furrows as deep as possible by running both ways, with a two-horse plow, and in bottom of this furrow scatter well-rotted compost as freely as we could spare it, and on this set roots one foot apart and cover. Plough furrows 3 to 3 1/2 feet apart. We know some advocate 3 feet each way, but to us it seems like a waste of land. We suppose because it grows in its wild state near salt water, some advocate salt as indispensable, but we have seen immense crops where no salt was sown, but where barn yard manure was freely used. Salt retains moisture, hence is beneficial. A. M. PURDY.

179. **Best Market Pears for New York.** I would add the "Bussock." It is of fair quality, good size, clear skin, and an abundant bearer. I think the Kieffers grown south of New Jersey are of better quality than further north. In fact those grown in Burlington County, N. J., are of much better flavor than those grown further north in the same State. After a little this much-lauded and abused variety will find its true place among Pears. C. W. IDELL, 333 Washington St., New York City.

181. **Thrips on Fuchsias.** Dissolve two ounces of soft soap in warm water and add thereto a gallon of clean water, and either dip the plants in it or syringe them. Thrips are the result of want of vigor in the plants, or more frequently of a too arid atmosphere. The two causes in conjunction will bring on a bad attack. Fuchsias, if root bound, need watering twice a day, and the foliage should be freely syringed morning and evening, well damping down the floor and stages of the house. Fuchsias like a cool, rather moist, atmosphere, not lasting in bloom when much exposed to sun. E. D. L.

182. **Heat for Stove Plants.** For Dipladenias, Eucharis, Crotons, etc., the winter temperature should not be less than 60° by day and 55° by night, but in spring, when making their growth, they require some 10° more. The weather should in a great measure determine the amount of heat applied; thus, if the days are sunny and the temperature rises to, say 80°, the night temperature may with benefit be raised accordingly, but in dull, cold weather it is not advisable to apply more heat than is just necessary to keep them gently moving. In summer, when the days and nights are warm, there is no need to make a fire, but when the evenings are chilly the pipes should be warmed. By August the generality of stove plants have made their growth and it is important that they ripen their wood. This is especially the case with Allamandas, Ixoras, Francisceas, and other plants which are grown for their flowers. From the middle of August they should get plenty of air on fine days, and no more fire heat than is necessary to keep them in health. Then they pass the winter better and at a lower temperature than they otherwise would. OLD GARDENER.

193. **Strawberries and Gregg Raspberries.** Plow strips 2 to 2 1/2 feet wide and leave strips of Strawberry plants 1 to 1 1/2 feet wide. Cut off all weeds, stir up ground well with a fork hoe, and scatter well-rotted manure among the plants. You can trim Greggs at any time. A. M. PURDY.

# The Household Poultry.

Heavy, dingy-looking Oranges are the best.

Home courtesy is an important element of life.

Why not drop the running store bill system this year.

Crackers baked until crisp are nicer for use with oysters.

Dough mixed with water requires more heat for baking than that mixed with milk.

In sunny Italy they have a proverb which should be universal: "Where the sun does not come in the doctor does."

**A Capital Idea.** When making every-day garments, shirts, dresses, etc., cut an extra pair of sleeves for each garment, make them and lay them aside. Then when the sleeves need mending, remove them and put in the new, saving the best part of the old ones for patching at the last.

**Mending in Advance.** If the fronts of overalls are made double to six inches below the knee, then when they wear through the patch is already set. By inserting a patch just on the knee, and when the part wears through cutting the outer piece of the front away neatly, close to the seams, adds greatly to the length of time a garment will wear, and saves much mending.

**Raisins for the Table.** These in a stewed state make a wholesome dish, acting also as an aperient, and are to be recommended. Stone a pound of good raisins, and add a teacupful of cold water; let them soak in this all night, and then put them into a lined stewpan or jar in the oven, and cook slowly until quite tender. They may be eaten warm or cold, with a slice of whole-meal bread. The commencement of breakfast is the best time to eat them.

Children's toys are provided by all good parents, but we may as well teach a useful lesson along with the pleasure they yield, and which will make them all the more enjoyed. We have found that a box large enough to hold all the children's playthings, and low enough to slip under the table, is a great help in keeping a room neat. If a child is taught that he must never go out or to a meal, or to bed, without first picking up his toys, he will soon take great delight in doing it neatly, and it will be as much play to him as anything else. Blocks are the cleanest toys and seem to furnish the most fun. Mechanical toys that are always getting out of order only make a child ill-tempered, and the very ease with which he can pull them to pieces teaches him to be destructive. If you paper the toy box inside and cover it on the outside it will not be unsightly. Fasten the lid on with a pair of hinges, and stuff and cover it.

The home should have a "Medical Bureau" of its own. Accidents and ailments, while they may not be serious, require prompt attention. The following is a plan of such a fixture as I hope to have in my own house some day: At the height of the chair rail have a broad drop-leaf attached; above this have a cupboard, which may be let into the wall. First above the shelf will come a drawer about six inches deep, to contain old sheets, etc., for bandages; next above may be one to contain small bandages, flannels, and the like; above this will be drawers, to contain corks, adhesive plasters, sticking salve, and measuring apparatuses, and one part with close doors shall contain mustard, camphor, peppermint, salts, ammonia, liniment, etc. The upper shelf should hold a box with a spring lock, on the lid of which is placed in plain letters, "Poison," and in this all articles of a poisonous nature will be kept. ELNER'S WIFE.

**Apple and Almond Pudding.**—Take about three pounds of apples, two ounces of sweet almonds, one gill of cold water, the whites of two eggs, four ounces of fine sugar and a little lemon or orange marmalade. Put the water and three ounces of the sugar in a preserving pan and stir till it boils; put eight of the apple peeled and cored, but not split, into the syrup, and cook till soft, but do not let them break. Lift the apples carefully on to a flat dish, and fill that part where the core was taken out with marmalade. Pare, core, and stew the remainder of the apples till soft, then press all through a wire sieve; pile this pulp over the apples, and make smooth with a knife. Beat the whites of the eggs to a very stiff froth, sprinkle in half an ounce of the sugar, and spread this froth all over the top of the apples. Dredge on the remainder of the sugar and stick the almonds—previously put in boiling water, skinned, and cut in long thin strips—very thickly and neatly all over the whites of the eggs. Put the pudding in a slow oven until the almonds take on a delicate golden tinge. Use hot or cold. PRACTICE.

Cocks are at their best when two years old.

For nice feathers feed a little flaxseed at times.

Choose your breeding stock carefully; imperfections are likely to be perpetuated; blood will tell.

Coarse bones in fowls indicate coarse meat. A coarse-meated fowl is a poor thing side of a fine juicy-meated one.

It is possible that old hens may be too fat to lay; not so with pullets. Feed them abundantly. Even in the case of old hens less laying goes on as a result of under than of over-feeding.

**Ducks and Water.** I find it easier to raise them where they cannot get to a large body of water than where they can. All the water mine get is a small pond fed from a distant spring. A. M. LANO.

**Using Carbolic Acid.** The *Farm Journal* says that in doing the usual cleaning in the poultry house and yard it is a good thing to use crude carbolic acid in the whitewash. The way to mix the acid with the wash is to put the acid in hot water and slake the lime with this. A dry slake may be made and the acid mixed with the lime flour. The former however is the better way. It is useless to try to mix the acid with whitewash after it is made.

**Working with Young Fowls.** This would be a good motto for the hen house door on the inside: "Keep your hens but one year, and no 'tough fowls' will haunt your dreams." There is no trouble to get fowls to lay a second year, but put such points as feeding through the moulting season, age for marketing, reduced laying powers, etc., together, and there is a serious question whether it would not always pay best to market them at a year old or slightly more, than to keep them longer.

**The Food, and Egg Flavor.** If it is not realized how the former affects the latter, let one but mix onions with the feed to-day and the flavor of the eggs to-morrow will show him. But there would be nothing unwholesome in such an onion flavor in eggs; it would be merely unpleasant. There might be this wholesome lesson learned from the experiment, however: flavors that are unhealthy and nauseous may be imparted in the same way. Force your fowls to feed on the manure pile and drink impure water that contains stable leachings and we will not, if we know it, dine with you on their eggs. Where the food is of an improper character the product cannot be all that is desirable.

**Hatching Chickens in January.** It is one of our nice Brahma hens that is going to do the hatching, and she is under one of the benches in the greenhouse. When I put her there she would not sit down on her nest; but after I took thirteen eggs out of my pocket, and placed them beside her, she took her bill and pushed them under with great satisfaction, and sat down as motherly as one could wish. When it came breakfast time, however, she got into one of the boxes of lettuce plants, and don't you believe she made them fly? Some of them must have hit the glass overhead; and after she did the same thing next day, Mr. Weed, the gardener, wanted to have her discharged for bad behavior. We didn't, though; we just put some poultry netting around her, and now she sits in one corner, and sits equal to any new-fangled incubator. She started New Year's day, so the chickens ought to hatch out on the 21st. A. I. ROOT.

**Care of Layers.** How A. M. Van Auken, a correspondent of the *American Farmer*, believes in caring for them is told as follows: Make your layers take exercise, not as much as the breeders, but still enough to ward off disease. One-half the feed for my layers is ground. The natural mill of a fowl's gizzard is capable of grinding all sorts of grain, but it is at a considerable expense of muscular force. All the ground feed is cooked. I should cook all, only a part raw is preferred by the fowls and they need it to keep them busy. The cooked food is placed in a trough, with slats over the top, to prevent the fowls from scratching it out and dirtying it. The unground grain is so placed that the hens must scratch in order to get it. This is accomplished by burying it slightly in the ground in summer, and in a pile of chaff or cut straw on the floor of the poultry-house in the winter. The fowls should also be supplied with some vegetable and flesh food every day in the winter. The best way to get this is to feed Turnips, Potatoes, Cabbage-leaves, etc. For flesh, butcher's waste is my staple, but I often get worthless fish, which are both cheap and, for this purpose, good. Anything that is animal food will do, and where one has but few fowls, and can get skim-milk, he need look no further.

# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

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### Looking Ahead.

What though we shiver in the blast,  
Hope in the heart is springing,  
The sun is coming northward fast  
And finer weather bringing.  
When February disappears  
And March, the month that seldom cheers,  
And April, month of smiles and tears,  
Have passed away,  
And flowery May  
Has come, and birds begin to sing,  
And winter hoar,  
The aged bore,  
Has left the lap of smiling spring;  
Cold weather o'er we'll think no more  
Of storms of snow or blizzards keen.

—Boston Courier.

BY LIFTING some young plants of that favorite, the Pansy, during a winter thaw, or when there is no thaw, and bringing them to the window, they will flower easily here a little later on, providing that they are kept near the glass and are given plenty of air.

PROFESSOR E. W. HILGARD'S conclusions, after a thorough investigation of the effects of sulphur fumes on fruit in the evaporating process, are against such a process. For reasons, which he states, sulphuring is objectionable in proportion to its extent, and the less of it the better, down to the point of absolute safety by non-use. Consumers should know that the most inferior fruit may be made by this process to look as white as the best; that a light brownish color indicates the absence of artificial bleaching, and the full natural flavor.

A LACK OF TREES about the home grounds is bad enough, but to have so many of these, as a result of a close-planting, never-thinning system, as to cause excessive shade to the house and lawn, is even worse. What is meant by excessive shade is, when grass will not grow well under the trees, for this may be taken as a true sign that the tree tops prove to be a sufficient barrier to the sun's rays, and to the circulation of the air, to cause an unhealthy state of things for the inmates of the home. Yet such a crowd of trees about a home may often be seen. Not only will there be better health within the house, for a free thinning out of such trees, but there may also be a beautiful sward beneath them. The trees which remain will also be the finer for the course of thinning.

AS OUR LAST FORM is being closed, word comes from the Western New York Horticultural meeting, in session at Rochester, that the following important resolution has just been passed: "Resolved, That it is the sense of this convention that Congress should give substantial aid to the efforts now being put forth in connection with the Department of Agriculture to promote the interests of horticulture in this country, and that each member of this society at once forward to his member of Congress a copy of this resolution, urging his aid and influence in the passage of needed measures." To which may be added the explanation, that it is for the new and important Division of Pomology and Plant Pathology (plant diseases and cures) that an appropriation is now being asked. We urge the readers of POPULAR GARDENING everywhere in this country to similarly act as suggested in influencing their own Representatives.

AT THE DATE of this writing the first substantial advance has been made toward the establishing of a Department of Agriculture and Labor, to be represented by a Secretary in the Cabinet. This was effected by the passing of the necessary bill by the Lower House, on the strong vote of 222 as against 26. With such favorable treatment in the House, it seems not likely that the course of the measure in becoming a law will be stayed either by the Senate or the President. While this move is not a popular one with the political press, it is with the people. They are demanding, and reasonably enough, that agriculture, the most important of all our industries, and labor, the life of industry, should have a better representation in the councils of the nation. No fact is more obvious than that soil cultivators have too long taken a back seat or no seat at all in the discussion of national affairs. There is a growing sentiment in favor of a change here, which indicates better things for the future. To speak as some do of the difficulty of securing fit men among agriculturists for such a new office is an insult to a noble profession. There are enough men in this nation who would well grace the office.

### Aim for Harmony of Color.

The grower and user of flowers, plants, fruits and trees, finds himself much in conjunction with the most beautiful forms and colors this world affords. It is no wonder, therefore, on this account alone, that horticulture is classed among the fine arts.

But while it is true that gardeners as a rule have a keen appreciation of the beauties of Nature, it is also true that many of them have never made the harmony of Nature's colors anything of a study, not so much indeed as their constant use of these would suggest as being desirable. If any one in this world should by right give this subject close attention, it is the grower and arranger of flowers, fruits, trees, etc.

By harmony of colors, a well-known authority tells us, we understand colors placed side by side in such a manner that they do not injure the effect of each other; rather, on the contrary, complete each other, *i. e.*, they gain in intensity. To be familiar with the harmony of colors one can, with the greatest simplicity, produce a more favorable effect than is possible without this.

In the arrangement of flowers in bouquets or designs, plants in beds, conservatories, or wherever else fine effects with these are desired, fruits on the table or fruit trees in the border, and especially in the display of all such richly colored products in the markets or shops for sale, this matter of harmony of colors becomes one of moment, and even of dollars and cents. Take it in the latter case, for instance, namely, selling garden products. Very often, owing to a lack of taste here, it will be found that the fruits, plants or flowers of one stand will appear less fresh and bright than in another, the one being arranged so that the colors are in harmony, while in the other no attention was given to the matter. In the one instance the pro-

ducts gain, while in the other they lose in intensity of color and beauty.

Harmony in color let us, however, understand, does not depend on the caprice or personal taste of an individual, but it is based on the unchangeable laws of Nature, which we shall now discuss.

*Red and Green.*—A red body reflects green rays, while on the other hand a green body reflects red rays. Therefore green is the color which completes red, and similarly red is the color which completes green. Both colors, therefore, gain in intensity.

*Blue and Orange.*—A blue body often reflects orange rays, and inversely an orange body will frequently reflect the blue rays. Orange is, therefore, the complementary color of blue, and *vice versa*; therefore each color intensifies the other.

*Violet and Greenish Yellow.*—A violet body reflects greenish yellow, and inversely a greenish yellow body reflects violet. Both colors, therefore, complete each other, and intensify each other.

*Indigo and Yellow.*—Indigo reflects yellow, and yellow indigo rays, hence they are complementary and intensify each other.

It would carry us too far to describe all the other colors which are complementary. In general, we may say that all spectral colors are complementary, that is, the two colors lying opposite each other; for instance the upper carmine and intermediate green.

### Pedigree in Fruits.

BY SECRETARY E. WILLIAMS OF NEW JERSEY.

In the newspaper reports of the recent Horticultural meeting at Grand Rapids, Mich., I notice the stress laid on the importance of looking well to the ancestral foundations of our fruits. This is all very nice and correct in theory, and in support of the proverb that "like tends to produce like," and fully accords with the oft-reiterated advice of our beloved President Wilder, "to grow seedlings from our best fruits." In doing so we can know with absolute certainty the immediate maternal parentage of our products, but when we enter the mysterious and hidden domain of Nature's creations we are not so certain of our knowledge. Those who attempt to step in and perform Nature's work artificially may think and believe they have succeeded in their designs, but when their products, both in fruit and foliage, tell in unmistakable terms the existence of foreign blood, it shows the absurdity and folly of persistent adherence to the contrary.

Take the ——— Grape, for instance, which the introducer claims to have been produced from Concord parentage for two generations, and on the paternal side two pure native varieties were used, thus leaving him in doubt as to which one was the real parent. The fruit and foliage both tell as positively as possible the existence of foreign blood somewhere in its ancestry, so we may

reasonably doubt if either of the varieties used for pollenizing may have any claim to this position, and he who presents such claims to an intelligent public only shows his superficial knowledge on the subject he has pretended to master. To my mind there is no question but that health and constitutional vigor can best be secured and maintained by strict attention to the laws of heredity; but experience proves that progress and advancement in quality is more slow, though none the less sure.

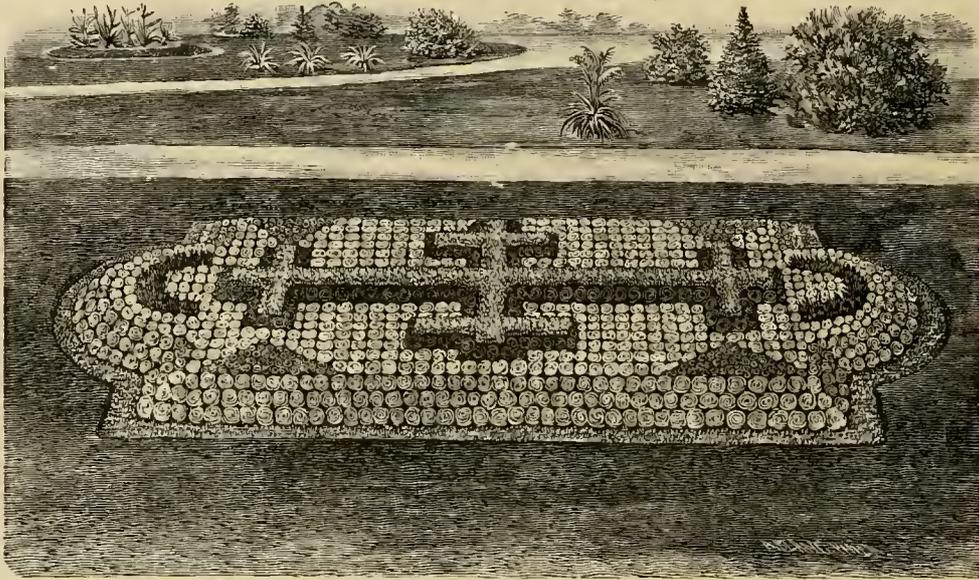
As we advance in civilization there is a corresponding reduction in the reproductive-ness of the species. This seems to be a law of Nature, that where ignorance, superstition, and a low order of intelligence prevail, there population increases to the maximum, and as we ascend in civilization, intelligence and wealth, with its attendants, to a higher scale of mental, moral and physical style and habits of living, surrounded with comforts and luxuries, there is a corresponding decrease in the multiplication of the human species.

This law of Nature is quite as apparent in the vegetable kingdom, as shown by our fruits. It is especially so in the Peach. I think it is quite within the bounds of truth to say that the germinating power of the pits of our finest varieties, taking an average, is reduced 50 to 75 per cent. as compared with native pits. At least this is my experience. Does not the longevity and health of the variety suffer in similar ratio? My own experience as well as others' seems to point that way. The city of Newark, N. J., five miles from where I now write, has perhaps been the home of thousands of seedling peaches of large size, high quality, and superior merits, the original trees living and bearing large crops for a score or more of years, very few of which when budded and grown elsewhere have lived long or sustained their home reputation. Is this failure due to soil, situation, surroundings, or protection?

If some of our scientific experimenters, or the faculty of our experiment stations, were to undertake the task of crossing the blossoms of our native seedlings with pollen from some of our finer varieties, who knows but the result would be in perpetuating the longevity and health of these natives, now used only as stocks—in new varieties equaling, if not exceeding, the fine but short-lived varieties we now have? The experiment is worth trying. Did any one ever see a case of blight in one of our native indigenous Pear trees with which this State abounds? I never have seen or heard of any. Who doubts but seedlings of these as stocks for our imported varieties would have a beneficial effect in the direction of health and hardiness. These fields are ample, open and inviting. Who will enter them?

### Echeverias as Bedding Plants.

As ornamental plants the Echeverias (or, as English botanists propose to call them, the Cotyledons) are admirably adapted to the formal or geometric style of bedding out. The plants are prim and formal in habit of growth, while their peculiar succulent nature gives to them a character at once distinct and interesting. Each individual may be likened to a rosette of leaves. As the growth is slow and regular, by arranging the plants in geometric forms, using contrasting colors of foliage, the effect capable of being created, as may be seen by our engraving, is decidedly



BED OF ECHEVERIAS IN THE GEOMETRIC ARRANGEMENT.

unique. The Echeverias are also a useful class of plants for rock gardening.

Not the least among the merits of the more ordinary sorts of these plants is the ease with which they are managed from year to year. One of the best known species is *E. secunda*, and this is a half-hardy plant, which may be wintered in a dry frame or in the cellar. Others are more tender, needing a greenhouse or moderately warm cellar in which to keep them through the winter.

The species named, as well as a variety of it known as *E. secunda glauca*, are the easiest to increase, as they are also the most useful sorts for bedding. They are of a low habit of growth and find a ready means of employment in forming panels in beds, or else as dividing lines or edging lines. These annually produce numerous side growths, which can be removed and grown into good plants in a comparatively short time. A usual method of handling them is to remove the offsets during the winter, set them into shallow boxes in a fair growing, but dry place, until some weeks before planting-out time, when they should be potted up individually to prepare them for this stage.

The vigorous Blood-leaved Echeveria (*E. sanguinea*), together with the species named next below, because of their conspicuous size and forms, are chiefly used in central positions in bedding. In the former kind, as the plants get large, they have a tendency to drop their leaves. These, if placed on a surface of damp moss or sand, will take root from their lower end, and very quickly make plants. This one also seeds freely, and plants could be raised from the seed.

The beautiful Metallic Echeveria (*E. metallica*), and its varieties, must in the main be raised from seed, as they make but few

suckers. There is one other way of increasing this favorite which should be mentioned. Early in the season flower stems are thrown up from old plants. By cutting the embryo flowers off from these and setting the stems in pots of sandy soil they will strike root, and will also produce numerous little offsets from the axils of the flower stem leaves. By placing these offsets on a bed of moist sand they will soon throw out roots, after which they may go into pots of soil.

To raise plants from seed, sow such as is quite fresh in pots filled almost full of well-sanded loam and leaf mold, covering lightly with sand. Cover with a pane of glass and shade, keeping the pot in a close frame. The soil should have been once well watered before sowing and this will answer until the plants are up. Later prick out, give sun and air, and during the first winter keep dry.

In the culture of Echeverias in general two rules should be closely observed, namely, when in a half dormant state, as during the winter season, they must be kept comparatively dry, but later on, as growth is proceeding, they should be freely watered. But overwatering and a soddened soil they will at no time bear.

### Norway Spruce for Shelter Belts.

On the northern line of the writer's grounds stands a wind break of Norway Spruce trees that is, and always has been, a most satisfactory feature of the place. This screen was planted some twelve years ago, small trees, 18 inches in height, having been used; now it is about twelve feet high, a solid, thrifty wall of green, and most admirably answering the purpose for which it was planted. It has been occasionally pruned.

Finding our own Spruce shelter belt so satisfactory we have always felt a hearty interest in the matter of shelters for the grounds of others as well. Some time since we had our attention called to a very remarkable belt of this kind on the grounds of E. H. Ricker & Co., Nurserymen, Elgin, Ill. It is perhaps as good an illustration of what can be done in providing a complete shelter of this kind for home grounds, orchards, etc., as can be found. The nursery company referred to had an engraving made of their belt from a photograph, and this by their kindness we are able to present herewith.

The belt at Elgin, like our own, is of Norway Spruce. Although the trees composing it are but thirty years old, they have reached the great height of 70 feet throughout the length of the screen. As can readily be understood by a glance at the picture, the foliage and branches are so thick that it is impossible for the fiercest storms to go through it. It stands out upon the open prairie, and for twenty years has been a complete shelter belt.

It may be thought that the securing of such a belt is a difficult and costly matter. Nothing could be farther from the fact. Young trees of this most valuable of all



THE NORWAY SPRUCE.

Evergreens, the Norway Spruce, may be bought at 18 inches high for about \$12 a hundred, and these should not be planted nearer than three feet apart. At this rate \$5.00 would about cover the first cost for trees for each one hundred feet in length. But three feet apart is fully twice as close as the trees should be for permanent, so that if one does not object to a thin looking row for the first few years, they might set them at six feet apart at the start. If the beginning is made at three feet apart, every alternate one, in what is designed to be such a large shelter belt, should be taken out before the branches come together. These could be used for forming similar new lines or in any other style of planting evergreens.

A belt of this kind should for best results have both good soil and good culture. But we can dismiss this matter by saying that if these for the first six years are fully up to the standard required for a good crop of Potatoes or Corn nothing further would be needed.

Some who might like Norway Spruce shelter belts would not aspire to having one of such monstrous proportions as the last described. All such can be accommodated. There is no ordinary tree in cultivation that will bear the shears to equal that of the Norway Spruce. By an annual pruning in June a line that might without pruning reach a height of 70 feet in thirty years could be kept down to one-tenth of this height, and in the very best condition. If a close hedge like this would be desired the trees should be three or less feet apart.

**On Growing Trees From Seed.**

PROF. W. J. BEAL, MICHIGAN AGRICULTURAL COLLEGE.

Till a person begins to plant and cultivate trees and shrubs, as here attempted, he does not realize how little any one in this country knows about the best sorts to select and how to treat them from the seeds to mature trees.

In starting the trees in the arboretum the seeds were usually planted when freshly gathered, just where the trees were to remain. The rows are four feet apart and run north and south. For five or six years, and in some cases more, they were regularly cultivated like a field of Corn till about the middle of August, and again late in autumn. As the trees crowded some were cut out. A very little trimming has been done by way of removing dead limbs and preventing bad crotches.

After the trees had got a good start and shaded the ground pretty well, cultivation generally ceased, as it seemed as though they would take care of themselves, but June Grass and some other grasses and weeds soon crept in and partially occupied the ground, apparently retarding considerably the growth of the trees. The grasses and weeds which seem to do the most harm are capable of growing late in autumn and early in spring, while there is no foliage on the trees to shade the ground or plants below.

To save the expense of cultivation after a few years and to keep the grass out we need to know the best *nurses*, i. e., the trees, shrubs or herbs which hold their leaves well in the shade. Forest leaves where deep enough keep out the grass, but the wind drives most dead leaves out of the arboretum. To get a few points on this topic of nurses, in October last I made quite a complete list of the broad leaved undergrowth of the arboretum. This included some 60 species. Some of those holding their leaves best are Black Cap Raspberries, Common Milkweeds, Desmodium, Celandine, Wild Asters, Golden-rods, Grape-vines, seedlings of many trees or shrubs, such as Black Cherry, American Elm, Butternut, Low Willows, Catalpas, Birches and Box Alders. To these may also be added White Oak, Swamp White Oak, Beech, Sugar Maple, Dogwood, Hazel, Blue Beech, Choke Cherry, Poplars, and sprouts and seedlings of

Rapidity of growth is relative, variable and an uncertain element; still some trees are usually more rapid growers than others. To grow fast relatively a tree needs to have many good roots and branches clothed with an abundance of good leaves. For this it needs a suitable soil and climate, and room enough in which to spread itself. The south tree of the row is more exposed to the light than most of the rest, and is generally the largest.

I have made a selection, and below are given the age, height and diameter of the largest tree of its kind. The diameter is taken one foot from the ground. If there is no mistake in figuring, the tree first mentioned made the slowest growth, and the one last named the fastest growth.

Table Giving the Age, Height, and Diameter of Different Trees.

Name.	Age, Years.	Height, Feet.	Diameter, Inches.
Swamp White Oak.....	11	12	2
Sugar Maple.....	10	18	2
White Pine.....	9	15	2½
Butternut.....	10	18	3
Black Walnut.....	9	16	3½
White Ash.....	10	28	4
Black Cherry.....	7	17	3
Basswood.....	10	25	4½
Red Elm.....	14	30	6½
Poplar Birch.....	13	30	6
Balsam Poplar.....	12	30	6
European Larch.....	13	28	7
Locust.....	7	25	4½
Chestnut.....	10	22	7
Catalpa speciosa.....	13	28	10
Silver Maple.....	12	35	10½

With reference to the above figures, I may add that Butternut does not hold out its rate of rapid growth as well as it promised for a few years at first. White Ash has been checked for two years by bark lice. The Locust trees are very fine and healthy, only a few in all, and were planted later than the trees on either side. The size of the Chestnut tree, as given in the table, is considerable larger than any other tree of the kind. The Catalpa is the one usually called hardy, but our trees are damaged by cold winters.—*College Bulletin No. 21.*

PLANTS often lead a miserable existence in the living rooms, because of dryness and dust. Keep a vessel of boiling water on the stove, and every other day sprinkle the leaves, either



AN EFFECTIVE WIND-BREAK OF NORWAY SPRUCE, 70 FEET HIGH, LOCATED AT ELGIN, ILLINOIS.

many others, as holding their lower leaves well. Some of the evergreens, such as White Pine, Arbor Vitæ, Red Cedar and Norway Spruce, also hold their lower leaves well.

with a whisk broom or a watering-pot with fine holes. If the plant-stand is on oil-cloth, the pots need not be removed. Not much water will get on the floor. "SISTER GRACIOUS."

### Yellow Transparent Family.

J. L. BUDD, AMES, IOWA.

Beyond all reasonable doubt the Yellow Transparent will prove a valuable addition to the lists over a very large area of the United States and Canada, but I wish to keep the idea before the reading public that the Thaler Apple will succeed grandly in parts of the West and the cold North where the Yellow Transparent will fail by blight or winter killing.

The Thaler is a better tree and with us it is quite as early, fully as large in size, and we think better in quality, as it retains its richness of flavor and juiciness longer after it becomes fit for dessert use.

A member of this interesting family a week later in ripening, known as "Blushed Calville," is best of all in quality of fruit. Though it has a German name it is a true Russian variety, and is much grown on the sparrow hills near Moscow. The fruit is bright yellow with a delicate blush next the sun. In size it is about like Yellow Transparent, but in tenderness and delicacy of its sub-acid flesh it is near the Dyer.

The Grand Sultan of Ellwanger & Barry is also of this family, and the hardest tree and least liable to blight of the whole lot. As yet we do not know much of its habits of bearing as our only specimens were picked in the nursery. Will some reader who has had longer experience report the behavior of the Grand Sultan in the orchard.

### Seedling and Russian Apples in the Northwest.

REPORT OF PETER M. GIDEON, SUPERINTENDENT OF MINNESOTA STATE FRUIT FARM.

Twenty-three years ago I planted a few Cherry Crab seeds, obtained in Maine, and from those seeds I grew the Wealthy Apple. That fruit convinced me that the true road to success was in crossing the Siberian Crab with the common Apple; on that line I have operated. I did not suppose that in the short space of sixteen years, the time since the Wealthy first fruited, that I should have more than twenty first-class Apples—as good as the world can produce—and in hardness of tree surpassing all known varieties of the common Apple. But it is done, the problem is solved, as to what to do and how to do it, with the material at hand with which to attain yet greater results.

With such results, and only a few thousand trees fruited, what may we not expect at the end of the next sixteen years, with twenty or thirty thousand selected trees from the very best of seed, which are not yet fruited, and the seed of over one hundred bushels of choice Apples planted this fall, all to fruit in a few years. Soon the choice varieties will count into the hundreds, and the great Northwest will be the fruit paradise of America.

To get the desired cross we plant the selected varieties in close proximity. The seed thus produced is planted, the most promising of the seedlings selected and set in orchards for fruiting, and, after fruiting, the best in tree and fruit is selected from which to grow seeds to try again, and so on. At each repetition I find there is a gain. The young trees that fruited this year for the first gave a larger percentage of first-class Apples than any lot ever before.

By crossing and judicious selection we retain the hardness of the Crab without the Crab thorns, and grow large Apples without the astringency of the parent Crab. We also get an exquisite flavor not found in any other class of Apples, especially so when made into sauce. But our triumph is not yet complete; we must, we can, fill up the entire year with a continued succession of luscious Apples. The past is a guarantee that it can be done.

But the proper cross can't be got in Minnesota, a fact clearly demonstrated in the extensive trials that have been made in the last nine years in the State orchard. There are no long keepers, of the best quality, yet found that are hardy enough to fruit in Minnesota; but we

can take our best hardy seedlings further south, where the long-keepers can be grown, and there get the cross and then bring the seed here to grow and test the hardness of tree and quality of fruit. Our seedlings will average in quality with Hyslop and Transcendent. But those of first-class, such as we propagate, stand about as one to 500, as hardy as Duchess and Wealthy, and of the extreme hardiest about one to 1,500.

### SEEDLING TREES FOR DISTRIBUTION.

We now have thousands of choice seedlings of our raising on hand here for distribution to those who want one, two, three and four year-old trees. Those who come and dig the trees will get them free of cost; others will have the cost of digging and packing to pay, about one dollar per 100. The bulk of the trees are two years old. All who get trees will be expected to take good care of them until they fruit, and if any prove of extra value, so report, but the trees and the profits thereof belong to the cultivator. We only want the report. Those who want larger trees had better come and do their own digging and thus save a large bill.

### PLANT VARIOUS KINDS.

Two years ago this winter was the first time the Duchess and Wealthy were seriously hurt, and a like fate befell all the Russians on our grounds, so that not a Russian Apple was set here last year, whilst alongside of them our seedlings carried a fair crop, some of them profuse, and this year all bore heavy crops, showing beyond a question that the Crab infusion is to be the foundation of successful fruit culture throughout the Northwest.

The value of the Duchess, Wealthy and some of the best of the Russians is too great in the Northwest to be rejected on account of one partial failure, after over twenty years of uninterrupted success, for such a winter as that of two years ago may not occur again in a lifetime, if ever. If those varieties should stand only ten years they would be the most profitable crop a land owner could plant. On clay soil they do the best.

The so-called Crab roots are not at all hardy. Being mongrels, where the Crab predominates the graft that is not a Crab mongrel does not take well, neither on root nor stock. The mongrel root and mongrel stock are only preferable when a mongrel graft is to be inserted, but as all such are not hardy, a good mulch is needed of some coarse litter to make sure against root-killing in winter.

The Common Apple will not make a smooth junction on a stock where the Crab predominates, and consequently will not make a lasting tree; and one of these hardy varieties grafted or budded on the Common Apple stock is worthless, as the stock below the junction of graft or bud is sure to winter-kill the first hard winter. You can protect a tender root, not a tender stock, so avoid the tree agent with his budded trees.

### The Eating of Flowers.

One lady we know of laments the fact of being so badly addicted to this horrid use of flowers that she cannot possibly break herself of the habit. No sooner does she get a bunch of flowers, than, after enjoying them for a while, and in which she takes great pleasure, she will go into a spell of meditation, during which she unconsciously picks and consumes the petals. Usually by the time her thoughts are regained the flowers are spoiled, and she then grieves over such a foolish loss.

The habit of eating flowers is unquestionably a bad one. Flowers were so evidently created for gratifying the organs of sight and smell, that one must wonder how any person could get in the way of consuming them indiscriminately as cattle eat grass. To be sure Hyacinth blooms and Rose petals are well known to have a not unpleasant taste, in fact it is quite otherwise. Their use in the making of candied flowers it seems is being adopted abroad. It is also reported that some belles eat Violets to

sweeten the breath, but we question the propriety of the course.

Aside of this use of certain flowers, however, and which many will call proper enough, it is unquestionably the case that there are those who, like the women reported above, eat many other sorts, in fact any sorts they may happen to get hold of, but who are ready to admit that it is done as a habit, and usually with no thought of what they are doing at the time.

A bitter taste in the mouth is one of the common consequences of the habit, but this in itself, it would seem, seldom causes enough discomfort to lead to reform.

There is even danger in the habit, for some flowers, like the Aconites, are poisonous. Children have often been made sick, even to vomiting by swallowing blossoms that were otherwise harmless. In this last fact may possibly be found an idea to aid slaves of the habit in breaking themselves.

If those who know that any bouquet they may get in hand will sooner or later be picked to pieces and eaten by themselves, will at the first take the precaution to scatter some grains of any simple drug which has the power to cause nausea, over the flowers, the eating may then lead to such unpleasant results as will make the very sight of flowers disgusting to the stomach for a while. In this way it is believed that entire recovery from the habit may after a few repetitions be effected. The remedy may be an unpleasant one, but surely it is not so bad as the disease.

### Making Lawns at the South; Good General Advice.

WM. SAUNDERS, WASHINGTON, D. C.

To the inquiry of your correspondent regarding the formation of lawns in Louisiana, and the best method of obtaining them, I would answer that the principal factor is a deeply loosened soil, and this applies to the North as well as to the South.

Where practicable this work of preparation can be more economically performed by the plow than by hand labor alone. First throw out as deep a furrow as possible with the common plow, then run a subsoil plow in the bottom of the furrow. A stirred depth of from 15 to 18 inches may thus be obtained. If done by hand, it should be spaded as deep as the spade can penetrate, and the subsoil loosened with a pick or mattock.

In all cases it is better to keep the top layer of the soil on the top, rather than to trench the ground over and throw the subsoil on the surface. A second plowing will be necessary; but previous to this the ground should receive a dressing of rotted manure at the rate of thirty cart loads per acre; failing this, apply at least half a ton of bone dust per acre and harrow it in. Before sowing the seed, the surface should be made smooth and regular. No pains or expense should be grudged to make the surface grade perfect before sowing, for it will be difficult to make corrections afterwards.

With proper preparation there need be no doubts raised about the growth of Blue Grass, or June Grass, *Poa pratensis*, in Louisiana. There are no better grasses for lawns than the above named and the Red Top, *Agrostis vulgaris*. Two bushels of Blue Grass, one bushel of Red Top and one quart of Timothy Grass is sufficient for one acre. This should be mixed before sowing. The Timothy Grass will soon disappear; but the seed vegetates quickly, loosens the surface and greatly assists the growth of the other grasses. One of the most pernicious practices is to sow oats, barley or some other grain with the grass seed. Grass requires no shade or protection of this kind.

As to the time of sowing in Louisiana, I would decidedly prefer late fall, say about the 1st of October. If sown in spring, the earlier the better. If sown in February, the lawn should be ready for mowing by middle of April. On newly seeded lawns the mower should be run

over the grass as soon as it is high enough to cut, and kept trimmed over frequently to keep the growth of grass uniform and prevent the injurious growth of weeds.

Neither in the preparation and formation of a lawn, nor in its keeping afterwards, are there any half-way compromises. The work must be done thoroughly to begin with, and then timely attention to cutting the grass all through the growing season will ensure a satisfactory result. Thanks to the numerous cheap and efficient lawn mowers to be found everywhere, there is in this day really no excuse for imperfectly kept lawns.

#### Peter Henderson on Forcing Cucumbers.

The wide greenhouses or forcing-houses, 22 feet wide, which we have described, can also be made equally available for forcing Cucumbers, either during the entire winter and spring season, or to be used to succeed the last crops of Radishes or Lettuce in the spring season only.

If wanted for the forcing of Cucumbers during the fall season, the seed should be sown in the greenhouse about October 1st in small pots, three or four seeds in each, thinning out to one strong plant. These, in thirty days, will have become sufficiently strong to plant out at twenty to twenty-four inches apart on the south side of the bench, one row only. A trellise of galvanized wire is made with about a nine-inch mesh, diamond shaped. This, on the middle bench, should be kept two feet from the glass, but on the front bench it can only be kept one foot from the glass, because so near the sashes.

The depth of soil should be, if on raised wooden benches, about five or six inches; if on the solid center bed, eighteen inches to two feet. The soil should be a sandy loam, with one-fifth well-rotted cow manure.

The night temperature in the forcing-house for the fall, winter and spring months for Cucumbers should range as near as possible from sixty to sixty-five degrees, with a temperature on bright days of from ten to fifteen degrees higher, giving ventilation at all reasonable times. Cucumbers delight in a moist atmosphere, and whenever the weather is bright and clear water should be sprinkled on the pipes, walks and under the benches. A dry atmosphere is certain to develop the Red Spider, which is fatal to success.

It may also be here stated, if Cucumbers are to be forced during the winter months, that to keep up the necessary high temperature eight runs of four inch pipe will be required in a greenhouse twenty feet wide, in-

grown in the open air, where the insects and winds do the work, yet, when grown in the forcing-house, it is absolutely necessary, particularly in midwinter. This is best done with a camel's hair pencil, by detaching the pollen, or fertilizing dust, from the stamens and applying it to the stigma. It will also facilitate impregnation on bright days to slightly jar the



*Sabbatia Compestris.* See "Some of the Newer Garden Products" etc., page 70.

wire trellis, so as to let the pollen loose, which, in floating through the air, fastens on the stigma.

Cucumbers from seed sown in October will give a continuous crop until June—of course, if well handled. When wanted only to succeed crops of Lettuce or Radishes in spring, the seed should not be sown until February or March.

The variety for forcing which seems to be most favorably received in our markets is "Selected Early White Spine," though, of late years, the beautiful long kinds, such as "Telegraph" and "Rambler," which are almost exclusively used in Europe, are beginning to be favorably received.

Forced Cucumbers from December to May average, for best quality in the market of New York, \$6 per dozen, and, if the forcing is well done, this price will be found to pay very well. Southern competition, of course, seriously interferes with the forcing of Cucumbers, as it does with nearly everything else in early vegetables and fruits; but, like hot-house Grapes, the bloom and fine appearance, together with the more delicate flavor, of the forced Cucumber, finds customers in all large cities who are willing to pay for the finer quality.—From *Revised Gardening for Profit*.

#### Making Straw Mats.

As a common article of protection to hot-beds, frames, seed-beds, etc., straw mats commend themselves because of their being light, convenient, effective and cheap. If well cared for, seeing that they are never rolled up while damp to invite heating within the roll, or if always handled with reasonable care they are also quite durable.

The spring season being near when straw mats will be the most wanted in the garden, we herewith present an engraving of a simple, home-made affair for weaving them. The form and working of this contrivance may be so easily understood that any words of explanation relating thereto seem almost unnecessary.

For twine, a light, strong, tarred article is to be preferred, and this should be kept wound on a proper number of spools usually 12 made of two 20-penny spikes each, as separately shown in the engraving. To make the spool, notches should be filed near one end of the spikes which are to hold a winding of wire for keeping them together. The other ends should not be united; by being a little apart the end of the twine may be drawn in between them so the spool cannot unwind faster than the twine is wanted. The object in using spools of iron is to secure weight enough in 12 or more of these (one-half on each side of the weaver) to hold the mat properly in place as the weaving progresses.

Straight, bundle rye straw is the best, but other kinds even if shorter might answer. In the making, care should be taken to have each layer consist of about the same quantity of straw. A handful should be picked up, divided into two parts, bringing the butt ends of each part at opposite ends of the mat, at the top of the main horizontal pieces where the tying is done. The tying of the twine as the ends are brought over each layer of straw may consist of a single tie if the twine is well tarred or of a double tie if it is not. The advantage of a double tie is that, should the twine break at any point during the future use of the mats there would be but little liability of its opening out beyond the break.

Care should also be taken to keep the ends of the different layers even. This may be most readily accomplished by setting a wedge-shaped gauge uprightly between the side pieces of the weaver, against which to bring the butts of the straw as layer by layer is brought into place in the process of the weaving.

#### A Glance at Some Kitchen Garden Matters.

E. S. GOFF, GENEVA, N. Y.

The earliness of Peas may be enhanced somewhat by sprouting the seed in a box of moist sand before planting.

I have found nothing to surpass the early Wakefield as a first early Cabbage, nor the Early Summer for second. Fortier and Premium Flat Dutch are the standards for late.

The Eclipse Beet is one of the finest I have tested. It is a few days later than the Egyptian but more uniform in form and size, and is by some considered of better flavor.

As far as possible, arrange the vegetable garden so that it may be cultivated with the horse. Leave plenty of room at the ends of the rows for turning.

The common Burdock is one of the most important vegetables in Japan. The root is the part used. It is taken when one-third grown.

Beware of novelties, unless you are willing to be disappointed. If we look back over the seedsmen's catalogues of former years, we find that many novelties were called but few are now chosen.

The American Wonder Pea, though very productive for the size of its plants, really yields far less from the same amount of seed than the taller varieties. The only real advantage it possesses is that it is earliest of the wrinkled sorts.

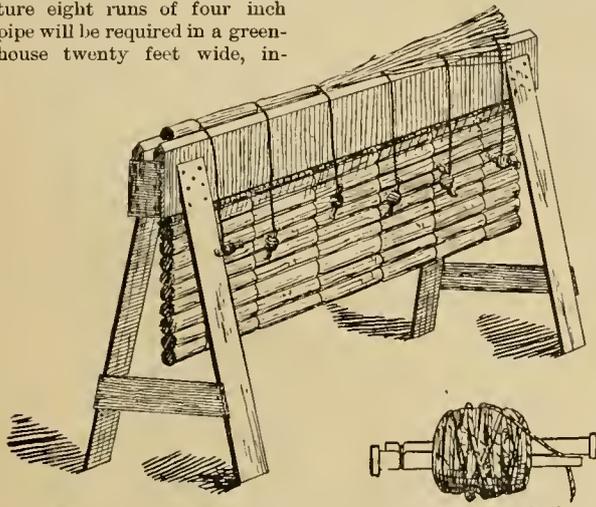
Hot-bed frames made in sections and put together like the sides and ends of a wagon-hox are preferable to others, as they are stored under cover during summer, where they are out of the weather, out of sight and out of the way.

Sifted coal ashes are very useful for lightening heavy garden soils. Though they possess little fertilizing value, they increase productivity by making the soil more porous, giving greater permeability to rains, and freer access of oxygen to the roots of plants.

The Fern-leaved Celery sent out last season is not worth growing for the table.

The Stratagem, Pride of the Market, and Market Garden are unexcelled as late Peas.

It is safe to say that no Squash has yet been found to surpass the Hubbard for general use.



A Straw Mat Weaver and a weighted Spool made of Iron Spikes.

stead of six, as recommended for Lettuce and Radishes, though, when grown only to succeed the Lettuce or Radish crop in spring, which is usually the case, the six runs of pipes at that season will be sufficient.

Although there is no necessity for artificial impregnation of the Cucumber flowers when

## THE COMPLETE GARDEN.\*

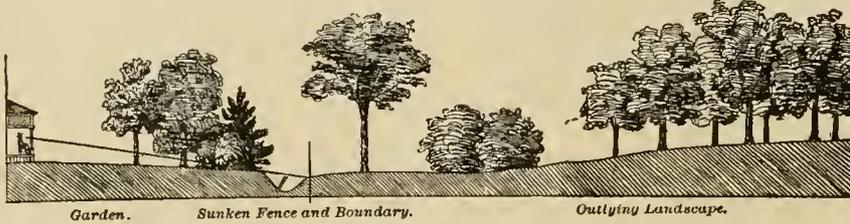
BY A WELL-KNOWN HORTICULTURIST.

## II.

Besides the kinds of soil referred to one very commonly met with is the gravelly soil, so called from the presence in it of numerous small stones or pebbles. The gravel of such does not enhance its value for gardening purposes, excepting in some degree to perform a mechan-

to such vital matters as healthfulness of locality, comfort, beauty of surrounding scenery, etc. It is obvious that these are entirely separate and distinct from the question as to whether the soil is, or is not fit to support plant life. Indeed it usually is the case that the most naturally fertile soils are found in lowlands, the place of all others most unfit for the home of man.

Other things being equal, one should choose



Garden. Sunken Fence and Boundary. Outlying Landscape.

MAKING THE MOST OF CIRCUMSTANCES BY SEEMINGLY EXTENDING THE GARDEN.

ical duty, by separating its parts, promoting drainage and by holding in storage solar heat. If the percentage of gravel be great, it is liable to be almost valueless for cultivation, but should it contain only a moderate proportion of gravel stones, it may be fertile, easy of tillage and in every way desirable. The poorer kinds of gravel soil usually overlay subsoils, which come nearer being gravel beds than anything to which can be applied the term soil. When the testing pits reveal such subsoils, leave the land alone for garden purposes.

But one may possess grounds having buildings and other improvements the soil of which is not very serviceable for a garden. It does not necessarily follow, such being the case, that nothing satisfactory can be done with it. Poor soil presents serious drawbacks, but by bringing time, skillful culture, and other recognized methods of improvement to bear, even a soil somewhat inferior in character may be so ameliorated as to offer some chance for raising fair garden products. Of course the smaller the garden the less discouraging the work of undertaking to improve a poor soil.

If its nature is that of a stubborn clay, by the incorporation of sand, loam, lime, coal ashes, cinders and manure deeply into the surface stratum, and also by deep culture even below this line, as well as proper under-draining, such a soil may be rendered capable of meeting the needs of many plants. Is the soil the reverse of this, being too sandy or gravelly, the addition of vegetable matter in the form of leaf mold from the woods, turfy loam, manure, peat, marl, or even by introducing into it a certain proportion of clay, as improving agents, there will be a decided change for the better. With poor soils capable of being improved must be classed those worn out soils, which once were of good quality for supporting crops and trees, but which have been exhausted of the requisite quantity of plant food. It is possible to make such again fertile by the application of manure and good tillage, but it would be neither a quick nor an inexpensive operation.

Beside these suggestions, however, stands out boldly the fact, which must never be lost sight of, that all such methods are necessarily costly. It is always a great gain to start the garden on a soil of the best character, requiring no such special treatment. In gardening on organically bad but improved land, whilst a certain degree of success may be attained, one must, on the other hand, be prepared for being shut off from many of the finer enjoyments of which a garden complete is capable of affording.

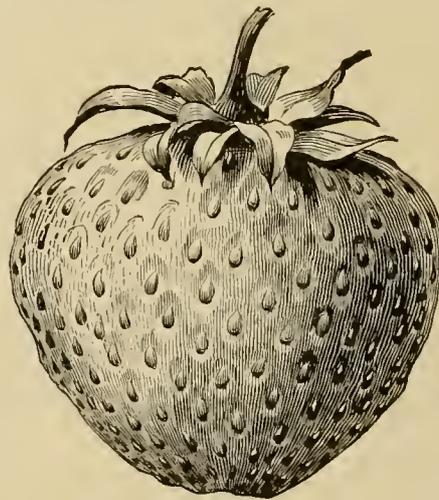
## SITUATION, SURROUNDINGS, ETC.

The garden in which the majority of people are interested is the plot of ground which is the seat of the home. Important as is the matter of the soil to the place, there are other elements which should not be ignored. I refer

neither the highest or lowest points for establishing the complete home garden. Land gently rolling is more desirable than that which is level, not only because it is drier naturally, but because its surface even when unadorned presents a more pleasing aspect and variation of lines to the eye that count for much in the making of a beautiful place. The home plot when level should be capable of being rendered dry by underdrainage.

The question of an abundant water supply for the garden is a great one. Without doubt the ideal garden should be situated on the banks (provided not too low) of a lake, river or creek. There should at least be a strong rill passing within its borders. In addition to the mere superficial beauty of living water scenery associated with a garden, the presence of water lines permits of the culture of numerous aquatic and sub-aquatic plants, something very desirable, but which, without these, would be nearly impossible.

Still the greater number of homes cannot have attached to them the highest type of a garden here suggested. In such cases there



THE JESSIE STRAWBERRY.—SEE NEXT PAGE.

should at least be provisions for a fair artificial supply from one or more wells on the grounds. This being adequate, the employment of wind or steam to raise the water into tanks at a suitable height for distribution, by means of pipes and hose throughout the grounds, would tend to make the absence of natural supplies less felt. In any event, to have at one's command, at all seasons, an abundance of water for use is a most important factor in conducting a complete garden.

The general character of the surrounding country should receive due consideration in selecting a site for the home garden. If the neighborhood is rich in woody growths, and especially if large trees of various kinds abound, this in itself would be an index of the natural fertility of the soil. The presence of

such growths outside of our garden lines should be a living incentive to our best efforts within. The missionary attempt of beautifying a desert region by planting a fine garden in the midst of it, when other localities garden-like in themselves could be chosen, is certainly not to be advised.

It is hardly possible in ordinary sized ornamental gardens to secure that appearance of breadth and extent which is one of the greatest charms of large parks and landscapes. This being evident, we must either confine ourselves to our restricted possessions, or bring into use contiguous views and scenery. I would particularly mention those cases where beyond the garden boundary, either adjacent or more remote, there may be beautiful landscapes, hills, water, etc., the views of which could be made to do service to our own possessions. Let me instance a pleasing meadow supporting some trees and other growths and lying just beyond the boundary of the garden.

In the engraving herewith I show how, by means of a depression (which should be five or six feet deep) just within the garden line, and in which the outside fence should be located with its top below the general line, such a meadow in a certain sense could be appropriated to the garden. As is seen by the line of sight extending from the portico of the house to the ground beyond the boundary line, this fence would not be visible from that point, and to the casual view it would appear as though the lawn surface extended from the house to the very farthest point in one unbroken line. If this outside territory was a pasture lot or a meadow having a not particularly fine appearance when closely examined, distance would so lend enchantment, that as an apparent continuation of the garden, the effect might still be all that could be desired. Let the reader imagine in our engraving the advantage of such an extended vista as seen from this side of the house, as compared with the same broken off by an ordinary fence above the surface of the ground on the boundary of the garden spot.

This plan could often be made to afford the means of adding greatly to the appearance of the extent of grounds at a moderate cost.

## SHELTER BELTS.

Unless fairly sheltered from severe winds, a garden cannot be considered complete. Atmosphere in motion, when not too violent, is beneficial to most growing things, hence gardens, and especially the smaller ones which are closed in by buildings or high walls, are not capable of yielding the best results. Where winds are fierce and frequent, unless their force is subdued by masses of wood or other barriers, the list of plants that can be well grown in their path is comparatively small. In good soil, the question of establishing wind-breaks of living trees to soon have them of an effective size is not an impracticable one. The quick growing Conifers are the best trees for this purpose, as they advance rapidly in rich well-tilled soil, and their growth is the heaviest near the ground where the barrier is most needed. Being for the most part evergreen, they afford an equal degree of shelter in the winter as at other times.

The most approved method of planting shelter belts, where space is ample, is in lines, and several of them, the trees being set alternately. My plan would be to plant either two or three rows. If the former, my choice of varieties would be the Norway Spruce for one line and the White or Austrian Pine for the other. If three rows, the third one might be that quick grower, the European Larch. I would have the rows four or more feet apart, with the trees four feet in the row. Later on, I would remove about one-half of the trees, or more, to prevent undue crowding. If in some places the wind-break met, or was widened out to form masses of varying size, the effect would be all the better. In other places, and especially in the direction from which harsh winds

seldom come, there may be breaks in the line, or no screen whatever.

To secure the most rapid growth the ground where the belt is planted should for a liberal width be not only rich, but be kept well cultivated for a period of at least five years after planting. The advantage of a more or less open belt of trees over a wall or close hedge as a wind-break is, that the wind becomes broken in its force and scattered or entangled, instead of striking an unyielding surface, to rebound and start up again with a fresh impetus.

**On Manuring Lawns.—The Use of Nitrate of Soda.**

JOSEPH HARRIS, AUTHOR OF "TALKS ON MANURES."

In POPULAR GARDENING for January your pleasant correspondent, S. Q. Lent, says: "I proved beyond a question that a top dressing of ashes and bone-dust, the application of which would not disfigure the lawn, was a perfect fertilizer for lawn grass." There can be no doubt on this point. But one must use a heavy dressing of bone-dust to get any immediate effect, and the perfume is not agreeable. A dressing of ashes, superphosphate and nitrate of soda is far more effective and much cheaper. It contains every element of stable manure except carbonaceous matter, and the clippings of the lawn, if left on the surface, furnish an abundance of vegetable matter.

In the Park at Rothamsted in England, which has been in grass for centuries, Sir John B. Lawes obtained the following results during the "great drought" of 1870:

	Yield of Hay Per Acre.
1 No Manure	644 lbs.
2 "Ashes" and Superphosphate,	1,968 "
3 Same as 2 and 550 lbs. of Nitrate of Soda,	6,300 "

In nine cases out of ten, all that is necessary to freshen up a lawn and enable it to stand

What would be called a "great drought" in England is not an unusual occurrence here. And it is surprising that we have not yet learned what a valuable and at the same time

The Jessie Strawberry is one of the latest varieties of that popular fruit claiming attention. Its originator is F. W. Loudon, of Jaynesville, Wis. It is being introduced by



HEAD OF THE NEW YORK LETTUCE.

cheap fertilizer we have in nitrate of soda.

Nitrate of soda looks like common salt and is easily applied. Sow it handcast over the whole lawn and flower beds and Roses and shrubs and trees at the rate of 500 to 600 pounds per acre, or say three or four pounds to the square rod. And if you extend the application to the Strawberry beds and Raspberries and Currants and the entire orchard and garden, you will not regret it. For Asparagus nothing equals this fertilizer.

Green's Nursery Co., Rochester, N. Y. Concerning a visit to the grounds of the originator in fruiting time by the committee of the Wisconsin Horticultural Society, it is said of the Jessie that "the berries lay upon the ground in heaps. They were fair in shape, of good color, averaging very large; one measured nine inches; quarts would measure from six to seven; flavor very fine. It promises to be a great acquisition surely."

Professor Green, of the Columbus Experiment Station, who is testing perhaps more new and old kinds than any other person, says: "We have a number of the newer sorts under trial at the Experiment Station. Jessie seems one of the most promising new sorts. Plants very vigorous, berries large, productive."

We are informed by H. E. Van Deman, Pomologist to the U. S. Department of Agriculture at Washington, that the Jessie is a most promising variety. He has received many reports concerning it from unprejudiced cultivators, all of whom speak of its high excellence.

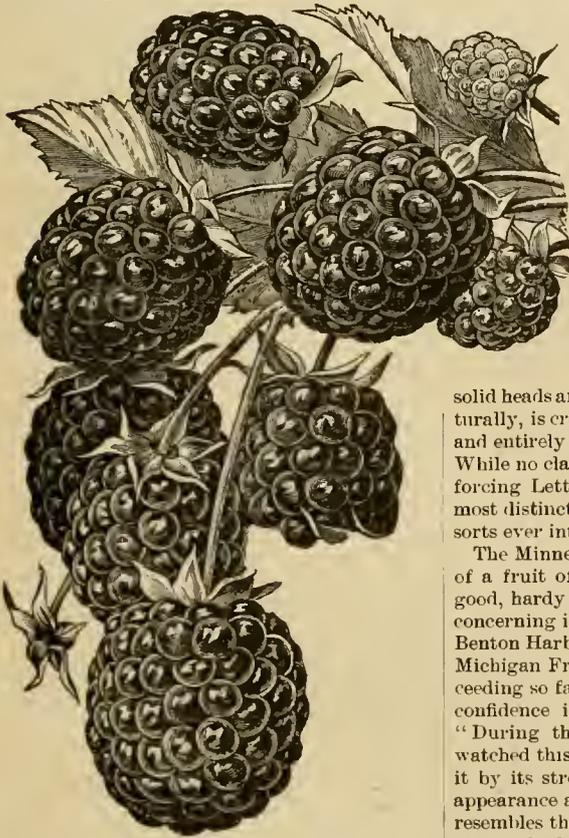
On the second page preceding is shown an engraving of an annual flower, which, if not really new, is at least practically so to most flower growers. This is *Sabbatia campestris*. Peter Henderson & Co., of New York, who are offering the seed of it this year, say that it grows about six inches high and throws up a great number of rosy carmine flowers, with a large yellow eye of the form shown in the illustration. The seed should be sown in the sitting room or greenhouse, and transplanted to the open ground as soon as the weather becomes settled and warm.

*Pelargonium "Victor,"* which is illustrated, as growing in a pot on page 79 of this issue, is a remarkable variety of this extremely attractive class of plants, and which has been well tested about New York City for some years, but which we believe is new generally to the country. In the catalogue of Peter Henderson & Co., of New York, we find this description of it: "This variety has been grown almost exclusively by the florists in this vicinity for the past two years to supply the critical New York trade. It gives great satisfaction. The ground color of the flower is bright cherry pink, white at the base of the petals. The two upper petals are dark crimson maroon, almost black. The flowers are produced very freely and are immense in size, single florets exceeding in size a silver dollar." To this same firm we are indebted for the use of the engraving referred to.

**Some of the Newer Garden Products being Offered.**

Henderson's New York Lettuce, an engraving of which is shown herewith, is offered by Peter Henderson & Co., of New York, a house that has always been prominent in disseminating new products of the garden. It is described as a remarkable variety, with but little tendency to run to seed, and unusual for size and solidity of head. Single plants of it eighteen inches across and with solid heads are reported. It blanches itself naturally, is crisp, tender, and of excellent flavor, and entirely free from bitterness. Seeds white. While no claims are set up for this variety as a forcing Lettuce, it is believed to be not only a most distinct, but also one of the best summer sorts ever introduced.

The Minnewaski Blackberry is a new variety of a fruit of which there are none too many good, hardy sorts in cultivation. Our report concerning its merits is from W. A. Brown, of Benton Harbor, Mich., inspector of the Western Michigan Fruit Exchange. A Blackberry succeeding so far north will be looked upon with confidence in most other regions. He says: "During the past two years I have closely watched this plant in Berrien Co., and, judging it by its strong growth, prolific bearing, fine appearance and quality of fruit, which closely resembles the Lawton, except that it does not turn red after picking, I consider it the most promising Blackberry yet introduced. Our fruit growers are looking to its future propagation and adaptability to commercial growing with much interest. We have not tested its hardiness and its merits for general field culture, but I have faith in it." A. J. Caywood & Son, of Marlboro, N. Y., are its introducers. The engraving shows but a portion of a cluster.



THE MINNEWASKI BLACKBERRY.

drought, is an annual dressing of nitrate of soda in the spring at the rate of three or four pounds to the square rod, costing about 10 cents, or \$16 per acre. The nitrate is derived from the leaching of sea-weed and other vegetable matter, and is the essence of manure. Its effect is magical.

## A. M. PURDY'S DEPARTMENT.

Post-office address. - - - Palmyra, N. Y.

## Briefs.

After heavy snow falls tramp around the fruit trees to prevent mice from working at the bodies.

**The Early Ohio.** A Mr. Taylor, of Kansas, who grows all the leading Potatoes, and 30,000 bushels a year, prefers the Early Ohio to all others.

**Remember** that it is a good plan in order to prevent Gooseberries from breaking down to the ground with their weight of fruit to tie the tops together.

**Attend at once** to the fruit crates and boxes or baskets. Get them overhauled and fixed up in good shape. Don't wait till the bustle of spring work.

If you have an old half starved Apple tree or orchard feed it, and do it now, by hauling out plenty of manure and scattering under the trees. If you haven't that, scatter straw, and if not that, muck from the swamp, and if not that, put on the coal ashes thickly, and you will soon see a change in them.

**Its astonishing** what a difference even one handful of unleached wood-ashes makes in the growth of a Peach tree the first year or two, scattered in the bottom of the hole where the tree is set out, and if a teaspoonful of salt be mixed with it all the better, only have it well mixed into the soil before setting the tree in.

**It is strange** that more people do not plant out Sage. The demand for it in every town is large and prices high. It is as easily grown from seed as Cabbage. Simply sow early in a box in the house or greenhouse, and transplant, as soon as frosts are over in the spring, into rows two feet apart, and one foot apart in the row.

**Grape-vines** may be trimmed now and the trimmings cut up into three-eye cuttings and buried in the cellar for spring setting. The same, too, with Currants and Gooseberries if not done before. It is said that a pound of copperas scattered under each Grape-vine is a preventive to Grape rot and mildew; as it so cheap it will cost but little to try it.

**Depth of Planting.** Much has been said and written as to the depth trees should be planted. The kind and condition of the soil has much to do with it. If soil is deep, with an open alluvial sub-soil, they may be planted much deeper than when sub-soil is hard and impossible to loosen up. We have thrown out earth from the bottom of wells and outhouses in Northern Indiana on which seed would grow and succeed well, while, here we could not make it a success even on earth thrown up from one to two feet in depth.

**A Correspondent Writes.** The author of "Ten Acres Enough" recommends marl as a specific manure for Blackberries. What do you say? We say that circumstances alter cases. The marl is excellent on the poor, worn-out, sandy soil of New Jersey, where Blackberries need some fertilizers, but on notably good soil it will not do. For fruit, Blackberry bushes should not be forced into too much growth. By the way, that book has done more harm than good. Many a poor man has started out with "air castles" after reading it, to find more fiction than truth in its pages.

**We hear a great deal** of talk about Strawberries being winter killed, but ten acres are spring killed where one acre is winter killed. It is not the extreme cold that kills Strawberry plants as a rule, but the heaving out in the spring by freezings and thawings. To prevent this, now is the time to spread on the coarse manure or straw or hay evenly over the plants, so as to hide them from sight. "But," we hear some one say, "the foul stuff in hay and straw is bad for the beds." So it is, but this may be prevented by first hauling the mulch out into some old field, throwing it over once or twice and thus working the seed all out of it. Then it may be spread over the plants, and here it can lay until after the fruiting season.

**Radishes under glass** require little heat, yet it will not do to freeze them hard when growing fast. If accidentally frozen, do not let the sun strike them until they thaw out, and they will generally recover without much injury. But if they are in tender condition from rapid growth, and the sun strikes them while frozen, they are often spoiled. We clip the above from an exchange. We have had good luck with the Turnip Radish, grown under glass, care being exercised to give them plenty of fresh air and opening sash on pleasant, warmish day. And while speaking of this we would remind our readers that Onion seed sowed thickly in rows two inches apart under glass, the first of March in this section and south earlier, can be transplanted in May and then get a long way ahead of those sown in open ground in April.

**Cucumbers and Melons** should be started now at the South in hot beds, with manure for under heat. We have generally used inverted sods, say four inches square, packing them close together next to the manure after it was firmly packed down. Let sods lay three to four days, with glass sash on the beds before planting the seed.

Then put in each inverted sod six to eight seeds. Keep sufficiently watered and give plenty of fresh air by removing or raising sash a little with each pleasant day.

If in danger of frost cover just before dark with hay or straw or matting. When two inches high thin out to three plants for each sod. Water well so as to have sods wet, and then remove to the open ground, having frames a foot square to put them inside of, and if danger of frost after transplanting, cover frames as warm weather approaches. Keep well dusted with air-slaked lime or wood-ashes to keep off bugs, and when frame is filled up, and danger of frost is over, plant out.

**To "Fruit Recorder" Readers.** We hope and trust that every old *Recorder* subscriber will renew for POPULAR GARDENING. We find with the great care and perplexity of publishing a paper off our hands and mind, we are in a much better shape to go over our large fruit farm and nurseries more, as also to visit fruit growers in different sections, and hence shall be in a much better shape to give our readers more practical original matter from our pen than we have ever been able to do in the *Fruit Recorder*. We will do our very best to make POPULAR GARDENING the best paper of its kind published in this country. The reader must see it is not largely filled with glowing descriptions of fruit that someone has for sale, and in that line will be fearless and unbiased in giving opinions of fruits.

## SUCCESSION OF FRUITS.

The great mistake many fruit growers make, especially beginners, is to plant too extensively of one kind of fruit—like Strawberries—to the almost entire neglect of others, and even of these but one or two varieties only. The successful gardener or fruit grower is careful to so plant of the different kinds of fruit that he will have a succession from the first Strawberry to the last Grape. Where only Strawberries pay well, to follow the advice given by many and plow up the bed after one year's crop, is a mistake, for the reason that old plantations give two or three good pickings before new plantations ripen any fruit.

There are certain kinds of fruit, like Black Raspberries, that are profitably dried or evaporated, and of which one need not fear planting too many, for with the most complete dryers now in use, if the market is overstocked with this fruit, or there comes a wet spell, in which they are likely to mold and spoil in marketing, put them into the drying house.

Dried Black Raspberries generally bring 22 to 30 cents per pound, and as it takes a trifle over three quarts to the pound, sold at this price it is about the same as 6 to 8 cents per quart for the fruit, and this will pay.

There is one fruit that is largely overlooked, and yet sells well in every market—Currants. One thing very nice about them is that one is not obliged to pick them as soon as ripe, and to force them upon a low market. They will hang on the bushes a month after ripening. As for the Currant worm, sprinkling the bush and fruit with a pailful of water in which is a spoonful of white powdered hellebore exterminates them quickly. This should be done as quick as their work is begun.

A plantation of Currants once set and kept properly trimmed and fed with manure, will last from 15 to 20 years, with but very little cost. This fruit connects the Strawberry and Raspberry crops nicely together.

The cost of picking is light, and coming at a time when the last pickings of Strawberries and the first pickings of Raspberries are lightest and pickers make but little money, turning them into the Currants an hour or two each day helps them out on the general picking.

No fruit comes after the Strawberry that is more sought for than the Red Raspberry. And no fruit is more scarce in many markets, and for these reasons. The country has been flooded with tender and red sorts and they have not been properly grown. Such hardy sorts as the Hansel, Crimson Beauty, Turner, Brandywine, and Cuthbert can be relied on in every section where it is possible to grow the red sorts. This excellent fruit must not be cultivated too deep, but to run through them shallow with a horse hoe that will cut off suckers and weeds, and allowing but three to four stalks to a hill, one is sure of good crops.

The same may be said of Blackberries. By planting such "iron clad" as Snyder, Taylor, Western Triumph and Stone's Hardy, these too may be made very profitable.

Then of Grapes, plant such old, hardy, tried sorts as Concord, Rogers 4 and 15, Salem and Pocklington, and one may have a selection that will give this fruit the season through.

## RECEIPTS FOR GRAFTING AND WOUND-DRESSING WAX.

For winter use—French: Melt together two pounds of clear rosin and two ounces of beef or mutton tallow, and when cool add one fluid ounce of spirits of turpentine and about thirteen to fifteen fluid ounces of ninety-five per cent alcohol, added slowly over a moderate heat, the contents being well stirred until about the consistency of honey, or just so as to be applied with a stiff feather. Keep in a wide-mouthed bottle, and cork when not in use. It is a complete dressing for all wounds on trees.

For early spring—Major Freas: Four pounds of rosin, one pound of tallow, and one of beeswax; melt all together over a slow fire, and when done turn out into a tub of cold water, and pull as shoemaker's wax is made. This may be softened with hot water if the weather be too cool, and applied with a paddle.

For summer, and to use upon trees—*Farm Journal*: Four pounds of rosin, one pound of beeswax, and from half to a pint of raw linseed; melt all together gradually, and turn into water and pull as for making shoemaker's wax. This is a grafting-wax that needs no seeing to afterward if well put on, by cooling the greasy hands and applying *secundum artem*.

In cherry grafting always, and in other kinds sometimes, strips of old muslin or calico from a quarter to half an inch wide should be wound over the wax and the ends imbedded into it to hold the grafts steady, and to prevent the slit from gaping.—*Germantown Telegraph*.

## GOOD VS. POOR SOIL FOR SMALL FRUITS.

An Illinois party asks, "Shall I choose a rich prairie loam, or 'bluff land' that is sandy and rather poor (or at least we Western folks would call it so), for growing small fruit? I can get plenty of manure for the hauling."

Heavy, rich, level land, like your prairies, is very apt to "heave" badly, and it is this that destroys plantations, while the bluff, rolling, sandy land heaves but little, if any, and consequently plants are not damaged. We have always chosen sandy land for our operations.

The great mistake many make, is either in choosing too rich soil, or over-feeding it with manure—supposing the more they put on the larger the crops. As well might they over-stuff a child with food to give it strength. Were we to take our choice of a poor, sandy piece of land, where even manure was scarce, or a deep, rich, heavy soil, both being in sections where fruits were liable to winter kill, we should take the poorest, plowing it deep, cultivating it well, and changing the crops here and there on it every two or three years.

In certain sections of Western New York, and others similar, where fruit does not winter kill, and where there is not that rich, virgin soil, and where earliness is not particularly desirable because of Southern fruits coming in, we should prefer about the best land that could be had, keeping in view land that is easily

worked. There is, too, another important thing in favor of sandy soil. It can be worked right after rains,—even while wet—without "baking," and, too, it is more easily worked.

We remember one season having almost continual rain for weeks. Between showers we kept the cultivator going lively, and all hands at pulling out all large weeds by hand,—not using hoes, and when it did come off dry we had but little trouble to get everything cleaned up in good shape. Visiting a brother-in-law at that time, we found his plants literally choked down with weeds. His land was heavier, with some clay, and for weeks he could work it no better than a mortar bed, hence the weeds.

Again, a sandy loam will stand the drought the best; only keep it well worked and droughts are really a benefit to the owner thereof. We mean that we have always made more money in dry seasons than wet, for the reason that we kept our cultivators and hoes constantly going and the soil well stirred, and when this is done on sandy soil, and it is kept well pulverized, it suffers but little in comparison to heavier soil that becomes hard with drought.

But we don't get the crops such seasons that we do in more rainy weather and as a rule we don't want them. We are speaking of sections where there is competition, and where most people grow in their gardens fruit sufficient for their own use and in favorable seasons fruit is abundant and cheap, large lots bringing in little money. Picking bill, expressage, cost of baskets, etc., etc., cut the net proceeds down to a low figure. In dry seasons many, or in fact, most, do not understand that cultivation keeps moisture to the surface; and while all such fail to get crops because of negligence, and, too, plantations on heavy soils suffering most, and garden beds drying up, instead of having a supply of their own, these become purchasers.

We had rather have one hundred bushels of small fruit from five acres of land at 15 cents per quart, than four hundred bushels from the same land at 5 to 8 cents per quart. Figure up cost of picking, baskets, marketing, etc., and you will see the point. And best of all, the small crop is less driving, giving one more time. Understand us, reader, we are no advocate of small crops when they are plenty all around us; neither would we, if we had the power, have droughts to obtain light crops and rain enough for plantations all around us.

#### SMALL FRUITS ON THE FARM.

To advise a farmer to grow small fruits for market, and at the same time carry on his farming operations, is something we will not do. But there are hundreds and thousands of farmers who have a natural taste for fruit growing, and to whom farming has become a drudgery—especially that class who are not strong, to whom a change is desirable and necessary. To these we would say, if you are living within three or four miles of a good home market, and cities not far away by rail or steamboat, a change to fruit growing will be both profitable and pleasant.

The first thing to do is to rent out most of your land, or let it out on shares, reserving your home, and say ten to twenty acres of land for your fruit growing operations, and if you have a love for the business, and go at it systematically and energetically, you will make more money from ten acres of land, than you have ever made from your farm, and that too, with less real heavy work.

Plant only of leading, well tried sorts that are hardy and productive; give them good cultivation and plenty of mulch, and you will reap a large reward, and too, this kind of work makes less hard work for the women folks, and besides, supplies the table with fruit daily throughout the year.

There are farmers who have no liking for growing fruit; but as a rule, these have a son or sons who have, and who might prefer it to farming. These are very anxious to keep their

sons on a farm, away from the city. To such we say, let such a son have the use of a few acres to grow small fruits; and the longer he is engaged in it, the more he will like it, and consequently his attachment for home strengthened and, too, by this the table is supplied with luxuries you would not dispense with after one season's experience. There are many inland towns not well supplied with fruit and vegetables and here there would be good openings.

#### COST OF GROWING STRAWBERRIES.

A paragraph is going the rounds of the press in which the cost of growing Strawberries in the East is put down at \$150 per acre, and itemized as follows: Land rent \$6; plowing and harrowing, \$4; manure, \$50; plants, \$20; summer cultivation, \$50; mulching material for winter, \$20. In amount for fertilizers, \$35 is allowed for one ton of pure ground bone and \$15 for muriate of potash. Will some of our Minnesota and Dakota growers give us the cost from their experience?

We clip the above from the *North Dakota Farmer*. It's laughable how such absurd items will find their way into Western papers. All we have to say is, that as a rule one acre of Strawberries does not cost the grower at the most more than one-third to one-half the amount given above. In fact, we can take an acre of poor Eastern land and plow and subsoil properly, where Strawberries have never been grown, and at the right time (say in August or September) apply ten dollars' worth of superphosphate and get as fine a crop as the average of growers in the West.

So then we save the \$50 item above on manure and the \$40 item on commercial fertilizers. As to the expense of \$20 on plants, that need not be but for the first or starting year, for after that one has all the plants he needs from his own increase. We would not advise ground bone for Strawberries, as it is not quick enough in its effects for a crop that is dependent on the first year after planting, like Strawberries, but is better adapted to Currants, Grapes and Raspberries, because more lasting.

We can cultivate one acre and do it well for \$25 to \$30, while \$50 is set down in above figurings. We wonder where in the East that acre could have been grown.

#### THE CULTURE OF CRANBERRIES.

We have often had inquiries as to the growing of Cranberries, and among all the directions we have yet received none equal the following short, practical, directions taken from the *Farm, Field and Stockman*:

The best soil is muck with a coating of sand on top. Clay and loam soils will not answer. Hence never plant Cranberries on a drift formation, and the sand should be sharp (a silicious sand).

When a situation has been selected for a Cranberry bog, the first thing to be done is to level it. It requires much less water to flow a bog that has a level surface than one that is uneven. If the bog is extensive, and cannot, without too much expense, be reduced to one common level, there is no objection to having different grades with low dykes between them. In many bogs it would be economical to employ an experienced engineer, and have marked stakes put up and profiles and working plans drawn. With such marked stakes and drawings the workman knows when he has filled his barrow where he is to tip the contents. There will be no mistakes, no alterations to be made, and in the end money will be saved.

The depth of sand required to be spread on the surface depends upon the depth of the peat. If the latter is only a foot or two in thickness, five inches of sand is considered sufficient; if it is several feet, at least a foot of sand is required to make a good bog. The more sand there is used, the longer it requires to bring the vines into a bearing state; but when brought into that state they will bear for many years.

The planting is generally done in the spring, by covering pieces of the vine, say three inches long, in the soil, about two inches deep, eighteen inches apart, three pieces in a place. A better way, on prepared soil, would be to open narrow furrows, two feet apart, and strew the vines, cut into sections in the cutting-box, rather thickly therein and covering lightly. If in planting in this manner care is taken to leave out one end of the vine, the best means will have been employed.

#### MEAT FROM THE SHELL.

Stephen Powers, in the *Ohio Farmer*, tells of a man in Athens County, Ohio, who bought 40 acres of not particularly good soil, which he set to Apple trees, planting Peach trees alternately with them. This was 13 years ago. He had but three crops from his Peach trees in that time, but his orchard has paid for 200 acres additional land, and the returns for the current year aggregate \$1,080 for Apples, cider and evaporated fruit, and the 15 swine that were fattened on windfalls. The orchard is principally of the Rome Beauty.

The *Orange County (N.Y.) Farmer* says: "George A. Galloway, of Walden, has applied the test of cold storage to Peaches. He purchased fifty bushels of Peaches of the Salway variety, of the finest quality purchasable, and put them in one-half bushel baskets. The result has proven perfectly satisfactory to the owner of the Peaches, as well as to the cold storage house property. Mr. Galloway expects to realize \$10 a basket for his crop. In fact he has now been offered \$15 a bushel for the entire lot, which offer he has refused.

Dr. Lazenby, of the Ohio Experiment Station, says: "I am acquainted with an orchard of fifteen Apple trees, now twenty-six years old, that has been regularly and systematically treated to a wash of soft soap about May 20, and again June 20, each year. Less than half a dozen borers have been found in this orchard and the trees are all in a thrifty, vigorous condition. In neighboring orchards, where this precaution has not been taken, the trees have been killed by scores, while many that remain are so much injured as to be worthless. Lye is sometimes used in the place of soap, but the latter is a much more effective preventive. It can be readily applied with an old broom. Beside making the tree obnoxious to the borer, the soap keeps the bark in a healthy condition. This remedy may be applied to all trees or shrubs liable to be attacked.

The *Prairie Farmer* says: The Dakota man who sowed buckwheat among his young forest trees was sensible. During the past fifteen years the writer has lost no opportunity for urging the sowing of buckwheat in nurseries, tree plantations, and young orchards. When trees are set on the dark colored prairie soils of the West, and the ground well cultivated and bare, the surface temperature above the nitrogen feeding roots will often reach 130, and sometimes 140 degrees. This intense heat of the soil and the consequent heating of the lower beds of air to which the young trees are exposed, is contrary to Nature and her methods of tree growing. If the exposed surfaces are covered with succulent plants of buckwheat, the nitrogen feeding roots can come up about as near to the surface as under native forest conditions, and the lower beds of air to which the plants are exposed become relatively cool. During the past quarter of a century some experiments with a view to testing the relative effect on young trees of exposed and shaded surfaces of soil between the rows have given results too striking for popular belief.

Ben: Perley Poore says in *American Cultivator*: Stealing fruit is a mean business. A highwayman, who meets me on the road on a dark night, and, presenting a revolver, demands my pocket-book, is more to be respected than the sneaking thief who creeps into my garden just before day and helps himself to Apples, Pears or Grapes. Thoughtless boys sometimes trespass in this manner as a good joke. Their parents should teach them better; and, if they will not, let a public exposure be made of every criminal detected. If this does not effect a reform, let the law do its work.

The *Practical Farmer* says: A well-known horticulturist says he had an Apple tree which bore fruit every alternate year only, and the fruit was very small. He made it a yearly bearer—and also greatly increased the size of the apples—by thinning out the small branches after the fruit had formed, so as to remove about half of it. The Apples were fully doubled in size and improved in flavor. Its year for non-bearing would find it full of blossoms, and by removing half the embryo Apples a good crop would result. This is a good thing to remember and try next spring.

### The Bouvardia for Amateurs.

When our New York correspondent in last month's issue spoke of the Bouvardia as being very much in demand in that city, but always inexpensive, she gave an intimation of two of the most striking qualities of the plant. These are, first, that the flowers are so charming that flower buyers eagerly demand them; second, they are grown so easily that they never can be a costly commodity. To winter flowers the Bouvardia occupies a relation somewhat similar to that of the Sweet Pea to other fine summer flowers, namely, they are most delightful yet always low priced in the city flower markets.

Still it cannot be said that amateurs in general are very successful as Bouvardia growers, and especially not so in the window garden. Simple as are the requirements of the plant, yet these are imperative for best results. It is as a winter-blooming plant that the Bouvardia has the greatest value. If for this one wishes to bring on his own stock a start should be made with 2 1-4 inch pot-plants the spring previous, growing such until fall in pots with several shifts or in the open ground.

As to soil for the Bouvardia, whether in pot or hedging-out culture, one that is light, rich and mellow is the best. While young growth is going on the plants need an occasional heading in, for securing stocky forms; tall plants are not the best bloomers. In starting the young plants a temperature of 70° with a moist atmosphere will suit them well until placed outside for the summer, say June 1.

To have flowers by Christmas from pot plants, these should be in a 5-inch size by the end of July, stopping the ends of the shoots not later than August, and shifting into the flowering pots in September. Plants grown in the open ground need clean culture throughout the season. As early as September 10th they should be lifted; to leave them until Geranium lifting time, some weeks later, would be a bad mistake. The size of pots required for flowering in varies from about six to eight inches across, according to strength of plants. In lifting exercise care that the roots are not exposed to air needlessly for one moment. Pot moderately firm and water the plants once thoroughly, then shade heavily for about a week, during which time spray the foliage frequently but lightly.

As the Bouvardia likes warmth, it should from the taking up time on have this provided. For a winter temperature anywhere from 50° to 65° night will suit; in the former the bloom will be finer; in the latter, earlier and more profuse. In inside culture the Red Spider, Green-fly and Mealy Bug are liable to do injury. Sponging or syringing the leaves very often will keep the plants clear of the first named; a dusting with tobacco powder will put an end to Green-fly, while for Mealy Bug the thumb and finger remedy, or else washing with warm soap-suds, should easily suffice.

The flowers of the Bouvardia come somewhat in crops throughout the winter. Towards spring the blooming slackens up a good deal, at which time it is well to withhold water for a spell, cutting the plant back fully one-half. A month or so later they may be started up again, removing most of the old earth and repotting in fresh soil. Or, if growing in a bed, a method very common among florists, mulch with manure. Such treatment, along with a good watering, should induce a new thick growth that will yield much bloom during a new term.

Those who grow Bouvardia extensively start with fresh plants each spring. It does not follow, however, that no success could be had by working with the same plants for several years after the course outlined above. Something should be said about the propagation. This is commonly, because most successfully, done during this month from cuttings of the roots.

Healthy young roots are taken and cut into small pieces. These are strewn over a warm bed of sand, covering them 1-4 of an inch in depth with sand. It does not take a long time before minute plants will appear, and these after having grown an inch or two are to be treated like any other cuttings.

Of varieties adapted to the window garden, these which follow are the best: Alfred Neuner, double white; President Garfield, double pink; Elegans, a charming and well tested single red,



TRUSS OF BOUVDARIA ELEGANS.

of which we give an engraving from the catalogue of Hill & Co., florists of Richmond, Ind.; Leiantha and Triphylla, also red; Davidsonii longiflora, and the fragrant Humboldtii corymbiflora, white. The last one is really a superior sort under all circumstances.

### A Reader Describes her Plant Stand.

My plant stand is a plain home-made affair, but answers my purpose well. It is made of inch pine boards, has four shelves, each one projecting five inches beyond the one above. The three lower ones are one foot wide, the top one seven inches. The height between them is nine inches; a foot piece of oak two inches square, reaching from front to back of the stand is secured to each side of the stand, and into these four casters are put.

The stand is made of a width corresponding with a large window in the south side of the kitchen, only a few feet from the cook-stove and holds when filled about 100 plants. My collection embraces Geraniums in variety, Begonias, Coleus, Heliotrope, Amaryllis, Agapanthus, Hardenbergia, Mesembryanthemums, Vinca, etc., etc., all seeming to enjoy the combined warmth of sun and stove, and thriving in tin cans, wooden buckets, and other "bric-a-brac."

The tea kettle is kept on the stove always, to keep the air moist, and a bottle of strong tobacco water, and a machine oiler filled with Pyrethrum powder, stand near to do instant execution on the appearance of insect enemies. I water the plants early every morning, using warm water. By taking hold of one end of the stand, the casters allow me to roll it back from the window with ease, giving access to them, so I can readily see the needs of each. If a plant

looks dry, it gets a generous drink; if a little moist it gets none, unless it be a greedy drinker.

When the plants need a bath, instead of taking them singly in the washtub as I did last winter, I turn the stand part way round, hang a heavy blanket behind them, and with warm water and a Whitman Fountain Pump give them a thorough washing. I do this on warm, bright days, keeping the sun from them until they dry off; all this requires scarcely more than half an hour, including mopping the floor, while the washtub, process required a great deal of time, and strength too.

ELDER'S WIFE.

### Some Fine Annuals for Next Summer.

WILBUR F. LAKE.

To the annuals we are largely indebted for our finest summer and early autumn flowers. At this comparatively idle season in gardening work, it is in order to study up our next season's display of these. I would like to urge the more general cultivation of many of the more delicate and really elegant annuals which cultivators too often pass by.

Without the gandy Phlox Drummondii, the carpet parterres of Portulaca, and the beautiful beds of Asters, the summer garden would be incomplete enough, no doubt. These are all right in their place, but a flower garden wholly composed of these does not begin to possess the charm of one containing the fine things to which I invite attention.

To my mind some of Nature's best smiles are found in such delicate annuals as the Asperula, the Nierembergia and the Fenzlia, all of which are worthy of being named here. For a shady spot few flowers give more pleasure than the Whitlavia. The plants are proof against cold and wet, but often suffer in hot weather, hence their suitability for shady places. The flowers consist of drooping clusters of white and blue bells. The Saponaria is another annual too rarely seen. It is a low-growing plant that is very desirable for edging, setting alternately with other low plants of pink and white. For a fine trailing flowering plant try the Abronia, a native of California, where it grows very plentifully. The branches of this plant are several feet in length and most pleasingly studded with the modest heads of bloom of various colors. The Eutoca, although a coarse-growing plant, produces blossoms of blue that are not common among flowers. These are very desirable for cutting. A branch placed in water will go on developing for many days.

The new varieties of the Godetia, with their delicate tints of rose, crimson and white, must also be mentioned among our attractive annuals. On the rockery one should be sure to have some plants of the Nolana, these being very pretty here. Treat them like Portulacas. The flowers are cup-shaped, resembling those of the Morning Glory, to which, indeed they are not distantly related.

I have mentioned the foregoing as being especially desirable, having grown them year after year. There are many others I have only given one year's trial and of which the Browallia, Callirhoe, Spraguea, Salpiglossis, Nemophila, Gaillardia and Viscaria pleased me.

A particular merit of the annuals is that, with being so numerous and differing so widely in habit, form and color, there is no spot otherwise left unoccupied but can be made attractive with them. The kinds of soil also are few in which some will not well thrive.

AS TO FUCHSIAS for winter flowering, Speciosa is one of the finest; corolla scarlet, sepals bluish. Earl of Beaconsfield is a fine one; flowers large, corolla rosy carmine, sepals carmine. Black Prince is of fine habit; corolla rose, sepals carmine. Arabella is fine; corolla rose and the sepals white.

### Mr. Treeclimber has Something to say for Botanical Names.

"What! is Mr. Treeclimber in favor of such terrible jaw-breaking names too? I supposed he was much too sensible for that." I think I hear some of my young friends make such a remark before they have heard what I have to offer.

First let me say that I am a warm friend of the best common names of plants, but not to a degree that would lead me to banish the botanical ones. While preferring for all ordinary uses the names Mignonette for *Reseda odorata*, Diadem Pink for *Dianthus Heddwigii diadematus flore pleno*, etc., I yet find the latter names of great importance. One thing that has given me great pleasure in reading POPULAR GARDENING is that its editors, ever since I have known the paper, have shown a preference for the common names of plants in its columns. Not but what I observe that they also appreciate the botanical ones, for usually I see these are given somewhere near the common names which they represent, and this is proper.

Wherein then does the

#### VALUE OF THE HARDER BOTANICAL NAMES

lie you will want to know. It is in the simple fact that such names are fixed and the same the world over in all languages. What I mean by this is, that these are the Latin names of plants and Latin is the language of science everywhere. With common names it is quite otherwise; usually they are common only in one language, and even at that, a certain name for a certain plant may often be known only to a very narrow region. Indeed nothing is so common as to find many of the more ordinary kinds of plants having a different name in almost every locality where they grow.

#### NO ONE KNOWS HOW MANY COMMON NAMES

such may altogether have throughout this or that state or country. To illustrate: sometime since five intelligent men from different parts of the state were discussing the subject of common and botanical names, when one of them picked up a weed that is widely known, and asked each of his companions to give the name he knew it by. Every one of the five gave a different name. In the neighborhood where this occurred the same plant was known by several others. And such cases of an abundance of names are anything but rare.

The worst part of this common name matter is that it leads to much confusion. How could it be otherwise with speaking of the same plant by different names in different places? Let us look at several familiar examples which clearly show this great liability to confusion. Take for one the well known shrub which botanically is everywhere known as *Rhus Cotinus*, but which

#### BEARS SEVEN COMMON NAMES

that I know of, and who can tell how many more besides. I will make a parallel exhibit of the names:

BOTANICAL NAME OF THE SHRUB.	COMMON NAMES OF THE SAME SHRUB.
<i>Rhus Cotinus</i> .	Venetian Sumach.
	Purple Fringe Tree.
	Smoke Bush.
	Cloud in the Air.
	Summer Fringe.
	Wig Tree.
	Mist Tree.

Now suppose some one of my readers knew this shrub only by the first name given, and some distant friend of yours would know it only by the last name given. Then supposing you was to offer that friend a sprout of your Venetian Sumach and he, not knowing it by that name, but having the same plant by the other name, would accept of your kind offer, do you not see how annoying the little friendly deal might prove to be? Or some friend might have a Cloud in the Air on his lawn which you very much admire. You would want to plant one and would order it by this name from a nurseryman. But how could he fill your order even though he might have thousands of trees for sale, knowing them only as Purple Fringe

or else by the botanical name. You will see at once in these cases, that had the botanical name been known and used along with the common ones, all chance of trouble would have been avoided, because this alone represents the same plant everywhere.

Here is even

#### A MORE STRIKING INSTANCE

of the same kind, in the case of an evergreen tree well known in many place and which case I present similarly to the former one.

BOTANICAL NAME OF THE TREE.	COMMON NAME OF THE SAME TREE.
<i>Abies Douglasii</i> .	Douglas Fir.
	Red Fir.
	Black Fir.
	Douglas' Spruce.
	Red Spruce.
	Black Spruce.
	Henlock.
	Oregon Pine.
	Bear River Pine.
	Swamp Pine.
	Western Pitch, and perhaps others.

In this case no less than eleven names are borne by the same tree in different localities of our country. It is possible that it has as many more common names in other countries. But with all its common names it bears but a single botanical name and that is the same everywhere and as a rule unchangeable. These illustrations must serve to show you very clearly how unsatisfactory is the attempt to get along well with only the common names of plants. If the Latin names may be somewhat hard to remember, really it is the common ones that give the most trouble and by a good deal.

But I have more to say on this subject which must be deferred until some future time.

TIMOTHY TREECLIMBER.

### Growing Tree Chrysanthemums.

This is the month in which to start on getting up next fall's flowering stock. On raising that always interesting class, the Tree Chrysanthemum, a correspondent of the *N. Y. Tribune* writes:

It is yet a mystery to most people how the expert gardener obtains his fine specimens of the showy autumn flowers, Chrysanthemums in tree form. The popular delusion that they are old plants, grown for two or three years in advance, is untenable for the reason that Chrysanthemums are herbaceous, and the tops consequently die down to the surface of the ground after the flowering season.

To obtain fine specimens, the old stock plants should be started in February, and the cuttings taken off and rooted as soon as possible. After potting them off in rich mellow soil, give an abundance of water both over the tops and at the roots. A little bonedust incorporated with the soil and a weekly allowance of liquid manure will cause vigorous growth. Keep the temperature at all times cool, but never permit frost to enter.

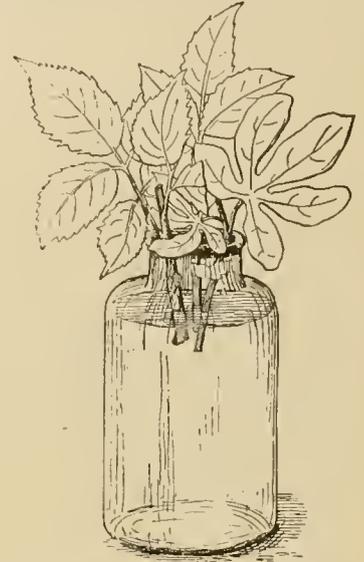
Train to a single stem and when the shoot reaches say four feet in height, pinch out the center, when side branches will at once start out. These in their turn must be pinched to form a compact head. As soon as the weather is sufficiently mild in spring, pot up the plants and plunge in the ground up to their rims. Never neglect to water, and syringe at least once a day, excepting in rainy weather, and continue the use of liquid manure all the season.

### Striking Cuttings in Bottles.

Variety in the methods of propagation are always of interest. One method for doing this work that is rarely applied beyond the rooting of Oleander cuttings, is in bottles, and this is suited to many other kinds also. At least so we are informed by our always interesting correspondent, M. W. H., of Dover, N. H. Along with this "note to the family" she also sent the little pencil sketch from which our engraving was made. She says: "I have rooted not only Oleanders, but Roses, Passion Vines, Virginia Creepers and numerous other things

in bottles with success. I have a sprig of Ground Ivy which I put in a specimen glass of water nearly two years ago, and it threw out roots, and is still growing, although it is not near the light.

For this kind of slipping I prefer a wide-mouthed bottle, and this I fill nearly full of water, and keep in a light place during rooting. I have tried bottles of different colored glass, and also stone bottles, but find no perceptible difference in the results, while the



STRIKING CUTTINGS IN BOTTLES.

light colored ones are more interesting and ornamental. I propagate at any season of the year, but find the present time very suitable.

The cuttings I take off with a heel, and not straight across. These I set so they do not dip more than three-fourths of an inch into the water. In the water I sometimes have put lumps of charcoal, but could see no good from it. The water may be changed if it becomes clear, having the fresh of the same temperature as the old. The cuttings usually start to throw out roots inside of three weeks, and I pot them as soon as ever the latter show. I have had success in striking outdoor Rose cuttings in the summer in this way."

### Received at this Office.

#### CATALOGUES.—FIGURES INDICATE NUMBER OF PAGES.

- Island Seed Co., Muscatine, Ia., Seeds; 24.  
 F. Bartelds & Co., Lawrence, Kas., Seeds; 96.  
 D. M. Ferry & Co., Detroit, Mich., Seeds; 124.  
 Plant Seed Co., St. Louis, Mo., Seeds, etc.; 64.  
 D. M. Dewey, Rochester, N. Y., Cold Plates; 56.  
 Hill & Co., Richmond, Ind., Roses, etc.; 60.  
 A. J. Caywood & Son, Marlboro, N. Y., Small Fruits; 10.  
 Cole & Brothers, Pella, Ia., Seeds; 48.  
 C. L. Whitney, Warren, Ohio, Evergreens; 4.  
 F. K. Phoenix & Son, Delevan, Wis., Nursery; 12.  
 Isaac F. Tillinghast, La Plume, Pa., Seeds; 32.  
 Wm. Toole, No. Freedom, Wis., Pansy Seeds; 8.  
 Parsons & Sons Co., Flushing, N. Y., Trees; 110.  
 Peter Henderson & Co., New York, Plants, etc.; 140.  
 James Vick, Rochester, N. Y., Plants, etc.; 144.  
 Young & Elliott, 54 Dey Street, N. Y., Seeds; 64.  
 Johnson & Stokes, Philadelphia, Pa., "Garden and Farm Manual;" 86.  
 John G. Hartel, Keokuk, Ia., Garden and Flower Seeds; 36.  
 F. N. Lang, Baraboo, Wis., Seeds; 46.  
 Rose Mfg. Co., New York City, Insect Powder; 4.  
 William Henry Maule, Philadelphia, Pa., Garden Supplies; 52.  
 L. W. Goodell, Dwight, Mass., Seeds, Trees and Plants; 32.  
 Frank Ford & Sons, Ravenna, Ohio, Seeds and Small Fruits; 31.

#### MISCELLANEOUS.

- "Fourth Annual Report of the New York Agricultural Experimental Station," Geneva, N. Y. 348 pages.  
 "Report of the Fungus Diseases of the Grapevine." By F. Lamson Scribner, B. Sc. From the Department of Agriculture, Washington, D. C.  
 "The Gold Fish and its Culture with a View to Profit." By Hugo Mulrett. 108 pps. H. Mulrett Cincinnati, Ohio.  
 "Art of Propagation; a Handbook for Nurserymen, Florists, Gardeners and Everybody." By J. Jenkins. Illustrated. 32 pps. Jenkins' Grape and Seedling Nursery, Winona, Ohio.

### The Dying Rosebud.

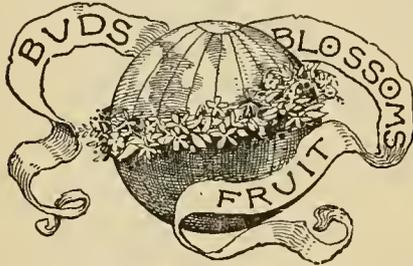
Ah, me! ah woe is me! that I should perish now,  
With the dear sunlight just let in upon my balmy brow.  
My leaves, instinct with glowing life, were quivering to un-  
close;  
My happy heart with love was ripe—I was almost a Rose.  
How oft while yet an infant flower, my crimson cheek I've  
laid  
Against the green bars of my bower, impatient of the shade;  
And pressing up and peeping through its small but pre-  
cious vistas,  
Sighed for the lovely light and dew that blessed my elder  
sisters.  
Ah me! ah woe is me! that I ere yet my leaves unclose,  
With all my wealth of sweets, must die before I am a Rose.

—Mrs. Osgood.

### Jack Frost.

When the evening lamps are glowing,  
And the wintry winds are blowing  
In a dull and hollow chorus through the branches brown  
and bare.  
Downward on a moonbeam gliding,  
And within the shadows hiding,  
He writes upon the window-panes with fingers light as air.  
In white, bewildering showers  
Of stars and crowns and flowers  
From out his cloudy chariot the feathery snow he hurls.

—R. M. Griswold.



Coleuses brighten.

Flowers now improve.

Burn the tree prunings.

Fir trees must be warmly clad

It pays to plan well beforehand.

Poor seeds are dear at any price.

All heavy crops are grown on rich soil.

Give thought to having an early garden.

Cramping Cineraria roots is a bad course.

Suppose you get up a garden marker now.

The roller is the best gravel walk preserver.

This year's catalogues scarcely show hard times.

Valentines of long stemmed flowers are in vogue.

Flowers bestow grace on the plainest apartments.

The Camellia and the Tea plant are near relatives.

For a low hedge the Barberry bush is excellent.

Thank you! To many friends who have sent in clubs.

Primroses once in bloom will then thrive in shady windows.

The Prairie Queen Rose is American. Baltimore, 1843.

Wanted! More items and articles of experience from readers.

Cyclamens kept cool when in bloom will look brighter and last longer.

Ten Strawberry plants well treated are better than a hundred misused ones.

A good resolution for the future: never to plant a tree and then let it die from neglect.

The Gregg Raspberry, excellent sort that it is, seems not to be satisfactory on clay soil.

The talent and support of five journals combined in one ought to be telling in effects.

The Dix is an excellent fall Pear, only we must not expect to see fruit from it soon after planting.

Single Petunias in the better strains give as much satisfaction for the outlay as any annual we can think of.

"No one Grape is suited to all localities: neither is there any one locality suited to all Grapes."—Geo. W. Campbell.

Where Winter Pears are wanted for the table they should be brought into a warm place, and here, after a few days, they will become fit for eating.

Your neighbor on some side, perhaps several neighbors, would be glad to take this paper, if made acquainted with its worth. Good reader you know to what we refer.

The Lucretia Dewberry. How well this may be adapted for market remains to be seen, but no one need be afraid of being humbugged by giving it a trial.—W. J. Green.

Do you want to help on the advancement of gardening in its every branch throughout America? Then simply help on the circulation of this journal. Your efforts here will surely bear good fruit.

**An Idea for a Cold Day.** In starting a new fire in the greenhouse boiler or furnace use warm coal from a box kept inside the house, for putting next to the kindling. It will ignite more readily than if only cold coal is used.

**Plums do not enjoy the highest ground, for this is apt to be too dry; nor low grounds, for here late frosts may catch the blossoms.** They do enjoy a rich, naturally moist but drained soil. An able authority backs this statement.

**At this season, when people begin to think of spring garden work, is a time when those who do not now take POPULAR GARDENING would listen to its merits and be likely to subscribe for it if invited.** Here is work for every gardener of our family.

**He Will be a Gardener.** Little Burt, who is soon to see his fifth birthday, picked all the leaves off his sisters toy tree a few days ago. His mother in reproving him for this asked why he did it, to which he answered, "Cause they isn't wight; it's winter."

**Plants are not aristocratic; they are better satisfied with the window of the kitchen than in any other one in the house; in a poor man's home than in a rich man's mansion.** It is a plenty of fresh air through oft-opened doors, and of moisture which they get in these places, that suit them so well.

**Grafted Apple trees may be long-lived, but trees that are not grafted are more so, as everybody knows.** It is not long since several old ladies revisited their childhood home and ate Bullet Apples, as they were called, from the same tree that they had picked them from as children 70 years before.

**Only a Western Story, Perhaps.** A Nebraskan sends to one of our farm exchanges the following statement: "I have kept Squashes till October, and have kept Crooknecks two years, and carried them to the fair the second year just as sound as when taken from the vines. I always take out fresh seeds for planting."

**A pleasing plant for pot culture, or for use in baskets, vases, etc., is Torrenia Fournieri.** The flowers are of a shape quite similar to those of the Maurandia, but in color are a blue, with golden blotches on the inner side. It is a free bloomer over a long season. The plants may be raised from seed, and this can be sown at any time now.—E. E. S.

**The "American Horticulturist,"** Although this journal has been merged into POPULAR GARDENING, we would say that all offers relating to subscriptions, contributions, etc., made by its former publishers will hold good until June 1st of this year. Moneys for the former may be sent either to Leavenworth & Burr Publishing Co., Detroit, Michigan, or directly to this office.

**No dew can reach the house plants, of course.** Had you ever thought of this, and of how much the plants miss in this respect, as compared with those of the flower beds in summer? We speak of it to impress the importance of frequent sprinkling, so all can see its necessity. There can be nothing nicer for this than the common rubber sprinkler having a fine rose. Let the dew fall daily.

**Here is a hint to those florists who would force the Camellia into early bloom next season:** Do the forcing now, or as the new growth, and with it the next season's buds, is forming. At this time they may be hastened by heat as high as 65°, but defer this until just before blooming time, as may be done with most kinds of plants that are wanted in flower early, and you invite disaster to the crop of bloom.

**An Edible Oxalis.** One species of this plant, *Oxalis crenata*, is cultivated as a garden vegetable in France, the bulb of which is much prized as food. Its flavor is slightly acid; the leaves also are acid, like those of the Rabbit Clover, a well known native Oxalis. This foreign species grows about one foot high, has yellow flowers, and tubers that in some plants are yellow, in others red. The first frost kills the tops; the tubers are fit to eat some time later.

**A folding protector for plants is shown in the engraving.** It consists of a pair of trapezoidal boards hinged together at their right-angled ends and connected by netting or oiled muslin of sufficient size to permit them to be opened as shown.

The protector when not in use may be compactly folded, as seen to the left in the engraving. The cost is said to be less than four cents apiece. This article is patented; it being the invention of Eugene Zimmer, Mobile, Alabama.

**Ferns in Moss.** In a fertilizing moss, made by sprinkling some fine bone meal over the moss as it was spread out, I have succeeded in growing Adiantum and Pteris Ferns with excellent results. I place the moss in round wire baskets of my own making, and which look like balls of moss with Ferns growing out of them when planted. They are pretty for hall or house decoration. They are easily watered by placing in a saucer of water, but here they must not be left to stand long.—Dora.

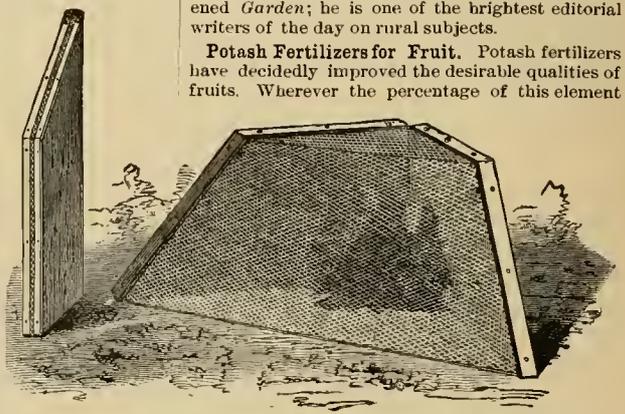
**A Rapid-growing Tree.** The Silver-leaved Maple (*Acer dasycarpum*) is one of the most rapid-growing trees we know of in the North, and it is open to but few of the objections that can be brought against the free-growing Poplars. We have just seen dug up some trees of this variety in an old nursery that are only twelve years old, and yet are a foot in diameter, though crowded somewhat. Culture and fertile soil had of course much to do with this. It is a good tree to plant where a quick growth is wanted, and it is a clean-looking and good shade tree.—J. H.

**An Insect Destroyer.** In printing a note from Mr. F. Dickinson on this subject it is done not by any means to justify cigar smoking, but for the idea it contains as to the use of tobacco in any other form, as an insecticide. He says: "I smoke cigars freely and save the stubs at the mouth end. I then put about three dozen of these in a stone jar with one quart of boiling water; stir well up, and cover over for two or three days. When it is nearly as dark as strong tea it is ready for use. Then I syringe my plants and wash off with hot water in twelve hours after. It is harmless, and is not only like some other insecticides."

**Holiday Flowers Outdoors.** They have them, as a usual thing, and in abundance, in the San Jose Valley, California, according to a recent letter from subscriber J. A. C., of that place: "Our churches and homes were adorned on Christmas with flowers from the open garden. Of these there were Roses, Chrysanthemums, Violets, Marigolds, Clematis, Jasmynes, Heliotropes, Geraniums, Candytufts, Tritomas, Cestrum (red and yellow), Japan Anemones, Snapdragons, Carnations, all blooming in my garden. In all the counties of California, from the foot hills of the Sierra Nevadas to the ocean, frost in winter is the exception. In 36 years snow has fallen probably 10 or 12 times, but only twice was there enough to gather snowballs."

**Joining their Fortunes.** Those excellent journals, the *American Garden* and the *Floral Cabinet*, as if tired of single blessedness, have become life partners for better and not for worse. Of the two the *Ladies' Cabinet*, being the more gentle partner, naturally enough gave up its name, and hereafter the title *American Garden* will serve the united papers. POPULAR GARDENING, with its own strong inclination to lessen the number of horticultural papers in the country by purchase, heartily rejoices in this union of the talent and strength of its New York contemporaries; to its mind it means a very able paper to continue the career of the others. Mr. E. H. Libby will continue to be editor of the strengthened *Garden*; he is one of the brightest editorial writers of the day on rural subjects.

**Potash Fertilizers for Fruit.** Potash fertilizers have decidedly improved the desirable qualities of fruits. Wherever the percentage of this element



A FOLDING PLANT PROTECTOR, SHOWN BOTH OPEN AND CLOSED.

has been raised, the change is accompanied by an increase of sugar and decrease of acid. This, it is hardly necessary to say, is an important and desirable change—a matter of dollars and cents. Other things being equal, the fruit with the largest per cent of sugar will bring the highest price. Moreover, less desirable varieties may be brought up to a higher standard, thus giving value to such in

quality, hardiness and prolific bearing. The fact that the quality and character of garden and orchard products can be modified by the effect of special fertilizers is of immense importance in its practical as well as scientific bearing.—*Massachusetts Experiment Station.*

**Fruit Growing in British Columbia.** Our correspondent, G. W. Henry, from that far-off region, has great faith in the future of that part of the world for fruit growing. Excepting California, he thinks it will develop into the finest fruit raising country on the continent. He says: "I have seen by far the finest specimens of Apple, Pear, Plum, Cherry, and all kinds of Berries and Currants, considering the varieties, I ever saw in any country, and the way the trees and bushes grow and produce is something wonderful. The fruit retains all the fine flavor of our Northern climate, grows to an immense size and is beautifully colored. I hope to give you some accounts later on, after I have had more experience here. Of course this country is new and fruit growing is in its infancy, but nearly every person is now turning their attention to that industry."



Fig. 1. The Common Perilla.

**Lily of the Valley in the House.** One of our new subscribers, E. M. Van Aken, a photographer, doing business in Elmira, N. Y., is also a successful amateur gardener. He succeeds well in growing the Lily of the Valley as a window plant, and has favored us with his method of managing this favorite here: "I find it very satisfactory. I take up a nice clump of roots, with strong flowering 'pips' late in the fall, place them in a pot or box of soil sufficiently large, and leave out-of-doors until the soil is frozen. Then I remove them to the cellar, or some cool place where they will thaw gradually, and placing them in the window about the first of January, and from then on they will come into bloom beautifully in about five weeks and remain for nearly a month, to make every one smile who looks upon them, and to fill the room with the most delightful fragrance."

**Hardly to be Wondered at.** One member of our family living in Tippecanoe Co., Ind., advances some conclusions concerning an insect on Apple trees in her vicinity, with which we cannot agree. On the face of things, however, it might seem as if she was right. It is her opinion that the Woolly Aphis, which is the insect referred to, owes its origin to the Cottonwood and similar trees, the leaves of which are covered with white down on their lower surface. She says this down flies from the trees in July and settling on other trees soon destroys them. While the substance may resemble the woolly insects, there is no connection whatever between them. The latter are propagated the same essentially as all other insects are, and to cut down all the Cottonwood trees, as our correspondent says she should do if she had her way, would not reduce them at all. One gentleman of our acquaintance who has been much troubled by this insect, finds a remedy for it by painting over every infected part of any tree with a composition made of an equal quantity of melted rosin and fish oil. This is put on while warm with a paint brush.

**The Perillas** are a class of easily raised, dark leaved plants that are very useful for creating contrasts with Centaureas, and similar "Dusty Millers" in summer bedding. Being half-hardy annuals they may be grown from seed by those who do not have the facilities for raising dark Coleus and the like from cuttings. The best known kind is the Common Perilla, (*P. nankinensis*), shown in Figure 1. This has dark vinous purple foliage. A variety of it of comparatively recent introduction is the Fimbriated Perilla (*P. nankinensis fimbriata*), and this one is shown in the lower engraving. The Perillas are heat lovers; with this characteristic kept in mind there is little difficulty in raising the plants. The seed may be sown as early as February 15 or March 1 to raise strong plants early, provided one has the conveniences of a warm greenhouse, hot-bed or window. These lacking, and the sowing had better be deferred to a month or six weeks later. We have seen fine results in raising the plants from seed that was sown in a sheltered place in the open ground about May 20, the soil here having been a black sandy loam. Sometimes the Perilla may be seen used with unrefined taste, in a

state so crowded that the plants become weak and straggling, and looking anything but creditable. Such a style of culture for them is inexcusable.

**Begging Cuttings.** Let there be an understanding as to this business and then no one need be offended. A visitor to a plant collection under glass, at this delightful season of the year, sees a fine plant bearing many cuttings suitable for striking. The thought occurs how easily a plant could be raised from one of these, and unwittingly the favor of perhaps a single cutting is asked by the visitor. To the one who asks it seems like a small thing for the plant owner to grant "only a slip from so many," and to be refused would be to greatly lower the latter in the estimation of the former. But let us look on the other side. The plant with its crop of cuttings and bloom is quite a different thing from what it was in the fall or early winter. It now represents in its vigorous shoots such things as costly growing facilities, care, coal, etc., and through a number of months of time. It has been brought along to a stage where it may soon begin to make some returns to its patient owner. He sees in these cuttings hardly any less value than in the same number of well rooted plants in pots, for inside of a few weeks they may be such by his skillful efforts in the propagating house. As well expect him to give away plants in the spring to those who can afford to buy as his dearly raised cuttings, which so soon will yield cash value. He may give in order not to offend, but he cannot do so with cheerfulness. It should never be asked. The way to manage such a matter is simply for the visitor to insist on paying the real value of the cutting, say a few cents less than a plant in the spring would be worth. Then there will be no misunderstanding or undue advantage on either side and both parties to the deal may part with pleasant faces and feeling happy.

**Buyers are Referred Elsewhere** "Do you have Box shoots suitable for hedge-making for sale and if so, at what price?" asks Mr. Jas. E. Kevil of Caldwell Co., Ky., along with some other questions, which appeared in our Inquiry Column. This detached part of our respected correspondent's inquiries we set forth here as a specimen of many such that reach this office and which in this instance we present as a text for some remarks to a multitude of our newer readers. As is well known to all old subscribers, POPULAR GARDENING is an independent journal of the straightest sect. No one connected with its management is interested in the sale of so much as a single seed, plant or tree of any kind. No one associated with this office is at liberty to even deal in horticultural stock of any kind. We are publishers and not nurserymen. While it is true that among our valuable contributors we have the pleasure of numbering some experienced nurserymen and seedmen, it is also true that not one such has any control in the affairs of the paper. Indeed we may with all due respect to our excellent contributors say, that it is one part of the office of the conductor of POPULAR GARDENING to see that not even such shall find the opportunity of grinding any axes here. The simple object in all this is to make POPULAR GARDENING a strictly reliable journal of horticulture in which every word is designed to benefit the reader, and with no words or statements fixed up to help the sale of this man's or that man's seeds or plants. That such a straightforward, independent course is giving great satisfaction to our readers, and not to them alone but also to all engaged in the garden supply trade, because of our strict impartiality towards all such, is becoming more and more evident with each month's history of our successful paper. We have from the first known that this was the only right and consistent course for any horticultural paper to pursue, and to it we shall adhere so long as we are publishers. When, therefore, inquiries like the one quoted come in, we have only a single thing to do, namely, to refer them to one or another of the numerous growers or dealers whose cards at various times appear in our advertising columns. With the present year we also opened a permanent Garden Supply Directory, as seen elsewhere, and to this all such inquirers are respectfully referred.

#### Notes on the Use of Flowers in New York.

There was a much brisker wholesale flower trade during New Year's week than at Christmastide, and this in spite of the fact that a majority of the smart people were at Tuxedo, Pelham and Cedarhurst.

One society woman made use of an entirely novel floral decoration at the opera. She has attracted much attention through selecting a turtle as the friend of her bosom, and she takes this engaging reptile into her box at the opera, where he lies on a

bed of Hyacinths, and takes his dose of Wagner with well-bred indifference.

Orchid flowers brought good prices around the holidays, but as far as actual use was concerned, Violets came first on the list, with Lily of the Valley and Roses closely following. Orchid bridal bouquets are rare, partly, perhaps, from their costliness, and partly from the still prevailing opinion that Roses, Lilies and Orange blossoms are more appropriate to youthful brides than the heavy richness of the Tropical flowers.

One society reporter recounts a harrowing instance at a notable social gathering, where the decorations were very meagre, and, what more strongly affected some of the guests, there was a decided scarcity of champagne, its want being supplied by plebeian bottled beer. This innovation was explained on the ground that many preferred the humbler fluid; any suggestion of economy would be in decidedly bad form.

It is a melancholy fact, but the prevailing fashion in flowers with a good many really smart people this winter is economy. Whether Wall street has been unpropitious, or real estate fluctuating, or whether our mondaines are reducing expenditure in imitation of impoverished nobility, no one knows. But society has tightened its purse strings this winter, and in many instances floral decorations are less elaborate in consequence.

The wheel of fortune displayed at the Philadelphia Convention has acquired a large amount of popularity this winter. It consists of a large winged wheel, on a bed of plants and flowers, with a horn of plenty resting on the top. Some of the florists make much use of the finer varieties of dried flowers, in combination with the fresh ones, in this design; in fact, Cape Flowers are very often used for filling or backing in many designs.

Another luncheon arrangement showed a different combination of color. A broad strip of old gold plush was laid down the center of the table. In the center was an oval of growing Ferns, surrounded by massed bunches of Marechal Neil and Perle Roses, which were afterwards distributed among the guests. Radiating from the center of the table were satin ribbons, olive and gold; one end, bearing the name, lay across the plate of each guest.

Some of the daintiest table decorations this winter have been for luncheons. One artistic arrangement had for its centre piece a strip of blush-pink plush, outlined against the white damask by a border of Smilax. Within this was a round gilt basket closely filled with growing Maiden-hair Ferns. At each end were arranged in wheel shape pink satin bags, tied with dull-green bows, out of which arose bunches of Violets. These bags were the favors. At one end was a cut-glass globe, filled with pink Carnations, standing on a mirror.



Fig. 2. The Fimbriated Perilla.

One design, originated by a clever florist, has attracted attention by its oddity, and also by the fact that no one, on first sight, could grapple with its intricacies sufficiently to feel sure what it represented. It had an irregular base, from which radiated a series of angular arms, somewhat suggestive of a cuttle fish trying to crook his elbows after the style of Bunthorne. But a little explanation soon enables one to understand the designer's idea; it represents one of those branching "China monsters" last century dames loved to collect. We can see this shape in any collection of Chinese curios, in both bronze and porcelain, and the designer shows much ingenuity in thus adapting it to the needs of the florist.

EMILY LOUISE TAPLIN.

# LIGHT FROM THE SOCIETIES:

BEING MATTER THAT DESERVES TO BE WIDELY KNOWN.



## GLEAMS.

Plant food locked up in lumps might as well be out of the field.—*Matthew Crawford.*

**Roses.** You can scarcely give Hardy Roses too much food.—*Mr. Warner, at Ontario Fruit Growers' Association.*

"Horticultural Education for Women" was the subject of a paper, by Miss Sara J. Smith, Hartford, Conn., to have been read at the last meeting of the Massachusetts Horticultural Society.

An Inter-State Convention in the interests of fruit growing and general agriculture will be held at Lake Charles, La., on the 23d and 24th inst. Particulars furnished by Secretary S. A. Knapp, Lake Charles, La.

The will of the late Marshall P. Wilder bequeaths to the American Pomological Society and the Massachusetts Horticultural Society \$1,000 each, the income of which is to be devoted to prizes for objects of especial merit.

**Like a Fish out of Water.** It is a critical time in the life of a plant when the roots are out of ground. It is like a fish out of water; it may not die, but it is dying.—*Matthew Crawford, at Ohio State Horticultural Society.*

**The Hoe Remedy for the Blues.** But let me tell you, my dear sister, that there is nothing equal to the use of a hoe in the garden to drive away a fit of blues; it will not take more than an hour or two to accomplish the desired result.—*Mary N. Allen, at Lenawee (Mich.) Horticultural Society.*

**Nut Trees.** I know of no more enjoyable thing about a farmer's house than a small orchard of nut-bearing trees. An acre or two devoted to this purpose will do as much to keep the boys and girls at home while young, and to make the memory of the old home blessed in after life, as anything that I could name.—*Prof. James Satterlee.*

**Massachusetts Horticultural Society.** Following is the programme of meetings for discussion during the present month: Feb. 5, Ornamental Climbing Plants and how to use them, by John G. Barker, Jamaica Plains, Mass. Feb. 12, Annuals, and their Cultivation, by M. B. Faxon, Saugus, Mass. Feb. 19, Herbaceous Plants, by W. A. Manda, Cambridge, Mass. Feb. 26, Fertilizers,—Agricultural, Physical, Intellectual, and Moral, by Rev. Frederick C. Knapp, Plymouth, Mass.

**Women and the Societies.** It is also generally too true that the ladies, who constitute the great majority of the growers and lovers of plants and flowers, only in exceptional cases affiliate with our organizations, or are present at our meetings, as active co-laborers; while, in by far the larger portion of our state, we are utterly without a representative society; or even, so far as we are aware, any considerable number of individual sympathizers.—*President Lyon, at Michigan State Horticultural Society.*

**Ammonia for House Plants.** I have used ammonia both in the form of sulphate and liquid ammonia, and also a solution of carbonate of ammonia, and I think they all gave a strong stimulation to plant growth, and are beneficial in the same way as liquid manure prepared in the manner described by the Secretary. The solution I have used has been one ounce of sulphate or carbonate to a painful of water. The action of ammonia upon the plant is the same as that of the phosphates, giving a strong stimulus to its growth.—*Prest. Saunders, at Ontario Fruit Growers' Association.*

**Orchard Sites.** Formerly it was thought that the more elevated and rolling grounds were the best.

Some think that this was an error. We think it would be, provided the lower grounds selected are susceptible of easy surface drainage. We have here two classes of fruit lands—prairie and timber—and it would certainly be an error to select the bottom lands in the timber for an orchard site in preference to the higher grounds. For a Peach orchard, we should still prefer the higher grounds of either. High grounds on our prairies are, however, not to be avoided. The thing to be avoided is a too rapid drainage, and a thin and impoverished soil as a result. By the increased attention given to the removal of all surface water of late years, the low lands of to-day do not contain more moisture than was contained in the higher twenty-five years ago.—*B. Pullen, at Illinois Horticultural Society.*

## Rays from the Ohio State Horticultural Meeting, Dayton, Dec. 15-17.

**Lucas Co. farmers** dug 30ct. Potatoes and husked 20ct. Corn, and let winter Apples blow from the tree and waste which are now worth \$2 per barrel. . . . **Toledo grocers** preferred to buy berries in drawers because they could measure their thumbs 32 times to the bushel and still have them left.—*W. W. FARNSWORTH, Lucas Co.*

**Prune Apple trees** in winter by sawing the limbs several inches from the trunk, then about the last of May cut them off at the proper place and the wounds will soon heal. In this way the selecting of limbs to be cut and the piling up of the brush can be done in the leisure of winter; the final sawing then is quickly done and no danger of splitting had. . . . **The Lucretia Deuberry** is full of sharp thorns—and a pair of buckskin gloves with the tips of the fingers cut off is used when picking.—*N. H. ALBAUGH, Miami Co.*

**No Apple orchards** are being planted in Central Ohio. . . . **All pistillate Strawberries** have stamens bearing some pollen but it is not available without the intervention of insects.—*W. J. GREEN, Franklin Co.*

**Pruning Young Trees.**—Between the blooming and fruiting of Strawberries is the best time to prune Apple trees from nurseries. **The planting of Apple trees** in Northern Ohio is not very encouraging. Every other year Western New York raises a crop that amounts in single counties to 700,000 barrels, and of these shippers can dump 20,000 barrels on the Cleveland market in a single week. **Strawberries** kept in an ice chest soon spoil after taking out. Therefore never keep market fruit in a dark cellar, but load upon a wagon and let them stand under a tree over night.—*L. B. PIRACE, Summit Co.*

**Water sprouts** should be pulled off through the summer while yet soft. The wound will heal over and it will be the last of them. **The Commission men.**—Berries picked the same day and arriving in Cincinnati by the same train were reported sold at a profit by one of these men, and at a loss by another.—*J. P. OHMER, Vinton Co.*

**The Ohio Horticultural Society.**—The Ohio Pomological Society was organized in 1860, and in 1867 was united with the Grape Growers' Association, and the name changed to this one given in the head. Much of the time of the earlier meetings was devoted to examining fruits and correcting names. People had hobbies in the early days as well as now. One Dayton gentleman planted a large orchard of Spice Russets, thinking the fruit was going to be immensely popular and sell at the price of oranges. A Zanesville preacher bored his friends by always proclaiming the merits of the Cooper Apple. There was a strong feeling that a state society was not needed, but F. R. Elliot persisted in pushing the matter in the *Ohio Farmer* until a society was formed. The American Pomological Society met in Cincinnati in 1850. There was no fruit in Ohio in 1851 on account of a heavy frost.—*R. W. STEELE, Montgomery Co.*

**Grape shipments.**—About 18,000 tons of grapes were shipped from Euclid, and nearly as many from Collamer, during the year 1886.—*E. H. CUSHMAN, Cuyahoga County.*

**Ornamental Grape-vines.**—I brought home a Grape-vine, the foliage of which is scarlet. It is a fine addition to our vines. **Fruit in Russia.**—The juice of Cherries there is colored and much fruit is distilled and the brandy sent over here to doctor American wines. Gooseberries of very large size are grown upon little trees, 4 to 6 feet high, at the rate of about a bushel per tree. Cherries are grown along the highway by the Government, and the crop sold in 4 mile lots for from \$500 to \$1,000 to dealers, who pick and ship the same in bushel baskets at 15 cts. per bushel. There are no Pears in Russia as good as American Pears, and very few Apples of high quality. American fruits are much grown in Germany.—*LEO WELTZ, Warren Co.*  
Reported by L. B. Pierce, Summit, Ohio.

## Fruit Culture about the Home.

[Extract from P. M. Augur's address before the recent Agricultural Convention, Farrington, Conn.]

No home is complete without plenty of choice fruit and flowers.

Peaches should be started from good, healthy stock, on high, dry land, and should receive moderate and clean cultivation up to midsummer, and not afterwards. Never let the trees bear a breaking crop; to cut back helps both fruit and wood. A dressing composed of 1,400 pounds of fish waste and 600 pounds of potash, in some form, used at the rate of 600 pounds to the acre, had been found very beneficial in his orchard of eight-year-old trees, producing a remarkably fine crop. Sow rye in August for a winter mulch and turn it under in the spring.

The best Peaches found in the markets of Connecticut were raised in the State; 4,000 baskets were sold in Meriden, all raised within six miles of that city. The Peach crop is as sure in Connecticut as in Tennessee. It fails there as often as here.

The Grape is one of the easiest raised of any of our fruits, and the market can be overstocked with them. Would not advise planting them for market, but have a liberal supply for home use. Concord, Brighton and Hayes would be my first choice of three varieties.

The Grape needs a dry, well-drained soil and good culture. I plant in rows nine or ten feet apart, and eight feet apart in the row; have one main stock with two branches on each side, and do not allow a vine to bear more than twenty pounds of Grapes.

Sulphur mixed with air-slaked lime is sprinkled over the vines by hand from about June 20 to the time of ripening as a specific for mildew; it is of no avail to use it after the foliage is ruined. For rot, avoid the use of fermenting manures; keep the vines healthy and remove all affected fruit. Intelligent care throughout insures success.

The Quince needs a deep, rich loam. It will do nothing in a sour, stagnant soil. It is not safe to plow among Quince trees, as they have many roots running near the surface of the ground. Cover in the fall with two inches of stable manure, to be forked under in the spring; in summer, mulch to smother the weeds, or cultivate lightly with a hoe. The Apple or Orange Quince is as good as any. I have raised Champions, fifteen to the peck.

## Coleus Beds for Amateurs.

[Abstract of a paper read by Miss L. M. Pope before the Maine Pomological Society.]

My admiration for this charming bedding plant induces me to offer some suggestions in regard to its culture for bedding purposes, even by persons of economical motives. The Coleus is a very rapid growing plant and easily propagated, even when put to root in the least favorable situation. By procuring a dozen medium-sized plants of the florist as soon as it will do to start a hot-bed, you can cut them back, putting in the cuttings to root, and the old plants will force more cuttings. As it takes but one week to root cuttings with ordinary bottom heat, these slips can be potted off by that time into small thumb-pots and sunk into the sand covering the hot-bed.

In two or three weeks at most such plants will need topping and these can in time be used for a later set of slips, to be in their turn rooted. As Coleus should never be set before June it leaves even the latest slips a long time to grow before bedding out. There must

have been slips on the old plants to have been rooted, so you can by this process get a large increase of plants by the time you are ready to set them. To the superficial lover of plants this method of propagation may seem too much trouble, but those who truly enjoy plants and their culture will find ample reward for the time and pains spent.

As for planting, I would suggest making large beds composed only in part of Coleus, the center being made up of inexpensive plants of large growth raised from seed. The Castor Bean makes a fine large specimen plant for the center, when surrounded by six or eight Cannas, and these in turn by Zonale Geraniums, of which most people have a good supply in the spring. Outside of these Coleus there may be a row of blue Lobelia, in fine contrast to the green of the turf. Still other beds with the Coleus plants set at some distance apart may have a matting of some low-growing fancy foliage or fine flowering plants of contrasting color, forming an undertone. The matting planted in the spaces may be seedlings like Sweet Alyssum, white or blue Lobelia, or anything that will form a close mass of color.

I know of a bed where the Coleus were set at some distance apart, and then as they were cut back to a uniform size the slips were set in the spaces and on the front edges, and before the summer was far advanced the bed was well filled, looking nearly as well as if set close at first. As the Coleus are set out late, the beds may be filled in the fall with bulbs that would be out of flower before time of setting, or with Pansies set in the fall or early spring. The attraction of these would cause less danger of putting out the Coleus too early, as is frequently done.

Not all of the Coleus are of equal value as bedders. The old velvety maroon variety called *Verschaffetii*, the Spotted Gem, Golden Bedder, Black Prince, Burning Bush and Butterfly are among the best to grow in the full light, and are the least liable to fade. Then there are some delicate and brilliantly marked varieties that must be grown in partial shade to insure success. The best effect I have ever been able to get from planting Coleus by itself was in a short border made up of a shaded line of four colors, the outside black, the next maroon, the third bright mottled and the fourth very light, this so situated that we looked across it lengthwise and the colors blended and produced a much finer effect than the same varieties arranged in a circular bed similarly situated.

### The Massachusetts Horticultural Society.

THE LATE MARSHALL P. WILDER.

The first meeting of the year was held on January 1st. As was to be expected, it was largely devoted to a consideration of the deep loss sustained by the Society, and kindred societies and the public in general, through the death of the Hon. Marshall P. Wilder, on Dec. 17 last. In his annual address, President Walcott said that the future readers of the history of the society will find it difficult to believe that this man, so prominent in its records, was equally conspicuous in many other organizations, and was at the same time a busy merchant of the city of Boston. But he illustrated the best charm of horticulture—the relief offered by it to the tired man of business and to the wearied student. The changes of Nature were even more attractive to him than the triumphs of public life.

A fund established by the provisions of his will, by which medals are annually to be given for encouraging the cultivation of certain fruits, will forever be associated with his name.

The committee charged with preparing a fit

expression of the Society's regard for the late Mr. Wilder made a report, of which the following is a brief abstract :

For fifty-six years Marshall Pinckney Wilder has been a constant and an active member. His loss seems for the present to change the very character of our society.

A specially kind Providence seems to have smiled upon his enthusiastic love of Nature and his efforts to develop the works of the Creator. With gratitude do we acknowledge the wide and lasting influence which Mr. Wilder has exerted in his favorite pursuit of horticulture, an influence which is recognized wherever our art is known. We shall cherish the memory of his unflagging zeal in every branch of horticulture, his example in skillful cul-



PELARGONIUM VICTOR.—SEE DESCRIPTION ON PAGE 71.

tivation, his constant attendance and his wise and kindly words of encouragement. Let it be our aim to be animated by his noble example.

To the family of the deceased the society extends its profound sympathy in their sorrow.

William C. Strong stated that in Mr. Wilder's favorite pursuit of horticulture he did his best service for his fellow men. While engaged in large commercial business, he yet found time for extensive importation and cultivation of a great variety of plants and agricultural products, being always on the alert to obtain and test new kinds. This enthusiasm was life-long, and was as hearty in the cultivation of Peonies as Pears, or in the case of Camellias or Dahlias or Azaleas as of Raspberries and Strawberries.

After his severe prostration, more than a score of years ago, which compelled his retirement from active commercial enterprise, it is remarkable with what new zest he entered upon horticultural pursuits. He did not consider himself too old to sow seeds of trees, to cross-fertilize flowers that he might obtain seeds for new sorts, to form and lead off new societies for exerting a perpetual influence.

Robert Manning said that one of Mr. Wilder's most prominent characteristics was the perpetual youth which, in spite of the infirmities of age, he carried with him, and which led Governor Long, in 1881, to speak of him as at once the oldest and the youngest man in the State. This had been attributed to his love for rural pursuits; but the speaker thought it due also to his kind and loving heart, continually overflowing with regard to every one.

#### EXHIBITIONS, ETC., PAST AND FUTURE.

In his address the president called attention to the fact that the receipts for the year are greater than those of 1885 by about \$4,000, while the expenditures exceed those of 1885 by about \$1,000.

The exhibitions of the year have been, upon the whole, successful; the annual exhibitions have been crowded with plants, of the first merit, that should

have had for a proper display three times the floor space that could be given them. The weekly exhibitions have attracted more visitors than ever before; the exhibitions of native plants have been particularly extensive and instructive.

Generous provision has been made for prizes at the annual exhibition of this year, which is to be held in conjunction with the American Pomological Society. The great hall of the Massachusetts Charitable Mechanics' Association has been secured for this occasion. The library still increases in size and usefulness, but the inconveniences of the library room become also more noticeable.

The appropriations previously recommended by the executive committee, viz., for prizes \$6,954, for the library committee (including the card catalogue of plates) \$400, for the committee on publication and discussion \$250, and for the committee of arrangement \$300, came up for final action and were unanimously voted.

#### FIRST SHOW ON JAN. 1ST.

consisted mainly of forced vegetables, and a good one it was.

Radishes, 1st prize, Hittinger Bros.; Radishes, 2d prize, Geo. F. Stone. Lettuce, Tennis Ball, 1st prize, Hittinger Bros.; Lettuce, Tennis Ball, 2d prize, Geo. F. Stone. Parsley, 1st prize, Geo. F. Stone; Parsley, 2d prize, Hittinger Bros.; Parsley, 3d prize, Warren Heustis & Son. Mushrooms, Cephas H. Brackett. Tomatoes, by several exhibitors. Dandelions, Anjou Pears, and handsome flowers were also on exhibition.

#### Orchard Management.

[Abstract of paper read by D. F. Bruner before the Eastern Iowa Horticultural Society.]

No uniform rule can be adopted for orcharding in all localities. Any good, rich wheat land will do for orchards; a north or northeast slope is best. The ground should be cleaned from grass and weeds. Late in the fall plow the ground as deeply as possible. Harrow it over next spring, then plow shallow and harrow again. Do not plow in spring when too wet.

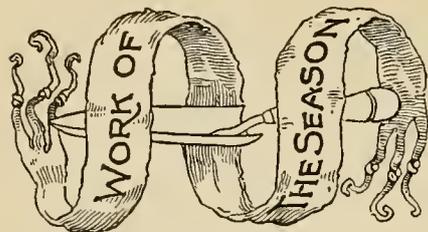
Stake off the ground at the proper distance; for Apples this is not less than 32 feet apart; if 40 feet apart it will be better. Dig large holes to the depth of the plowing. Cut all straggling roots and give plenty of room. Lean the trees slightly towards the wind. Fill in around the roots and make a mellow mound of soil about the tree. See that the tree stands as high as it did in the nursery.

Keep down all suckers, and plant corn between the rows the first year. Leave the stalks in the fall and mound up the trees in winter. Look out for mice and rabbits. Early in spring prepare for corn, turning the furrows toward the trees in plowing. Trim the branches a little in May or June. Let the stalks remain on the ground, as in the first year.

The third year sow the ground to buckwheat, turning it into clover the fourth year. If the clover is good, pigs or young calves may be turned in, but it is perhaps best to mow the clover. When the trees become poor, top dress with manure and wood ashes if these can be procured.

Surround the orchard with a good fence to exclude stock. Wind breaks and timber belts are more damage than benefit, if planted as they generally are, close to the orchard. Plant each variety in a separate row. Watch for mice and insects. Keep the trees in good shape. The head of tall Apple trees should commence about three or four feet from the ground. Spread growers should not be less than six or seven feet; medium tall growers should branch at about five feet. By planting only well proved varieties, such as are good bearers and have good salable fruit, in ordinary seasons we shall be amply rewarded for the outlay.

Commenting on this paper, one member recommended planting 40x40 feet, and after five or six years plant another orchard in the same area, setting the trees in the interspaces. Orchards are not permanent in this latitude and by this plan we may always have an orchard.



### HOUSE PLANTS.

**Annuals** of the hardier sorts, like Sweet Alysium, Dianthus, Antirrhinum, Stocks, Petunias, etc., may be sown for earliest flowers.

**Camellias** after blooming to be kept somewhat warmer than when in bloom, but with the air not dry. For those in bloom, a night temperature of 45° is the most suitable, with 10° to 15° higher during the day. For late bloomers, only enough heat now to well prevent freezing will answer best.

**Chrysanthemums.** The desirable varieties should be decided upon and started up at once for propagating material. Do not grow inferior sorts when the more beautiful ones are quite as easily raised. In the sorts Elaine, Mrs. Wm. Mincke, Tokio, Yellow Prince, Ab-del-Kader and Moonlight will be found variety enough to please every one.

**Cotton Plant.** Sow the seed now in good soil and the plants will be ready by spring. This makes a good house plant, its beautiful yellow flowers being followed by large balls of the genuine cotton and this is quite lasting as well as ornamental.

**Dahlias** of any rare kinds, or others, are easily propagated from cuttings. For this the tubers may be started and cuttings taken from the young growth a little later on, and such will make good plants during the summer.

**Fuchsias** in a dormant state to be re-potted, cutting back one-third or even more, to induce a good shape. With good treatment the young growth to come will blossom profusely. If any earlier plants show cuttings these to be put in for summer stock.

**Hyacinths** growing in water are sometimes troubled with furred roots; such should be cleansed by laying them on a sheet of paper and sponging the fur off, afterwards rinsing in clean water.

**Hyacinths** and all other bulbs should be brought in for a succession of bloom. At no other time will they make a better showing than now.

**Oleander flowers** may be enjoyed early by bringing some of the plants to light, and inducing activity of growth by the use of a fertilizer in the water given to them, or by a top-dressing of manure.

**Overhauling.** Most house plants need overhauling about this time. Any that have become weak and spindling from much blooming or insufficient light, re-pot in fresh soil, or top-dress with fine manure. Any surplus plants might now be cut into slips for stock for the coming season's use.

**Oxalis** should be started up if this has not yet been done. The plants need but little care, aside from good supplies of water and light.

**Pansies.** If it was neglected in the autumn to sow of these, one may still catch up by now sowing some in the house, for plants for spring and early summer bloom.

**Plants** still in the cellar must, as a rule, never become outrightly dry. To harden them by airing occasionally is a gain in various ways.

**Pot-bound plants.** Reference is had to such as have grown well for a considerable length of time in the same pots and which might ordinarily need a shift into larger ones. In this state they will usually bloom better, though, in part, at the expense of the finest foliage. Better foliage, but with less flowers, will result from an abundance of pot-room. Any pot-bound plants, however, to be so kept need free watering and some liquid plant food as well.

**Roses** are easily kept too warm. Guard against vermin always. As buds begin to show, small quantities of liquid manure will help matters.

**Sickly plants.** Any such are probably suffering either from too much water or from insects, quite often the former. The soil for healthy plants should, by being porous and underlaid with drainage, dry quickly. Sick ones to be re-potted into about the smallest pots possible. In such pots they should remain until a new healthy growth is made.

### LAWN AND FLOWER GARDEN.

**Bedding Plants.** Decide early upon the number that will be wanted, whether to be raised or bought.

In the latter case one can almost always better arrange with growers for filling a definite order at planting time, by doing the bargaining now, than to wait. The grower will view it as a sure sale, and can afford to fill the order at a discount.

**Bulbs and Roots** of border plants such as Cannas, Dahlias, Caladiums, Gladiolus, etc., to be looked over, seeing that they are in good condition, and removing any that might show signs of decay.

**Hot-beds** are a great help in providing plants for summer; their making is now a seasonable matter. See under Vegetable Garden. Herewith is shown the cross section of a bed heated with an oil stove, and which for neatness and efficiency should commend itself to many. We think the engraving is clear enough to guide any one in constructing such a bed. It may be said, however, that the horizontal board surface midway between the stove and the soil is for equalizing the heat; it should not come nearer than four inches from the sides of the bed, and should have some holes bored into it about midway between the center and the edges.

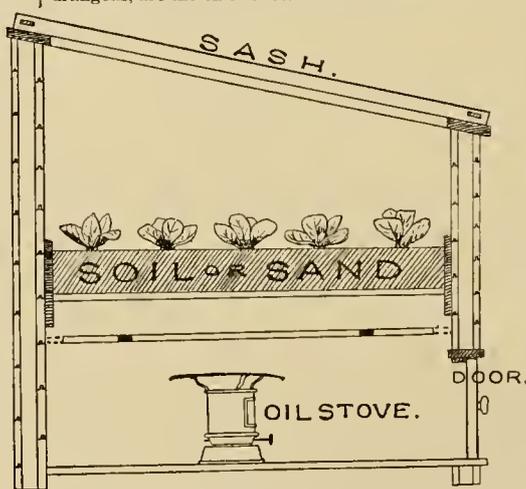
**Lawn.** Every second or third year the turf to receive a coat of about three inches of fine manure, or else a dressing of some standard lawn fertilizer

**Plans** should be devised now so that work may go on intelligently and without delay when the spring season of operations is at hand. There is economy also in carefully planning work and methods beforehand, rather than to wait till the last minute and then jump at conclusions without thought.

**Seed Sowing.** At the South hardy Annuals may be sown out-of-doors. In the North, Annuals for summer bedding, like Balsams, Globe Amaranths, Portulacas, Brachycomes, Tropæolums, Lophospermums, Acrioliniums, etc., may be sown in heat before the month is out.

**Shade Trees.** Too many about the house cause unhealthful shade to human beings, and to the grass and small plants as well. Some should be removed, and this leisure season is the time to do it. Cut near the ground, depending on the roots rotting away, or, better still, dig down a foot below the surface, cutting to about that line.

**Shrub Pruning** may be done at the South. In this work bear in mind that all shrubs are not alike as to the extent of the cutting they will bear with benefit. Such as bloom on the early growth of the same year can be trimmed to almost any degree of severity and be the better for it, both in shape and as to the flowering. Of these the Altheas, Roses, Hypericum, Coronilla, Amorpha, Late-flowering Spiræas, Burning Bush, and Hardy Hydrangeas, are the chief ones. About all other kinds



CROSS-SECTION OF A HOT-BED HEATED WITH AN OIL STOVE

should be pruned but sparingly at this time, only enough, indeed, to direct general form; for, blossoming, as they mostly do, on wood of the former year's growth, much cutting would result in much waste of bloom. Pruning this class should for the most part be done immediately after they are through blooming and before the regular growth of the season has begun.

### PLANT CULTURE UNDER GLASS.

**Annuals.** During this month such kinds as Cockscob, Amaranthus, Stocks, Cobæas, Mimulus, Snapdragon, Chinese Pinks, etc., may be sown for the earliest plants. Most other kinds, if brought along too early, become unsightly as a result of this; for sowing such, next month will be time enough.

**Begonias, Tuberos.** Any that were kept in pots over winter may be started up, a little later giving them fresh soil. Pot those that are out of soil. Seed may be sown now for flowering plants for use late in the summer.

**Carnations.** Plants for the main stock to have the cuttings struck with little delay. Keep newly propagated plants in a cool airy place. When such become strongly established and several inches high, they should be stopped about one inch up.

**Cinerarias.** One should aim for fine foliage quite as much as for fine flowers. Water the plants regularly. Give some air almost daily.

**Fumigating** with tobacco, as heretofore directed is one of the important details; now let it be attended to regularly. Conditions suiting plant growth suit Aphids, etc., as well. At this growing time if plants are allowed to become infested, hard work will be required to get them in clean shape by spring.

**Gloxinias.** One should not wait for the bulbs to start into growth before potting. A suitable soil for them is loam, leaf mould and plenty of white sand. Be gentle in watering till well started. For bulbs two inches across use 6 inch pots draining well.

**Hollyhocks** may readily be raised from cuttings taken from old plants that have been started up.

**Pelargoniums** should be kept growing with unbroken vigor, having fair pot room until brought to the flowering state. Light, rich soil, no lack of water and fair airing are among their requirements.

**Petunias.** The best doubles will be raised from cuttings, and these should be enclosed by a bell glass while the rooting process is going on.

**Poinsettias** to be dried off and be set in a moderately cool place, which need not be very light.

**Propagation.** This is a leading operation for this month, the extent of the stock in May will depend directly upon how closely it is followed up now. Many cuttings also that strike with difficulty at other times will now be found to root readily.

**Sedum Sebaldii** may be brought from winter quarters and after starting be divided and repotted.

**Schizanthus.** In point of blooming qualities few plants surpass this. The fall sown plants are best off in rather small pots during winter, and kept in a low greenhouse temperature. From now, shift them on, finally getting them in 6 inch or 8 inch pots for flowering. Air must be freely given. Use a rich open soil and one-third dried cow manure.

### FRUIT GARDEN AND ORCHARD.

**Currant Bushes.** Coal ashes applied as a mulch will help these. Pruning may be done at any time when it is mild enough to make comfortable work. The same of Gooseberries. If it is desirable to propagate, save the cuttings covering them with damp earth until planting-out time.

**Grafting.** One should get ready for this work in good season. Grafts may be cut in mild weather, if not yet done, packing them in fine damp moss or any similar substance that will preserve their natural moisture, and no more. Grafting wax must also be prepared, for doing which see recipes given on another page. The mode of applying the wax is not important so long as the essential object of completely excluding air from the wound on both parts of the graft is effected. In all the different methods of grafting the one essential thing to be aimed for is to secure a speedy union between the scion and the stock. Directly to this end and to success the condition of securing an uninterrupted flow of sap from stock to graft must be made certain. The particular point to observe is to have the cambium layer (the line between bark and wood) in each part to exactly correspond. Where both are of equal size this comes easy enough, but with large stocks and small scions the latter must be brought to the one side or the other, or else, two be used. Waxing over every portion of the cut parts and the points of union with care completes the work.

**Manuring Grapes.** If growing in a dry situation, stable manure answers as well as any fertilizer; on damp ground it is different. Here diseased vines would result from its use. A much better article is found in wood ashes, bone dust and the like. It may be added that roots of vines in damp places should be encouraged by surface culture, to keep near the surface.

**Old Orchards** whether under cultivation or not require a liberal top-dressing each year of old fine manure. A compost recommended by an experienced orchardist is lime and salt, mixed with tan or saw-dust and this saturated with manure water.

**Soil.** If one is choosing a site for an orchard, a deep soil, even if not so rich, should be preferred to one that is much richer but shallow.

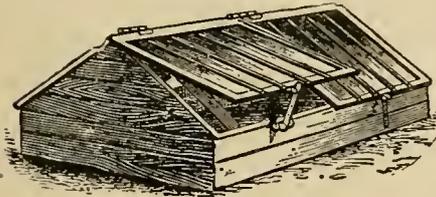
## VEGETABLE GARDEN.

**Asparagus** is helped by an annual mulch of manure and this can now be applied.

**Beets** sown in a box and potted into thumb pots, then transplanted in a good rich hot-bed, come in fine for early and as a market crop are profitable.

**Cold frames** and pits to be looked after for preventing hurtful sudden changes of temperature.

**Forcing Frame.** In the engraving herewith is shown a useful portable frame for hastening various garden crops, such as Rhubarb, Asparagus, Lettuce, Strawberries, etc. Placed on the beds



A Portable Forcing Frame.

about March 1 and given some attention in the matters of airing and protection during cold snaps, the season of things thus forced should be advanced about three weeks.

**Hot-beds.** In making start by taking out from a space several feet larger each way than the size of the intended bed about 18 in. in depth of soil. In filling the excavation with horse manure for heat, first put down a 6 in. layer from the colder portion of the pile over the entire surface. Continue to add manure till a bed several feet in thickness is formed, firmly tramping it as the work proceeds. Then, upon this place the frame, and this may consist of a single thickness of boards, or better yet a double sheet with a space of several inches between them. The rear of the bed should be about a foot higher than the front, the two sides being steadied by bars placed crosswise between them for the sash to rest upon. The parts of the boards which meet the soil will last longer if painted before using, and when dry, with several coats of hot gas tar. Around the frame outside, to bank over the projecting manure with earth six inches deep will promote the heating powers greatly. Inside the frame may be added a foot or less of fine manure, upon which is to come five inches or more of good soil. The bed made up, cover it with sash and mats. After several days, test the temperature of the manure, and when it has fallen to 90° the seeds may be sown in shallow drills, each kind being labeled. With strict attention to airing, giving neither too much or too little, strong stocky plants may be easily grown of all early sorts from seeds, bulbs, cuttings, etc.

**Manure** for hot-beds to be forked over to prevent fire-fang and excessive heating otherwise.

**Mats.** See article elsewhere on making these.

**Seeds.** The best are by far the cheapest in the end, and such are to be secured only from reliable firms. It is none to early to get off the orders.

## FRUIT AND VEGETABLES UNDER GLASS.

**Cucumbers** should not be allowed to fruit before the plants are strong and well established. When fruiting begins, stop regularly one joint beyond fruit, and draw fine earth up around the plants.

**Figs** will require free syringing, with an increase of water at the roots. Give young spurs and fruit plenty of light by thinning out weak useless growth.

**Grapery.** In the early house, the buds will now be swelling and need to be syringed twice a day. All but the best bunches ought to be removed before full flowering. For several weeks a temperature of 55° at night will be warm enough. After flowering the free-setting varieties should early be thinned.

**Lettuce.** By the end of the month a second crop may usually be ready for cutting. Excessive watering is to be guarded against as being nearly as bad as drought. A temperature of 45° at night answers about the best; if it gets much above this a kind of damping off might set in. Green-fly is apt to prove a serious trouble if not kept down by proper remedies. See reply to Inquiry 209 on this page.

**Rhubarb** comes of fair quality when grown under the stages but is vastly better for having much more air and light than it here usually receives.

# INQUIRY COLUMN

This being the People's Paper, it is open to all their inquiries bearing on gardening.

Replies to Inquiries are earnestly requested from readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.

208. **Roses Turning Yellow.** The leaves of Roses in my greenhouse turn yellow and drop off. Would some one of experience give the cause and remedy. It is not red spider. M., *Urbana, Illinois.*

209. **Lettuce Forcing.** What variety of Lettuce is best for forcing under glass at this season and later on? In what manner can the Green-fly or Aphid be destroyed without harm to the Lettuce? C. W. F., *Canton, Ohio.*

210. **Sweet-scented Chrysanthemums.** Could you give me a list of these as well as of the latest varieties of the same plants, and where they can be procured? W. F. W., *Cottage Grove, Iowa.*

211. **Treating Plums for Curculio.** In your November issue you say put Plums where Pears fall, and that they pay well to evaporate, now, since we have got the best of the Curculio by spraying. (A) Please tell me at what stage of growth you commence the spraying. How often should it be done and until how late? (B) How do you prepare the poison? (C) and is there any danger from eating such Plums? W. P. S., *Monmouth, Ill.*

212. **Distance for Apples.** What is the best distance to plant Apple trees apart in a light sandy or granite soil. W. C. A., *Ashland, Oregon.*

213. **Cutting back Fuchsias, etc.** Should the branches of Fuchsias, Geraniums, Petunias, etc., be cut back before repotting or after, and how long between each operation? E. A. B., *Springfield, Ill.*

214. **Raspberry Cane-blight.** What ails my Gregg Raspberries? The plants were very thrifty last April. Then later on after the old canes were cut, the new ones showed an appearance of having been stung near their top, and afterwards they died from that point up. Sometimes the cane is punctured for an inch in length, sometimes more. A few canes of the Reds were similarly affected. I enclose a cane. J. C. H., *Lawrence Co., Pa.*

215. **Gooseberries under Trees.** I am aware that Gooseberry bushes like the shade of a fence, but will they do well under a spreading tree?

216. **Covering Grape-vines.** Will manure answer for this? and to what distance from the vine is it necessary to cover the roots?

217. **Hammond's Slug Shot.**—What is your opinion of Hammond's Slug Shot, its efficiency and harmlessness to the party using it? R., *Toronto.*

218. **Gladioli from seed.** Will some grower of Gladioli please say the shortest time in which they can get the bulbs to flower from the time of sowing the seed, also what is the difference in this respect between *G. breuchleyensis* and *G. gandaveensis*?—J. L.

219. **Treatment of Christmas Roses.** I should be obliged if some one would tell me the proper treatment for Christmas Roses. I want particularly to know what soil and what aspect suits them best, and at what time they may be moved.—L. E. G.

220. **Celery Culture.** (A) How early should the seed be sown to have plants ready for setting out July 20? (B) Will frost hurt early-raised plants outdoors? (C) Sowing in a seed bed in rows 8 inches apart, how close should the plants stand in the row? (D) How would it do to set Golden Heart Celery in rows 18 inches apart, blanching the rows alternately with boards and by hilling up? (E) How soon after setting should boards for blanching be placed against the plants, and how long to be left? C. J. M., *Little Genesee N. Y.*

221. **Treating a Large Wax Plant.** I have a magnificent *Iloya*, too large to be moved, which has stood for over three years in an ordinary wooden pail. This winter some of the leaves turn yellow, and I am afraid it is getting exhausted. I cannot remove any soil as it is a complete mass of roots. Can I feed it, and with what, to keep it thriving indefinitely?

222. **Cherries for Michigan.** What varieties of sweet Cherries would be the best for this climate?

223. **Potting old Fuchsias.** I have some very fine old Fuchsias. I have had them under the greenhouse stage some time. Will they want potting in fresh soil, and what other treatment do they require? A. A. H., *Wayne Co., N. Y.*

224. **Pruning Vines in Grapery.** I have a Vine (white) ten years old that has borne fruit several years; last year only three bunches. I think I pruned it wrong. Shall I let it remain this season until the bunches show before I prune it? I am sure there are too many canes in now.—HITITE.

225. **Soil for Perennials.** How can I best improve the soil in a flower garden in which perennials are to be grown? It is a stiff clay, and, as I am just about to move my plants into it from the garden I am leaving, in which the soil is a light free loam, I fear for their health.—T. L.

## REPLIES TO INQUIRIES.

155. **Narcissus Blasting.** This is due to some defect in the soil, or other element into which the roots extend, by which the needs of the latter are not well provided for. By taking up and resetting the plants, next September, into good soil, they should do better.—JOHN L. PARK, *Berrien Co., Mich.*

168. **Asparagus Growing.** For Asparagus (as well as Rhubarb) it is difficult to have the soil too rich at the start. Well-rotted manure should be thoroughly incorporated with the soil. Then each fall, after the ground freezes, a good coat of fresh manure can be applied that will answer as a mulch during the winter, and later be forked into the soil. A bad mistake with many is too close planting. Two by three feet is closer or at least fully as close as any plants should be set at the start, while three by four feet will be better. You can sow the seed where the plants are to grow, dropping three or four seeds in each place and thinning out to one later or you can set out the plants from a seed bed. If this is done, care should be taken to spread out the roots as early as possible and fill in well with soil. The shoots at first are very small and it requires some care to hoe well and keep clean. For this reason land that is foul with weed or grass seed should not be selected. It is necessary, at least during the first year, to cultivate and keep clear of weeds. I like to secure good stocky plants, and in order to secure these good cultivation is essential until they have become well established. Let the plants make a good growth before commencing to cut. If good soil is given and kept rich, and sufficient cultivation is given to keep down the weeds and it is not cut too severely a bed will last a long time without replanting.—N. J. SHERMAN, *Eldon, Mo.*

209. **Lettuce Forcing.** Our large market growers about Buffalo confine themselves almost wholly to a variety called Hubbard's Market. In New York and other eastern cities the Black-seeded Tennis Ball, Boston Market or White-seeded Tennis Ball, and the Early Curled Simpson, are favorite forcing varieties with the gardeners. Without exception the above are also valuable for outdoor culture. The Green-fly or Aphid is one of the worst enemies to the Lettuce grower, and every means must be taken to keep it down. To do this, first dust over the surface of the bed before planting with tobacco dust or finely chopped up refuse stems of the plant. Second, dip the young seedlings, at planting time, in tobacco water that looks like strong tea. Thirdly, strew the walks with tobacco stems. With such treatment there should be no aphid seen. If there is, fumigate by burning moistened tobacco stems.

210. **Sweet-scented Chrysanthemums.** At the late show of the N. Y. Horticultural Society, Mr. E. M. Allen, of Woodbridge, N. J., exhibited a seedling Chrysanthemum of his own, named Mrs. Akers Allen. The chief merit of which was its very distinct fragrance, almost approaching the perfume of the Violet; otherwise it was a very smooth reflexed variety, of good size, broad petals, white with lemon yellow shadings at the base. Refugens is called sweet scented, but is very slightly so.—G. B. KEWSEN.

175. **Ground Cherries.** They grow here spontaneously, and are treated as weeds. They are also quite common in Eastern Nebraska. Some people make them up into preserves. I do not know of any one growing them for sale. The person who would grow them for market would find it difficult to sell his crop.—ALEX. WOOD, *Council Bluffs, Iowa.*

211. **Treating Plums for Curculio.** (A) AS SOON as the blossoms fall and at intervals of two weeks until the fruit is one-half grown. (B) We prefer to use London Purple or Paris Green, believing the former to be the most reliable. Of this we prepare a water by taking a teaspoonful of the poison to 4 or 6 gallons of water. (C) We think not, as the poison is not applied after one-half the growth is attained. Should no heavy rain fall between that time and ripening, it would be safest to throw the Plums into a tub of water before using or marketing, to take up the poisonous properties.—A. M. P.

212. **Distance for Apples.** Two rods apart is near enough. They can, however, be planted one rod apart and grown thus for 12 to 15 years, getting good crops, and then cut out 3 out of 4 trees, leaving them 2 rods apart.—A. M. P.

189. **Eupatoriums, etc.** They should winter safely in a moderately light cellar, the temperature of which never falls to the freezing point. Here they had better be brought to almost a complete state of rest by largely withholding water. We would not cut them back until they were moved to more light and air again, towards spring.

190. **Calla Culture.** The suckers undoubtedly draw some strength from the old plant as well as from the soil, an important point also. On this account when we prepare our stock each summer for the coming winter we take off all these suckers, growing them along if we care to by setting them an inch apart in pots or low boxes of soil. By digging down now the suckers could still be removed from your plant. This should be done very carefully in order not to injure the old plant or its leaf stalks.

192. **Early Covering of Strawberries.** To do this as early as November and before the ground is frozen, would not be safe as a rule. As has before been directed in these columns, the better time for this work is about the time winter sets in in good earnest, usually in December. The greatest benefits from covering Strawberries come from the protec-

tion afforded during the freezing and thawing time of weather in the spring.

213. **Cutting back Fuchsias, etc.** In all such cases as "E. A. B." enquires about the plant should be cut back first and allowed to throw out shoots and show signs of active growth before being reotted, the reason being that when a plant is cut back it receives a check, and if before it has recovered itself it receives another check from reotting, it might prove fatal. First cut the plants back as much as necessary, and then, when they have well sprouted, reot in sweet soil, and they will be very much benefited by the change.—W. C. COWLEY.

214. **Raspberry Cane-blight.** The diseased Raspberry cane has received my attention. It exhibits no trace of insect work but it is a good example of the Raspberry cane-blight, a disease which is not at all well understood. It may be caused by an undescribed fungus of the genus *Phyllosticta*, which is always present. In this state of uncertainty I can recommend definitely no good remedy beyond careful pruning and burning of the infested canes.—C. V. RILEY, *Entomologist U. S. Agricultural Department.*

220. **Celery Culture.** (A) As soon as dry enough to work—say April 15. (B) Celery is hardy enough to withstand any frost that will come. (C) Sow as near as possible so that they would come at 1-16 inch apart, and thin out to 1-2 inch or so. (D) Nothing would be gained by such a course. (E) If boards are used at all, they should be placed against the plants about September 1st, according to the season. The time of blanching will take from 3 to 6 weeks. PETER HENDERSON.

187. **Red Spider on Window Plants.** If a light showering every day will not keep down Red Spider, it is because the air is kept too warm. B. B., *Hickory Corners, Mich.*

224. **Pruning Vines in Grapery.** Do not leave the pruning until the vines show the bunches, as you propose, or you will make matters worse. They should be pruned at once. Prune back to within two eyes of last season's growth, and to make sure do not disbud them until the bunches show. If the two eyes break and the lowest one shows a good bunch, rub off the upper shoot altogether. You should get some practical gardener to show how to prune and disbud them. A. H. E.

218. **Gladioli from Seeds.** If you will sow the seeds of *G. gandavensis* thinly in 7-inch pots about the first week in April, and plunge the pots in a gentle hot-bed, the plants will appear in about two weeks. As they increase in strength, admit more air than at first, until by the end of May they may be placed in a cold frame. About the end of October the young plants will have completed their growth, when water must be entirely withheld. Turn the bulbs out in November; they will be from the size of Peas to that of an ordinary Filbert. They should be kept in dry sand and be planted out early in March. Most of them will produce strong flowering spikes the same season. I have had no experience in raising *G. brencleyensis* from seeds; it is scarcely necessary to do so, as the bulbs are so cheap. OLD GARDENER.

171. **Evergreen Hardy Plants.** Among the hardiest shrubs in this line may be named the various kinds of Box, Andromeda, Cotoneaster, Evergreen Thorn and Berberry, Daphne cneorum, Kalmia, Mahonia, Holly and Rhododendron. Of those less hardy, Aucubas, Japan Evergreens, Gardenia Florida, Jasminums, Japan Privets, Magnolia grandiflora, Oleander, Olive, Pittosporum and Rhyncospernum.

197. **Peach Yellows.** This disease is readily distinguished by the leaves taking on a sickly yellow color, the newer ones being of much smaller size than ordinary, and the shoots coming out feeble. The fruit is small, inferior and ripens prematurely.

199. **English Walnuts.** We observe that Ellwanger & Barry, Rochester, N. Y., and J. T. Lovett, Little Silver, N. J., have trees for sale. They are not a tree that is quick to come into bearing; if any fruit was to be yielded before seven years they would be doing well.

201. **Hydrangea Budding in Cellar.** We should look upon the buds as premature in some way; perhaps you have kept the soil rather wet. A single cluster starting thus early should not lead to the plant being taken up for growing any earlier than usual. Keep it somewhat drier at the root until you are ready to bring it to heat and light.

202. **Sunlight for Palms, etc.** Palms can get along as well as any plants I know of in windows where the sun never enters. On the other hand, direct sunshine is too liable to blister or otherwise injure the leaves to make it desirable to keep them in this. The Jerusalem Cherry has no special need of direct sunlight in the winter. P. P. HAYES, *Queens Co., N. Y.*

223. **Potting old Fuchsias.** The first thing to do is to prune them, and this should be done at once, as they will soon be breaking. Prune the wood made last year back to two eyes, and cut entirely away every weak, sprayey shoot. Water very moderately only when the soil becomes quite dry; and when new shoots an inch long are made, shake away all the old soil and replace in a pot just about large enough to contain the roots. Water moderately until the plants come fully into growth, and then more freely, and when the pots get full of fibres, shift into larger pots. From the latter end of June they do well in the open air. A. H. E.

# The Household Poultry.

Bluing is too often overdone.

An Irish Potato and some brick-dust for scouring knives, etc.

Sensible George Eliot's favorite room—a bright kitchen.

A better polish, it is claimed, will result if a little snugar is mixed with the stove blacking

Upsetting the fruit jar and holding its top in hot water a little will help out, over an obstinate cover.

Ammonia A tablespoonful added to the overnight soaking water will in washing ease up on the arm muscles.

We know of a housekeeper—there are many no doubt—who would no more think of leaving the outside of the pans and kettles unwashed than the inside. It is the neat way.

Do you take advantage of the more practical labor-saving devices in doing your work? Improvement here should be thought of before getting farther into this new year.

In cooking vegetables, they should for best flavor go directly from the washing-off water to the stew-pan. This may seem unimportant; there is more in it than might be thought.

The old wash boiler need not be cast aside when leakage beyond repair sets in. This is the time it should have the deuts straightened out and be scoured up to use for keeping bowls and glasses of jelly and marmalade from the mice.

The broom, instead of standing in a corner when not in use, ought to be hung up. A strong twisted or braided string put through a small hole in the handle will do it. Wet the broom in boiling hot suds every wash day; if treated in this way it will keep its shape, and wear much longer.

Don't throw away things that may sometime be of use, simply because the piece that matches it has given out. I do not mean keep absolutely worthless things to clutter up the premises, but see first if the pieces cannot be made useful. A goblet that has lost its base is quite as good as a whole one to keep at the well. ELDER'S WIFE.

Green Food for Canaries. Mrs. L. D. E., Livingstone Co., this State, writes to this paper as follows: I find that my canary is very fond of green food. To supply him during winter I scattered Lettuce seeds in my plant pots, and also a few seeds of Chickweed, which is rather a pretty little plant anyway, and by simply breaking off branches of it, the roots keep up a supply; then, by way of variety, I give him a few Oxalis leaves sometimes, and tender tops of Celery. His enjoyment of them is ample reward for the small amount of trouble."

Damp Cellars. It would be well if the danger of these to health was better recognized. Keeping them ventilated and dry are simple matters, if rightly attended to, and they are very important ones. The builder in the first place should see that the necessary appliances for keeping a cellar in good condition are furnished, but the occupant of the house must see that they are kept in working order; that the places for ventilation are not choked up; that the cellar is kept perfectly clean. And better not neglect a thick coating of whitewash occasionally.

If the Onion comes in for a good deal of good-natured abuse because of the odor that lingers, it also is entitled to the highest praises for its real value among kitchen vegetables. Containing, as it does, much nitrogenous matter, with a good deal of sugar and a pungent oil, it is, to say the least, very nutritious. Boiling dissipates the odoriferous oil of the onion freely, as every one who is about where the cooking is done knows, and also makes them less acrid. When one cares for such flavoring, the oil, to obtain which firmly press a slice of the vegetable against a grater, is useful. A drop of it goes a long way. In the line of domestic medicine Onions have their uses. They are looked upon as making one of the best poultices, when roasted, especially for that common winter complaint with children, ear-ache. For making a soothing syrup, along with snugar, Onions furnish a widely famed remedy for colds, croup, etc. The vegetable is also believed to have a quieting influence on the nerves; a person subject to wakefulness may often find relief in eating a couple of small ones just before retiring. In countries like Spain and Portugal Onions are used to an enormous extent as food; very commonly the ordinary dinner of a working-man and his family is a piece of bread, with an Onion for each. Those which are raised in a mild climate like Bermuda are milder than our own.

Light is one of the essentials.

Homoeopathic doses, if any, for hens.

Early breakfasts for the fowls in winter.

Animal food like meat or milk is always appreciated by the hens. It will come back animal food, in the shape of eggs.

Tell us that the egg shells are very thin or quite often entirely absent and we tell you that lime in the food is what is lacking.

The Asphalt pavement men can make you a good floor for the hen house at a moderate cost. Such a one would be, in a degree, moist, while also dry enough and one of the easiest to keep clean.

"Artificial Chicks get a false start at birth, and from my observation are never so strong as the rugged specimens reared in the old fashioned way. I have noticed also that the meat of the incubator product is comparatively pale and flabby looking and lacking in flavor, and that such fowls do not command the highest price, as many first-class hotels will not use them." This is what an experienced poultry dealer of Boston offers on the subject.

A fowl infested with vermin is a miserable object. Thrive it cannot. No man who will allow the presence of insects deserves success at poultry raising. The shortest cut to not having any vermin about is to prevent its approach. The material composing the nests for laying hens, and for which straw alone is as good as any, should be frequently destroyed and especially after hatching. Before fresh material is provided in the nest, some carbolic disinfectant ought to be lightly syringed about. Scattering some sulphur over the dust bath occasionally will tend to keep the hens clean.

Early hatching under right conditions is easily carried on. For the setting nests secure a room in which to place them, where the temperature can be controlled. If a room in itself warm cannot be had, a good nest may be made in any fairly close building, by using a pile of fresh horse manure underneath it, covering the manure with a layer of earth on which is to come the nest of straw or hay. The manure will provide both modified heat and a desirable degree of moisture. When the chicks are out keep them protected from sudden changes in temperature, and after 24 hours feed generously.

Pigeons, according to E. S. Starr in the *Century*, are more used as couriers than is generally known. Business men in cities communicate with home in the suburbs by pigeon post, or use them between office and factory. Farmers use them as messengers from the post-office and the town. Country physicians now often carry their birds with them, to be left with patients for bringing on later word, and to send word home when there is need. Mr. R. D. Hune of Fruit Vale, Cal., claims to use pigeons with complete success between his factories, some three hundred miles apart. A New York broker says: "I use my birds to bring the reports from Wall Street to me at Chetolah, my summer residence, near North Branch."

Poultry Fences. One of the principal drawbacks in raising poultry in yards is the cost of the fences. Galvanized wire is an excellent material, but it allows no protection in winter from winds. Boards are expensive in some sections, and palings or pickets are not always obtainable. A good and cheap fence may be made of lath, and if rightly constructed will last for a number of years. A lath fence six feet high may be made by placing the posts eight feet apart, using three strips running from post to post, for the purpose of holding the lath. If preferred, a one-foot board may be used in place of the bottom strip. Place the second (or middle) strip two feet above the bottom one, and nail half laths to the two strips, cutting four-foot laths in two pieces for that purpose. This will make the two feet of fence at the bottom strong enough to resist considerable pressure, keeping off dogs, and even larger animals. The third strip should be three feet above that in the middle, and whole laths should be nailed to them, which will leave each lath projecting one foot above the top strip. When completed the fence will be six feet high, or seven if a board is used at the bottom, or two feet from the ground, where it is most needed. The bottom half-laths may be placed very closely together, but two inches of space will be sufficient for the upper ones. Such a fence will cost but little, and is the cheapest good fence that can be made, so far as cost of material is concerned.—*Farm, Field and Stockman.*

# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

Vol. II.

MARCH, 1887.

No. 6.

### Warm Winds on the Way.

We wait for thy coming,  
Sweet wind of the South!  
For the touch of thy light wings,  
The kiss of thy mouth;  
For the yearly evangel  
Thou bearest from God,  
Resurrection and life  
To the graves of the sod!  
—Whittier, in *Youth's Companion*.

IT IS WELL TO SECURE at least a part of the summer plants now. One may then get a month or two of enjoyment out of them before setting-out time arrives. At this season a little care in keeping plants vigorous goes a great ways.

THE OLD WASP NESTS that hang about the trees and elsewhere, and which in the former cases, can readily be seen in the winter, are not always untenanted even if so they might appear. They may contain perfect, if undeveloped, insects and hence every one that is met should be destroyed. Every female now killed will prevent a bothersome brood the coming season.

OUTSIDERS can hardly sympathize with the Massachusetts Horticultural Society in its trouble of having too many annual members. At a January meeting it was voted that the executive committee report the most feasible method of limiting the number of members. Usually the difficulty comes in the other way—too few members. The state of affairs referred to speaks well for horticulture at the "Hub."

THE ADVANCEMENT that in the present day is being made in improving certain kinds of ornamental plants is very remarkable. Only so short a time ago as 1861 that most valuable summer bedding plant *Coleus Verschaffelti* was introduced to the world, previous to which time fine-leaved *Coleuses* were unknown. Since then new varieties without number have appeared, and the great diversity of colors and forms of foliage produced is quite as remarkable as the number of the sorts.

IT IS A MATTER for great joy that our enemies, the Curculio, the Pear Blight and perhaps the Codling Moth are lessening their former tight hold. Such is the case especially in the eastern portions of the country. President Barry lately said before a large body of fruit growers that the prospects for Pear culture at the present time were better than at any previous time for many years, so far as the blight was concerned. Plums have never been more productive than for the past year or more, while the Codling Moth seems certainly to be turning the corner. We may next expect to hear of the decline of the Cabbage worm, and who knows what others. Take courage brethren, but don't dismiss the remedies at once.

IT IS RELATED in the *Kansas Students' Farm Journal* that parts of the same lot of root grafts of the Pear, Plum and Cherry failed to grow, while the rest made a perfect and healthy union. The only difference was that upon the first common grafting wax was used (the boiled oil of which is believed to have been adulterated with some substance capable of injuring vegetable tissue), and upon the latter the alcoholic mixture for grafting, prepared as

follows: Melt six parts white rosin with one part beeswax; remove from stove and partly cool by stirring, then add gradually, with continued stirring, enough alcohol to make the mixture, when cold, of the consistency of porridge. In the temperature of the grafting room it will remain sufficiently plastic to permit applying with the finger.

MARCH is a most delightful month in which to visit the plant growers' houses, and it is a good time to consult about stock to be bought later for the summer beds, vases and window boxes. No matter how uncomfortable may be the weather outside, beneath the glass roof it is, in all sunny days at least, most charming. The sunshine, fragrance and beauty are there, not the raw cutting winds. For days upon days now it is a common thing to find the temperature here in the eighties, and plant life aglow with vigor and bloom. As the season advances the heat increases and then shading the glass is resorted to, or else plants will suffer. But such shaded greenhouses are not so pleasant to visit as those not shaded, provided the temperature of the former is agreeable, and this is why of all the year March affords the most delightful conditions ever to be met in the plant houses. It is a taste of pure summer weather, sun and all, when outside, cold, dampness and searching winds yet prevail.

### Plan Well Before Planting.

Results from planting are too far-reaching to admit of this important part of garden work being done without very careful previous planning. One may plant the orchard and ornamental trees of a place in a week—a life-time will not suffice to end their testimony, good or bad, as to how the work was done. The short time before the spring planting season should be devoted to a very careful consideration of what, where and how the planting, if any, is to be done.

As a usual thing the margin in dollars and cents between the cost of doing the work of garden and orchard improvement right and doing it wrong is not so very great. Where the difference between the two in the main comes in is on the score of the mental work: thought, study, planning, that was applied, before work on the ground commenced. It is a recognized fact that a large share of the labors of advising and landscape gardeners in the present day consists, in planning to make over places that were illy planned when first improved. Nothing can be more aggravating to the gardener for profit or more unpleasant to any cultivator than to discover, as trees approach maturity, that a serious blunder was committed as to the kinds that were planted, or as to how, in ornamental trees, they had been arranged.

What to plant, depends much on the locality. Meteorological influences, soils and situations vary greatly, hence to make no mistake as to kinds it is best for each planter to look carefully about in his vicinity and consult with experienced growers as to

the sorts doing the best thereabouts. A dozen trees of kinds well adapted to a certain section will be sure to yield more satisfaction than twice as many ill suited to the place.

To new beginners we would say, place not your trust in the tempting highly-lauded novelties of the catalogues. Novelties are all right in their place, but their place is not in the gardens of beginners. And here it may be said that the space devoted to descriptions respectively, in the catalogues, is a very poor criterion to go by as to the respective merits of kinds. Old standard sorts that are well known do not need to have their praises sounded forth from year to year, hence these, like all things of true worth, are usually accompanied by modest claims. New sorts that are unknown, if they are to be presented at all, need considerable space for a proper introduction.

A very large proportion of all novelties fail when put to the test of wide dissemination. It is not the case necessarily that such failure results because the sorts are valueless. It is the case rather, that while such may possess decided merit in the place of their origin, or under special culture, outside of these conditions they prove not to be reliable. It would not do to forget, however, that as novelties, all of our old and valuable varieties first found their way into wide cultivation.

### More About Pedigree in Fruits—How to Gather, Handle, Mail and Apply Pollen.

PROF. J. L. BUDD, AMES, IOWA.

The notes of Mr. Williams on this vitally important subject are worthy of careful study.

We may truthfully say "That like produces like" within certain limits in the breeding of animals, and also when we sow or plant the plumpest and most perfectly developed seeds of established varieties of the cereals, the grasses and the flowers.

But we must not forget that an abnormal development in quantity and quality of the fleshy part of an Apple, or other fruit is no evidence of increased vigor and vitality of their contained seeds. The suggestive remark went the rounds of the press a few years ago that propagators could better afford to pay \$12.00 per bushel for seeds of the Red Romanite for stock growing, than to receive seeds of Yellow Bellflower or Northern Spy as a gift.

In climates as mild and agreeable as that of Belgium the Van Mons theory of improving the quality of fruits by lowering the vitality of the tree might hold good, and in climates where the inherent vitality and hardiness of tree were secondary considerations our common axiom: "Grow seedlings from our largest and best fruits," might be accepted unconditionally.

But over a large portion of the Northern States of America increased hardiness of

tree or plant is each year becoming a more important element in the solution of the fruit problem. Here comes in the sound conclusion of Mr. Williams, that our experiment stations should commence the work of crossing the best varieties on primitive forms.

This is an old and rich producing field in Europe, and with us not wholly new.

If Mr. Rogers had continued to plant the pure seeds of the native Sage Grape of Massachusetts to this day he probably would not have materially varied the wild form in foliage or fruit. But the magic touch of the pollen of the Black Hamburg and White Chasselas brought him at once forty or more varieties quite as hardy in wood and as perfect in foliage as the native species, approaching very nearly in size and quality of fruit to the foreign sorts used for fertilizing.

If gathered together the magical changes which have been wrought in fruit, foliage, and flower in Europe and America by practical cultivators would make a valuable sequel to Darwin's wonderful, but yet unappreciated, work on "Cross and Self-fertilization in the Vegetable Kingdom."

During the past eight years we have been preparing for an extended work in this inviting field, and last spring we made our first successful crosses of the pollen of best known varieties which seem perfect in foliage and ability to stand our trying winters.

With a view to encouraging your many thoughtful readers, to whom the work is new, I add a few notes on pollen saving, etc.

**POLLEN GATHERING.** This is first in order. If the dry pollen is at hand we can touch the stigmas at the nick of time when the nectar is secreted, even if the weather be quite unfavorable. Our plan of gathering pollen of Apple, Pear, Plum, Peach, etc., is rapid and so far has been successful.

When the blossoms are fully expanded, but before many of the anthers have matured and burst, the stamens are plucked with thumb and finger and dropped into a clean, bright tin cup. While not attempting to pluck the pistils, no special care is taken to avoid it, as they do no harm.

In a dry warm room the anthers in the cup soon ripen, and when stirred with a moistened pencil brush it will take on pollen enough to fertilize several blossoms.

**REMOVING ANTHERS.** When the blossoms of the varieties to be fertilized are beginning to open select one or two of the strong central ones of a cluster and pinch off the others. With small botanist's shears nip off the anthers of the selected blossoms, which an assistant at once covers with a small sack—widest at the lower end—made of light white muslin.

**APPLYING THE POLLEN.** In from 20 to 36 hours after removing the anthers, if the weather is fairly warm, the stigmas have secreted the nectar which causes the pollen to adhere. With an assistant to take off and replace the sacks, the work of touching the stigmas with the pollen brush is quite rapid. In practice we find the use of pins in fastening the sack to place is far more rapid and convenient than strings.

**AFTER CARE.** A label should state the cross made, and a week after the sacks should be taken off, and in all cases where the fruit has formed it should be covered loosely with musquito bar, which is kept in place until fruits mature to show the successful crosses, to protect from birds and to give boys a hint that it is valuable property.

**MAILING OF POLLEN.** The pollen of our orchard fruits, and some of our small fruits, is not as evanescent and perishable as is usually supposed. Apple pollen, mingled with dried stamens and pistils in an open tin cup, was germinated last spring by Dr.

flowers. It is a modest grower and not in the least disposed to be weedy in appearance.

The Trilliums, Wake Robins, or Wood Lilies, of which a mass of the large flowering white variety is shown in the engraving, are among the most beautiful and interesting of wild flowers. In several varieties they are common in the woods over a wide region of our country. They succeed as easily in the garden as any Daffodil, and increase in the size of the bloom under cultivation. For naturalizing in moist places or in half-open woods, they are, although American plants, widely used in England. If we were obliged to bring them from England or Asia, instead of getting them in many places so easily for the digging, no doubt they would be oftener seen in American gardens.

The only special point to be observed in the cultivation of Trilliums, is that they succeed better in partial shade than in the full sun. If too much exposed there is a lack of leaf development, and consequently a weaker growth ensues. It is the more

vigorous plant that gives the finest bloom. Plants of the large-flowered sort figured, when in a good state of vigor, produce flowers almost equal to the White Lily in size, while they are of fairer appearance.

The native varieties of the Hepatica, or Liver Leaf, must also be classed among our most valuable wild flowers suitable for cultivation. The flowers of the common



WILD FLOWERS. A CLUMP OF THE LARGE FLOWERED WOOD LILY.

Halsted fully two weeks after it was gathered, and we know it can safely be sent by mail long distances. In some cases this will specially aid us in our work. For instance, Mr. Peter M. Gideon (see page 68) can send South for his pollen of choice winter Apples, instead of sending, as he proposes, his hardy seedlings South to be operated upon.

I did not intend to say a word about the minutia of the work, and now I find I have not spoken of experience in pollen saving or crossing of the Grape and the small fruits.

#### Some Modest Wild Flowers for Garden Cultivation.

Among our native American plants there are many which are as well entitled to a place in the flower garden as are any of the species so commonly found here and which have been brought from great distances. Take for one illustration the Blood Root, *Sanguinaria Canadensis*, unequalled as it is among early spring wild flowers, both for the exquisite whiteness and beauty of the bloom, and for the beautiful form of its leaves. In the writer's garden a good sized clump of this has been growing for years, and in its season it stands for attractiveness among the most highly prized of all our

*Hepatica triloba* are of a beautiful deep blue, and these appear freely early in the spring. They rise and expand before the foliage, and they are really charming. There are some double Hepaticas which in cultivation are beautiful little hardy perennials.

Among other wild flowers worthy of a place in every garden may be named Native Lilies, Columbines, *Asclepia tuberosa*, Violets, Anemones, Lobelias, Gentians, Dog's Tooth Violet or *Erythronium*, *Cypripediums*. We are glad to see that a number of American nurseries have begun to make a specialty of our beautiful native flowering plants. The prices at which they are sold is very moderate, a reason being that their culture and propagation are very simple.

#### Funeral Designs of Ivy.

Those who may have occasion to present designs when flowers are scarce, or who tire of the conventional floral arrangements, should know that very fine ones may be made of the leaves of the English Ivy, or of those and a few flowers. We can think of no design more beautiful than a simple heavy wreath made of Ivy alone, while there are many other designs of a simple character that are very effective in this material with or without flowers added.

The Ivy is understood to signify in sentimental language fidelity and friendship, and this fact, added to the beauty of the leaves and their appearance of stability, renders this material especially suitable for such purposes.

Among flowers to combine with Ivy leaves, none are more suitable than Violets or the early spring flowers. The sombre appearance of the former especially harmonizes well with the dark leaves, while yet the appearance is sufficiently varied as to form to create a very pleasing combination to the eye. One thing should be said of preparing the Ivy leaves for such work. They should be rubbed with a cloth to remove every particle of dust, and by this means also the general appearance is much improved. To very lightly rub the leaves with linseed oil will give them a polish.

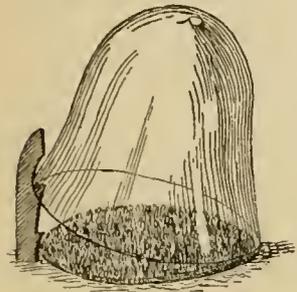


Fig. 4. Bell Glass or Cloche.

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**Some Simple Uses of Glass In Gardening.**

Such is the adaptability of glass to the uses of gardening, that the climate of the Tropics and the cultivation of all tropical plants may on a moderate scale, be easily attained to throughout the regions of the North. Glass allows those important needs of plant life, sunlight and heat, to pass through its substance, while it shuts out the cold and untoward winds. It at the same time retains the heat and moisture that accumulate within its cover, and thus together secures a variety of conditions most congenial to plant growth.

The province of this article is to call attention to some of the more simple uses of glass in aiding the work of the plant grower and propagator. As this is the season of general plant propagation in the window and greenhouse, notice is first invited to the propagating box of figure 1, improvised by the use of a small-sized box, such as a lower section sawed from a soap box would make, and eight or more panes of glass. In this instance the upright panes forming the sides of the case are held in position by having their lower ends embedded between the sand or soil and the sides of the box. For starting cuttings and seeds, as well as for bringing on young plants, Fergus, etc., such a simple affair is most useful.

In figure 2 is shown an arrangement of but four panes of glass, and these resting on the surface of a bed of sand or soil. This may find a wide range of usefulness in starting slips and seeds, and for protecting young plants indoors or out. The upper part, which serves to keep the lights in position, consists simply of a pine strip, size one inch by two inches and a half, and of a length somewhat greater than the width of the glass used. In this strip are inserted, to project downwards, two pegs of wood three inches long, against which the oblique lights recline. Two grooves are also sawed crosswise in the strips at a proper distance apart for retaining the perpendicular side lights.

For simple small boxes, covered with one or two lights of glass, the sketches of figure 3 serve to give an idea. Such boxes find a wide use in open-air gardening, for placing over the hills of heat-loving seeds, such as those of the Cucumber and Melon, and also in protecting young plants of Tomatoes, etc., that are susceptible to injury from the late frosts and harsh winds of spring. Boxes of this kind should be made up ready to receive the glass early in the season, and be stored away for use when the planting time arrives.

All the appliances suggested are in general designed to meet the same use as that long

given to the bell-glass, or *cloche*, as it is called in France, where it finds very extensive use. The former contrivances referred to may be made cheaply by any one; the latter is a manufactured article, the price of which might debar some from buying it. They may be bought for about \$5.00 a dozen, for a size 7 inches across at the base, of some dealers in horticulture supplies. Being made of heavy glass, they are decidedly durable, and with fair handling will last for many years.

**Varieties for Heavy Clay Soil.**

Recently Prof. L. R. Taft of the Horticultural Department of the Missouri State Agricultural College gave an account of the work during the year in that department. The horticultural grounds comprise forty acres, and the soil is a heavy White Oak clay.

The grounds are devoted to large and small fruits and vegetables. Of Strawberries they had last year seventy varieties, but have discarded one-half of them. On these grounds the best berries for a commercial plantation it has been found are the Cumberland Triumph, Capt. Jack and Crescent Seedling, and these seem to suit a large part of the State.

Of Red Raspberries the Turner did well. Shaffer's Colossal was also good, large and productive, but rather soft. Among the Blackcaps the Carman is promising for an early kind.

Taylor and Snyder are the only Blackberries they raise, and are not profitable in that market, there being too many wild ones.

Of vegetables, the Professor spoke well of Cleveland's Alaska Pea, which was six days earlier than any other. He had grown an excellent crop of Celery, though the season had been very dry, by putting the plants in a cold frame which had been used for early vegetables. The soil in the frame was moderately rich and the plants were set in rows ten inches apart and a few inches in the rows. With an occasional watering the plants did well and inside were well blanched, and when sunk in the ground for a short time were blanched perfectly. It is hard to grow good Celery in their hard dry soil, but by this method a large quantity of an excellent quality can be grown in a small space. Of the varieties the Golden Hearted Dwarf is one of the best.

**Which Grape Canes to Leave for the Best Fruit.**

D. S. MARVIN, WATERTOWN, N. Y.

"There is one well authenticated fact in the fruiting of the Grape, viz., the finest fruit, the best, earliest and largest crops are produced upon the strongest shoots of the previous year's growth."

I have seen the above from the pen of one who is usually a careful observer, going the rounds of the press as the sum of accurate human knowledge upon this point, so often, that my mental dissent each time I have read it has finally taken the form of an earnest protest. The truth is that the strongest canes are often not the canes that should be saved for fruiting, for they do not yield the heaviest and best crops of fruit.

This matter of which are the best canes, like nearly every other horticultural practice, should be governed by the conditions. There is no such unvarying rule for trimming the vine as the item asserts. Wherever there is a feeble growth of the vine, there the idea is right; but wherever there is a strong growth then it is wrong, and here are the reasons:

All the operations of the vineyard should be directed to the production of well developed fruit buds. But the fruit buds upon strong,

vigorous canes are never so well developed as upon medium-sized canes, for in large canes the energies of the vine have been turned too much towards the development of wood at the expense of the fruit buds. Therefore, in a strong growing vineyard these larger canes should be trimmed and the medium canes that possess the better developed buds saved for fruiting.

Fig. 3. Some Simple Forms of Forwarding Boxes.

The pruner should before commencing operations look each vine over, and trim according to the vine's condition. He will invariably find that upon a thrifty, strong growing vine the buds upon the medium-sized canes are swelled larger and stand out from the cane more prominently than the buds upon the larger canes.

I have tried the experiment over and over, and this is the sum of my observation, that the medium canes are the ones that develop the best fruit buds whenever the vines are strong.

**Do Transplanted Cabbage Plants Head Better Than Others.**

It has been claimed that the act of transplanting Cabbage plants exerts a beneficial influence upon their heading qualities. The second and third plantings in our test of varieties gave an opportunity to make a comparison in this respect, as the second planting was made in boxes in the cold frame, May 6-10, and the third in the open ground May 7-10. It is thus possible to compare 166 rows of transplanted plants with the same number of rows grown "in place," the varieties being identical, and the seed being taken from the same packages. The results were as follows:

	Average time to first head, Days	Average time to largest cutting, Days	Average diameter of heads, Ins.	Average weight of heads, Ozs.	Per cent of plants that headed, %
Second planting, Plants transplanted ..	114.95	140.89	7.55	89.1	86.76
Third planting, Plants grown in place ..	116.17	141.90	7.71	90.	90.16

It is evident that, in this case, the transplanting shows no beneficial effect. The little difference is in favor of the plants grown "in place." —Report of the New York Experiment Station.

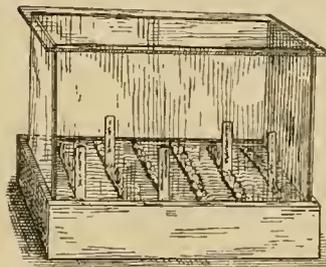


Fig. 1. Propagating Case. Easily Improvised with Panes of Glass.

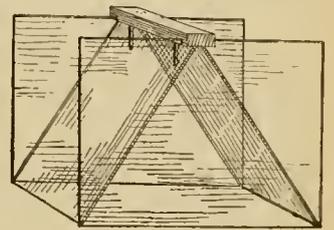


Fig. 2. Plant Shield.

**As to Hardiness of Trees.**

Hardiness depends on many things — as elevation, soil, drainage, exposure, cultivation, rapidity of growth, the nature of the summers, springs and winters, or any one or all of these, and doubtless on still other conditions.

Last winter was as cold as any we have had in 20 years—33° F. below zero—yet thrifty sprouts of *Magnolia umbrella* remained alive to the terminal bud. Perhaps this was owing to the fact that there was plenty of moisture in the soil, or little wind, or no sunshine during the freezing period, or all combined. These Magnolias have usually, even in mild winters, died to the snow line.—Prof. Beal's Report.

### "Blue" Roses: Fraud Agents Rejoice In Such Things.

In the notice of "A Memoir of Father S. J. Barbetin," of Philadelphia, which appeared in a leading Philadelphia paper recently appear these words: "His biographer gives a pleasant description of the old Lorraine homestead, surrounded by fruit trees and hardy flowers, a flora, which included *Blue Roses*, a variety unknown to the usual Pennsylvania gardens."

This notice was sent to us by our wide-awake correspondent "H," with some decidedly just comments as follows: "I cut this from one of the leading Philadelphia papers, a paper whose owner is known as a special patron of horticulture, and yet such silly credulity is allowed to go out unchallenged to its quarter of a million readers, indorsing a credulity almost akin to superstition, for all intelligent people interested in horticulture nowadays laugh at the 'Blue Rose' story, just as they would laugh at the story of a 'blue' cow or a 'scarlet' horse. There is just about as much chance of ever seeing the one as the other. But it cannot be too often told to our young readers so as to keep them out of the hands of sharpers, who are yet occasionally found to offer these absurdities for sale, that there is *no such thing in nature as blue, scarlet and yellow in varieties of the same species*. Thus we have blue and yellow in Hyacinths but no true scarlet; scarlet and yellow Dahlias, Chrysanthemums and Roses; but never blue, and so on through the whole category. It is the province of such papers as POPULAR GARDENING to warn the people against such popular errors, promulgated so recklessly by the secular press."

### Losses in Shipping Fruits.—A Cause and a Cure.

C. W. IDELL, COMMISSION MERCHANT, NEW YORK.

Promptness in the arrival of fruits in the market is not appreciated as it should be. There are instances where producers strive to get low rates of freight, but how often is any mention made of the time fruit should be delivered at its terminus. Yet of the two the latter is really the more important item.

A reduction of one cent per quart on berries would be thought very fair, but I have known a loss of 2 cents per quart to take place day after day by late arrivals, and even reaching 4 cents. I believe that during the past season the loss created by late arrivals on one of the largest carrying roads into this city amounted to 2 cents per quart regularly.

My experience with transportation companies shows me that the management of fruit carrying by rail is left entirely with those who have the care of the trains, the head officials knowing nothing of the delays occasioned, unless complaint is made to them direct. Even then it is rarely one can gain admittance if it is known that you have complaints to enter.

The indifference of those in charge of the trains is owing largely, no doubt, to the belief that complaints cannot reach superiors. That an effectual system of threats is made use of by the employees is evident from a remark made to me by one having quite a high position on the line. I sought aid in breaking up a bad habit of some yard officials in drilling the cars, when he quietly said to me, "Please don't ask my aid, for if it was known that I did so my position would be most disagreeable; go to the head official." He gave me his name, I made the complaint and had the difficulty removed.

I suppose some shippers would open their eyes in surprise to hear that entire carloads of fruit are at times lost between the starting point and its terminus. Yet this is a fact, and to be accounted for only on the plea of indifference on the part of train men. An instance: Last season, on July 23d, my cartman failed to make his appearance with the fruit, until hours after the usual time. On inquiring the cause he gave this statement: "Me and other carters were waiting as usual for our fruit train. It came, but there was no car from the

point expected. I asked the yard-master if that car was in; he replied: 'No, nor do I know where it is; go ask the superintendent.'" The carters did so, but while that official had the manifest of the fruit in the car, he could tell nothing of the car.

An engineer who was sitting in the office and overhearing this said: "Boys if you will treat nicely I will take you on my engine and look up the car." The offer was accepted, and all mounted the engine and proceeded on the search. Between the station and the next town they discovered the car on a side track where it had been switched and left by the conductor of the train that started with it. However the men continued their trip until they reached the town, run the engine on a side track, entered a saloon, played three games of pool, took three rounds of drinks, then took the back track, hooked on the missing car and took it to the main depot where it should long have been.

Yet the shippers were compelled to accept the loss on the sale of that fruit, all owing to the company's inefficient management.

Another common cause of delay is that empty cars are left standing over night on tracks that are needed to run out cars loaded with fruit. Then when the trains arrive the engineers must leave their trains on an off track while they take up precious time (if they do it) to drill the empty ones off the others they are after. Of course if the yard-master was to do his duty he would see that every empty car was taken off as soon as unloaded. I suppose that he, like his superiors, really suffers nothing by such carelessness; hence leaves the cars in the way for some others to remove if they will do it. If fruit shippers would look deeper into these matters, they might be surprised to hear how much money they lose in this way. Seemingly they do not care. How seldom is this important feature broached in the horticultural societies. Shippers seem to be impressed with the idea that it cannot be cured, so must be endured.

Yet it could soon be cured if the shippers would unite with the determination to cure it, for if these roads were made to pay the losses sustained they would soon run the trains on time, and instead of these head officials coming to their office at 9 or 10 o'clock A. M., you would frequently see them there at 2 and 3 in the morning, looking after the train hands. Try it!

### Orchards on the Mississippi Bluffs.

There is a cry going up all over the land, east and west, of orchards failing, varieties deteriorating, diseases multiplying—and then the query "what shall be done?" The fault I believe lies less in the tree or variety than with the owner. Neglect is the great and primary cause of orchard failure. Soils are allowed to become exhausted of the chief ingredients needed for vigorous growth and productiveness. A cow turned out without food or protection will fail; and a tree set out and made for years to live on poor soil must do likewise.

Proper care as to the selection of soil, intelligent after-culture, and a continued application of the necessary nourishment, are in my opinion the main requisites to secure healthy and long-lived orchards. Neglect of these has caused and is causing yearly more and more unfruitfulness, decay and death. But we must not forget, that even with the best of care, some varieties will serve us better than others, and none are constituted to live forever.

People here now are exercised as to what is the best to plant, as they were forty years ago, when they began. The Bellflower, the Rawle's Jenet, the Sweet Bough, the Red June, the Winesap, have all done well in former years, but now seem to be giving out. What shall take their place?

The Yellow Transparent is highly extolled as to quality and earliness. But one drawback here in the Northwest is that the tree blights. Wherever that defect can be overcome it promises to be one of the foremost early Ap-

ples of the Russian type. The Salome is handsome, a good keeper, hardy in tree, and it has one quality which I think should strongly commend it to orchardists—it hangs persistently to the tree, thus rendering it safe from high winds. I would add a third to the list of valuable Apples—the Whitney No. 20—a most beautiful Apple of excellent quality, and though claimed to be of crab parentage, is of about medium size—as large as the Winesap or Fameuse. The tree is hardy—one of the "iron-clads,"—a good bearer, and for beauty of shape cannot be excelled; its season October.

The Ben Davis has been boomed in this region for thirty years past, and to tell the truth, there has been more money made with it than any other. But it, too, like some others, is losing ground. It never was recommended for its quality, being only about third rate; but its bearing qualities and hardiness brought it into notice, and its beauty of size and color always sold it in the market, even over Bellflowers and Greenings. H. G.

### On the Pruning of Orchard Trees.

ODDFREY ZIMMERMAN, PINE HILL ORCHARDS, NEAR BUFFALO, N. Y.

So much is offered on pruning that the learner must believe this operation is as much needed to a tree as water to a fish, without which it cannot live. If less pruning, more manuring, and better cultivation were practiced, we would see far less old-looking, decaying trees at the age of 30 or 40 years than now.

The illustration of a badly pruned Apple tree given in your January issue is not half as bad as we often see them, and if one was to imagine the branches on, where now there are stumps, the tree would nearly come under that class of Apple trees of which Downing says: "The less the pruning saw and knife are used the better."

In regard to opening the tree top that the sunlight be accessible, this I concluded after long experience is far less needed than is generally supposed. We have such powerful sunshine that if assisted by the wind it penetrates the whole top unless it is as close as a broom, which is seldom the case. As for providing ample room for the picker to move in the top, one is apt to prune too much. At any rate most of the fruit is better picked from the outside with proper fruit ladders.

To prune on the principle never to cut a branch that is larger than a man's thumb is an ability which I have tried to acquire for many years, but have come to the conclusion that in common practice it is not easily attainable. To prevent in future years, such cutting would require to remove so many lateral branches as to cause too great a liability of the main ones becoming slender and weak, and unable to bear the fruit on its upper part without bending, causing also numerous shoots to start on the upper side of the bend.

Pruning as a principle, in itself tending to impair rather than increase vitality, applies more strongly to young vigorous trees than to bearing ones. Cutting back such branches of the latter as have become stunted in growth by a number of heavy bearing years, down to where younger and more favorably situated ones are growing, tends in my judgment to keep up the vitality of bearing trees. The cutting of such branches appears to be no detriment to the tree, while its live force is maintained.

In the cutting of a branch large or small just where the swelling of the base begins, unimportant as this may seem to many, lies the chance to do the least possible injury to the tree. To disregard this rule, cutting off the whole base close to the body, increases the wound three-fold in circumference, making it so much more difficult to heal over. And this is not all. The new growth for covering the bare spot is no more active here than it would be at the point of cutting if this were a trifle further out. The larger wounds also, with the surface of the layers exposed their *flat side* to the

influence of heat and cold, dry out and contract to an extent that causes the ascending sap to become arrested, directly inviting decay, no matter how well the wound may be covered with paint or grafting wax.

Too often a busy pruner does not stop to inquire whether the lopping off of a branch is really beneficial to the tree or not. If in the way of his idea of symmetry of form it probably must go no matter how thrifty it may be, and perhaps leaving some half-dying limbs if only a little better suited for securing the desired shape.

In my own practice I have for many years worked by a rule of my own, never to cut off a thrifty branch from a bearing tree for mere shape. An Apple tree of such thrift that it produces shoots of from 6 to 12 inches in a season, looks far more beautiful to me than any forced form of tree maintained by the constant pruning of small branches.

#### Growing Green Peas For Market.

BY W. D. PHILBRICK.

Peas do not do so well on the same land year after year as when in rotation with other crops, and do not do well after Turnips or Cabbages. They will do well after Corn or Potatoes upon land broken from sod the previous year. The early kinds do well on light land, the later ones requiring good, rich land.

The common way of planting Peas is to manure the land with fine manure in drills three feet apart; cover the manure slightly by hand hoe, then sow the seed, about six pecks per acre being used; next cover with hand hoe. All this involves a good deal of labor both in planting and hoeing, and where a large area is to be planted it will be found good economy to spread the manure and plow it in; then harrow and roll the land, and next put in the seed with a drill in rows three feet apart, about eight to ten seeds per foot. The rows will then be straight and narrow, and the cultivator can be run so close that no hoeing will be needed.

As to the best varieties for early planting there is not much difference between several of the very early kinds. The Dan O'Rourke, Carter, Caractacus and other hard early Peas are all about alike. Next in earliness is Bliss's American Wonder, a dwarf vine with a sweet wrinkled Pea of great excellence and of especial value where land is valuable, and some late crop, such as pickles, etc., is to occupy the land later, and must be planted between the Pea rows before they are cleared up. Next in earliness and excellence is McLean's Advancer, a well known market Pea, very sweet, with a medium growth of vine, and very productive.

For late crops the Stratagem is one of the very best, and is preferable to the well-known. Champion of England, on account of its more dwarf growth, needing no stakes as the latter does. If you plant one of the early kinds, the American Wonder, the McLean's Advancer and the Stratagem on the same day, you will have one follow the other in the order named in ripening, and at about the right interval to make it easy to handle them in succession. The Stratagem will not come to the table before July 10. If it is desired to have Green Peas later than this, it will be needful to make successive sowings of seed every ten or fifteen days from April 10 till July 1, after which there is risk that they will not ripen before frost takes them.

The chief labor with the Pea crop is at picking time. To market an acre of Peas will require the services at picking time of five or six good pickers, and they should be engaged beforehand, so that there will be no loss from delay in picking. It is well to be beforehand in this business, for the early Peas always sell best. It is customary to pay for picking by the barrel, the price ranging from fifty to seventy-five cents per barrel, according to the variety and ease of picking. A good picker will easily pick 1-2 barrels of early Peas, or two barrels per day of McLean Peas.

A trusty man is required to boss a gang of pickers to see that they do their work well and do not injure the vines or the late crop that may be growing between the vines. A good crop of Peas will sell for \$60 to \$100 per acre, and comes off early enough to admit of growing Rantabagas, Turnips, Squashes, Melons, Cucumber Pickles or Beans for pickling, or Spinach, upon the same land.—*American Cultivator.*

#### The Care of Hot-Beds.

E. S. GOFF, HORTICULTURIST OF THE STATE FARM, GENEVA, N. Y.

The hot-bed in early spring is beset by three dangers that must be carefully guarded against or failure is almost certain. First and simplest, cold weather must be provided against. It is not safe to trust much to the weather in March. Remember that it is far better to put on the mats a score of nights when they are not needed than to leave them off one when they are needed.

The second danger is what is known among gardeners as "damping off." The young plants suddenly droop, without any apparent cause, and on examination it appears that the stem has rotted nearly or quite off at the surface of the ground. Various causes have been assigned to this, but probably the true one is that the plants smother from a lack of oxygen.

It should never be forgotten that the fermentation of the manure beneath the hot-bed is a slow, but a true combustion. This is why it produces heat. The oxygen of the air unites with the carbon of the manure, forming carbonic acid, and in this no plant can live. The hot-bed frame should never be entirely closed, therefore, so long as the manure is in an active state of fermentation. If all the joints are tight, one sash should always be left slightly open, even in severe weather, and when it is necessary to use the mats.

The third danger applies to April more than to March. It is that of sun-burning. When the sun shines brightly on a closed hot-bed there is great danger that the temperature within may rise to a degree that will prove fatal to the young plants. Careful watch must be kept, therefore, and plenty of air admitted during bright sunshine on still days.

#### What is Cardoon?

Some American seedsmen offer seed of this vegetable in their catalogues. It is by no means a new vegetable, having long been grown in Continental Europe. It may at least be said to be new to the majority of Americans who grow garden vegetables, hence some information relative to its use and culture are here in order.

The engraving given at once suggests the resemblance of this vegetable to Celery. In the matter of its preparation for use and the parts that are used it differs but little from that favorite. In its botanical character, use and taste, it is entirely distinct, coming very near to the Globe Artichoke. It is also a much larger grower than Celery. The blanched leaf-stalks and mid-ribs (if any) of the leaves are the parts used. These are employed both as a pleasant salad and for boiling or for making soups. Like Celery, Cardoon is essentially a winter vegetable.

To raise this vegetable the seed should be sown either in April, in small pots in frames for later transplanting, or else in May in the garden direct, sowing here in drills an inch deep and fully three feet apart. The plant needs a rich deep soil to arrive at its best state. To accommodate the growth properly each plant should stand after transplanting or the final thinning at 20 inches apart in the row. The soil must be kept loose and free from weeds. The growth is tuft-like in form, the leaves being large and handsomely divided. During dry weather the plants will bear free watering and occasional supplies of liquid manure with great advantage.

In October Cardoon requires to be treated somewhat like Celery in its blanching stage. The leaves are less upright than those of that plant, hence a first step in blanching is the drawing together of these, keeping them compactly in place by winding with hay or heavy paper bands, which should extend up a foot from the ground. These bands are designed to serve the purpose of keeping the earth from coming in contact with the stems in the banking up process. They should be applied on a dry day, before any soil is applied.

Following on the binding, the soil must then be earthed up nearly as high as the bands and be beaten hard with the spade. The plants will be fit for use in about a month and may



CARDOON BLANCHED READY FOR USE.

be taken up as required. For winter use Cardoon should be managed like Celery.

Of various sorts of Cardoon, the one known as the Spanish, with large solid ribs and spineless leaves is the most cultivated. One ounce of seed will give fully 500 plants. Mice are very fond of the seed of this vegetable.

#### Growing the Vallota for Fall Shows.

The Vallota or Scarborough Lily, with its splendid spikes of brilliant scarlet flowers, appearing about August, is one of the easiest plants for amateurs to grow to perfection. Wherever there are late summer flower shows, in connection with the fairs or otherwise, it would in many cases be well for plant lovers to raise some of the plants for exhibition.

Excepting for a few months in winter, this plant delights in liberal watering for by nature it is a bog plant.

The course of treatment for the season should begin towards the end of March or in April, by putting up or shifting on the bulbs, using a mixture of fibrous turfy leaves and old manure. The latter article may comprise fully one-third of the soil. The bulbs should not be divided beyond having six in a clump, until this number is exceeded they should be simply shifted into larger pots, removing some of the old soil but not to damage the roots.

Keep the plants in a moderately warm and light situation until the growth is completed. For the summer they may stand in a light, airy frame, or in the greenhouse, having the glass lightly shaded to prevent sun scald.

After the flower spikes first show themselves the blooms come on very rapidly. If there are a number of plants some may be retarded by placing them in a frame at the north side of a building or wall where they will be but slightly under the influence of direct sun heat.



grass path, shown in the plan by dotted lines. Leaving this path opposite the north end of the Roses, we find our way into a grass-carpeted retreat in the midst of the deciduous shrubbery, and in this lovely spot a well chosen seat. Bordering around this retreat is such a variety of shrubs, commencing with the April-flowering Mezeron Pink and ending with Hydrangea and Witch Hazel in autumn, that one scarcely ever enters the spot in comfortable weather without finding some shrubs in bloom. Should your visit occur in May or June, the place would be found redolent with the perfume of Lilacs, Syringias and other sweet blooms near by.

Returning to the walk, directly beyond another opening to the right is met and this leads to the grassy Shrubbery Walk, and to the Arbor, which formed so striking an object as seen from the veranda. Of shrubs in this locality, it is enough to say that they represent a fine assortment of both rare and common kinds, with evergreens predominating closely about the arbor. The Shrubbery Walk is always a favorite strolling place. Coming back to and continuing along the west walk,

we soon reach a secluded, but most interesting spot, namely, the Rockery, and near at hand in the midst of evergreens, the Alpine Garden. A goodly portion of our time could be spent here at any season, studying the numerous plants, from water lovers to Alpines, that hereabouts find a suitable home.

Beyond the Rockery no gravel walk extends, for here we approach the Wild Garden section, where unkept grass paths are more in keeping. Continuing on in this path we at once come, by a slight fall in the ground, to a fork, the right branch of which leads to the Nut Grove and Fruit Garden on the rise ahead, the left continuing in the low part across the lakelet by a stone bridge. From this latter branch we are, by a short turn to the left after leaving the bridge, brought to the Fernery. Continuing on in this path we reach the Wild Garden, the Aquatics and the Bog Plants. This section is a stranger to the close-cutting mower, and in diverging from the path visitors may as well walk with eyes open, or they may find themselves in the embrace of sundry Rose Briers, Brambles, Thorns and other interesting wild plants, which in their proper place are by no means weeds. Recrossing the water, a rill at this place, we come to wild vines clambering over rocks on a steep slope and beyond and above which is a large Walnut tree on the verge of the Fruit Garden. Here, after our tramp half way around the place through the ornamental grounds, and before visiting the fruit garden, let us take a rest on the inviting rustic bench beneath the Walnut's copious shade.

#### The Apricot as a Popular Fruit.

Here is a fruit ranking among the hardier kinds; the earliest of all the large stone fruits by some weeks; exceedingly delicious and perhaps the handsomest of all, yet its culture is very limited. If we can therefore offer any words for the Apricot which shall lead to its being more widely planted, a desirable thing will have been accomplished.

In its general character the Apricot stands between the Plum and the Peach, but nearest

to the former. It has the broad leaf and smooth stone of the Plum, with the bloom of the Peach. It has also a strong resemblance to the form, beauty and flavor of the latter. Our engraving of an Apricot is of one of the lar-

what above the forty-third degree of latitude. The trees succeed either on heavy or light soil, provided the conditions named are in a good degree met. Where the former kind of soil is possessed, the nurseryman who provides the trees should be asked to furnish them worked on Plum stocks; in the case of light, loamy or gravelly soil, trees on Peach stocks should be ordered. Nurserymen usually keep both kinds.

Another characteristic of the Apricot, which under some circumstances is unfavorable, is its earliness—the blossoms coming at a season when frosts are yet prevalent. To avert danger here several resources offer. One of these is to plant on land having a northern or other exposure that would tend to keep back the bloom somewhat; the other, to plant near to a building, fence or trellise, as shown in figures 2 and 3, the trees in these cases to be trained in Espalier form, a system for which they are admirably adapted.

The suitability of the Apricot to culture against buildings and walls is one of its most promising qualities. The sides of stables, outhouses and sheds, walls, fences, and even the walls of dwellings, could in innumerable cases be devoted to this delicious fruit, raising large crops where now nothing is raised. Not only would the fruit prove of much value for consumption or sale, but the tree, independent of foliage, would be decidedly ornamental in foliage and in the blooming season.

In furnishing walls the area to each Apricot tree may vary from 12 to 20 feet in length along the wall. There should be a considerable depth of good soil and in this the roots should in planting be carefully arranged.

One marked advantage of the wall system of growing Apricots is that in case of severe frosts there is a reduced liability to injury, from the fact of the tree being close to a wall. Besides, here it is easy to protect them with mats, or by setting up some shutters or

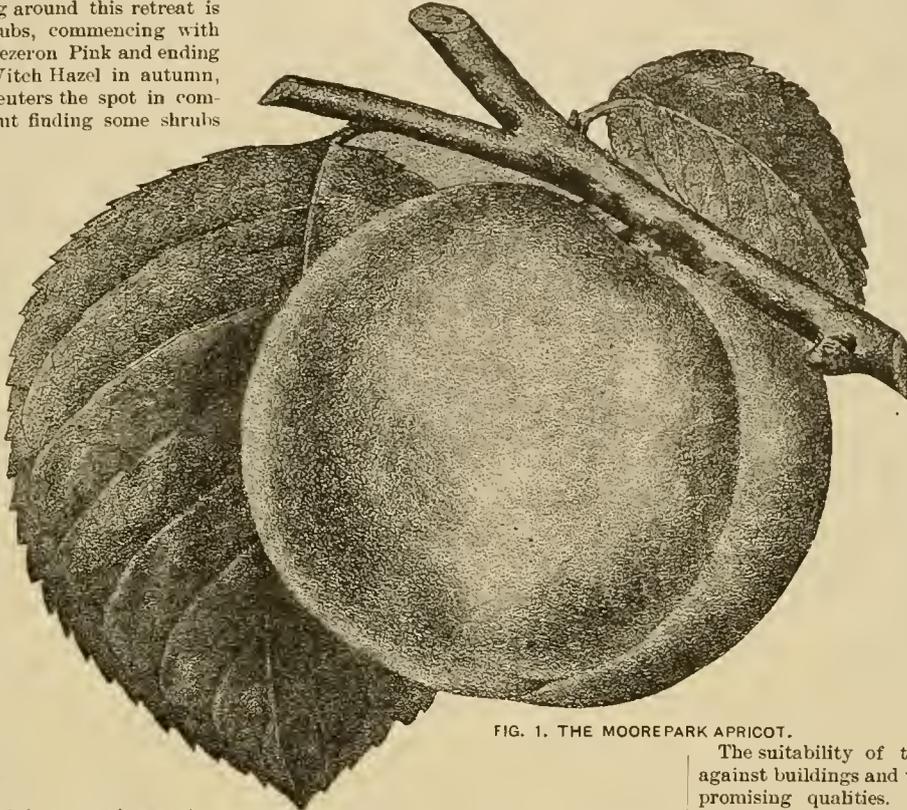


FIG. 1. THE MOOREPARK APRICOT.

gest varieties in cultivation, the Moorepark and this might readily pass for a Peach. As, for its season of ripening, the Apricot follows in a very desirable manner, closely on the Cherry, and extends to the Peach season.

Of various causes that have worked against the popularity of this fruit, that of its liability to suffer from the Curculio which has proved such an enemy to Plum culture, and, then, the fact that the tree fails on some kinds of soil, are the most prominent. As to Curculio, it is a matter of rejoicing that throughout the eastern section of the country at least its attacks are now decidedly on the wane. We may hope soon to be nearly free from its presence, and then both Plum and Apricot culture will stand on a more promising basis. But in those sections where this insect is still very destructive the simple remedy of jarring them from the

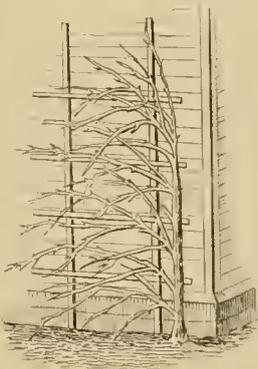


Fig. 2. An Apricot Tree against a Dwelling House.

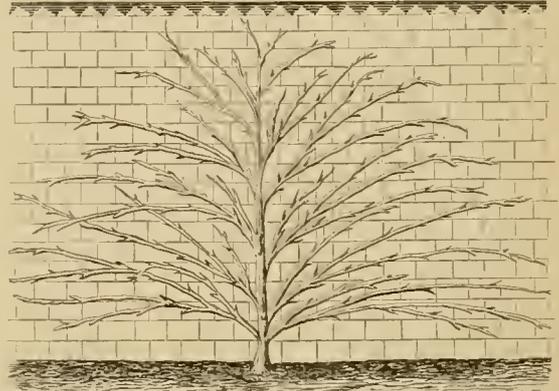


Fig. 3. An Apricot Tree trained on a Wall.

tree upon sheets and then burning them, which proves so effective in the case of Plums, is as well adapted to the other.

On soil that is shallow, or such as is underlaid by a cold or wet subsoil, the Apricot does not succeed. On that which is deep and dry, and especially in situations somewhat sheltered from sweeping gales, this fruit may be relied on to do well as far north as or even some

boards when danger from frost threatens.

Some authorities object to planting the Apricot on a south wall, because of its starting earlier here, hence more liable to receive injury from Spring frosts. One of the finest Apricot trees we know of, and growing somewhat farther north than the latitude of Buffalo, is trained over a south wall. In seven years the buds have not been killed by frost.

### A Few Points in Potato Culture.

FRANK FORD, RAVENNA, O.

It is too common a practice to plant the whole crop at one time, very early, and of but one or two varieties. Then one often hears the exclamation, "I planted two weeks too soon," or "I planted so late that a dry spell at the crop-setting time caught them." Such a time is a critical one. If the weather then be very dry or otherwise unpropitious, giving the vines a set back, but very few tubers will set, and a full crop will be impossible.

It is better to plant several early and late varieties at intervals until June. Some of them will then be sure to bridge over bad spells of weather. The Potatoes we planted last season about the first of June yielded the best and produced the largest and best tubers. The selection of sorts is an important point. These are now so numerous, and the variations so great on different soils that this is not so easy a matter to solve. Concerning variation, we observe that at the Ohio Experimental Station, varieties were graded very low in quality which in our soil are among the best. There is more variation in quality than in the yield. The best way: test several sorts for several years, then plant largely of the best for the place.

Commercial fertilizers, either high grade phosphate containing five to eight per cent of potash, or special fertilizers, judiciously used, will ordinarily many times pay their cost in a better yield and quality. From 200 to 500 pounds per acre, according to soil, will be found of great benefit if well mixed with the soil in the hill or drill; much brought into close contact with the seed will be a damage. These fertilizers tell the best in moist seasons. Recent experiments at the Iowa Agricultural College showed that large quantities of stable manure greatly lessened the injuries from severe drought.

For very early planting I prefer tubers of a hen's egg size, planting whole, or if larger tubers are used, make of such only two or three pieces. As only a portion of the eyes will start, these will make a more vigorous and early growth than if the pieces were quite small. Besides, should such be killed by frost, the dormant eyes will start and make the crop.

For later ordinary planting, cut according to soil fertility. For moderately rich land have good sized pieces, of from about two to five eyes; for that very rich, less will answer. Cutting to single eyes, and even dividing the large eyes, will do when the object is to secure the largest amount of tubers from a given amount of seed; in general it will not.

Early Potatoes having but a short time in which to grow require a richer soil than late ones. As a rule late varieties are the most productive. Sometimes it is the other way, as was shown at the Ohio Experimental Station, in 1885, when early varieties yielded nearly double as much as later varieties, Lee's Favorite the one taking the lead in about 100 varieties, by over 60 bushels per acre. Something similar was also shown at the Iowa Agricultural College last year, owing to severe drought just after the earliest varieties had set their tubers.

The depth of planting should depend on the nature of the soil. If well drained and porous, plant three or four inches down, giving almost level culture. In clay or moist soil plant near the surface and hill up.

Suggestions for preventing blight and rot: When using Paris green for beetles for each pound take 200 lbs. gypsum (land plaster), 10 lbs. fine sulphur, mix thoroughly, and apply in the ordinary way. Another: Dissolve 5 lbs. sulphate of iron (copperas) in 40 gallons of water. To a three-gallon watering-can of this solution, mix a teaspoonful of Paris green. Keep well stirred; use a fine rose, so as to use the least quantity possible and still wet the foliage all over. Either of these methods will be found effective, if not a complete preventive of blight and consequently rot. The ingredients named are not expensive if bought in quantity.

### A. M. PURDY'S DEPARTMENT.

Post-office address, - - - Palmyra, N. Y.

#### Brieflets.

The main requirement to make Currant and Gooseberry growing successful at the South is thorough trimming, heavy mulching, and in drought plenty of waste matter worked into the soil.

A Blackberry as large, good and productive as the Kittatiny and as hardy and tough as to the plant as is the Snyder, is what is now wanted. The Western Triumph and Taylor's Prolific come the nearest to it of any sorts we know of.

Nooks and corners are usually to be found in gardens and yards, where a nice clump of Raspberries, Blackberries and Currants might be grown. And how many old sheds, barns, fences and trees might be covered with Grape-vines.

A friend in Florida, whose land is light and poor, writes us he fertilized his Strawberries nicely by burning heaps of old logs, brush and sod, and that but a teaspoonful of the unleached ashes around each plant "made a wonderful difference."

Renewing Asparagus. If an Asparagus bed has got old and stunted, the best way is to take up the roots, divide them and replant in a new place. Of course part of the roots can be left in the old bed and having more room will do well for years.

In answer to J. R. S. of Burlington, N. J., as to best fertilizer for the Peach tree, we say first and most valuable of all, wood ashes; if not to be had, then German Kainit, and if this is not to be had, scatter straw or hay under the tree and burn it.

Strawberries South. For a reliable list we would name as safe, May King, Crescent, Charles Downing, Downer's Prolific, Cumberland Triumph, Sharpless, Capt. Jack, Kentucky; there are of course others, but these have done well in North Carolina.

Where fruit as well as beauty is desired for the front yard there is nothing more beautiful than a well trained dwarf Apple, Pear or Cherry—especially the first. Shortening in and not allowing too many limbs to grow are the main essentials in culture.

Those who have no Rhubarb or Asparagus roots, can easily grow them from the seed. Asparagus seed should have boiling hot water poured on it just sufficient to cover the seed, and let it stand therein for a day or two. Sow, if wanted early, in hot-beds or pans in the house and transplant in April or May.

Grafting Stone Fruits. In answer to our friend, Prof. Budd, of Iowa, we would say that we have grafted Cherries, Plums, Pears and Peaches, and planted here in different ways and we never have had any success. We know they do well at the South but not here, and but few if any nursery-men in these parts produce them.

The Hardier Cherries. It's a mistake to suppose that the Early Richmond or "Early May" is the only good hardy Cherry that succeeds in severe climates. Such sorts as Montmorency, Luelling, Olivet, Louis Philippe, Engli Morello, and Empress Eugenie are as hardy and some of them as productive and better Cherries.

Strawberry Blossoms and Frosts. To prevent damaging frost on early blossoms, have plenty of straw or hay mulching in blossoming season, and when danger from frost cover plants and blossoms with the mulch out of sight, and if frost comes leave it on plants over the next day and night, being careful to leave it on one day after frost. The sun after a night of frost is what does the mischief.

If your soil is heavy and stiff and you cannot grow Grapes without their rotting and mildewing, try this: Dig a deep hole, say 4 feet deep and 4 to 5 feet square, fill up to within a foot of the top with stones mixing earth well through the stones and having six inches of earth above the stones and on this plant your vine and see if you don't get fine Grapes; of course this is only for amateurs or the family who wish to grow a vine or two.

Grape-vines Unfruitful. If you have Grape-vines that blossom but do not bear and that make a superabundance of wood, trim them in the spring early. If you have practiced close pruning and your vines do not bear, try the experiment of allowing more wood to the vine and *vice versa*. If your vines make a strong growth of wood and bear lightly, stop manuring them and let the grass grow or sow clover or buckwheat among them. Whenever vines do not bear change your practice.

Dwarf Apple Orchards. One of the most beautiful sights we ever saw in the line of fruit was a small Dwarf Apple orchard, on the grounds of

Ellwanger & Barry. The trees were then only four or five feet high, perhaps not quite so large, full of fruits of different colors, sizes, etc. We have been asked the question: Will it pay to plant out an orchard of Dwarf Apples? As a rule, and generally over the country, we would answer in the negative, but there may be localities where protection is necessary, or where there are deep snows with extremely severe winters, where by having the trees covered with snow they would do nicely and it might pay. If any one of our readers has made a success with growing Dwarf Apples for market we would like to hear from them.

The Crimson Beauty Raspberry cannot be beat, but to perfect their crop of fruit, they must be planted near some other early kind of Red Raspberry to be fertilized. Mine are fertilized by the Turner, and they do not cast their blossoms, but are an improvement on both kinds. Several persons have complained of it blasting; all it wants is a fertilizer. I think Marlborough would be first-rate, but have not tried it yet. So writes Thos. D. Abbott, of Tippecanoe Co., Ind. We have repeatedly stated that the Crimson Beauty Raspberry must be well fertilized by having some such sort as Hansel or Cutlbert or Marlboro planted near it, say within 3 to 4 rods. The best way is to plant 4 to 6 rows of one and then 4 to 6 rows of the other. The Herstine, as also Franconia, do best planted nearer these sorts. The above is a proof of what we have recommended.

#### HOW CAN I KEEP UP SOIL IF MANURE IS SCARCE.

This question is asked us scores of times through the year, and we have answered: "Plow under green crops like Peas, Corn, Clover or Buckwheat." "Scrape up what manure you have, sods, etc., and mix with muck from some swamp or low ground, and scatter this over the land," "Scatter lime freely over it." "Give it rest," "Plow in the fall deep, and let it lay up rough for action of frost."

But the question is, "How can I keep up soil when manure is scarce? If it is strictly necessary to keep it up, according to the common acceptance of the term, we know of no way only by one of the above methods. Southern soil that has been plowed a certain depth for a long term of years is benefited by ploughing deep in the fall, and throwing the soil below to the surface for better action of the frosts, and by following with a subsoiler that simply loosens but does not throw the subsoil to the surface. When the soil below is of a loamy character we would advise throwing it up in the fall, but if of a stiff heavy character, simply loosed and not thrown up.

However, many persons are ignorant of the fact that land where a Strawberry bed has been for a number of years and has apparently "run out" will grow for another term of years good crops of Raspberries and Blackberries, and *vice versa*, the main requisite being thorough and oft repeated cultivation. Of course, mulching with any coarse material around the plant is a great help.

So to be successful with small fruit on poor soil, change every two or three years, give what manure you can scrape up, and even work in coal ashes after ploughing, by harrowing well, or scatter it along between the rows, and follow with the cultivator. By thus changing Strawberry to Raspberry and *vice versa*, a very little compost or fertilizer will suffice.

#### PLANTING GRAPES.

Ground should be well prepared in the fall of the year, if possible—especially giving a good thorough subsoil plowing, and mixing well rotted compost thoroughly into the soil. Where the vines come, dig out holes deep and large, and fill in the bottom with soil, bones, iron, etc. Nothing is better than scraps and sweepings from the blacksmith shop. Have also a little salt well mixed through the soil. Plant vines rather shallow, earthing up somewhat rather than have them too deep.

As for pruning we prefer to do this in the fall or early winter, as a rule, but where vines are too rank and bear but little, prune in spring.

In summer trimming, never pick off leaves that are opposite the fruit bud or hunch. Keep laterals well nipped off.

Plant on high, dry soil, and lay vines down on the ground late in the autumn, here to remain through the winter, placing stones or earth over them to hold them in place.

#### STARTING CUCUMBERS, MELONS, ETC., UNDER GLASS.

It is very simple indeed. Make an ordinary hot-bed, and for Cucumbers, Melons, Squashes, and that class of vegetables, merely sow the seed in drills in the bed in this latitude (43) about the first of April; if further south, say about two weeks earlier to each degree of latitude. Be sure that the dirt is warm before sowing; bank up against the outside of the bed; properly protect at night.

The plants will be well up within one week. Then transplant into another bed on sod cut 4 to 6 inches square and inverted; or take cheap quart or pint boxes and set in close together, filled two-thirds full with good rich soil. On a warm day, after saturating the plants in the seed bed, lift them carefully and transplant four or five in each sod or box. While growing raise the sash a trifle on pleasant days to admit air. When the third rough leaf shows nip the point to cause branching.

Keep the temperature at from 60 to 85 degrees. Sprinkle daily with tepid water. If roots protrude above ground scatter a little dirt on them. Aim to water when the weather is mild; cold air must not strike the tender plants. After the vines commence to run they can be set where they are to remain for growth. This is done by digging a hole a foot deep and dumping in a wheelbarrow of fresh manure. Pack it down hard with the feet and cover with about 4 to 6 inches of dirt, and in this set the sods or box plants—after breaking off the box. Remember to saturate the sods well with water before they are transplanted. Over this place a box two feet square, covered with a single sash made to fit, or oiled muslin, being careful to uncover on warm, pleasant days.

We know of a party who realizes every year from a few hundred hills of Cucumbers one dollar to the hill, and this too, with only small village markets. These can be sown directly in the inverted sods or boxes, but it is better to sow in the seed bed and transplant, as they become more hardened and the roots more fibrous.

Tomatoes should be sown about the same time in the hot-beds. When 2 to 4 inches high transplant into another bed, three inches apart each way. Keep well watered and give plenty of air on mild days. As soon as settled weather comes transplant to the open ground. Saturate well with water and take up with each plant a quantity of dirt.

Those who only want a few plants can start the seed in their kitchen windows. The directions for Tomatoes answer for Cabbage and Lettuce, only that the latter do not require so close attention and are not so liable to be hurt by cold snaps.

Another crop that pays to start in the hot-bed is Onions. Simply sow the seed early in March in this latitude, thickly, in drills three inches apart. Keep well watered, and when the ground is settled and the plants get say two or three inches high, transplant outdoors in rows, three inches apart, and the rows one foot apart. The great advantages in thus starting them are that the Onions will be ready for early pulling to sell in bunches about as soon as "set" Onions, and no matter how short the season, every Onion will get ripe. Some may say it is too much work to transplant them. This is done rapidly when the ground is fresh and finely pulverized. Just as fast as one can stick his finger into the soil and withdraw it the work can be done. A large quantity can be started under a small sash.

Beets, Parsnips, Carrots, and all that class of vegetables can be grown in the same way.

#### MEAT FROM THE SHELL.

A writer in the *Rural World* tells how to make a good tree wash. I have used it on thousands of trees. It is both good and cheap: Take a bucketful of slaked lime, a bucketful of yellow clay, two quarts of coal or gas tar, and a gallon of sloppy soap and lye from the bottom of a soap barrel if you have it, or three or four pounds of whale oil soap dissolved in hot water, or strong lye or potash will do. Mix thoroughly in a barrel until you get it about as thick as whitewash. Apply it with an old broom from the limbs, or higher, down to the dirt, clearing it away from the collar and washing thoroughly. It will destroy the bark louse, loosen the roots and destroy moss and make the bodies look polished; it is said to keep the borers away. Rabbits and mice will not girdle them, neither do I think sheep will bark them. Apply in late autumn for rabbits, in the spring about May for general benefit of the tree.

Geo. Hobbs says in the *Prairie Farmer*: To keep off rabbits I have used Pine tar on young trees for 30 years and more. It forms a perfect protection without injuring the trees in the least. I warm the tar to have it work better, and put it on with a narrow paddle. It does not form a continuous covering, but sticks in finely detached scattered particles, and can not possibly interfere with any function of the bark. I will defy any person to show a finer growth than has been made by those same trees. I can go over an orchard of 250 trees in half a day with the tar. Use no coal tar. Our advice: Do not put even pine tar on too freely, just thinly.

The *Country Gentleman* says: One of the most successful ways to prevent Pear blight, is the selection of such varieties as are least subject to its attacks. With this end in view, we collect what information comes to hand as to those hardy sorts. Angouleme doubtless stands at the head, and then Winter Nelis, Seckel, Clairgeau and Washington. In the report of the Worcester County Horticultural Society the secretary says there is no variety he would more highly prize than Glout Moreau, were it secure from this disease. He has grafted on the Lawrence, and it has not blighted since. The same operation was performed on Josephine de Malines, with equal success. The two last named sorts are less liable to disease.

The most successful peach growers in the Middle States are those who use potash liberally as a fertilizer. In his late report on Peach orchards to the New Jersey experiment station, Mr. J. M. White remarks that the healthiest and longest lived orchards in that State are those which have been fertilized with potash and phosphoric acid. Among other orchards, he describes that of J. S. Quinby, of Chester, who has 4,000 trees in bearing, six to ten years old. He applies 500 pounds of bone to the acre, and as much ashes as he can secure. The fruit is abundant and of good quality. If disease appears, every affected tree is removed and destroyed at once; and no instrument on a diseased tree is used on a healthy one until thoroughly cleaned. S. H. Wartman cultivates his 7,000 bearing trees twice in a season. The past season he had 3,600 baskets of Peaches. Dr. H. Race, of Pittstown, gathered 5,100 baskets of Peaches from 3,000 trees. He used super-phosphate and potash. J. L. Nixon, of Quakertown, sold 9,000 baskets from his 12,000 trees the past season, for \$9,045; he cultivates well, and applies barn manure and wood ashes. Peach growers in this State who have applied wood ashes liberally to their orchards have succeeded in raising good crops of fruit when the orchards of their neighbors who used no ashes were barren.

A writer says in the *Pacific Rural Press* of Peach trees: Many people see the mistake they made years ago in trimming their trees up and starting them to branch out two or three feet from the ground. With a tree, to make a success, you must have good material to start with; then it is easy to guide it properly if you know how; but once make a mistake and it can never be corrected. Fruit trees that have to be gone over two or three times to gather the fruit should start to branch out not more than a foot from the ground. Then, if cut back properly, when it is five years old, the head is formed, and a man can stand on the ground or on a very short ladder and gather the fruit. It is much cheaper to hire four feet square of ground around the tree spaded up than to hire a man to run up and down a tall ladder to pick the fruit. Heavy pruning will cause much wood, and light pruning will cause the tree to set full of bloom buds.

An English writer on horticulture says extensive experiments with Grapes point to the conclusion that sulphate of potash will produce a sweeter Grape than the muriate. Chloride of potash and

magnesia, with phosphoric acid, is an excellent mixture to apply to the Peach tree as a means of preventing disease and developing healthy wood.

#### Azaleas for Window Culture.

ROBERT J. BALLIDAY, BALTIMORE, MD

I have frequent inquiries from correspondents: Will the Azalea do for window or house culture? I know of no plant more beautiful for window decoration than the Azalea when in full bloom.

The success of this plant is much better than that of the Camellia. It will stand a great amount of heat, but at the same time a moist atmosphere is necessary for it. Dampening



A YOUNG PLANT OF THE AZALEA IN BLOOM.

the foliage three times a day will give all the moisture necessary, and this is very important.

There will be very little trouble in growing or flowering this plant in a window that is inclosed. I would advise a temperature of from fifty to fifty-five degrees, and the plants will come into bloom during February. Those grown with extra heat will require double the amount of care and attention than those that are grown in a low temperature. All plants do best, and are healthier, that get but little artificial heat. In fine weather give air freely.

If intended to grow in the windows, do not remove them to the house until late in the fall, or just before frost. Place them outside early in the spring. About once a month take the plants from the window and dip their heads into a solution of the following wash: 8 gallons of soap-suds, 1-4 lb. of sulphur, and a little soft soap, well mixed together. After being dipped into this solution, a soapy gloss will cling to the foliage, which will not be objectionable. Syringing with clean water will remove most of the insects that infest this plant.

Every lover of plants should have an elastic plant sprinkler to syringe or dampen the foliage. They can be had of any seedsman or florist, the cost being about \$1.25, each. For heating a bay window, use a coal-oil stove, from which there is no smoke or gas. Place a pan of water on the top to create moisture, which will be beneficial to the plants.

As for soil, use equal parts of loam and peat soil, well mixed and broken with the spade, but not sieved. I prefer a good, light, fibrous loam, which can be obtained from the hills and fence corners. My sod is cut during the spring and summer, placed in a heap, grass side down, in a few weeks it is ready for use.

Peat is a black, sandy soil, and consists of decayed leaves roots and sand. I prefer that which is full of fibrous roots. This is cut in sods like that of the loam, but will take a much longer time to decay. I get this soil in close proximity to my place, and where the Wild Azalea, or as it is better known, the Swamp Honeysuckle abounds. Had I to procure my peat soil, like many do that send from two to five hundred miles, and some from the Pacific slope, I would, undoubtedly, do without this particular kind of soil.

I am not an advocate for so many mixtures of soil as some recommend. Use a light and fibrous loam; always guard against a heavy, clayey soil. Soil is often blamed for not growing good plants, when the fault lies in not ventilating and syringing properly.

Why do so many Azaleas perish in the hands

seedlings appear, give light, or you will have weak, spindly plants, or a damp-off.

In outside sowing, the same thing holds good, more especially with fine seeds that require a light covering. An hour of a bright clear sun may so dry them that germination is destroyed. In such cases I protect by covering with a few Cedar branches or anything else that will retain the moisture, until they are seen peeping through the ground, then uncover. It is at this critical point really where the fault of so-called bad seeds largely lies. In the case of large seeds, there is less need of this precaution, but when once they are wet keep them so, or you will be likely to suffer loss.

#### An Attractive Class of Trees. --The Magnolias.

Wherever the Magnolias are well known they are highly prized as ornamental trees. The large-leaved native species are grand in their foliage and produce not unattractive flowers, while the Asiatic and hybrid sorts are when in bloom magnificent to a degree quite without equal among trees. It is the charm of the flowers and the profusion with which they are borne by the better class of these that have made the name Magnolia so prominent among ornamental growths.

For fine effect the Magnolias may be planted as single specimens or in groups on the lawn. They contrast particularly well when brought in close conjunction with Evergreens. One drawback to their popularity is the difficulty of transplanting them. On this point the well-known nurserymen, Ellwanger & Barry, of Rochester, N. Y., and to whom we are indebted for the use of the accompanying engravings,

say: To insure success in the transplanting they should be moved in the spring, never in the fall, and the Chinese varieties at that period when they are coming in bloom, and consequently before the leaves have made their appearance. Great care should be exercised in their removal, the fibrous roots being preserved as regularly as possible and carefully guarded from any exposure to wind or sun. While almost any good soil is sufficient to insure their growth, they succeed best in a soil which is warm, rich and dry.

Of the flowering section of the Magnolias, the Great Laurel Magnolia, *M. grandiflora*, of the Southern States is remarkable for its large fragrant flowers and evergreen leaves. This one is not hardy north of Washington. It is to the Chinese and Japanese Magnolias, with their varieties and hybrids, that we are throughout the North indebted for our hardy kinds, noted specially for their attractive flowering qualities.

One of the finest and hardiest of the Asiatic Magnolias is Soulange's Magnolia, *M. Soulangiana*, shown in figure 1, which closely resembles the White Chinese; flowers, cup-

shaped, white and purple; foliage, large and massive. The Showy flowered Magnolia, *M. speciosa*, of figure 2, differs from the last-named in having smaller and somewhat paler flowers, but producing them in great profusion, and they remain on the tree longer than those of any other variety. This one forms a conspicuous specimen tree.

The variety known as Norbert's Magnolia, *M. Norbertiana*, resembles Soulange's, but is lighter colored. Lenne's Red-Flowering Magnolia, *M. Lenne*, has very large deep-reddish-purple flowers, and good-sized showy leaves. Thompson's Magnolia, *var. Thompsoniana*, is a hybrid between the American Umbrella Magnolia and the Sweet Bay, partaking mostly of the character of the latter; it has large leaves, large, fragrant, creamy-white flowers. It is tender in the North.

Among native species which possess large, handsome foliage, rendering them valuable as ornamental trees, are the Cucumber Tree, *M. acuminata*, a rapid, upright grower, with oblong-pointed leaves, often nine or ten inches long; bell-shaped, greenish yellow flowers; the fruit of which, when it is green, resembles a Cucumber. The Heart-Shaped Magnolia, *M. cordata*, blooms usually in May and August, producing tulip-shaped yellow flowers; it has oval, slightly cordate leaves that are downy beneath. Umbrella Magnolia is a rapid growing tree, with immense light-green leaves; creamy-white flowers, which are often a foot across. Great-Leaved Magnolia, *M. macrophylla*, has enormous leaves, two to three feet long; white bell-shaped flowers, nine or ten inches across; requires protection in the North. Ear-Leaved Magnolia, *M. Fraseri*; leaves near a foot long, with earlobes at the base; the white flowers are six inches across.

The Sweet Bay Magnolia, *M. glauca*, has glossy leaves, whitish beneath; flowers pure



Fig. 1. Soulange's Magnolia—White and Purple.

of amateurs, and why are they so unsuccessful with the cuttings of this plant? Red spider is the whole cause of the failure. Sand and soil are seldom in fault. My advice to the inexperienced is, pay less attention to the mixtures of soil, more to airing and syringing, and success will be better.—From "Azalea Culture."

#### The Culture of Annuals.--"Bad Seeds" and the Seedsmen.

N. ROBERTSON, SUPT. OF GOVERNMENT GROUNDS, OTTAWA, CANADA.

The time is now at hand for looking through the catalogues for the seeds to be sown the coming season. And we must not be too hard on the seedsmen if their stock does not always produce exactly as represented, for they have to depend, in a measure, on growers for their descriptions. Then, too, locality and position have their influences.

In the purchase of seeds, I recommend buying in distinct colors, and the seedsmen tell me it is not now the prevailing practice. One large seedsmen with whom I deal says I am the only one that does so with him. The plants can be mixed afterwards, if one likes, for although beds from mixed seeds are well, yet where one has many beds to fill, the benefit found in distinct colors is that you can make many pleasing yet distinct variations.

Take, for instance, what I suppose is the best of all annuals, the Phlox Drommondi, in its varied colors, and especially the Red and White Snowball and Fireball, one can make many designs. But never attempt to make very acute points or intricate figures with this flower, for although a good deal of trimming and tying in is allowable to keep the form desired, still the better plan with it is to take plain designs. Many annuals can be wrought in this same fashion.

Many complaints are heard about bad seeds. I very rarely meet with such. The great fault, I feel sure, is in the germinating of those seeds. When once a seed becomes wet it should be kept so, for if once it starts and becomes dry, it is done for. In hot-beds I sow what seeds will germinate in the same lapse of time together, moisten and cover up until they are coming through the soil. If there should appear to be too strong heat or too much damp in the frame, I open the frame, when the weather is favorable, and let the steam escape, but never, under any circumstance, uncover and allow the sun to dry them out. Along with sun they must be kept moist. Immediately the

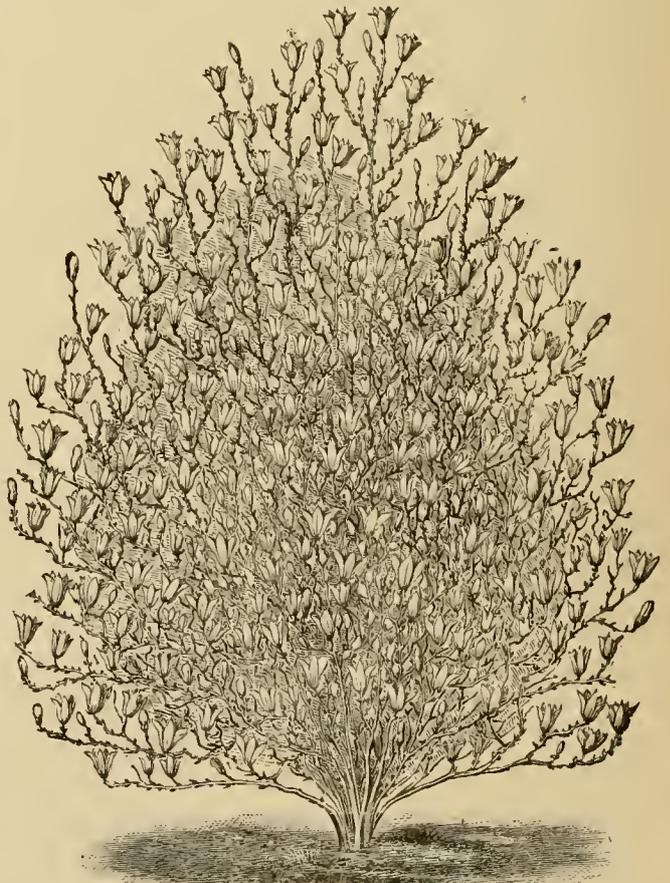


Fig. 2. Tree of the Showy-flowered Magnolia in bloom, the Flowers preceding the Leaves.

white, very fragrant. If carefully trained this forms a beautiful small tree. The Long-leaved Sweet Bay, *var. longifolia*, is a variety of the preceding, with larger leaves.

### Some Suggestions on Rose Pruning.

A French grower of Roses offers the following statements deduced from facts under his observation:

1. If in the spring some Rose bushes are pruned, and, on the contrary, some others are allowed to remain without any suppression of the branches, the latter will come into bloom about a fortnight before the others; their flowers will be more numerous, and at the same time less beautiful.

2. If some Rose bushes are completely pruned, and upon some others are left only some twigs, these latter will have the same advance in time of bloom.

3. If two Rose bushes are pruned alike, one at the end of September, the other in February, the one pruned in autumn will flower first.

4. If, toward the middle of September, the branches of a Rose bush are laid down horizontally, and those of another bush in exactly the same condition are left in the natural position, and in the spring both be pruned alike, the bush with the branches laid down will bloom first.

5. In pruning Rose bushes before vegetation starts, that is to say, in early spring, bloom on them will be obtained in advance of that which will appear on bushes pruned later.

6. Pinching the young shoots as they start on bushes after pruning retards blooming very much. In this case the pinching should be done before the flower buds appear, or when the shoots have only three or four leaves.

### Seed Sowing in March.

WILBUR F. LAKE, WAYNE CO., N. Y.

In various forms there are gains in early seed-sowing, perhaps more to be noticed in having well advanced plants of Annuals for early decoration than in other lines.

Without a supply of greenhouse bedding plants, there is a time after the spring-flowering hardy plants and shrubs are through, and before the outdoor sown Annuals begin to bloom, that the supply of flowers is inclined to run short. In a measure this may be remedied by having a number of well started Annual plants to set early. To this end, I would say begin the sowing now.

If hot-beds (and every family possessing a garden, no matter how small, should have one) are to be used, they are to be prepared at least a week before sowing, as the rank heat that arises for the first few days after the completion of the bed is often intense enough to destroy the vitality of the seeds.

In sowing any kind of seeds the old rule of covering twice the depth of their diameter may be relied upon. The value of thoroughly decomposed hops from the breweries, and so old as to work up very fine, is hardly to be over estimated for a covering material, as it prevents the soil from crusting, and is of that light, moisture-preserving nature so well suited to the needs of young seedlings.

Before having the conveniences of a greenhouse for very delicate seeds, I employed the following methods:

I had boxes made somewhat deeper than the small-size cigar box and three times the length by twice the width. Potsherds to the depth of three quarters of an inch were placed in the bottom, coarser pieces below, with finer ones above, and filled within one-half inch of the top with finely sifted mellow soil. The boxes were then properly labelled, seeds sowed, covering to right depth with fine earth, dusted on through a sieve, well watered, using a spray, covered with a glass and placed in a dark, rather warm place until they began to germinate, when they were given full light, hot sun and air occasionally to prevent damping off.

With this treatment I found little difficulty in growing the finest seeded plants, of which the Begonia and Calceolaria are good examples.

My first batch of flower seeds I usually plant the first week in March. For early plants to

be set in open ground in May I generally include Alyssum, Balsam, Tuberosus Begonia, Canna, Celosia, Chrysanthemum, Coleus, Daisy, Godetia, Nierembergia, Perilla, Phlox, Pansy, Petunia, Sensitive Plant and Verbena.

For early blooming in the window garden, Abutilon, Smilax, Cineraria, Clanthus, Cyclamen, Fuchsia, Gloxinia, Heliotrope, Hibiscus, Impatiens, Lantana and Petunia.

All these for purposes named I find much better sown early and given a chance to mature hardy plants than if deferred till later and then pushed, resulting in weak, tender plants that need petting to succeed at all. An essential point in the growing of seedlings is the prevention of crowding from very early. As soon as the leaves begin to touch, I either transplant to other boxes, giving space, or else thin them out.

### Hyacinths in Glasses.--An Experience.

G. W. MERGLER, HUDSON CO., N. J.

In the fall I set two hyacinth bulbs in glasses, for winter blooming. One of the bulbs was a little irregular in shape, and the air could easily get at the water. It took this one much longer to root than it did the other, which having been perfectly round, fitted the top of the glass tight and completely prevented the ingress and egress of air.

The latter bulb threw down roots in a short time, almost filling the glass. One day, however, when attending it, I noticed that the water had a bad smell. This I took out and refilled with fresh, but after a few days this water also became disagreeable. I then noticed that the roots were rotting and the top was not growing much, while the other bulb was as fresh and healthy looking as it could be, with the whole glass full of roots. So I concluded it must be a lack of air that caused the trouble with the first one, hence I placed a bit of wood under the bulb so that the air could have better access to the interior of the glass.

The result has been entirely satisfactory. While the diseased roots of that bulb rotted completely and were rubbed off, since then it has formed a number of new roots, some of which at this writing are two inches long, and a great many more coming out, while the top is growing well. The water had not been changed since, and appears to be all right yet.

Yesterday I noticed that the water of the irregular shaped bulb was in a tainted state, and as its roots almost filled the glass, I concluded that the bunch of roots blocked up the opening of the glass too close, preventing the passage of the air. I have resolved hereafter to change the water in the jars once a week.

### Tree Roots and Sidewalks.

Instances are not rare throughout every city showing the power of roots to disturb the street walks and pavements. Indeed, it is well known that roots, by their gradual increase in size, have lifted large rocks of several tons weight. Their force, though exerted through a slight space, is almost irresistible.

On this account it would be well, in setting street trees in cities, to keep them at least several feet away from walks and curbs. To remove roots of large trees that cause misplacement of stones, as sometimes must be done if growing too near these, is not only a big job, but the severing of the roots also seriously injures the trees.

The Ailanthus is one of the worst shade trees for exerting the power referred to. Wherever the seed-producing sort grows its seeds are liable to scatter everywhere and germinate in every place containing a little soil or street dust. They often fall into the cracks of pavements and walks, to be followed by a seedling, which if not removed will in a few years make a tree several inches in diameter, and requiring considerable labor to take out.

Maples and Elms sometimes, but quite rare-

ly, start up in this way. In every such case, no matter what the kind of tree may be, it should be removed while young, before the roots have caused mischief. It is very unwise to allow such to grow on for years, to see what may result, as once was done by an acquaintance of ours, with considerable trouble later.

### A Talk about Fruits, New and Old.

E. WOODS, ESQ., BEFORE THE MASSACHUSETTS HORTICULTURAL SOCIETY.

It is difficult to confine our subject to new fruits, for many that are new in one place are old in another. Most fruits are best in the place where they originated, and deteriorate elsewhere; exceptions, the Wilson Strawberry and the Gravenstein Apple.

In Massachusetts our winter Apples possess many good qualities difficult to surpass. The Baldwin grows well, bears early, and is of good size and color, and it will probably be long before anything will displace it for market. Among good Apples is the Palmer Greening, or Washington Royal, a late keeping variety, green, changing to yellow when ripe, and of excellent quality, bringing from fifty cents to a dollar per barrel more than Baldwins. The Sutton Beauty is not as well known as it deserves to be. It is of good size, excellent quality and handsome, and has other good points. The Chenango Apple is little known here; it is large, handsome, of fine quality and valuable for family or market.

The Frederick Clapp Pear has now been sufficiently tested to show its superiority; a good grower and bearer and should be in every amateur's garden. The President Clark is of the highest quality, but is not yet disseminated. Of the Keiffer there has never been a specimen shown here of fair quality as a dessert fruit.

There has been much improvement in Grapes in recent years. The Worden is probably the best of the many seedlings from the Concord. The Cottage, raised by Mr. Bull, the originator of the Concord, and the Early Victor, a native of Kansas, are desirable early kinds. The Niagara ripens with the Concord; it is a vigorous grower and bears abundantly, and is a valuable white Grape. The Hayes Grape in quality is superior to the Niagara. Wine made from this variety has by experts been thought the best wine they had ever tasted from a native Grape. The Prentiss (said to be a cross between the native and foreign) is of fine quality, but lacks in vigor and productiveness. We shall have to look to pure natives for these points. Of the 40 or 50 Roger's Hybrids introduced under favorable conditions only 13 dishes were shown at our exhibitions during the last season.

In Plums, owing to black wart and the curculio, almost all varieties may be said to be new. The Green Gage is unequaled in quality, but there are many better growers. The Jefferson, McLaughlin, Washington, Bradshaw and Niagara are among the best.

In Strawberries, kinds that did well 10 or 15 years ago have become almost obsolete. The Hovey ceases to produce good crops, and the same with Brighton Pine. The Triomphe de Gand has not been shown here for years. Among the newer excellent market berries are the Charles Downing, Miner's Prolific, Sharpless, and Cumberland. The Wilson and Crescent are exceedingly productive, but of inferior quality. With amateurs the Hervey Davis, Wilder and LaConstante are favorites for their fine quality. Among newer kinds which promise well are Bidwell, Manchester, Belmont and Jewell. Some complain that the Bidwell does not carry out its fruit; perhaps higher cultivation will obviate this. The Manchester is very prolific and of good size. The Belmont is most productive and the quality is from fair to good. It is a late variety, with fine flesh, and keeps remarkably well. The Jewell is perhaps a little better in quality than the Belmont, large, and while of good form it is very prolific, and makes strong runners.

### A Spring Race.

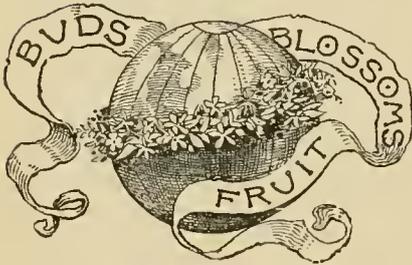
The Crocus and the Daffodil  
Had quite a breathless race,  
To see which first should greet the Spring  
With sunny, smiling face,  
The fragile Snow-drop hung its head,  
And trembled in the breeze,  
Until a sunbeam, playing 'round,  
Came near, lest it should freeze.  
But e'en before the Violets  
Have op'd their eyes of blue,  
Or spotted spears of Alder-tongue  
Have pierced the damp sod through,  
Down in the forest's fragrant shade  
The sweetest blossoms blow,  
For while the rest were fast asleep  
These grew beneath the snow.  
And here Arbutus is the first  
To whisper, "Welcome, Spring,"  
And never monarch on his throne  
Found lovelier offering.

—M. K. Buck, in *Golden Days*.

### The Wall-Flower.

The Wall-flower! the Wall-flower!  
How beautiful it blooms!  
It gleams above the ruined tower  
Like sunlight over tombs;  
It sheds a halo of repose  
Around the wrecks of time;  
To beauty give the flaunting Rose—  
The Wall-flower is sublime.

—Moir.



Try a Sweet Pea hedge.  
Dusty plants are not nice.  
Hurry up plant propagation.  
More clubs would be welcome.  
Keep coal tar off from the bark.  
Flora starts modestly in her season.  
Free Growers need the most water.  
Field mice are enemies of the Crocus.  
Our Cytisus is aglow with sweet bloom.  
Flowers are the sweeteners of life's acids.  
The "Inquiry Department" is growing.  
The Kieffer Pear is looking up more again.  
Acacias have been called Winter Golden-rod.  
A bit of tough sod answers well for pot drainage.  
Too many plants for a given space is a great mistake.  
Why not plant a clump of improved Pæonies this year?  
Trees that are the same before and after burning—Ashes.  
For window culture the best Rose is the true *Agrippina*.  
The White Garden Rose for the million is *Madame Plantier*.  
The secret of having large Pansy flowers lies in liquid manure.  
Camellias are grown as open air plants about London, England.  
We would like to see more people growing fruits in abundance for their own use.  
Make hot-beds to hold the overflow of windows, other hot-beds and greenhouses.  
To let green cuttings of any kind wilt but once is to do them irreparable damage.  
The bright, richly embellished catalogue covers must not come to the children's mouths.  
Thousands who cannot have fruit trees or bushes might grow Grapes to perfection against buildings.  
On one account commission seeds might perhaps be praised. They never wear out from much travelling.  
Aim to have every plant and tree a "specimen." That is how to acquire much pleasure from horticulture.  
A touch of Nature in the form of climbing vines may render the most humble house a most charming sight.  
It is claimed by European vintners that very old Grape-vines bear finer fruit than younger ones of the same variety.

Thousands of American women don't know of the health they might enjoy by turning their spare time to light gardening.

Some state that Begonias will not bear water on their leaves. This applies with special force only to the large-leaved Rex section.

Amateur gardening gains in popularity with every year. The improvement in the catalogues from year to year plainly indicates this.

"I can buy fruit and vegetables cheaper than I can raise them" too often means a table scantily supplied, where it should abound with these things.

Forget-me-nots make nice pot plants. In forcing they are impatient of much heat. They like plenty of water and light. *M. dissitiflora alba* is a useful variety for its white flowers.

A new plant spraying apparatus is referred to in a welcome letter from our correspondent E. H. Cushman of Cuyahoga Co., Ohio, and which we hope later to describe somewhat fully.

Bones for Trees. Mr. Barry remarks that in taking up trees from soil enriched by reduced bones he has found every fragment within reach of the roots enclosed in a mass of root fibers.

Impatiens Sultan. This ever-blooming single Balsam is better raised from seed than is sown now than from cuttings. As a pot plant it is really desirable and in favorable seasons an excellent bedder.

Ferns. A generally good soil for potting them in is composed of equal parts turfy loam and fibrous peat, mixed with coarse sand and fine charcoal. Although they love moisture, free drainage is of real importance.

Some of the largest clubs ever received by this paper have come in during the past month. For these the senders have our sincere thanks; it is largely by the kind efforts of club raisers that POPULAR GARDENING exists.

Dr. Fisher, the successful Grape-grower of Fitchburg, Mass., is using two and one-fourth inch chestnut stakes for his trellises that were cut and set 13 or 14 years ago and still answer their purpose. They were all cut in late summer when in full leaf.

"Language of Flowers," Etc. From the enterprising florist and publisher, Charles A. Reeser, of Springfield, Ohio, comes to our desk a little 50 cent cloth-bound book on this subject, and on other floral matters. It contains 142 pages and is just such a gem as all flower growers would delight in.

To have a good lawn the roller should be a companion implement to the mower. But the two should not be combined, for in such a case the hand-mower having a roller attached does not prove heavy enough as a roller, while it proves to be too heavy and possessed of too useless an adjunct to be propelled the season through in the weekly mowings.

Bedding Designs. A useful new plate book of such designs has reached us from Geo. A. Solly & Son, Springfield, Mass. It contains over 90 handsome and complete plans of flower beds, from simple to elaborate. Of the latter some are printed in as many as eight colors. Lists of plants accompany the plans. Full particulars may be had of the firm named.

Pretty Near the Mark. No one other thing is more important to good tillage than the thorough fining of the soil. Here is one good gardener's suggestions put in his own way on how he prepares soil for crops: "I tell my men to harrow the ground until they think it is harrowed twice as much as it ought to be, and then I tell them it is not harrowed half enough."

The Knife You Use. When we see some one haggle away at pruning a pot or other plant with a case-knife of the usual dullness, we are glad indeed that it has never been demonstrated that plants have feelings. On this point POPULAR GARDENING is clear: Every gardener, and even those who grow but a few pot plants, should have a sharp knife to use expressly for pruning.

Take up This Craze. In the last century quite a craze for planting individual trees existed in England. For example: Byron when he first went to Newstead Abbey, at the age of 10, planted an Oak there. He had an idea that as the tree flourished so should he. However he "awakened to find himself famous," and, returning many years later to Newstead found the sapling choked up with weeds and almost dead.

Grape-vines and Bees. How to make the vine and its trellise of some use in a bee-yard is well shown by A. I. Root, an extensive bee grower, of Medina, Ohio, in the accompanying engraving which he has kindly sent to us. The vine affords

shade and the trellise supports a convenient shelf for use when managing the bees. The space taken up by the vine would be of no value otherwise, while in this way it is made fruitful. Mischievous boys would not be apt to trouble the fruit.

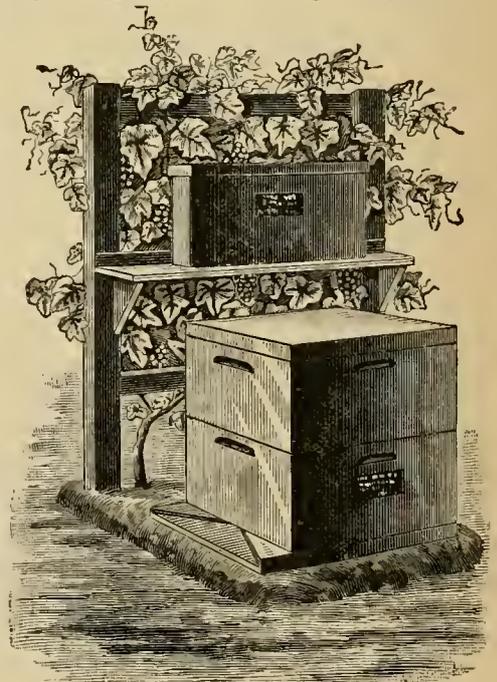
Kind Words Appreciated. Letters praising the character and worth of POPULAR GARDENING reach this office in every day's mail, aggregating hundreds and thousands. All such are most thankfully received, for, independent of the friendly spirit expressed, they form a great source of strength to the workers on the paper, prompting them to the most strenuous efforts in making a better journal with each month. To publish many of these letters would be most gratifying, but the crowded state of our columns forbids.

The Weeping Cherry is one of our most beautiful small lawn trees, and a few words on its propagation may not be out of place. It is raised by grafting or budding on some other stock, that of the Mazzard Cherry being the best. To graft on the wood of the previous year's growth does not work as well as to employ growth that is about three years old. We have been quite successful in grafting it by the whip or splice grafting, as well as by cleft grafting. The stock should be about six feet high where it receives the cion.

The Wild Yellow Lily Again. Seeing S. T. W.'s account of cultivating Lily Canadense, in the January number, I offer my own experience. Two years ago I took two bulbs from a swamp after the stalks were sear, and planted them in a Dutch Bull bed. The next season they grew five feet high. One bore three and the other seven flowers. Last summer they reached seven feet high, and one had 23, the other 28, all larger than those found in the wild state. One produced sulphur yellow, the other orange flowers.—W. H. PERRY, Worcester Co., Mass.

Bees and Early Flowers. Many of the early cultivated flowers in the garden, window and greenhouse attract the bees that are out searching for early sweets. But it is found that the visits of bees are detrimental to the endurance of flowers, for once these become well fertilized by pollen, their maturing and the dropping of their petals is hastened. It is desirable therefore to keep the bees from our early flowers. In the case of window or conservatory plants this may be done by the simple use of wire or other screens over the openings.

A \$200 Lesson in Raspberry Planting. It cost us at least \$200 to learn that Raspberry plants to be set out on sod ground should have this done very early wherever Cut-worms abound. Those planted late are here liable to be very badly affected. It is often stated that in setting Strawberries, avoid



Vine and Trellise Useful in the Bee Yard for Shade

setting upon sod ground, where the white grub is liable to be bad, but we have never observed anything written about setting Raspberry plants upon sod ground. We have never been troubled with white grubs in Raspberry plants. A. M. NICHOL, Licking Co., Ohio.

Don't Uncover too Early. Just as some people are liable to protect their shrubs, vines and

plants too early in the fall, others get in a great hurry and remove the covers too early in the spring. We say don't. A protected bush or plant is necessarily rendered more delicate in a degree because of protection. To uncover it and submit it to the harsh winds and biting frosts certain to come after the first spring-like days is to assume a great and needless risk. To be safe at the North better wait until well along in April before removing the winter coats.

**More about Nitrate of Soda.** Last month Mr. Joseph Harris, farmer, seedsman and author, spoke in these columns on the use of this new fertilizer on lawns. Since then we have received the Joseph Harris Seed Company's Catalogue, and in this we find further interesting information from the same gentleman's pen on how to use the article for various crops, where to procure it and on some other points. We are also told that this valuable information will be given free to all who apply to the above firm. The address is Rochester, N. Y. It would be well to mention POPULAR GARDENING.

**Small Fruits for a Gravelly Soil.** Mr. N. Amerman of Washtenaw County, Mich., finds pleasure in reporting as follows on what he calls "The Survival of the Fittest," in his garden. The soil of the garden, he says, is gravelly, and it gets very hot and dry. Moreover, the past season, and upon which his report is based, was one in which there was a "terrible" drought. "The Sharpless and Crescent Strawberries stood the test, as did also the Cumberland Triumph. Of Raspberries, Cuthbert did the best of three varieties, the two others being the Doolittle and the Gregg. The Lucretia Dewberry is a fine thing; it stood the drought and bore an immense crop of fruit."

**Gardening for Women.** There is nothing better for wives and daughters, physically, than to have the care of a garden—a flower-pot, if nothing more. What is pleasanter than to spend a portion of every day in working among plants, watching their growth and observing the opening of their flowers, from week to week, as the season advances? Then how much it adds to the enjoyment to know that your own hands have planted them and have pruned and trained them—this is a pleasure that requires neither great riches nor profound knowledge. The advantages which woman personally derives from stirring the soil and sniffing the morning air are freshness and beauty of cheek and brightness of eye, cheerfulness of temper, vigor of mind, and purity of heart.—H. B. Stowe.

**Thinks It is Not a Fish Story.** Mr. B. P. Estes of Sumner County, Tenn., would inform Judge Miller and others that the origin of the Wild Goose Plum, from a pit that was found in the crop of a certain wild goose, is not so fishy as some would suppose. He assumes to name its originator, and also to give some account of its history. Where the trouble in dealing with this Wild Goose Plum matter comes in is this: The variety is but an improved form of the Wild Chickasaw Plum, that is found growing in Arkansas and elsewhere. But there are numerous and quite distinct varieties of the same kind of Plums in different localities, and following quite naturally on this fact, there are of such Plums many which are respectively claimed to be the only true and original Wild Goose Plum.

**Guard Against Crowding Now.** Many a florist's stock, most promising in appearance in March, has come out a failure in May because of overcrowding. A healthy plant will advance so much in size between the two months that unless really ample provisions is made for growing space for each individual, there must be serious suffering. One point very deceiving in the case, is that plants too much crowded will not reveal this fault to the inexperienced eye until the real damage has been great, the upper and outer leaves exposed to the light as well as to the eye being the last ones to indicate the true condition of things. So give all plants ample space. It is vastly better to have 50 strong, healthy plants in a given space than 100 drawn up, leggy, and soft-wooded ones, that can never mature into sturdy specimens.

**Chrysanthemums not on the Wane.** Mr. E. H. Cushman of Cuyahoga Co., Ohio, informs us that he quite agrees with Mr. Henderson that Chrysanthemum culture is not on the decrease, but just the reverse. He says: "While wealthy amateurs, as well as commercial growers, have with vigor been booming them for the past few years, the flower loving ruralists in general are but fairly taking up their culture. I believe these beautiful flowers will grow and bloom about thousands of homes where they have not yet been cultivated under their modern name. I want to say also that they are among the very best of plants for local horticultural societies to grow for exhibition. The

Eastern Cuyahoga (Ohio) Society tried it last season, and now 'Chrysanthemum Day' is looked back to with pleasure, and forward to with renewed interest. My advice is for all interested in such matters to grow and to exhibit them."

**Annuals** are, taken all in all, among the best of flowers which can be used for the decoration of the gardens of the people, and this is the season in which to make provision for the summer and au-



PLANT OF THE MADAGASCAR PERIWINKLE.

turn display. When such plants as Geraniums are used, they require a great deal of attention to keep them during the winter; or where there is no means of doing this, and an attempt is made to buy them, they cost comparatively a great deal of money, and, after all, it is a question if they succeed in making a good show; but it is quite different with the annuals, as a great many choice varieties may be bought for a little money, and besides seed for one's own sowing is easily saved. They are from first to last not only easy of culture and sure of growth, but they produce gorgeous masses of the most lovely flowers imaginable. The blossoms include forms of peculiar shape, all shades of colors, and exquisite fragrance. Indeed, the modest Mignonette, to say nothing of the Sweet Pea and Nasturtium, of this class stands with hardly a rival among fine flowers as regards the last named quality.

**The Madagascar Periwinkle.** The common Periwinkles, *Viola minor*, *V. major*, etc., are among our most desirable hardy plants, and very useful also in pot and vase culture as trailers. The Madagascar Periwinkle is classed among greenhouse plants, but it may not be generally known that it is a useful summer bedding or a pot plant. When grown from seed, treating it like an annual, it is of upright growth, with heavy, finely-veined leaves that are evergreen, and decidedly handsome. Still of this class the flowers are considered the main attraction. These are of simple form, fine texture and pleasing colors. The favorite variety is the one herewith figured, *Viola alba*, and this has white flowers with a deep crimson eye. *V. rosa* is rose-colored with a dark eye; *V. alba pura* an exquisite pure white variety. The fact that these Periwinkles are usually grown as greenhouse plants should prevent no amateur who is without a greenhouse attempting their culture. Let them be treated, from the seed (it may be bought from the leading seedsmen) precisely like the Balsam, and it will flower about as early and for as great a length of time as will that favorite.

#### Fashion in Flowers as noted by our New York Correspondent.

Some of our leading florists are using Stags-horn Fern a great deal as a house plant. Growing on a block it may be hung in a window, and does admirably if laid in a basin of water to thoroughly soak every now and then. It is handsome with a Pathos trained over the stump on which it grows.

The best way of keeping Orchid blooms in a store is to take a dish and fill it with good sphagnum, then pour in water until the moss is almost afloat, making an artificial swamp. Lay some Asparagus or Ferns on the top, and then, making apertures in the moss to receive the stems, put the Orchids in this and they will keep fresh longer than any other flowers in existence.

One of the prettiest small foliage plants for use in table decoration is a new Maranta from a German grower, M. Bachemania. It is a little low-growing thing with satiny, light green leaves marked with black, and it bears moving, gas light, and all the other things that kill decorative plants, with

positive indifference. It is charming mixed with Ferns for a table plateau.

At a great private party ball recently the favors were particularly pretty. They were arranged on two large screens, and consisted of wreaths and bells. One screen was covered with the bells, some of which were Violets with Rosebud clappers, others Lily of the Valley tied with pale green ribbons. The wreaths were of Ivy, tied with clusters of spring flowers. The boutonnières, which are much larger than they used to be, were of Gardenias, Violets, Lilies and Hyacinths.

Now that Orchids hold a recognized place among cut flowers, it is well to know which are most valuable for keeping qualities. An experienced florist says that *Laelia anceps* is the poorest keeper of them all; it is never safe to send it any distance. *Masdevallias* and *Odontoglossums* when they become flabby may be thrown into a basin of cold water, and they soon crisp up and keep much better after their bath. *Cattleyas* would be ruined by such treatment, but they are admirable keepers, and will withstand the effects of gas after pot Ferns in their company have become blackened.

One of the most artistic arrangements for table decoration seen for a long time was at the dinner given by Mrs. Secretary Whitney to the artist Munkacsy. Down the centre of the table was a Turkish scarf of unknown antiquity, dull red in hue, here and there relieved by sparing embroidery of tinsel. This was framed by a wreath of *Lygodiums* and fine Ferns. On this was laid a fragrant chain of *La France* and *Mermet* Roses, alternated by *Parma* Violets. This garland was continued around the decanters and epergnes. Four large bunches of *American Beauty* and *La France* Roses were at the corners of the scarf. These were afterwards given as favors.

The coming event in the floricultural world is the great Orchid show to be given by Siebrecht & Wadley about the first week in March. It is to be held in the Eden Musee, which, though of course not as large as the places where some of the great shows have been held, is very conveniently arranged, and a very pretty place. Rose Hill nurseries make an extraordinarily fine display of Orchids, but of course the proprietors will call on other growers for co-operation in this novel enterprise. There will be both growing plants and cut flowers, and as backing, some remarkable foliage plants, *Palms* and *Nepenthes*. *Nepenthes* always attract the unbotanical public by their bloodthirsty reputation, as well as by their oddity. There are to be absolutely no Roses at this show; this is in itself a novelty.

The most elaborate decoration ever seen in Delmonico's was for an indoors "garden party" given by some prominent members of Hebrew society. The great ball-room was turned into an imitation garden. Half way to the lofty ceiling, about twelve feet above the floor, was a temporary roof, made of wire and piping, which was slightly arched toward the center, and completely massed with Hemlock branches, so that it looked like a thick forest. In the center was a huge sun of red and yellow *Immortelles*, surrounded by *Pampas Plum* rays. Here and there were stars of *Immortelles*. At the entrance to the room was a rustic picket fence with gate leading into the room, the fence trimmed with Ivy. By this were banks of flowering plants. The walls about the mirrors were massed with Hemlock, and the mirrors draped with *Bougainvillea* and other flowers; large *Palms* and rustic seats were disposed at intervals. At the end of the room, opposite the door, were masses of fine *Palms*, a pretty fountain, and a log house, in which was a realistic gardener; not in flesh and blood, but in wax. Surroundings of *Virgin Cork* and handsome plants gave a charming effect. The whole decoration was extremely elaborate, and reflected great credit on the taste and ingenuity of the florist.

EMILY LOUISE TAPLIN.

#### REPLIES TO INQUIRIES.

254. **Currant Leaves Infested.** Syringe with a handpump, using a wash, made as follows: One quart of Paris Green stirred into a twelve-quart pail of water, using just enough to wet the leaves. Apply early before the lice appear, simply wetting the leaves. A. M. P.

216. **Covering Grape-vines.** The only objection to the use of manure for covering Grape-vines is that it makes a harbor for mice, and the mice are apt to gnaw the bark off from the canes. It is necessary to cover the roots as well as the canes. It prevents breaking the roots by heaving. D. S. M.

218. **Gladioli from Seed.** I have never had Gladioli seedlings blossom in less than three years here at Watertown, N. Y. I have heard that where there is a longer season, some plants, if started with heat, blossom in two years. D. S. M.

# LIGHT FROM THE SOCIETIES:

BEING MATTER THAT DESERVES TO BE WIDELY KNOWN.



## GLEAMS.

The Mary Grape is acknowledged by its disseminator to be the same as the Lindley.

**Nursery Agents.** "On the principle of greatest good to greatest number, the agent is a benefit."—*A Ray from Western New York Society.*

**The Anjou Pear** is probably the most valuable Pear in America to-day. It was introduced from France by the late Marshall Wilder.—*Pres. Barry.*

**Iona.** If a man wants a good Grape and will get down on his knees and work with it, then let him get the Iona—*W. L. Dulaney, before Kentucky Society.*

**New Varieties.** Do not waste much money or time on new varieties: of 10,000 new ones not more than 10 prove valuable.—*J. H. Butler, before Western N. Y. Society.*

**Stand up for Horticulture.** I believe the Western New York Horticultural Society is worth ten times as much to the State as the State Agricultural Society, and I am familiar with both.—*H. T. Brooks.*

**"Fruit for the People."** There is no spot where a family supply cannot be had by a proper selection of sorts. There is no reason why every family should not have a liberal supply of fruit.—*J. J. Thomas, before Western N. Y. Society.*

**The cultivation of flowers** has an elevating and refining influence, giving health, beauty and fragrance in exact proportion to the love and care bestowed upon them. Now if this be so—and I believe it is—we do a good work when we cause to be planted, where not planted before, a fruit tree, vine, or flower.—*James M. Lamb, before N. C. State Society.*

**Colorado Horticultural Society.** "The organization of this in 1880 dates a new era in the history of this great industry in this State. Unbelief is being dissipated, faith is growing stronger and fruit planting is having a boom, there having been more trees planted in 1885 in Colorado than during all the years of its past."—*Pres. Richardson, before Colorado Society.*

**Irrigation.** "There is danger in careless irrigation. The condition of the soil and the needs of whatever is growing on it should be studied. My own view is that too much water is used by a majority of irrigators in the orchard and garden. The continuous soaking of the land or crop is sure to result in injury. Often a thorough stirring of the soil is as good as, if not better than, irrigation. If mulching is practiced, less water is required."—*A. E. Gipson, before Colorado Society.*

**Grasses for Ornament.** The commonness and apparent simplicity of our useful friends the Grasses lead us to think lightly of them as plants of ornament. They are valuable. If it were a choice between a fine sod a few rods in extent, or a flower bed, I should prefer the sod, as being more easily obtained and kept up.

**Society Work.** "Another very important work of the society is educating the people to beware of buying trees indiscriminately of every irresponsible party who may apply for patronage, claiming to have Strawberries bearing fruit so high as to be out of the way of dirt; Russian Apples that are affected neither by heat, cold nor insects; Peaches budded on stocks not affected by borers; and many other things that no sensible or thinking man should entertain. Making the best selections we are able, we will have plenty to discourage us."—*S. Otho Wilson, before N. C. State Society.*

**Italians as Market Gardeners.** "Prices are getting so low that old hands at the business are getting out of it or have made a specialty of some one or more articles, leaving the general market gardening to Italians mostly, who have come among us and seem to be able to work and live cheaper than those who have been in the business here for years."—*John Tobias, before Colorado Society Meeting.*

## The Winter Meeting of the Michigan State Horticultural Society.

To the square mile of tilled soil the State of Michigan has more thoughtful fruit-growers than any other one of the larger States of the Union. At least, such a conclusion seems allowable in view of the fact that out of 70 counties in the Southern Peninsula 28 have one Horticultural Society apiece, while several have more than one each. There is also a live State Society, and this in a sense is the head of the county societies.

The "Winter" Meetings of the State Organization, usually held in the month of February of every year, are designed largely to aid horticultural progress in the respective sections of the State, being held one year in one place, in another elsewhere, and so on around. This year's winter meeting took place in the extreme southern part of Michigan. It was held in the pleasant town of Hillsdale, the headquarters of the Hillsdale County Horticultural Society. An abstract of the opening proceedings of this interesting meeting has reached us from our representative in attendance in time for this issue. More will follow next month.

**CAUSE OF THE SUCCESSIVE FAILURES IN ORCHARDING IN SOUTHERN MICHIGAN.** Mr. B. Hathaway, who led the discussion, said that the regions where failure is the most present are prairie-like in character, being in some degree so by nature, but largely as a result of the growing bleakness that comes from cutting away the trees. Such bleakness has injured where it has not killed; it has reduced vigor so that although there was bloom it was not followed by fruit. As a result a climate not naturally unfriendly has become so. Still there are varieties even now suitable. These have, however, not been enough planted. There has been too much dependence on simply what the nurserymen and agents have seen fit to send in. He had found by long experience that root grafted trees are objectionable, being neither as fruitful nor hardy as top grafted ones. The latter are the easiest raised, hence the most popular. Trees grafted standard high hold out the only promise for the Michigan fruit-grower. The cost of such may be double; their real value is one hundred fold. A further remedy to look to is the production of new varieties that are suited to our climatic conditions. We need State experimental stations to promote unity of action of many minds in making tests. The Agricultural College has done good in this direction. Would urge the planting of forest trees both for protection and for profit. If every land-owner in Michigan would plant timber belts on two lines of his place we could grow Apples as well as ever.

President Lyon concurred in the main. While advocating high grafting, he believed in double working, grafting some hardy sort first and then on this the more tender sorts. Seedling stock may be tender; this must never be lost sight of. Take Northern Spy, it always succeeds on root graft. If we then take such grafts for stocks and work high on these we may expect the best results.

Peter Collier said that failure in general can be answered in a few words. Too much sheer neglect—doing all they can to destroy them. Many who

have orchards turn their hogs in; sometimes trim the trees, but don't bother much in such ways. How under the sun expect fruitfulness if you don't care for the trees. If would give same care as to the corn crop, would have Apples. There is no trimming, no manure for the young trees. Growers want the trees to do for them before they do anything for the trees; they start backwards.

Prof. Bailey, of Agricultural College, stated that neglect of orchards was the cause of failure of orchards. If you crop with wheat year after year you soon get no wheat. He favors crossing somewhat, but does not believe it to be the only or best course for Michigan. Would advocate experimenting with the hundreds of varieties now in cultivation to learn certainly which are hardy. Are trying this at Lansing and expect to find some good ones in the end.

**HORTICULTURE AS AFFECTED BY THE STATE SOCIETY.** President Lyon drew attention to the fact that from the outset of the discovery of Western Michigan as a region for fruit growing the help of association was greatly felt. He likened those who are always ready to draw general benefits from organized work but fail to contribute to the horse who hangs back, shirking work, but never falls at the feed trough.

Commercial horticulture cannot be said to be an unmixed good. Sharp practices have come in—an aim to give a seeming, instead of a real value, in fruits grown for market. Varieties of inferior value are planted because possessing beauty, thus acting a falsehood. Everything is too much brought to the test of profit. Because Red Astrachans, Maiden's Blush and Ben Davis are handsome they are much planted, while really fit only to take place with the Potato and Cabbage. A result: dessert fruits are almost unknown in the markets.

The Michigan Society, originally pomological, now by general approval covers the entire field of horticulture. The society promotes local societies, and through them horticulture for the family. By the exhibition of products the fruit growing capacity of Michigan has become widely known outside the State. He read an extract from an English journal containing a most favorable reference to the work of the Michigan Horticultural Society, and in which it was urged that the Royal Society of England be placed on a similar basis.

In country school districts something has been done. No trouble to interest the children here. A needed step is to get the teachers in the way of becoming leaders. Ornamental gardening had been helped by the Society. The Society has had influence in staying the destruction of forests. The recent legislative step on planting highways was a right step, but there is need yet to educate the people before the best results in it will be reached.

**SUGGESTIONS ON LOCAL HORTICULTURAL SOCIETIES.** Matthew Crawford, of Ohio, sent in a communication in which he said that local societies are intended to interest the people. Their leaders should have horticultural influence. Should believe in what they teach; practice what they preach. All should talk up the society; none should talk it down. There should be a question box and all should use it. A programme should be issued and be studied up. Worthy outside horticulturists should be invited, making it pleasant for them. A dinner at the house of the gathering is an important feature, as tending to sociability and talking up horticulture.

Secretary Garfield said that the best plan of all is a Whole-day Meeting at some private house, the forenoon to be devoted to conversation; a dinner to arouse sociability, and at which to study the methods of horticulture in practice at the place of meeting. After dinner to go over the premises, then come together, have one paper with discussions. After that discuss in general the things seen on the premises. This is much better than to meet in halls.

Referred to Lenawee Co. Society, which had broken away from the old style of hall meetings, with perfect success. Formerly at times had not more than three or five members; now have from 50 to 100. The social meeting and discussions on the premises visited brings out valuable facts pertaining directly to methods and ways that would never have come out. Too often when papers are the main feature, these are read, printed, shelved, forgotten. A visit is remembered, matters absorbed and worked out.

L. B. Pierce of Summit, Ohio, spoke of the success of the Portage Co. (Ohio) Society. The most pleasant and profitable gatherings are the winter ones from house to house, which call out 50 to 75 members. They sometimes have 150, and at summer meetings in a tent have had as high as 300 together, a number too large for best results. In his own county have a more recently organized society, the meetings of which are very successfully conducted

on the social plan. They have committees on Orchards, Vineyards, Small Fruits, Insects, Botany, Ornamental Planting, Forestry, from which reports are received in every seasonable month. These bring out much interesting matter, and altogether the cause of horticulture is very much helped. Is satisfied the social course is the only proper one. It calls out the ladies, who take a hearty interest in all the proceedings.

President Lyons said their society was a social or visiting one. He spoke of the good effects on an expected visit, in leading owners to give their places a good clearing up and putting them into shape, and that was a good thing.

Mr. Peter Collier of the Adrian Society spoke of their society adopting the social plan and having found it a successful experience. A dinner or a supper brings out the young folks, who in this way get to be active members. Sometimes it had been suggested to go to a hall, but the "noes" always carried. It seems to be hard to get ladies into halls.

### The January Meeting of the Western New York Horticultural Society.

In the neighboring city of Rochester, N. Y., this, the 32nd annual meeting of our Society, convened on January 26th, and continued for two days. When on the first day President Barry called the meeting to order, he faced about 150 of the horticulturists of this famous fruit-growing district, which number was increased to more than 200 before the meeting was over. A keen interest was shown throughout in the proceedings, and altogether a more profitable gathering was never held by the Society. A number of ladies attended the sessions; there should have been many more present. We aim to present some of the more important points brought out.

FROM PRESIDENT BARRY'S ADDRESS.—Fruit culture has been moderately prosperous. Crops, on the whole, have been good. In our own section the Apple crop was an exception. The loss to this crop, no doubt, amounted to millions of dollars, taking in as it did the best Apple region of our State. The cause of this failure will be discussed.

Prices generally have been low, but this is a period of low prices, and we may as well expect them in the future. Fruit growing has not suffered more than any other branch of agriculture.

We must rather aim at improving our methods—and thus cheapen the cost of production. One very common evil is attempting too much. Our orchards should have twice or three times as much manure and labor as they now get. Above all other things, growing poor fruit will not pay.

The production of fine fruit is not a mystery, but it requires care and skill, and a good deal of both. The trees must be kept in health and vigor. Insects must be kept in subjection. The fruit must be gathered at the right time and in the most careful manner, and be marketed with judgment—nothing can be left to chance.

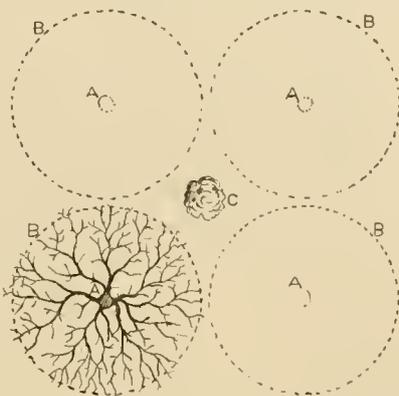
The fruit growing industry has been much carried on in an easy-going way, which will not answer in the future. An industry of such importance, not only to ourselves, but to others, must not be allowed to suffer from poor management. Our cultivators must be aroused or our great fruit industry will perish.

It is strange that fruit growers do not more generally unite in societies, and thus aid one another in their work. Our own society ought to have 1,000 members from throughout Western New York.

ON THE CURRANT. Dr. Sturtevant in his essay said this was one of the younger members of the horticultural family. There is no ancient record of it. In 1616 what may be called the Common Red was figured; it was also used in topiary work. The wild types became more fruitful in cultivation. Many sub-varieties have come from culture. It received its present form between 1512 and 1588. Mr. Barry said the Currant was one of the most important as it is one of the most abused fruits. Can hardly find it properly cultivated. Give plenty of manure and some pruning and there will be plenty of fruit. The red and not the white is the Currant for market. Mr. Reed spoke of a Bright Yellow Currant in Dakota that is sweet but not prolific. E. A. Bronson said the Currant had been a good crop and gave good market results; for this it must have good treatment.

PAST AND FUTURE OF FRUIT GROWING. In a paper on this subject J. J. Thomas recalled the time when the public looked with amazement on the grower of 2½ acres of nursery trees, wondering where they could find sale for them all. Formerly no reliability could be placed in names; there were

"Early Bartletts," "Fall Bartletts" and "Winter Bartletts," "Blue Plums" and "Green Gages," applied to all varieties of these fruits good or bad. In general the want of intelligence among the people was a great cause of hindrance to horticulture. Every one of our 50 millions should enjoy the yearly circle of garden fruits. Each family of 5 persons should have a garden of five acres. Many orchardists make a mistake of thinking trees will take care of themselves. Our large orchards must give way to smaller and better.



Replanting Old Orchards. A's show Site, B's approximate Root Circumference of Old Trees, C intermediate spot of fresh soil.

HARDY ROSES. Mr. Dunning, a successful grower of these, in a valuable paper, said that Hybrid Perpetuals can be successfully grown by any one who tries. Insects offer trouble, but they are easily controlled. Supply plenty of food to the plants. Protection in winter is of great importance. He advises to simply bend the plants down and cover with snow, corn stalks, evergreens, or similar material; earth is good. Pruning is a stumbling block to beginners. He would leave not more than two shoots to young plants, cutting these back to two eyes. Prunes in cutting the flowers by taking long stems; this causes a new growth soon and later flowers. For a location prefers one somewhat sheltered but exposed to some sun. He plants mostly in beds on a lawn, in strong soil well prepared. Coats the bed with manure in the fall, and this acts as a mulch too. He cuts away the buds of all but one or two flowers the first year. A good growth of wood is desirable. Liquid manuring is the greatest secret of success: it kills the larvæ of injurious insects. Uses it several times a week. Tills about once a week and adds leaf mold each time. A pleasant diversion is to make a Tree Rose by taking a strong shoot, leave some growth at top, clip all the other away, support the shoot by a stake and protect the trunk from the sun. Mr. Dunning's favorite varieties are M. P. Wilder, P. C. de Rohan, Louis Van Houtte, Eugenie Verdier, Gabriel Luizet, Baroness Rothschild, Mabel Morrison, a "White Baroness Rothschild," Eliza Boelle, Madame Augusta Perrin, Merville de Lyon, new white, Etienne Levet, Glory of Cheshunt, Annie Wood, Annie de Dieshach, Francis Michelon, Marie Baumann, Alfred Colomb, Chas. Lefehvre, Chas. Margotten, General Jacqueminot. Two unique Roses are Marquise de Castellane, Edward Morren. Among good honest varieties he named, Marguerite de St. Amande, John Hopper, Abel Grand, Jules Margotten. Louise Odier is a perfectly hardy Bourbon. La France and Captain Cristy are the most reliable Hybrid Teas.

REPLANTING OLD ORCHARDS (see engraving). W. T. Smith would not hesitate to do so, planting precisely where old trees stood, as the feeding roots of the old trees are not there; Mr. Green and Mr. Hooker concurred. Mr. Atwood opposed this view, saying he had removed an old orchard, planting the ground to nursery stock. Wherever an old tree row came, could always see by feeble growth in the nursery trees. Mr. Watson would not plant the young trees where old ones had stood, but between, then in later years the roots would extend back to the sites of the old ones.

To be Continued.

### Fruit Matters in Nova Scotia.

The 23d annual meeting of the Fruit Growers' Association occurred January 19th and 20th, at Wolfeville. It was a most successful one in every way, calling out a large attendance at all the sessions. Following are some of the matters brought out in the meeting:

One of the first papers was on "Fruit Grow-

ing in Nova Scotia in 1886," by Dr. Chipman of Grand Pre. Among other things, the Doctor said that twenty years ago the farmers of Nova Scotia grew almost no fruit, Potatoes being the chief crop. The United States by shutting its doors to their Potatoes had compelled them to take up something else, so they turned their attention to fruits, and have now become a competitor with the United States in the world's market. Kings county, one of the smallest in the Province, raised last year 100,000 barrels of apples for shipment, which brought at least \$150,000; and in one case one quarter of an acre produced 50 barrels. Many young orchards have been planted which have scarcely come into bearing, so that the annual yield will soon be increased very much. Plum and small fruit culture is on the increase.

A paper contributed by Prof. Penhallow of McGill University, on the "Spot Disease of the Fameuse Apple," was read by Prof. Tufts of Acadia College. In the course of the paper it was shown how great was the loss from this disease and that it diminished the size of fruit as 1 to 2 or 1 to 3, and that it is not a recent disease. Prof. Trelease's Wisconsin report was reviewed. The life history of the fungus was traced as far as known. For treatment judicious pruning was suggested, but the writer looks with disfavor upon local applications of sulphur, potash, etc., in any form, advising all to look after the general nutrition of the tree.

Secretary C. H. Starr (commissioner to London for Canada at the Colonial Exhibition) gave an address on fruits at that exhibition. He said that what the English want is a crisp, fresh Apple. Fruits should always be sent in cold storage, and should be sold by private sale and not at auction. The English are substituting Apples for beer.

An interesting account was given by Dr. Saunders of various methods which he adopted in the preservation of fruit at the Colonial Exhibition, such as the use of salicylic, sulphurous and boric acids and chloral hydrates. He found these four the best and most satisfactory preservatives. For example, salicylic acid turns Pears black, but on treatment with sulphurous acid the color was restored. In England Grapes are grown under glass, and while they are free from the foxy taste of our Grapes, are very expensive, and so he thought a good market might be had for ours there.

A paper on "Evaporation of Fruit," was read by Prof. H. W. Smith, of Nova Scotia's School of Agriculture. He explained how extensive the practice was elsewhere, and very much regretted that so few evaporators were to be found in the Province. The workings of evaporators was explained. He showed that in ordinary seasons they were a ready means of saving much fruit.

Prof. Fletcher addressed the association on the insects which had been the most injurious during the past season. These were the canker worm, to treat which he advised the use of Paris green sprayed upon the trees, cautioning against a copious use of that insecticide, as it would injure the foliage. Aphides were also quite destructive, but could be destroyed by emulsions of soap and kerosene in water, the soap assisting very much in the formation of the emulsion. Other insects were spoken of.

The Fruit Committee reported that the Apple crop of 1886 was the finest ever produced in Nova Scotia both for quality and quantity. Very good crops of Plums and Pears were also reported. The prices for Apples had been very good. Tompkin's King leading at 21s. in London, while the average price for the crop of these was 19s. Gravensteins, which constitute one-fifth of the entire crop here sold for from 12s to 16s.

### An Essay on Waysides.

[By Miss Carrie Brown, before the Horticultural Society, at Dayton, Ohio.]

As we go out of our city in almost any direction we find the waysides are ragged and unkept, grown up with coarse unsightly weeds. It appears to be nobody's business to take care of these narrow strips of land on either side of the public roads. Even within our city limits great beds of rank weeds are permitted to grow.

But I am not simply urging a raid upon weeds; I have in mind the adornment of the roadsides, so I must put in a plea for some of the lovely wild flowers that are often found along the way, and beg those whose object is the destruction of weeds to use a little discretion and save such flowers as are attractive to

the eye; and not multiplying rapidly, are harmless, so should not be treated as intruders.

Such, for instance, as the modest little Violets, the Claytonia Virginia, the Snowy Elder, the Wild Roses with their pink clusters; and I would want to see a few stalks of Golden-rod, of Rudbeckia, Helianthus and Purple Asters. To add picturesque to the scene we must have some vines on the fences, as the Clematis, Calcestrus scandens, Trumpet Vine and others of equal beauty, but with the ground well graded, the weeds kept down, and all the space nicely growing with grass we cannot have a perfect wayside unless we have a law prohibiting cattle and hogs from running at large. I hope the day is not far distant when the proper authorities will make and enforce such a law.

Then there is another necessity to an ideal wayside; it must be bordered with trees to furnish refreshing shade to passers by. Our people are very slow in learning the fact that great advantages as well as pleasure will follow the planting of trees along the highways. There are some parts of the country where they have arrived at the proper point of appreciation of this subject, and have set about doing the work. In some places it is accomplished in one way, in some by another. It can be done by societies organized especially for such purposes, as the village improvement societies of New England, or by such as our own Horticultural Society, which could appoint a "planting day," when each member should furnish a tree, the kind to be determined by some previous concert of action, and then all repairing to the road selected to be beautified make a pleasant time of the planting that would long be remembered.

It is delightful to even think of the possibility of a drive over our splendid Fifth-street river bridge and all the way to the Soldiers' Home along a broad roadway edged with clean, green sward, no Jimson weeds or Thistles to offend the eye, and shaded by trees worthy of attention. The men who will make such a possibility an absolute fact, for that or any other of the roads leading out of the city, will deserve and will have their names handed down to posterity with great honor. I am in hopes that some of us may live to see this dream realized. If the commissioners of our county succeed in purchasing all the turnpikes in their bounds, perhaps they may be induced to take such steps at once as will make model roads of all in this county.

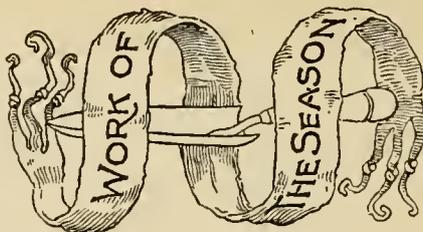
There has been a movement among some of the railroad companies of our country in the way of adorning the grounds along their tracks by grading, sodding and planting with trees. This is a commendable progressive step, and we hope it will be universally followed. The companies showing such enterprise will be repaid some day by the increased value of land along their way, and by the proceeds of timber they can cut if they but plant rightly.

#### John Henderson's List of Hybrid Perpetual Roses.

Mr. Henderson has favored us with the following list, it being the one he presented in his essay at the last annual meeting of the American Florists' Association. Coming as it does from such a veteran florist, it presents especial claims to being valuable:

* Abel Carriere.	Julespolyte Jamin.
* Abel Grand.	Jules Margotton.
* Alfred Colomh.	John Hopper.
* Anna Alexieff.	Jean Liahaud.
* Anna de Diesbach.	* La France.
* Antoine Mouton.	* La Reine.
* Auguste Mie.	Louls Van Houtte.
* Baron de Bonstetten.	* Lyonnaise.
* Baroness Rotbschild.	* Mahel Morrison.
* Baroness Prevost.	Madame Bail.
* Beauty of Waltham.	Madamo Charles Wood.
Boieldieu.	Madame de Cambaseres.
* Boule de Neige.	* Ulrich Brunner.
* Capt. Christy.	Madame Gabriel Luizet.
* Charles Lefebre.	Madame Lacharne.
Caroline de Sansal.	* Madame Victor Verdier.
Comtesse de Serenye.	Madame Gabriel Tournou.
Comtesse of Oxford.	* Marguerite de St. Amande.
* Coquette des Alpes.	* Mlle. Annie Kood.
Coquette des Blancnes.	* Madame Eugenie Verdier.
Dr. Andry.	Marie Baumann.
Duke of Albany.	* Marquise de Castellane.
Duchess of Edinburgh.	Magna Charta.
* Elizabeth Vigneau.	Marquis de Montenait.
Elie Morel.	Maurice Bernardin.
Edward Morren.	* Mervielle de Lyon.
* Elissa Boelle.	Monsieur Borcenne.
* Fisher Holmes.	* Paul Nun.
* Francois Michelon.	Paul Verdier.
* Francois Levet.	* Pierre Notting.
* General Jacqueminot.	* Prince Camille de Rohan.
* General Washington.	* Pride of Waltham.
Reine Louise Victoria.	* President Thiers.
* Queen of Queens.	Senator Baise.

Those marked thus \* flower again during the fall.



#### HOUSE PLANTS.

**Achimenes** not to be started all at the same time. A succession of bloom is to be aimed for.

**Amaryllis.** Weak manure water given occasionally will help them when in bloom. Perfect blooms can be gained only with considerable sunlight.

**Begonias.** The cuttings of all plants wanted for next winter's decoration should now be struck. The large show-leaved section (*B. Rex*) to be increased by laying old leaves flat on their underside and slightly weighted down on soil, in a warm shady place, and here they will easily form roots, potting the parts separately later on. Any old plants designed for summer use to be started and repotted in light, rich, soil.

**Caladium Esculentum.** Remove the little bulbs from the large ones before starting and place one inch apart in sandy loam, well firmed and with good drainage, till large enough to pot separately.

**Callas.** For securing continued bloom it will help to top dress the soil with fine manure or to apply liquid manure twice weekly, or else shift into larger pots, using rich, light soil. To secure large plants keep side shoots down; give plenty pot room.

**Canary Bird Flower.** Start as directed for Ricinus. Grow in light soil. Plant in sheltered situation.

**Canna bulbs** to be placed in heat for early stock. After they have started pot in very rich soil. They are increased by division, leaving a strong shoot to each part, or by sowing the seed after soaking it in water for 24 hours, starting with this boiling hot.

**Cyclamen** seed sown now and grown near the glass until warm weather, and with good treatment later on, may be had to flower in January next. Shift as needed in light, rich soil, leaving the bulb or corm half uncovered.

**Dust** accumulation on the foliage to be avoided by the frequent use of a dampened sponge.

**Primroses** of the hardy class may be sown; shading the seedlings from the direct rays of the sun, aiming to have them in shape for planting out by the time of Cherry blossoming.

**Ricinus** (Castor Oil Bean) sown this month singly in pots in heat will quickly germinate and make fine plants for the center of summer beds.

**Salvias** for summer use to be grown either from seed or from cuttings. These plants require light, rich soil, with fair pot room. Scant watering and small pots they will not stand.

**Vallotas.** As the growth increases these will need more pot room, yet too much is undesirable. For propagation see under Caladium.

#### LAWN AND FLOWER GARDEN.

**Annals** of the hardier kinds like Mignonette, Candytuft, Larkspur, Collinsia, Clarkia, etc., may, for early cutting, be sown as soon as the ground works up well.

**Border Perennials** in the line of Phloxes, Irises, etc., that have occupied the same place three or four years, to be divided and reset into new positions respectively.

**Bulbs** such as Tulips, Hyacinths, Crocus, etc., in beds should, along with the first partial uncovering, have the soil of the beds firmed to counteract the loosening effect of frost.

**Cypress Vine** (*Ipomoea Quamoclit*). Seed to be started in heat and the young plants to be grown in pots till frosts are over, then set into rich open soil.

**Evergreens.** Specimen trees to be trimmed had better have this done before growth commences. In the transplanting of Evergreens, pruning at such a time is often treated as of slight importance, but for the best results it is no more to be neglected than the same in deciduous trees.

**Grass Plats** to be rolled just as the frost has left for securing a nice smooth surface.

**Hydrangea.** The Grand Panicle-flowered hardy sort, now largely grown in clumps, should have to

promote to the fullest its blooming powers a pretty severe heading back each spring and a top dressing of old manure every other season at least.

**Neatness.** Early work about the garden may call one to travel from muddy beds to grass plats or walks. Much can be done to prevent mud and litter being carried about with the boots by having a simple movable foot scraper, as illustrated, to be used where most needed.

**Roses** and ornamental trees to be planted should be ordered without delay, if this has not yet been done. Climbers should have their supports renewed or repaired as needing it, before growth begins.

**Shrubs** having grown closely together a number of years will be improved if a portion of the old soil is replaced with fresh, or else it is top dressed with fine manure or well rotted leaf mold. Should the soil now, however, be in a condition to produce more foliage than bloom, one quart of slaked lime to 100 sq. ft. of surface would be a good dressing.

**Stakes, Labels, etc.,** should be repainted as needing it both to secure neatness and durability. Dipping the ground end of all new ones into hot gas tar will tend to preserve them.

**Sweet Pea.** This favorite does better for having the seed sown at early garden-making time, counting on its germination before the ground becomes very warm. Where soil is backward some might be started in pots and transplanted, but such would when set out need careful handling.

#### PLANT CULTURE UNDER GLASS.

**Alternantheras** may be increased with rapidity by potting the old plants deeply in soil or sand, covering one inch of their lower parts. Then place in high heat near to the glass, never stunting them in watering. Roots will form shortly from all the stems, and these later may be divided, potting separately, using light, rich soil and placing them in a warm hot-bed, which should be left so close as to cause a high heat and moist atmosphere. They will "jump" along in their growth.

**Azaleas** should mostly now be in the height of bloom and making new growth. Water thoroughly, but only as actually needed, and towards the end of the day. High artificial heat is not desirable this month, while to subdue the sun's rays and to prevent burning of the foliage there should be a slight shade overhead before April 1st. Syringe daily. Admit air regularly; never in strong draughts.

**Bedding Plants.** The main stock of such rapid growers as Coleus, Alternantheras, Achyranthus, Verbenas, etc., will be of the best size for bedding out if propagated now. Many other kinds will make good second-sized plants if struck in March.

**Bulbs like Hyacinths, Tulips, etc.,** which were forced, while of little or no use for forcing again, may be helped to completing their growth and ripening by keeping them fairly watered and in a planted place, and then after the usual rest can be planted out in the fall in a permanent situation.

**Camellias.** When making next season's growth, after blooming, will be invigorated by applications of soot water, which will also clear the soil of worms. At this time, when much tender wood appears, the white or brown scale is the most likely to prove troublesome. Warm soap-suds and a brush will afford an effective remedy.

**Centauria.** If the seedlings of the cut-leaved *gymnocarpa* are put by twos in 2-3-4 inch pots and left until pot bound, and then are separated and placed singly in 4 inch pots, going now into hot-beds they will easily make fine healthy plants by planting-out time. Do not set the seedlings too deeply in the soil, for then a black rot at the surface may destroy them. The entire-leaved *C. Candissima* easily suffers from being kept too wet.

**Klenia Repens.** Young plants come easily from cuttings, and such should be newly raised each year, as old plants soon get too unshapely for use. A common soil will do for these.

**Liliums** in pots will as they approach the blooming stage be benefited by an occasional dose of manure or guano water. Green-fly is very partial to these; by strewing tobacco about the pots and then fumigating they may easily be kept down.

**Shading** the glass over hard wooded plants, Double Primroses, Ferns, etc., is a necessary course usually towards the end of the month. Common whitewash put on with a broom is a cheap and simple method. Naphtha colored like milk with white lead, applied with a syringe is satisfactory.

**Space** is now if ever at a premium. This is a time when a close overhauling of stock, throwing out any surplus in more inferior plants, is needed.

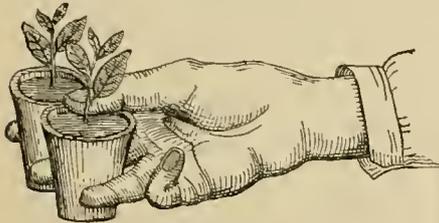
**Ventilation.** Now the increasing sun heat demands increasing attention as regards airing plant



Movable Garden Shoe Scraper.

structures. With too little fresh air when free growth is going on, plants become weak and vastly more liable to disease and to the attacks of insects. An excess of cold air in the form of rough draughts checks growth and causes mildew. To have stocky, healthy plants depends largely on judicious airing, with ample space for each plant.

**Watering** at this season of free growth and when moisture becomes so rapidly taken up, is



HANDLING TWO POTS AT ONE MOVE.

liable to be inadequate unless special pains be taken to water often and regularly. Some kinds require more water than others, and such should be attended to at least twice daily when this is demanded by the state of the weather.

### FRUIT GARDEN AND ORCHARD.

**Canker worm** ravages may be lessened by preventing the female from ascending the tree in early spring by this simple device: A strip of tin, 4 inches wide and long enough to encircle the tree, and leave a space of 6 inches between on all sides. An 8-inch strip of muslin as long as the tin is fastened to the upper edge by turning the edge down on the cloth. When around the tree the ends of the tin may be clasped by bending them in opposite directions. Secure the free end about the trunk with a stout cord, the tin hanging down, thus forming an impassable barrier to the insect.

**Cherry Trees.** P. M. Augur recommends the following mixture as a disease preventive: One part of common whitewash, one pint of soft soap, with one pound sulphur, applied to trunk and main branches of trees. For seedlings sow the Cherry pits immediately after the ground thaws.

**Currants.** Larger clusters and berries will result if the bushes are thinned out to 6 or 7 shoots.

**Girdled Trees** are a deplorable sight. If the girdling is not clear to the wood a simple and efficient course of treatment is early in spring to paint over the cut with dilute gum shellac, hilling the soil to cover it. Should the wound be too high for this, a paste of cow manure and clay bound on to exclude the air will usually save the tree. For stock that is badly girdled the inserting of several scions around the wound, with one end below and the other above the cut, and covering as above, may prolong the life and usefulness of the tree, but it can never be as good as it was before.

**Grafting** for most trees should be done when the buds are fairly swollen. With Cherry and Plum, however, the earlier it is now done the greater certainty of success. See last month under this head.

**Limbs broken off** by high winds and leaving a jagged surface should be smoothed with a sharp knife and covered with grafting wax.

**Orchards** of old trees are benefited by yearly sowing two bushels of Peas to the acre, having the land well fertilized, and then when nearly grown, after marketing the main part, turning the pigs in to them. Where the orchard is in sod, extra care is necessary in preventing borers, field mice, etc., from doing injury, as the turf affords these lodging.

**Peaches.** For providing a more uniform temperature to the roots during the spring season of alternate thawing and freezing a mulch of shavings over them will be of benefit. As a fertilizer for the Peach, wood ashes are excellent if not the very best. Prof. Goessman, of the Massachusetts Agricultural College, also recommends a compost of three hundred pounds guano, two hundred and fifty pounds bone black, and two hundred pounds muriate of potash per acre. This is his remedy for the yellows, besides being a good fertilizer.

**Strawberries.** Plants found to be upheaved when uncovered must be firmed by rolling or tramping the soil before the sun's heat does them injury. Some fine manure, if applied early in the spring, will greatly help the crop on any but the richest of soil. A part of the plants might be advanced a week or more in bearing by enclosing the bed with twelve-inch boards and covering with muslin. The earlier the plants for new beds are set out after the ground works up well the better.

**Trees frozen** in transportation to be so sheltered or covered as to allow of gradual thawing.

**Young Orchards.** Thorough cultivation for these will be repaid by future increased fruitfulness. In trimming avoid the formation of crotches.

### VEGETABLE GARDEN.

**Cabbage**, as well as Cauliflower of the earliest sowing in the hot-bed, may soon be ready for transplanting. This should be done into shallow boxes, using rich soil, giving each plant the use of an inch by two inches. About April 1st, for the North, these boxes may be placed in cold frames that are well banked with manure and covered securely against hard freezing at night, but giving plenty of air by day. Seed of these as well as of Lettuce may now be sown for the main lot of plants.

**Early Crops.** It is to be borne in mind that crops which mature early must grow quickly, hence need more stimulant in the shape of plant food than those having a longer time in which to grow.

**Onions** should be sown among the earliest of vegetables, in order that the bulb may become well formed before the dryness and high heat of summer checks the growth. A fine, rich soil is required for this crop. For some to come early, seed may be started in a hot-bed, transplanting the seedlings to several inches apart later on. By this course one can easily get a large patch of early Onions agoing.

**Potatoes.** By placing the cut tubers in a warm room till the buds start somewhat, and then planting rather deep to avoid freezing, one may have new Potatoes considerably ahead of the ordinary.

**Seed Planting.** The soil must not be worked while it is wet and sticky; much injury may thus be done to its texture, and from which it may take years to recover. Besides there is not so much gain to come on the score of earliness, for seed sown a week later in warm, mellow ground, will germinate more certainly than in the colder and soggy soil, and stronger plants, with an earlier crop, will usually result. Yet it is equally important to get the seed in the ground as early as possible after the ground is really fit. Everything that can be done preparatory to this should be promptly gotten along with, so that at the proper time all seeding may be pushed with vigor.

**Starting early** vegetables of kinds like Tomatoes, Melons, etc., in individual wooden boxes, is a satisfactory course and yet not costly. The boxes can be used a number of times by being fairly constructed in something of the following style: use one-eighth in. material for sides and bottom, and one-quarter in. stuff for the ends, a good size being three in. wide and deep, 4 in. long; nail the sides but slightly, so that when ready to set out, the plants may, by removing a side, be easily slipped out. From these boxes plants in bloom may be transplanted without injury.

**Tomatoes** sown this month and well grown in boxes (see directions above) will make large plants by the middle of May. To have vigorous plants the transplanting from the seed-bed should be done before there is any danger of the plants becoming drawn and weak. There is some question as to the advantage of sowing Tomatoes under glass, some claiming to get ripe fruit, but several days later, from seed sown in the open air the last of April.

### FRUIT AND VEGETABLES UNDER GLASS.

**Asparagus.** Old roots that were lifted in the autumn may go into heat, covering them here with 4 inches of earth. A space 3 ft. by 6 ft. ought to accommodate near a hundred roots.

**Cauliflower.** About the middle of the month, on the stages from which the last crop of early Lettuce was taken, Snowball Cauliflower which have been brought along for this purpose may be planted a foot apart each way, for marketing several weeks before the outdoor crop is ready.

**Grapery.** In hot-house water freely now, giving some air. Do not allow too many bunches to continue growth. Head in the laterals in cold house. While the leaves are expanding syringe daily until they are completely out.

**Pines** to be liberally supplied with water, and an increase of bottom heat. For young plants, roots or suckers may be encouraged by placing these in an active dung or tan bed. After roots have formed, they can go into pots ranging from 5 in. to 8 in. across. Plunge these into the bed at once, close to the glass, providing ample space. Do not water until they make roots into the new soil. Keep a heat of 55° to 60° at night, and 10° higher by day.

**Radishes.** Sow thinly in rows about 3 inches apart, and when an inch or so high thin out to one inch apart in the rows. The Early Round Dark Red and Small-topped Forcing are among the best.

## INQUIRY COLUMN

This being the People's Paper, it is open to all their inquiries bearing on gardening.

Replies to Inquiries are earnestly requested from readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.

226. **Raised or Flat Flower Beds.** Which are best in the ordinary cultivation of plants of these?

227. **Pansies Devoured.** Last season my Pansies in a small bed under a tree seemed to have been eaten away by some insect, but I never could discover it. Will some one help me to a remedy for the coming year? L. H., Langden, Minn.

228. **Dewberry Culture.** Will you please tell how this should be conducted? Is tillage or heavy mulching the best course?

229. **Apples Failing in Dakota.** After the trees get 8 or 10 years old here they commence at the top to die about July; the leaves dry up, bark comes off on south side and the tree may live 2 or 3 years. What is its cause and cure? D. M. Dickerson, Union Co., Dakota Territory.

230. **Hibiscus Leaves Ailing.** The leaves enclosed are affected by a white substance, also some specks as if caused by an insect. What are these, and how to be exterminated?

231. **Swanley White Violets.** What treatment should these receive to bloom in winter?

232. **Bermuda Lily in Pots.** Will this flourish as well in pots as in the ground? A SUBSCRIBER.

233. **Sheep Manure for Gardening.** I desire information as to the value of sheep manure compared with other manures for market crops on rather sandy prairie soil. T. R., Great Bend, Kan.

234. **Propagating Fay's Prolific Currant.** Is this variety increased in the same manner as the common Currant? H. G. M., Kokomo, Ind.

235. **Gesnerias in the Window.** Will some of your many readers please give their experience on the habit and successful treatment of the Gesneria as a window plant, and oblige PLANT LOVER.

236. **Chrysanthemums Dropping Leaves.** Last season after my plants were about a foot high the lower leaves began to dry up and fall. There were no insects or mildew. This continued until fall and by which time there were not leaves enough left to bring out the blossoms. It was an utter failure. I have tried the experiment before with the same result. If I take plants from the open ground into the house it is the same. Why is this thus? B.

237. **Treating Hyacinth Bulbets.** How do you treat the young bulbs on the old ones? Mine are single ones—in water. T. C. S., Malvern, Ark.

238. **Amaryllis from Seed.** How shall I proceed in so raising Amaryllis?

239. **Dahlia Planting.** Should the roots be set out the full size as when dug, or be divided?

240. **Primroses from Seed.** When is the best time to sow for next winter's bloom?

241. **Flower Garden Site.** Which side of the house would you prefer for flowers and plants? Mrs. A. E. D., Hastings, Mich.

242. **Dwarf Apples for Ohio.** Would you please state the names of those that would do well here? I. L., Zanesville, Ohio.

243. **Berries did not Develop.** Last year my Strawberries all ripened, after the first crop, with a knot on the end. I allowed runners; rows were very thick, ground fairly rich. What was the cause?

244. **The Crimson Beauty.** Does this Raspberry need a fertilizer? If so, what is the best? M. J. P. Jr., Evansville, Ind.

245. **Chickasaw Plums Failing.** I have 24 Chickasaw or Wild Goose Plum trees on my fruit farm. They are large, perhaps full grown, and require a great deal of trimming, which they regularly get, as well as plenty of manure. For three years they have blossomed freely, but the fruit seldom gets bigger than a large pin head and gradually shrivels and drops off, so that I have never got all told a pint of ripe Plums from the 24 trees. Can any one suggest a better remedy than the axe? Is the latitude too far north in the vicinity of Detroit, Mich.? A. M.

246. **Dividing Primroses.** When should these be divided, and how done? Should the blossoms be removed when they fade?

247. **Callas Turning Brown.** Will some one give directions for the treatment of Calla Lilies. Mine put out leaves, which quickly turn brown at edges, and will not bloom. Is it for want of water? Mrs. R. E., Charlestown, W. Va.

248. **Raising Winter Onions.** I would like to increase on raising these, and would feel obliged for good points from growers. G. I., Erie Co., Pa.

249. **Pruning Roses.** The Rose bed I planted last year will need its first annual pruning soon,

and fearing I should make some mistake as to this I apply to you for aid. MARTHA.

250. **Double Primroses—Grubs.** Our plants are being destroyed by a grub about 1-4 of an inch long, of a dirty white color with a brownish head. It eats its way into the main root and works up to the centre of the plant. Can you suggest a remedy? When I see a plant affected I cut them down and put the cutting in. I would like to know of something to kill the grub, as the plants are loaded with bloom. CANADIAN.

251. **Fuchsia Ailing.** I have a plant that stands nearly four feet high and the bark on the woody part of the stalk has split and its great large leaves have a kind of a mildew on them. Have I kept it too wet or what is the trouble? Rose, Macomb Co., Mich.

252. **Wood Ashes for Strawberries.** How much unleached hardwood ashes will a bed two rods long by one rod wide bear without harm? The plants are not yet set. The soil is rather a light, sandy loam. W. H. W.

253. **Raw Limestone Fertilizer.** How will this ground fine do for Strawberries? I mean unburned limestone. G. S. D.

254. **Currant Leaves Infested by Lice.** How can I kill these, which completely cover the under side of leaves and cause them to fall? Hellebore sprinkled on them does no good. R. E., Concord, N. H.

255. **Asparagus—Choice of Site.** I want to set out a patch on one of two places, high ground or rather low. My land is clay loam. Which is the best?

256. **Ridding the Ground.** Before setting out Raspberries and Blackberries largely, I would like to ask if one can get rid of them if later the land is wanted for some other purpose?

257. **Blackberries for N. E. Iowa.** Snyder and Taylor winter kill here badly unless laid down, then they come out all right. Are there any better kinds with covering in the fall? J. RIDLEY.

#### REPLIES TO INQUIRIES.

225. **Soil for Perennial Flowers.** Some species and varieties of these will grow almost anywhere, others object to grow in stiff clay. I planted a border about 150 yards long of stiff clay with plants from light soil. We trenched in many cartloads of stable manure, but this was not enough. I had to dig out a hole for each plant and round the roots of each valuable specimen a spadeful of light compost was placed. This was composed of about equal parts, leaf-mould and loam. All this might seem a deal of trouble, but it is better to do so than to lose plants, and then have to do it after all. J. D. E.

199. **English Walnuts.** I would refer to L. Burbank, Santa Rosa, California. I received some nuts and seedling trees from him last spring in fine condition. They all grew nicely. A. F. C.

191. **Fall Bloom on Strawberries.** The bloom next season must necessarily be as much less as the fall bloom amounted to. No doubt it will be considerably more because of injury done to the unseasonably starting buds that may not have developed into bloom. A. H. P.

198. **Waterloo Peach.** This closely resembles the Amsden (Amsden June) in the respects named, but inclines to be somewhat larger.

202. **Sunlight for Palms, etc.** The leaves of the Seafortia elegans often turn brown at their tips, an ailment of fungoid origin. I know of no remedy. The plants do not specially require sun, yet should be grown in as light a situation as one has at his command. As for the Jerusalem Cherry tree, during the winter months it does not require much sun, but still enjoys as light a situation as possible. In spring, or as soon as growth commences, it must be placed in the sun for obtaining strong healthy growth. Water thoroughly as needed, without which the leaves tend to a yellowish appearance, the berries to shrivel and drop, and the beauty of the plant is soon endangered. Drain the pots well, for, although this plant requires liberal watering, it soon suffers if water stands around its roots. CHAS. E. PARNELL, Queens, N. Y.

218. **Gladioli from Seed.** If the seed is sown early in spring in heat, the bulbs will flower the third year, and many of them in the second year from sowing, but if sown later in a cold frame they will be a year later coming to blooming size. Much, however, depends on culture, as generous treatment will forward them considerably. The best way is to sow at once in a mild hot-bed, if possible, as the seed then germinates more rapidly, or in a warm house. When the young plants appear keep them near the glass until they have developed a leaf, and then remove them to a cold frame, growing them in a sunny situation in the open air from the middle of June. When the foliage dies off store them in paper bags, or in dry sand in a cool place, and the following year plant them in the open ground, in April, some 3-inches apart. Stir the soil well before planting, adding plenty of rotten dung, and when the plants are well through, mulch with dung; water in dry weather, and keep free from weeds, taking them up in October.

216. **Covering Grapes-vines.** Manure lightly applied would answer for this, but the preferred materials are straw, evergreen branches, or even

soil. Grape-vine roots extend a long distance; hence, if the object is to cover these, the coat can hardly be spread too widely about.

217. **Hammond's Slug Shot.** The demand for this article which increases rapidly from year to year as it is more widely and repeatedly used, is one of the best proofs that the claims as to its efficiency and comparative safety are reliable. Still all such articles should be used with care.

238. **Dewberry Culture.** Best plan is to set two stakes six inches to a foot apart to each plant after the first year. Train the new growth on one stake, leaving the old bearing wood on the other. Another way, use one stake, training the new growth along the same on the ground, and as soon as through hearing cut out the old bearing wood and train new growth to stake—unless winters are very severe—and in that case let them lay on ground covered till spring. A. M. P.

229. **Apples Failing in Dakota.** The trouble with your Apple trees is winter freezing, and the only preventive is protection.

175. **Ground Cherries.** I have saved some seed, and will send your correspondent of it if he writes. Plant seed in hot-bed about the first of March, and the plants will answer to set by warm weather. In the scarcity of other fruits this fruit has been used for sauce. It is probably a remnant of Indian cultivation, as it bears in some regions the Indian name of Uticash. D. M. SMITH, Viola, Iowa.

221. **Treating a Large Wax Plant.** Such a large plant might be kept in good shape for some time on liquid stimulants, like manure or ammonia water, the latter described on page 78. Still this would not, with the cramped state of roots, give extended satisfaction. The right course would be to shift it into a larger box or tub. This could be done with destroying the present soil after it had been brought in place in the larger receptacle. If you have no young plant to finally succeed the present one, let such a one be propagated now, for this is a plant which is in no hurry about coming into flower. Propagating can be done by cuttings, layering, or even by rooting a leaf. Layering we should prefer. For this bend down a branch to a pot of soil and cover a portion of it containing a joint with earth, taking care when doing this to slightly break the portion you cover. Soon roots will be put forth; when this takes place, but not before, the branch should be cut off from the old plant.

230. **Hibiscus Leaves Ailing.** The entomologist of this department to whom the leaves were referred said the insects upon it were the *Tetranychus telarius*, or Red Mite, but he thought they had not caused the blistering of the leaf, which, therefore, remains unexplained. As to the white substance spoken of, no signs of a fungus disease were discovered. An emulsion of carbolic acid or carholic soap of proper strength syringed or sprayed with an atomizer on the under surface of the leaves will destroy the mites. GEO. VASEY, Botanist of the Department of Agriculture.

222. **Cherries for Michigan.** The sweet varieties recognized as standing at the head for the State, are Black Tartarian, Downer's (Late), Early Purple, Elton, Governor Wood, Knight's Early, Coe's Transparent. Others that succeed well in all sections of the State are Black Eagle, Belle D'Orleans, Bigerrean (Yellow Spanish), Merveille de Septembre, Napoleon, Ohio (Beauty). Among the Duke and Morello varieties the following take the lead: Belle de Choisy, Belle Magnifique, Early Richmond, Late Kentish, May Duke, Morello, Royal Duke.

208. **Roses turning Yellow.** From some cause the vigor of the plants has become checked, and this accounts for the ailment. For the soil to become sodden and sour, as a result of over-watering, there would be likely to follow such effects on Roses, and this quite likely is the cause in the case named.

234. **Propagating Fay's Prolific Currant.** Any method of increasing the common Currant will apply to this one as well.

250. **Double Primroses—Grubs.** Such a case is not easy to deal with, for any ordinary remedy in the shape of a dressing applied to kill the grubs would, if strong enough to destroy these, also destroy the plants. If when one suspects the presence of a grub at work on any plant, by the sickened appearance of the leaves, he will dig down very carefully he may find and kill the grub and thus save the plant.

219. **Treatment of Christmas Roses.** These should be moved in the spring, but the sooner after the ground works up well the better. Good loam enriched with rotten dung is the best soil, but they are not at all particular in this respect, doing worst in clay or soils so light and porous that they burn in summer. If the natural soil is very light, add good loam and plenty of manure; if heavy and close, sand, wood-ashes, leaf-soil or decayed garden refuse, anything indeed which may render it more open and free for the roots to work in. The best situation is where the plants get shelter from rough westerly and northerly winds. Ours succeed admirably on the east side of the house, about three feet away from the wall. One great beauty of the Christmas Rose is its persistent elegantly divided foliage, which seems peculiarly susceptible to cold drying winds; and when the leaves turn brown or are disfigured half the beauty of the plant is gone, and there is a sensible diminution in the size of the

flowers. Wherever the Christmas Rose is planted it should remain undisturbed, as its true worth is only apparent after becoming well established, when each clump will throw some fifty or more blooms, which, if protected with a handlight from November, leaving a little air on constantly, will come large and very pure; indeed it is only in exceptionally fine winters that the blooms come good unprotected.

238. **Amaryllis from Seed.** The treatment sufficing for any ordinary seed grown flowers will answer. The soil should be light and the seeds be but lightly covered. In the house the seed pot might be kept near the stove until germination takes place, afterwards giving plenty of light.

239. **Dahlia Planting.** Divide by all means; each tuber having crown enough to contain one sound eye will make a plant.

240. **Primroses from Seed.** We prefer not to sow before June. The seeds start somewhat slow.

242. **Dwarf Apples for Ohio.** The Storrs & Harrison Nursery Co., of Painesville, Ohio, recommend the following for your section: "For early, Red Astrachan; for fall, Autumn Strawberry, Duchess of Oldenburg; for winter, Hubbardstone Nonesuch. Ben, Davis, and we think Wealthy will do well there."

252. **Wood Ashes for Strawberries.**—If to be worked into the soil before setting, anywhere from three to six bushels. We have put on two bushels to the square rod and have had good results, when well worked into the soil. A. M. P.

253. **Raw Lime Fertilizer.** It will have no fertilizing value to speak of, but scattered on in dry weather retains moisture from dew, etc. A. M. P.

255. **Asparagus, Choice of Site.** Either will do but our choice would be the higher ground. A. M. P.

256. **Ridding the Ground.** The land can be cleared of Raspberries and Blackberries simply by cutting off with a "stub" scythe, and burning, plowing up the land. A. M. P.

257. **Blackberries for N. E. Iowa.** If covered, Kittatiny and Wilson are better than Snyder and Taylor. A. M. P.

220. **Celery Culture.** As an amateur I have raised for several years one hundred and fifty heads of Celery, but I have never succeeded in raising any plants out-of-doors. I sow the seed in a box in the house, about the 10th March, and by the time the ground is ready in the garden, about the middle of May, the plants are an inch and a half high and I transplant them in a bed that is somewhat shady, where they remain until I plant them out in rows six inches apart, about the 15th of July. I use boards in blanching, but find that I gain much by first hilling the plants once and then put the boards up after that and fill in, being careful at all times to tie or hold the plants together so that no earth can get in the heart. E. W. L.

201. **Hydrangea Budding in the Cellar.** Do not bring the plant from the cellar unless growth has commenced or unless you have sufficient accommodation after growth commences. C. E. P.

205. **Sawdust for Mulching.** I consider this of no value for the purpose. Not only does it harbor insect pests—but it gathers or is the cause of many fungoid evils, which soon destroy the roots of the plants to which it is applied. C. E. P.

195. **Knots on Prune Roots.** Do you not refer to stems and branches? If so carefully remove as much of them as possible while yet small and in a green state, and apply a coat of whitewash and sulphur, at least twice a year, (spring and fall) as a preventive. C. E. P.

199. **English Walnuts.** They can be procured of J. T. Lovett, Little Silver, N. J., or Parsons & Sons Co., Flushing, N. Y., and will bear in eight or ten years, the precise time depending on the growth made and size attained by the trees. C. E. P.

200. **Azalea Blasting.** The plant may have had improper treatment. It may have been kept too dry or else too wet, and as a result of this the roots received injury. If you will give me your treatment of the plant I can perhaps suggest a remedy. CHAS. E. PARNELL, Queens, N. Y.

207. **Cardinal Flower.** A kind of rust sometimes attacks the plant as a result of excessive moisture, causing death, and this is perhaps what affects yours. A remedy: take up the young plants in October, wash the roots, and at the same time removing any affected parts. Transplant for the winter in a frame on a dry spot, taking measures to keep excessive moisture from settling to the roots of the plants. In the spring they may be planted out early to the place of bloom.

203. **Trees for the Atlantic Coast.** For shade trees we would expect the Scotch Elm, Cork-harked, and Sycamore Maple, Poplars, Catalpas, Alnus Maritima, Thorns, Sumachs, Black Oak, Pines, and Willows to succeed fairly well with you. In Apple trees Gravenstein, Sweet Bough, Porter, Nonesuch (Hubbardson's), Roxbury Russet and Rhode Island Greening usually succeed well in light soil. For Pears on similar soil we would place such varieties as Angouleme, (Duchess de) Louise Bonne, Rostiezer, King's Siding, Osband's Summer, first on the list.

241. **Flower Garden Site.** Other things being equal, the side of the least strong winds and dense shade—usually the south or southeast—is the best

## Received at this Office.

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Irving Allen, Springfield, Mass., Small Fruits; 11.  
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 Wm. C. Beckert, Allegheny City, Pa., Florist; 72.  
 E. Bonner & Co., Xenia, O., Florists; 24.  
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 Joseph Breck & Sons, Boston, Mass., Florists; 174.  
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 Iowa Seed Co., Des Moines, Ia., Seeds; 35.  
 J. T. Lovett, Little Silver, N. J., Small Fruits; 56.  
 Aaron Low, Essex, Mass., Seeds; 112.  
 S. F. Leonard, Chicago, Ill., Seeds, etc.; 45.  
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 Robt C. Reeves, New York City, Seeds, etc.; 52.  
 Louis Roehch, Fredonia, N. Y., Grapes, etc.; 12.  
 W. W. Rawson & Co., Boston, Mass., Seeds; 90.  
 E. H. Ricker & Co., Elgin, Ill., Nursery Stock; 30.  
 A. C. Smith & Son, Clay Center, Kan., Nursery; 10.  
 Robert Scott & Sons, Philadelphia, Pa., Roses; 56.  
 Phil. Strubler, Naperville, Ill., Small Fruits; 8.  
 John Saul, Washington, I. C., Plants, etc.; 15.  
 Ezra G. Smith, Manchester, N. Y., Small Fruits; 4.  
 Shaker Seed Co., Mt. Lebanon, N. Y., Seeds; 96.  
 Schlegel & Fottler, Boston, Mass., Seeds; 104.  
 H. N. Smith, South Sudbury, Mass., Seeds; 10.  
 L. Templin & Sons, Calla, Ohio, Plants; 50.  
 J. C. Vaughan, Chicago, Ill., Seeds, etc.; 72.  
 Albert Williams, Sharon, Pa., Plants, etc.; 40.  
 I. C. Wood & Bros., Fishkill, N. Y., Nursery; 4.  
 Samuel Wilson, Mechanicville, Pa., Seeds; 88.  
 Wiley & Co., Cayuga, N. Y., Nursery; 21.  
 A. Whitcomb & Sons, Lawrence, Kan., Florists; 16.  
 Thos. J. Ward, St. Mary's, Ind., Nursery; 4.  
 Wm. C. Wilson, Astoria, N. Y., Plants; 20.  
 H. W. Williams & Sons, Batavia, Ill., Plants; 24.

## MISCELLANEOUS.

"Second Annual Report of the Society of American Florists." 155 pages. Sec'y Edwin Lonsdale, Philadelphia, Pa.  
 "Annual Reports of the Colorado State Horticultural Society, 1882, '83, '84, '85 and '86." Secretary, Nelson Millett, Denver, Col.  
 "Proceedings of the Columbus (O.) Horticultural Society," 1886. 240 pages. Secretary, W. S. Devol, Columbus, O.  
 "Essays on Economic Entomology," by Prof. S. A. Forbes, State Entomologist, Springfield, Ill. 130 pages.  
 "Transactions of the Indiana State Horticultural Society." 153 pages. Secretary, C. M. Hobbs, Bridgeport, Ind.  
 "First and Second Annual Reports of the New York State Entomologist on Injurious and Other Insects," 331 and 255 pages, by Prof. J. A. Lintner, Albany, N. Y.  
 "Transactions of the Maine State Pomological Society." 167 pages. Samuel L. Boardman, Secretary.  
 "Report of the Missouri State Horticultural Society." 573 pages. L. A. Goodman, Secretary, Westport, Mo.  
 "Report of the Montgomery (O.) Horticultural Society." 65 pages. Wm. Ramsey, Secretary, Dayton, O.  
 "Eleventh Annual Report of the Montreal Horticultural Society and Fruit Growers' Association of the Province of Quebec." 174 pages. E. J. Maxwell, Secretary.  
 "Transactions of the Massachusetts Horticultural Society for 1885." 410 pages, and Part I. of 1886. Robert Manning, Secretary, Boston, Mass.  
 "Reports of the North Carolina State Horticultural Society for 1885 and 1886." 20 and 40 pages. S. Otho Wilson, Secretary, Vineyard, N. C.  
 "Fourth Annual Report of the Ohio Agricultural Experiment Station," Columbus, O. 240 and 256 pages.  
 "Nineteenth Annual Report of the Ohio State Horticultural Society." Meeting at Columbus, O. 239 pages.  
 "Report of the Twenty-Seventh Annual Meeting of the Pennsylvania State Horticultural Association." Meeting at Reading, Pa. E. B. Engle, Secretary. 92 pages.

## The Household Poultry.

Alum water is useful for burns.

For dusting and wash-off rags, cheese-cloth excels.

Lassitude in the morning is rarely felt with the bed rooms kept aired.

Good deodorizers for the sick room are dried Orange or Lemon peels burned on coals.

A soft brush for dusting fine gilt frames. Never use cloth as you care for a polished surface.

Furred glass vessels are as easily cleaned with the use of spent tea leaves, in a little vinegar, as in any way of which we know.

To Cleanse dirty sponges, place in a basin, covering them with bran, and then with boiling water, keeping the steam in by covering tightly. When cold rinse in cold water and dry.

Water, pure and wholesome, is perfectly tasteless, nearly odorless (at least there can be no bad smell), and of a clear color, though water might in instances be somewhat cloudy or roily and still be harmless.

The old wash boiler need not be cast aside when leakage beyond repair sets in. This is the time it should have the dents straightened out and be scoured up to use for keeping bowls and glasses of jelly and marmalade from the mice.

Lamp wicks should be kept turned below the top of the tube when unlighted, as otherwise the oil is apt to exude, causing greasy and ill smelling lamps. Lamp chimneys are easily cleaned if held over a pot of steaming water long enough to dampen and then rubbed with soft dry paper or cloth.

Oranges, delicious, and in these times so cheap, are excellent for table use, either alone, or for an inexpensive delicacy combined with Apples. A recipe comes to us for using them by themselves, which looks like a good one to follow. Two dozen, cut up in a bowl, removing the seeds, with two large peeled Lemons, to which is added seven quarts of water, stirred and set away over night. The next day have them gradually come to a boil, then allow to simmer till the peel is tender, when add fourteen pounds of granulated sugar. Boil now till it is transparent and jellies if cooled. Keep in small cans, within the covers of which first place tissue paper ones. With care in making this marmalade may be kept a long time if visitors are not too frequent about tea time.

Moderation in Diet seems to be required for the greatest amount of endurance. The heavy workers of the world, both ancient and modern, seem to be the light eaters. The rice-fed Coolie is far superior to the heavy meat-eating negro in activity and fortitude. The Eastern porter, who thinks nothing of taking a third of a ton at a load, is satisfied with a few olives and other fruit. The hardy soldiers of ancient Rome, with their weighty armor and equipments, and engaged as they were in making the roads which even yet are the wonder of the world, owed their ruggedness to their exercise and temperance in diet, which was of coarse bread and sour wine. The poverty-stricken peasants of Spain, with their daily toil, and nightly dance, live on watermelons, onions and black bread, and make excellent soldiers.

Carpet sweeping. There are many diverse opinions about carpet sweeping. Some good housekeepers maintain that to throw any damp substance on the floor to prevent dust rising is a mistake, also that every window should be open and the dust allowed to rise and be blown out, the more wind the better. Others, whose authority appears to be equally good, say, and I agree with them, that to sweep in a gale with nothing to "lay the dust" is to make a dirty, suffocating business of one that is otherwise not unpleasant. The fact seems to me that the dust so raised will only be blown out so far as it lies in the course of the wind; the rest will lodge on the walls and every part that may intercept it; and unless there is a window directly opposite the one from which the wind comes, there can be no blowing of the dust out at all; it certainly will not go out against the wind. As to the idea that you need to raise the dust from the carpet, that is quite true; you want the dust out of the carpet, but you do not want it to fly over the place. Those who object to using wet paper or tea leaves to lessen the dust must be under the impression that they in some way prevent the dust from leaving the carpet, and that they simply roll over the surface of the carpet. The fact, is, if you sweep with a long, light stroke, the damp leaves will prevent the fine and dust from rising by taking it to themselves.—*Good Housekeeping*.

Warmth is life for young chicks.

One thing that don't pay: having too many eggs to a hen.

The shortest cut to relieving egg bound hena, is the axe cut.

Dirty Eggs. Clean them as soon as gathered. Shells are porous and if dirty taint the meat.

Of this there can be no doubt: fowls do better if not kept in the same yard area perpetually.

Gapes, it is said by one speaking with authority, may be cured by the use of a teaspoonful of turpentine to one and a half pints of corn meal, mixed with warm water and fed to the fowls.

It is said that epicures prize the poultry that has had a good feeding of roasted Corn and Celery, for a few days before killing. For laying fowls, corn treated in the way mentioned, is a welcome change of diet. Let these things be tried.

Clean Yards. Accumulating filth is a prolific source of disease, especially gapes, which is essentially a filth production. After a hen yard has been cleaned to sprinkle it with a solution of two gallons of water, one gill of carbolic acid and one pound of copperas will destroy disease germs, rendering the place sweet.

Roup. It comes usually from having damp or draughty roosting places. The first symptoms show themselves in a swollen head, one side at a time, something like the "mumps," which if not stopped spreads to the other side and a slimy discharge from the eyes appears. Being very contagious, all sick fowls should be isolated. A good treatment is feeding with oat meal with some green food, giving one grain of sulphate of zinc daily, and washing the head in tepid water.

Time for Hatching. February and March will be found quite early enough for most breeders, and it is our belief that more prize winners are hatched in April than in any month of the year. The first warm days of spring time have a wonderful effect in developing young chicks, and those that are hatched before that time, unless most carefully brooded, are very liable to have their lives cut short or their growth permanently affected by the frosty air of the earlier months.—*National Monitor*.

Hen Manure. How best to preserve and utilize it is a matter of wide interest. By sprinkling only enough dry earth, or in the absence of this, dry coal ashes under the roosts and over the floors, to thoroughly absorb all moisture from the dung, etc., and then cleaning out the house weekly, putting the scrapings in barrels and keeping in a dry place, there may soon be an accumulation of great value. Several weeks before the time of applying to the land empty out and turn the gathered manure a few times, then moisten it lightly to invite heating somewhat, and at the same time cover the pile with loam to prevent the escape of the ammonia. Such a course will render the manure fine, and it may then be used in the drills for seed.

Rearing Chicks. I have found that the secret of success is to pamper the young birds as little as possible. From the rearer or the incubator they are taken to an old sash-lighted building, the floor of which is thickly covered with sifted ashes; this is a foster-mother heated by a small lamp, and in which the birds sleep and warm themselves. The young birds soon find their way about, and after that they are very little trouble. The floor is swept every day, and fresh ashes put down; the food consists of small rice, oatmeal, chopped eggs, cooked offal from the butcher's, and scraps of all kinds; oyster-shells broken fine are an excellent addition to all their food; boiled Cabbage and roots are also given with the best results. Purchased food is bought at wholesale. After a few days all danger of their dying is over for the present, and the birds improve rapidly. They are let out during fine weather on to a grass plat close to the building, through a sliding door, which is closed at night. When about three weeks old, the warmed part of the building is wanted for the next brood from the incubator, and the older birds have to content themselves with rough boxes lined with old carpet, which keeps them warm. The young and old lots are separated by wire netting. When the birds are about six weeks old, they are put in the poultry-houses or spare loose boxes about the place, where they give little or no trouble. When about nine weeks old, they are placed in small, roughly-constructed huts in sheltered places in the grass-fields, where a boy feeds them twice a day.—*Corr. English Exchange*.

# The Exchange

Amateurs often have an excess of certain seeds, plants, etc., while in want of others. This department is designed to bring about free exchanges in such cases.

In The Exchange may be named what can be spared, what is wanted and the address. No price figures admitted. Any offer that may appear objectionable to the publishers not admitted. No responsibility will be assumed for any results connected with The Exchange. Those using the column should correspond before sending articles.

162. E. Heuftelen, LeRoy, N. Y., will exchange Gladiolus, Hyacinthus candicans, Lilies pulchellum and tenuifolium, for perfect stone knives, spears or ax heads.

163. T. D. Adams, Franklin, Pa., has a large list of choice garden and flower seeds for exchange.

164. J. F. La Far, Savannah, Ga., offers Ampelopsis Veitchii in exchange for Lilies or Dahlias.

165. Mrs. L. D. Elder, Dansville, N. Y., has various patterns to exchange for plants, bulbs, etc.

166. Mrs. Lizzie Coharn, Wood Lake, Ky., wants to exchange lists of plants.

167. Mrs. Nellie B. Heuff, Annisquam, Mass., has seeds of Calendula Meteor, Poppy, Marigold and Virginia Creeper to exchange for bulbs; Paeonies, Tigridias, Easter Lily, or Ixias preferred.

168. Mrs. T. M. Wright, Barnett, Tenn., offers Farfugium grande, Clematis Jackmanii, Callas, Lemon, Day and Candidum Lilies, White, Yellow and Blue Iris, for Oladiolus, Cyclamen, Amaryllis, Colchicum, Brownii and Auratum Lilies.

169. Mrs. F. E. Sawyer, 4289 Ashland Avenue, Chicago, Ill., has cuttings of various plants for others she has not.

170. Rufus E. Sanborn, Concord, N. H., has the finest strain of Aster seeds to exchange for Gladiolus, light colors preferred.

171. Mrs. L. C. Smith, Hood, Miss., offers plants of Christmas tree for Dahlias, Tuberoses, Gladiolus or flower seeds.

**PLANTS** of Hardy Small Fruits. Best Quality. Large Stock. Low Prices. Lists Free. **J. F. DAYTON**, Waukon, Ohio.

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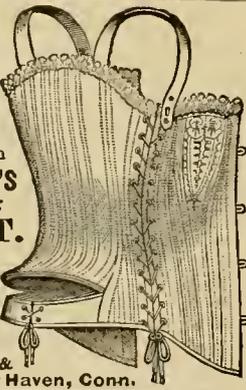
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50 roots brilliant Anemones, perfectly hardy, all colors, and 50 roots Ranunculi, both delightful flowers for cutting; produce quantities of bloom; the 100 one dollar, post-free. Guaranteed to arrive safely.

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## MAULE'S SEEDS.

There is no question but that Maule's Garden Seeds are unsurpassed. Their present popularity in almost every county in the United States shows it. When once sown, others are not wanted at any price. One quarter of a million copies of my new Catalogue for 1887 have been already mailed.

Every one pronounces it the most original and readable Seed Catalogue ever published. It contains among other things cash prizes for premium vegetables, etc., to the amount of \$1500, and also beautiful illustrations of over 500 vegetables and flowers, (20 being in colors). These are only two of many striking features. You should not think of purchasing any seeds this Spring before sending for it. It is mailed free to all enclosing stamp for return postage Address

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**BEWARE OF IMITATIONS.**

## GARDEN SUPPLY DIRECTORY.

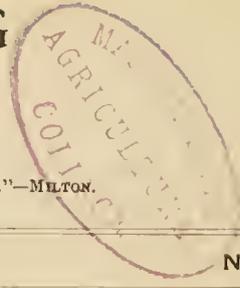
- Farm and Garden Seeds.**—W. Atlee Burpee & Co., Philadelphia, Pa.
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- Grape-vines.**—Geo. S. Josselyn, Fredonia, N. Y.
- Grape-vines and Small Fruits.**—Lewis Roesch, Fredonia, N. Y.
- Grape-vines.**—T. S. Hubbard, Fredonia, N. Y.
- Garden Seeds, etc.**—Shaker Seed Co., Mt. Lebanon, N. Y.
- Garden Seeds, etc.**—William Henry Maule, Philadelphia, Pa.
- Grape-vines, etc.**—Geo. W. Campbell, Delaware, Ohio.
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- Seeds, Fancies a Specialty.**—L. W. Goodell, Dwight, Mass.
- Seeds and Plants.**—William C. Beckett, Allegheny City, Pa.
- Seeds, Plants, etc.**—F. H. Mooers, Pittston, Me.
- Seeds, Plants and Fertilizers.**—Aaron Low, Essex, Mass.
- Seeds, Plants, etc.**—Albert Williams, Sharon, Pa.
- Seeds, Garden and Other.**—James J. H. Gregory, Marblehead, Mass.
- Seeds, Plants, etc.**—Frank Ford & Sons, Ravenna, Ohio.
- Seeds, Plants, etc.**—H. C. Harman, South Bend, Ind.
- Trees, Plants, etc.**—Storrs & Harrison Co., Painesville, Ohio.

POPULAR GARDENING may be ordered at the regular price of any of the parties named above.

### A NEW CHERRY.

**Brandywine Gem**, tree medium size, strong grower, very productive, ripens about 1st July, color red, fair size, rot free, slightly acid. Superior for preserving and canning. A very profitable market cherry. Trees \$1 each, \$10 per doz. packed. Send for circular. A good stock of Peach, Apple Trees, &c. **F. C. BIDDLE**, Brandywine Nurseries, Chadds Ford, Pa.

To Our Readers.—Always mention Popular Gardening, and thus secure the best of attention from advertisers.



Uprose the wild old Winter King,  
 And shook his head of snow;  
 "I hear the first young Harebell ring  
 'Tis time for me to go!  
 Northward o'er the icy rocks,  
 Northward o'er the sea,  
 My Daughter comes with sunny locks:  
 This land's too warm for me."  
 —Leland.

THAT favorite the Sweet Pea is a flower that should be sown early; the blooms come the finer for having the roots of the plants formed mainly during cool weather.

TEMPERANCE and flower-gardening easily go hand-in-hand. The experience of those who build cottages to let has proved that the addition of a garden-plot affects a most beneficial influence on the social, moral and religious life of those who occupy them.

EXTREMES are to be avoided in lawn mowing as in everything else. To keep the grass too closely cut may give the sward a better appearance than to allow it to grow long, but the lawn is as susceptible of injury in the one case as in the other. Letting the cutting edge of the mower lower down than an inch, and then running over the plot oftener than once a week is what we call cutting injuriously close. Such a course has the effect of reducing the vitality of the grass plants and giving various small creeping weeds an undesirable advantage.

A BEAUTIFUL Jerusalem Cherry-tree (*Solanum capsicastrum* of the seed catalogues) loaded with red fruit, can be grown by any child, for decorating the window next winter. Procure a packet of seeds and start them in a pot of light earth in April. They germinate quickly and in a few weeks from the time of sowing, the seedlings will be fit to prick out into individual pots, as many as you care to have plants of. About June first set the plants in the garden. Let them grow there till September, by which time they will be full of green fruit, and then lift and pot them in six-inch pots, bringing them into the house as soon after as frost threatens.

THE country boys and girls are the hope of the nation. Let them appreciate their opportunities and take courage. As Prof. Haynes, of Michigan, lately so well said, "the history of the world proves that the tillers of the soil are the safeguard of the world's best institutions. All great enterprises depend upon the boys of the rural homes. Washington, Jefferson, Clay, Webster, Lincoln, Garfield, Gladstone had all been country boys, and throughout their lives were more or less engaged in tilling the soil. Great men in all ages when they have trenched the earth have renewed their vigor. Mercy is said to be twice blessed, but horticulture is four times blessed; it gives health to the body, rest to the spirit, inspiration to the soul, and by its reflex action most liberally blesses his neighbors."

AMERICANS are at the present time large consumers of Cabbage imported from Denmark. It is safe to say that the bulk of this vegetable sold to what is known as first-class trade in Buffalo, during recent months, has been received from Copenhagen. The same thing is

true concerning the Cabbage trade of many other American towns as well. The peculiar excellence of the imported article lies in the solidity of the heads and the crispness and delicate flavor of the leaf. Mr. W. A. Burpee, the Philadelphia seedsman, while in Denmark last year, had an opportunity of making an intimate acquaintance with the particular variety that figures so largely in the American markets. He terms it the Ball-head, and says that the Danes grow it almost exclusively for winter Cabbage. The variety has been selected and perfected for more than 50 years by the Danish gardeners, and it is remarkable that the seed has not been offered before in America. The heads are as hard as they can be, round as a ball, of good marketable size, of extra choice quality, very fine grained, and remarkably good keepers.

THE new law about to be passed (if not already passed) in the State of Minnesota, against the unreliable tree agent, is very strict on some points, but none too strict. It requires, for one thing, that every dealer must carry satisfactory proofs of his honesty as certified to by a judge of the courts. Another important requirement is that he shall deal only in stock that is hardy in the State, and that he must deal in all kinds known to be hardy. These last demands are important ones, as everyone who has studied into the work of the average agent knows. An immense quantity of nursery stock is peddled out by this class throughout the North, which, while it would be hardy and reliable some degrees further south, is anything but this where it is sold. The agent who will urge plants, however valuable they may be in place, upon people who are utterly without power to meet their needs is little better than a charlatan. The fact that he himself may be ignorant of their relative hardiness does not mitigate the offense; he should not be allowed to proceed. The course of the Minnesota brethren could well be adopted by the people of every other State.

### On Choosing and Pruning Standard Pear Trees.

PETER COLLIER, LENA WEE CO., MICH.

#### SELECTION OF TREES.

With my twelve years' experience in Pear culture my choice is for yearling trees, particularly if wanted for low heads, which are preferable. Two-year olds are passable, but I would purchase nothing older. A second-size two year Pear tree, if it be well grown, is not objectionable.

Why I prefer such young trees is that I may, by removing all the branches, the more readily form a new head from new wood. I aim always to avoid forming a head on two or three year old wood, because it is almost impossible to force out dormant buds on such wood and form a well balanced top. True my method may take a little more care the first summer, but this is amply repaid in a handsomer growth and early maturity as to fruit bearing.

As may be inferred from my remarks, I care little for the form of the top as the tree comes from the nursery, for all side branches

are soon removed. I want to see a strong top, but only because a good top indicates vigor and a good root. Besides the objection named to trees that are older than two years, is the one that such usually have less fibrous roots, they incline to be spiky and unwieldy, and often are received in a broken

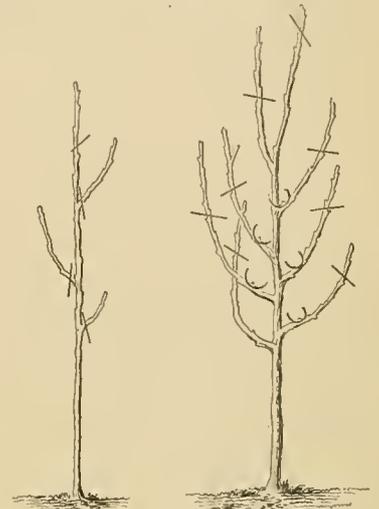


Fig. 1. Pear tree one year old, the cross marks showing places to prune at time of setting out. Fig. 2. The same tree one year later, cross marks showing places to prune, half circle places to disbud.

and mutilated condition as a result of digging, packing and shipping.

#### PRUNING THE FIRST YEAR.

Starting with a vigorous one-year-old I take off all side branches and cut the leader back from one-fourth to one-third, as shown by the cross lines of figure 1. If a very low head is wanted I cut still lower.

It is the buds on the upper portion of the remaining part that will ordinarily start the first and grow the fastest, hence it is from this portion that the head forms. The cutting of the leader must not be nearer than one-half an inch to the upper bud, for from this is to come the new leader. A short stub will be the result, and this should be removed after the leader is well started.

Let the leader always start on the side of the prevailing winds, and it may be added that throughout the early training of the tree always encourage the most growth on this side. If needed, for effecting this, shorten on the opposite side.

Too many branches should not be allowed to grow the first summer, six or seven being about right. Remember, however, it is easier to cut one out the following spring than to put one in. Whenever a shoot starts in a wrong direction off with it, you don't want to grow much wood that afterwards should be cut away.

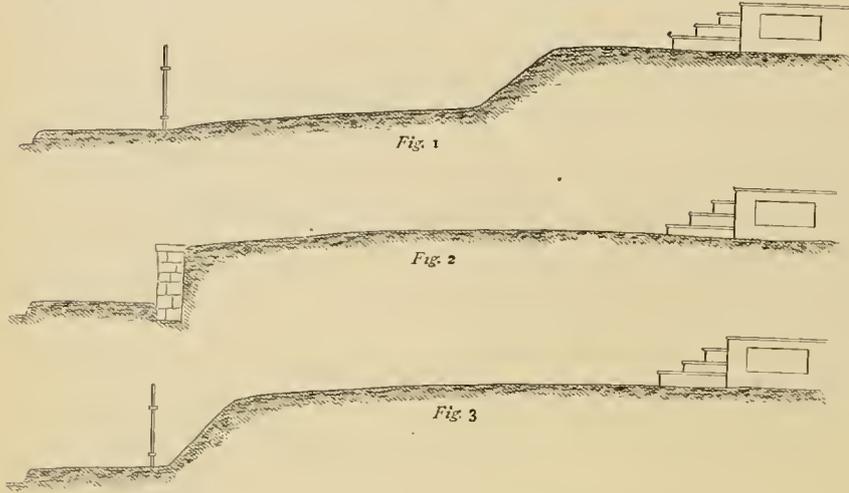
#### PRUNING THE SECOND YEAR AND LATER.

By the second year my trees should in general present the form of figure 2. Then, at some time before the buds begin to swell, I would prune as indicated by the cross

lines in this figure, always cutting to an outside bud on the branch, particularly in upright growing varieties, so as to spread the tree as much as possible for admitting air and sunlight. How much to cut from each branch is hard to determine on paper. Pruning, like bread-making, wants considerable good judgment applied. My practice usually is to take off from one-quarter to one-third of the previous year's growth, cut-

in from fifteen to twenty days the Celery seedlings will be up "thick as grass" if there has been life in the seed.

For the past twenty-five years we have practiced this plan, or at least what answers the same purpose when done on a large scale, and have not once failed. Last season we sowed forty pounds of seed, covering about four acres, which produced nearly five million plants.



THE GRADE OF THE FRONT YARD.—SOME VERTICAL SECTIONS.

ting to even up the branches over the tree.

This course in general I should continue until the tree was four or five years old, but still watching for and pruning those rampant shoots that seem to want to outstrip all others. Always have regard to the leader. Never allow it to become stunted or crippled by allowing lower shoots to grow perpendicular with it. Either cut such out or head them back to cause side branches.

A good deal of after pruning may be saved, by pinching or cutting out the buds which are formed on the inside of the branches near the intersection with the main stem, and indicated in figure 2 by the curved lines. Such buds usually send shoots upwards and across the path of the side branches and in time would need taking out.

The distance at which branches should be started along the main parts is of no small importance. From ten to fifteen inches would do very well after the first set of limbs are formed. It is not essential that branches be formed in sets, but at intervals, in such a manner as would best balance the tree.

The methods outlined are designed for those growers who look after their trees often, not for those who perhaps never see them for months together. I am not capable of recommending a style of pruning adapted to the latter class.

#### About Raising Celery Plants.

PETER HENDERSON, JERSEY CITY HEIGHTS, N. J.

I notice in your March number that E. F. L. says that he has never been able to get Celery seed to come up when raised out of doors. If he will, just as soon as he gets the April number of this magazine into his hands (for that will be the time to sow outside, if he is a resident of this latitude), prepare a nice mellow piece of ground, sow his Celery seed in rows half an inch deep; after sowing (but before covering) press the seed gently down with the foot or the back of the spade, sift some fine soil over it to a depth of one-sixteenth or one-eighth of an inch, again press down with the back of a spade, and

In all my practice of over thirty years in Celery growing we have never, until this season, raised Celery plants except in the open field; but the popular demand for Celery now requires it much earlier in the season and we in February started a lot of the "White Plume" variety in our greenhouses that will be fit to plant out in May, and may, if desired, be grown for use in July.

Since Celery has been grown so largely and successfully at Kalamazoo, Mich., it has been thrown into the markets of New York and Philadelphia as early as the first of August, and although the demand is yet limited it is steadily increasing, so that we will soon have Celery in use all the year around.

March 12, 1887.

#### The Grade of the Front Yard.

In many cases the house, standing back some twenty feet or more from the street, is seated on a level somewhat above that of the

street line. For this there are usually the best of reasons. First, one desires, and wisely, to have the home somewhat elevated to secure dryness about it, and this leads to the choosing of a more or less prominent site for the buildings.

In those towns where the streets are systematically graded to engineer's lines, they are often so cut down as to leave the buildings and building spots high and dry a good ways above the road level.

This state of things prompts the question how to treat such front yards to the best advantage. In the many cases where the difference in the two levels referred to is not more than four feet, with the house twenty-

five or more feet from the street, a simple short slope between the two levels is a common way and one of the best, for managing the inequality. Where should such a slope be brought in? If its presence at one point would serve to enhance the beauty of the home and the attractiveness of the buildings better than it would at another, then considerations of money value if nothing else should lead to seeking that more favorable point for the slope.

By the help of figures 1 to 3, we think it may be shown where the slope can in such cases be most advantageously located. In figure 1 it appears in the rear half of the front yard a little back from the center. Although such a position is often assigned to it as many examples show, still it is not the best one. Its fault is that the area is broken in two parts, causing the comparatively weak effect of two half lawns on different levels where one area bold and unbroken, or nearly so, would be vastly more handsome and complete.

Figure 2 shows a wall brought in to adjust an inequality of two grades, and this is a great improvement, so far as appearances go, over the first. The objection to it however, is the expense of constructing a wall, this being considerable greater than that of a fence; and the interference in most soils from frost, causing the wall to lose its shape and in time to crumble away.

Figure 3 shows a modification of the preceding figures such as possesses advantages over both. Here the important bold sweep of lawn peculiar to No. 2 is preserved, while instead of the wall a slope similar to that of figure 1 is brought in, but directly inside of the fence. By the help of our engravings it is easily imagined that with a like house situated on these three grades respectively, the ones on those of figure 3 or 2 would appear to far better advantage than the one on figure 1. The same would be true of trees, shrubs or any other kinds of embellishments.

Figure 4 represents a front lawn in the case of a house standing some ten feet above the street line, and not more than twenty-five feet back. A common course of treating such a steep grade would be to introduce a series of two or more terraces and slopes

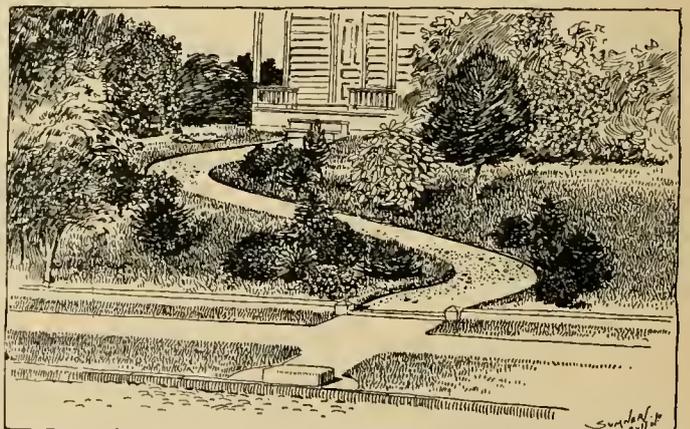


Figure 4. Steeply Sloping Front Yard Arranged in the Natural Style instead of with formal Terraces and Slopes.

with the walk from door to street on a straight line, having steps to connect the different terraces. The present case shows a great improvement over the plan referred to. Instead of putting away the strength of the front lawn, first by cutting it into two halves, the walk running straight from street

to door; second, by objectionably introducing the slopes in central positions, the present slope is almost continuous and considerably rounded from front to rear, and then a bold walk winding naturally about some clumps of shrubs is introduced.

This is to be designated as the natural style of arranging a steeply sloping front yard, in distinction from the formal or Italian style. While the walk without steps, of the former style, must be somewhat longer, it would be less costly, less difficult to ascend or descend, and less tiresome to the eye of correct taste than would be that of the other style. Moreover in general that form of boldness in a front lawn which should be always aimed for, as of great value in giving a house an appropriate setting, is in such a style secured in a degree utterly impossible to the more artificial and costly one.

#### A Noteworthy New Ornamental Tree.

From Northern Japan there came some years since the seed of a handsome ornamental tree, now known botanically as *Cercidiphyllum Japonicum*. The seed was planted, it grew, and up to the present time the trees have in this country been tested to an extent showing that in the new comer we have an addition to our ornamental growths, possessing both decided beauty and hardiness. That it bears such a long (albeit a soft and pleasing) name may not be in its favor as regards speedy introduction, for, long difficult names serve in a measure to repel acquaintance. But with the tree came also the shorter, if harsher sounding, Japanese name of Katsura, and this might be made to answer as the popular one.

The qualities of the *Cercidiphyllum* that recommend it to public favor are several: It is of rapid growth and upright habit, but without any of the stiffness that often accompanies trees of this form. The leaves are heart-shaped, dark green above and silvery green beneath, quite closely resembling those of the *Cercis Canadensis*, or Red Bud. The accompanying engraving which we are permitted to use through the kindness of Thomas Meehan, Nurseryman, Germantown, Pa., is a faithful representation of the habit of the tree and of the form and appearance of the leaf.

The young growth of the tree, slender but vigorous and ample is one of its most attractive features, for this is of a clean, reddish-brown color, rendering it distinctly conspicuous. The leaf stalks are of a dark red, and the veins of the leaves of a similar color, which hues tend to increase the attractiveness of the tree. In general the tree may be said to be one of great beauty and possessing a distinct style of its own that would give it marked character in any collection.

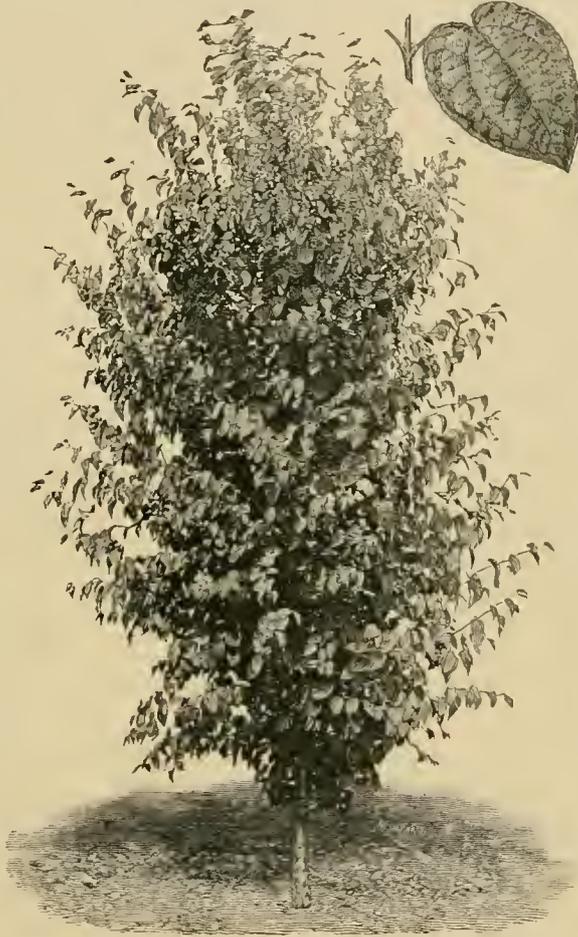
As to hardiness this new Japanese tree may be classed among the more reliable ones of the numerous valuable trees and shrubs that have reached us from Japan. This was to have been expected, considering that its home is in the northern part of that Island. From Boston, Mass., it is reported that in the six or seven years following the first planting of the seed it had never lost a bud by winter killing; Being thus hardy in its early and most trying age inspires the hope that it will prove hardy even much farther North.

Young trees of the *Cercidiphyllum*, of a size suitable for planting, may now be had from a number of our leading nurserymen, at a dollar and a half or less each. Why should not this "Jap." be given a wide trial?

#### Southern Planting.

We have seen enough of the best portions of Maryland, Virginia and North Carolina to know something as to the success of fruit growing there. The land as a rule has been badly run, but we have never seen soil there more quickly respond to good treatment, cultivation and a little manure as a fertilizer than that.

We would advise no person to go there and set out trees and plants at least on cleared land that has been worked and cropped for years without feeding them a little—and this may be cheaply done in sections where wood is of no value, or where there is plenty of brush, fallen wood, etc., or brick kilns to obtain ashes from, or in sections where leaves have lodged in low



CERCIDIPHYLLUM JAPONICUM. 5 YEARS GROWTH 8 FEET HIGH.

places and have become a mass of rich mold. When holes are dug for trees, scatter even a trifle of this in the bottom, mixing it into the soil, and if a spoonful or two of some good fertilizer is added, all the better; then keep the trees whitewashed or washed with strong wash-water once or twice a year, and as fine trees can be grown there as one can ask for.

As for small fruits like the Strawberry, Raspberry or Blackberry, when set out if a little of one or the other of these fertilizers is put under the plant, and also on the surface, round the plant, it will give them a remarkable growth—in fact as strong roots of Strawberries as we have ever seen were grown on our place at High Point, North Carolina, where ashes had been scattered over the vines.

A friend of ours in Florida, goes into the woods and cuts down brush and trims out trees and burns these for ashes to scatter on his Strawberries.

To do this properly, when set, plow furrows and set plant as described in another article in this number, and pass along before planting and scatter in a bit of some good fertilizer right under where each plant is set; and the same, too, with Raspberries and Blackberries.

Of course the newly cleared lands will not require this for at least three or four years.

#### Swanley White Violet Culture.

IN ANSWER TO INQUIRIES NO. 231 AND 275. GUSTAVUS SCHOENFELD, CHAUTAQUA CO., N. Y.

The soil of my place is gravel and deficient in potash and lime. In the fall it is manured and plowed, in the spring cross-plowed and muriate of potash at the rate of 300 pounds to the acre, with some slaked lime or land plaster is applied and well harrowed in. The plot has a good circulation of air, which I consider very essential to the best results.

The young Violet plants are set out as soon as the weather permits, usually by the middle of April. I plant in rows 16 inches apart and 12 inches in the row, keeping them clean by cultivation until the first week in July, when they are mulched with rotten manure. They will now commence to make runners and grow rapidly. About the first week in September the runners are taken off and of these such as are from the most short-jointed plants are selected for cuttings from which to propagate the plants for next year's planting, and the remainder are thrown away.

These cuttings are put in boxes holding about a hundred each, which had been previously filled with good compost. Coming back again to the present seasons plants, these are allowed to grow on until about the 25th of October before they are lifted, for as a rule, and especially so in the case of Swanley White, they will not flower until a month later. At the date named the ground is usually moist and the plants can readily be dug, with good large balls of earth adhering. In greenhouse culture they are planted on benches of soil at 3 inches apart each way, and these so constructed as to give good drainage, the soil being 4 inches deep.

Each summer before refilling the Violet benches, these are thoroughly white-washed with a solution of lime, sulphur and carbolic acid (crude), which has been previously cut with soap. The soil I use consists of one-half gravelly loam and one-half rotten hot-bed manure, with some wood ashes or muriate of potash well mixed together. My Violet house is 112 feet long, a lean-to facing east, from the eaves of the Carnation house to the ground. It is covered with hot-bed sashes 3x6 feet. The house being 5 feet 6 inches wide inside, gives room for a bench 3 feet 8 inches wide and a walk 18 inches wide.

It is heated by one 4 inch return pipe, placed under the eaves of the sashes 12 inches above the bench.

As to watering, about once a week on an average from November to March suffices. The ventilating is carefully attended to by drawing the sash more or less down, leaving a space at the bottom as well as towards the top trying at all times to keep the temperature between 50° and 55°.

The plants are kept clean from decaying leaves and runners, and the number of flowers produced average about 75 to each plant during the season, which is, with me, from November 25 to March 15, after which date the sashes are taken off and used for hot-beds, leaving the Violets to the mercy of the weather and soon to be thrown away.

As to insects and Violet fungus my plants don't know them, and I attribute their absence to the fact that I never propagate from a plant that has been weakened from flowering or the constitution impaired while in the winter quarters.

I grow only two varieties, viz.: Swanley White and Marie Louise, they are treated alike in all respects; the last named gives me about 100 flowers to each plant during the course of the forcing season, or about 25 per cent more than I get per plant from Swanley White.

### Some Insects Injurious to the Cabbage.

R. J. CORYELL, HILLSDALE CO., MICH.

As soon as the plant shows its first leaves in the seed bed it is almost certain to be visited by the Black or Striped Turnip Flea-beetle (*Haltica striolata*), which if left unchecked would permanently injure the plant by eating innumerable small holes in the upper surface of the leaf. The beetle is no larger than the head of a pin, black in color, with a wavy white line on each wing cover. They are shy in their habits, and when approached they will leap away at some distance, hence the name flea-beetle. A sure indication of their presence is the spotted appearance of the leaf, but the observer must look warily to see the insect that causes the damage.

The surest way to destroy them is by using Paris green or London purple mixed with land plaster, one part of the poison to fifty of the plaster. Other substances may be used, such as flour, well leached ashes, etc., but plaster is so cheap and has such a beneficial effect in itself that there is little need to look farther. If the plants can be dusted in the morning so much the better, but I generally do it when I first see the insects at work, which is in the heat of the day. One application usually suffices.

The Cut-worm is another pest that not only frequently causes the loss of a crop of early Cabbages but of various other vegetables as well. Their presence can be easily ascertained by examining a sod or clod of succulent roots partly turned under. If they are found to be abundant Cabbages would surely suffer if planted among them. Tared paper may be wrapped around the Cabbage stem, or some such means be employed as a preventive if it be found not too tedious.

I like the following plan: put a teaspoonful of Paris green or London purple in two gallons of water, and sprinkle handfuls of grass or sods, which then can be scattered throughout the patch, walking crossways of the harrow marks. By doing this toward evening, after the last harrowing, during the night the cut worms that are deprived of their food will be out looking for fresh pastures and will appropriate of the prepared bait, the smallest particle of the poison of which will kill. If the worms are very troublesome the remedy can be repeated, it being easily applied.

The plants as they begin to head are hovered over by a white beetle fly which is laying eggs for their future destruction. This Rape butterfly (*Pieris rapae*) was imported from England by the way of Canada and is very injurious, especially in small gardens. They are double brooded, the butterflies coming out in May and August, the second brood being the worst.

To fight these pests we dare not use any active poison, but Pyrethrum—the powdered flower of a plant by that name—can be safely used. It is not injurious to lung breathing animals, while singularly enough it kills all those that breathe by spores, as do the insects. The fly powder of our market is made of this substance, but is generally greatly adulterated. If it retains sufficient strength to kill the house fly, by putting a teaspoonful in two gallons of water and sprinkled on, or better still, forced on the Cabbage by a fountain pump it will kill the Cabbage worm as well.

The active principle of the Pyrethrum is volatile and loses its strength unless extra pains are taken to keep it in air tight boxes. The fresh and pure article can be obtained from the grower, G. N. Milco, Stockton, Cal.

The Cabbage maggot (*Anthomyia brassicae*) or Club-root has not troubled our growers much as yet. In its mature state it is a fly and belongs to the same family as the Onion, Radish and Turnip Fly. The maggots do not turn into flea-beetles as many suppose. The larvæ of the latter have feet, while the maggots do not. Experiments of the Eastern growers show that a liberal dressing of lime to the soil and harrowed in acts as a preventive to Club-root and also kills the Cabbage Maggot.

### A Norway Spruce Windbreak, and Its Profitable Uses.

L. B. PIERCE, SUMMIT CO., OHIO.

An account, in a recent issue, of an Illinois windbreak leads me to describe one that protects my dooryard. Sixteen years ago I set out for nursery purposes 400 Norway Spruce trees in four rows four feet apart and twelve rods long. In time one of these rows was entirely removed and the others are all gone but about thirty, which are pretty evenly distributed.

The trees that remain start some two rods back of my house and run north, forming a background to my dooryard and having an irregular outline next the yard as well as a varying sky line; they are very beautiful. This is especially the case when they are covered with a light snow or the ryme of a frosty winter's morning. As they are closer than was necessary I have sold occasionally one for a Christmas tree, and last Christmas sold seven for \$23, delivered at Akron, seven miles away. They were for church purposes, and I used from eighteen to twenty-three feet of the tops, the whole trees measuring from twenty-seven to thirty-three feet in height.

The uncut bottom portions of these trees I have only to let stand and in a few years they will again be perfect trees, as I have learned by experience. In such cases one or more of the topmost branches take a curving course upwards and form a leader. I have two or three Spruces standing on my place that have twice been sawed off and sold and are now shapely, handsome trees, although having three or more leaders.

The trees of this line form a wonderful protection against the westerly winds, and I can stand at the back of the house and see them bend nearly double in a northwest blizzard, while around the house there is scarcely wind enough to close an open door. It has attracted the attention of the neighbors, and some are discussing the matter of similar protection.

### Scattering Shots by An Illinoisian.

N. Y. L., ADAMS CO., ILL.

THE benefits from the application of potash to Grape-vines are usually very marked. All fruits generally show marked improvement when given potash. It is the element of their food for which they most often lack. The fruit tree or vine which gets the slops and suds from the kitchen has become proverbial for its fruitfulness. The potash may be applied in the form of muriate of potash, kainit, or wood ashes. Grape-vines are also much benefited by bone. Apply bone and potash and you will be certainly repaid by the improvement in the fruit, especially in its quality.

THERE are good and bad varieties of fruits, vegetables and flowering plants, yet the excellence of every variety depends more upon the treatment it gets than upon anything else. Starve the best variety and it will not do well. The breeders of fine stock understand that the well-bred animal is superior to the scrub only by reason of the greater return it makes for good treatment; the scrub will make the larger return for very bad treatment. It can "rough it" best. It is so with the plant. The best variety, neglected and starved, is no better than the poor variety; the best treatment makes the best variety the very best.

WITH us the Crescent seedling is yet grown more extensively than any other variety. It is productive, the berry is well shaped, and ships to St. Paul in good condition if picked before perfectly ripe. For fertilizing the Crescent I like best the Sucker State, originated by Mr. Miller, of the southern part of the State. It will produce a greater quantity of berries, year after year, than any other perfect variety I have been able to find. The berries are large, splendidly shaped, and I know of none that ship better; they are held well off the ground and are of good size and quality to the last.

The Captain Jack is not so good. Its berry is smaller, of light color, and there is too great a percentage of small ones, while the seeds are large and prominent; but the berries are well-shaped and ship well. Bidwell blights badly, the blossoms are caught by frost, and one side of the berry ripens before the other. Iron Clad is perfectly hardy, but blights, and the blossoms are apt to be caught by frost. The Sharpless is too tender—so easily frosted that we rarely get a crop.

I do not think Strawberry rust can be ascribed to wet weather. It has been bad when the season was dry. It appears on all ground alike. In a patch which I see often the land is quite fertile except one "point," which is quite poor; the rust seems to be as well distributed over the poor ground as over the rich. I don't think it is caused by lack of manure; if it were, some growers that I know of would have mighty rusty plants. Heavy manuring may indirectly favor the appearance of rust; I am inclined to think that it does, but am not certain. Some varieties rust little, if any, with us; and with our present knowledge the only commendable course is to use those varieties, and give the ones that rust badly "a rest."

NEITHER my neighbors nor I have yet found a Blackberry that we wish to put in the place of the Snyder for the bulk of our crop. It is perfectly hardy here (on the fortieth parallel) and always very productive. But the berry is not the largest, and we have found it not the best shipper, though it carries very nicely when picked in season. The Lawton ships splendidly, but is too tender for us. The Taylor is a good berry, hardy, but not very productive, a little later than the Snyder, and the berry somewhat larger, but of poor quality; yet, all in all, a good berry. Knox kills down to the ground every year. Stone's hardy is later than Snyder. Kittatunny freezes at least three years out of five.

SOME are advocating low lands for orchards, but I am clearly of opinion that when only elevation is taken into account, the higher land is the better. Often an orchard on low land does best because it is later to starve on such land, the rains taking fertility from the high lands to the low lands. The former orchardists double crop their land, and yet the orchard is the last spot to get manure.

When I moved on the farm which I now occupy about one-third of the land in orchard was low, though fairly well drained. In spite of all I could do, the trees on that land would die, and I have now given it up for orchard purposes. I have had no trouble in having a fine orchard on high land.

One corner of the orchard was a natural basin, which I did not get drained until a few years ago. Of course the trees died right along in that corner. One wet spring when I was setting a two-year old Maiden's Blush the hole was filled with water till I had finished digging it. I poured a bucket of unleached wood ashes in the hole, set the tree in the water and ashes; it blossomed that fall and grew right along in that wet corner. Did the ashes do it?

### How to Make Straight Rows.

IT is vastly more satisfactory to work with straight rows than with crooked ones, but it bothers some people to lay out the former without a reel and line for each row. Even this excellent plan has been known to have its drawbacks, as for instance in a case which once came to the writer's notice, where a tidy German gardener by some mishap neglected for one time to move the line at one end of the plot. The result was that two rows of Potatoes met at one end of the field while at the other they were three feet apart, with all rows on each side off from the parallel.

A good and simple way to provide straight marks for planting is to use a wheelbarrow as a marker. Nail a crosspiece against the front board to project on both sides of the barrow.

From this at such a distance from the center on each side, as you want the rows apart, attach a piece of chain to drag on the ground. Then pass back and forth across the patch to be marked, being guided by the last mark made. The idea in using a wheelbarrow is, that there is little chance of its diverting sideways, and straight rows may be easily made.

### Offending the Little Ones.

BY CHAS. W. GARFIELD, GRAND RAPIDS, MICH.

There is a good deal of human nature in men, as we find them, that needs to be bred out of them before we approach the time when God's will shall be done on earth "as it is done in Heaven." I have sat at the table with men who fervently thanked the Lord for his provision there manifested, and then found fault with every morsel later. I have listened to men as they grew eloquent over the delightful results of teaching horticulture in schools, and have later seen these men getting just as much labor out of their berry pickers as it was possible, without a thought of kindly instruction that could have been given incidentally to the little people, that would have gone with them for a life-time.

I am glad we have apostles and evangelists in horticulture who are willing to put in a good word for progressive measures on every available occasion. But for net results commend me to the people who are willing to give a little time to the instruction of their own children in the simple elements of horticulture; who are willing to spend a few hours with the boys and girls who go to their school in entertaining them with the products of horticulture; who are delighted to make happy the bands of children who pick their berries, by giving them lessons in horticulture garnished with the fruits of the season.

Children need guidance in their amusement as really as in their studies and work. The active inquiring child who is not given the delightful occupation of planting seeds and watching their germination, during the winter months, when confinement to the house is a necessity during many long cold days, loses tuition in horticulture that never can be taken later in life with such keen satisfaction.

Children enjoy making original observations. It is far better for them to learn by seeing that a Bean seed has two leaves bound up in it and Corn but one, than to learn to read and get this lesson from some book when old enough to read a botany.

If a parent has any idea of giving his child the information which will afterwards secure to him the most enjoyment, he can find his richest field in the element of horticulture. A boy or girl six years old can learn to graft and bud, trap injurious insects, observe their habits, and even go into the mysteries of cross fertilization, securing a fund of enjoyment not excelled by a visit at the circus or chasing a squirrel.

We need to go more into details about this matter of tuition in horticulture. We have been soaring away above the level where the best work can be done. The teacher who will take her pupils into the woods next Arbor Day and has a faculty of entertaining them successfully with observations of their own making, and will return to the school premises with bulbs, plants, shrubs and trees, securing them safely in their new home near the school house, is a queen in her profession and is doing more to lay a foundation for successful horticultural occupation than all the book writers or essayists upon the art.

Even the Sunday-school teacher has a horticultural duty to perform which few are fitted to do successfully, but which, if well done, cannot but give to the children nobler ideas of God's perfection manifested in the works of his creation than any amount of catechetical work upon the dogmas of theology. How can the beautiful Lily lesson of our Saviour be enforced so delightfully as by observations upon the

Lily family; the uniform character of its members; object and delicacy of the perfume of its flowers, and utility of the members of the family most used by man. In the vine lesson how attractive may the central thoughts be made if the instructor will but bring to bear a knowledge of botany and horticulture. I am a firm believer in leading children to love God through a knowledge of the details of His wonderful works; and a knowledge of horticulture and the sciences, which thread into and through the fabric of the art, can be made of the best use in rendering attractive to the little ones the lessons that are usually a burden upon their young lives.

The most delightful remembrances of my early boyhood are connected with object lessons given me by my parents upon the farm and in the garden. If the facts conund had been worthless to me the beautiful recollection pays for the energy expended in that early entertainment. But when I recall how efficient has been that information acquired under those pleasant conditions, I am led to awaken in my own boy a love for observing the behavior of plants; and by giving him the hints which lead to original investigation, stimulate in him the desire for wide knowledge in the constantly widening field of horticulture.

Years ago I often watched my teacher and friend, Prof. W. J. Beal, take his little girl by the hand and stroll into the woods on tours of botanical observation; and as I noted the keen delight of the little one and the interest of her father in the child's observations, I could not but think how few children are given the exquisite delight of such excursions, when it might be possible with almost every family who live in the country. Oh, these people who live in towns and go into ecstasies over rural life, and then other people who live near the woods and scorn the soarings of their city cousins! None of them have an adequate appreciation of what joy may be given to the life of children who are taught to observe the truths of Nature under the guidance of those who have before seen the lessons to be learned in the book that is always open before them.

### Strawberries—Something About Varieties, etc.

Those who think of setting out a bed of this most delicious and easily grown of fruits will find the following summary of results concerning varieties, etc., by the Agricultural College of Indiana (Purdue University), of value:

Among forty varieties grown at the experiment grounds, we have found nothing quite equaling the Crescent as a market berry. It was among the very first to ripen, beginning June 6, and continuing until July 9. Green Prolific comes next, and, for near market, I would add the Cumberland. The Kentucky is about a week later, and deserves third place. In fact, many growers in this locality prefer the Kentucky for their main crop of late berries for the home market. Wilson is still a favorite with many; it does not do well with us.

For family use I prefer the Cumberland, Black Defiance and Crescent, with a few Sharpless to tone down the sharp, acid flavor. I would drop, as unworthy of cultivation, the Big Bob, Phelps, Finch's Prolific, Piper, and Nigh's Superb.

Having set Strawberry plants both in spring and autumn, and at almost all other seasons during warm weather, I am convinced that those set in the spring do the best, are in the best condition to stand the winter, and produce the most berries the next year.

The past two winters here at Lafayette have also proved conclusively that careful winter protection is one of the essential requisites of success in Strawberry culture. A light covering of wheat straw or other litter, free from weed seeds, is put on early in winter and left until warm weather, when a portion is raked off and left between the rows. This keeps the ground moist, and prevents weed growth.

### Peter Henderson on the Cultivation of Early Beets.

This is one of the leading and most valuable crops of our market gardens, and, next to Cabbages, is perhaps the most extensively grown as an early crop.

The soil best suited is that which is rather light than otherwise, always provided that it is thoroughly enriched by manure. We make little difference in the manner of working or manuring the ground for any of our leading early crops of vegetables. The ground must, in all cases, be thoroughly pulverized by plowing, subsoiling and harrowing, and when stable manure can be procured, plowed in at the rate of seventy-five to one hundred tons per acre. It must be borne in mind that this large quantity of manure is used where two crops are taken off the land in one season, for Celery always follows crops of early Beets, Cabbages, Onions, etc.

As early in spring as the ground becomes fit to work, the Beets are usually sown in rows one foot apart, made by the "marker," about three inches deep. We prefer to sow rather thickly by hand (not less than eight pounds per acre), for the reason that late frosts often kill off a portion of the young plants; but when sown thickly, enough are usually left to make a crop which amply repays the difference of a few pounds of seed. After sowing, the seed is pressed in by the feet, and if the weather is dry, the whole surface is also rolled, which firms the soil better around the seed and also leaves the ground level, making it easier to be hoed. This firming of Beet seed is very important, as hundreds of acres, particularly of the Sugar Beet grown on farms, are annually lost for want of this precaution.

Beets are occasionally planted two feet apart, and the intervening row sown with Radishes. The Radishes mature early, and are used or sold off soon enough to allow more room for the Beet crop. It makes but little difference with us in the profits of the crop which way it is done, the results being nearly the same in each case. But in places where but limited quantities of vegetables can be disposed of, perhaps the latter plan is the best. The young Beets are thinned out to six inches apart when the rows are one foot apart, but when at two feet apart to only four inches, as they have more space between the rows for air. The thinnings of the Beets are used like Spinach, and, when carefully handled, they will always sell for more than the cost of the labor of thinning the crop.

In the neighborhood of New York Beets sown the first week in April are begun to be marketed the first week in June and entirely cleared off by July 1st, when the ground is prepared for the second crop. It will be understood that they are, at this early date, sold in an immature state, before the root has reached complete development; but the great point is earliness, the public being well satisfied to pay more for it half-grown, if early, than when full-grown, if late.

This crop I have always considered a very profitable one, even at the seemingly low price of seventy-five cents per 100 roots, the average wholesale price in New York markets. But 50,000 roots grow per acre when sown at one foot apart, and although the labor of pulling and bunching up is greater than in some crops, yet at seventy-five cents per 100 it will give an easy profit of \$250 per acre.

Beets are an excellent article to ship, and the price paid in New York for the first lots from Savannah and Norfolk, etc., is often as high as \$2 per 100 roots.

The foregoing all relates to the crop in the green state for an early market, but they are also extensively grown for use in fall, winter and spring. For this they are usually sown later, often in some sections as a second crop, as late as July 1st, although in the Northern States the roots hardly develop enough when sown after June.—New "Gardening for Profit."

### Some Favorites and Two Pests Reported on by an Amateur.

MRS. M. R. WAGGONER, SCOTT CO., IOWA.

One of the most satisfactory house plants, providing it is not kept too warm, is the Chinese Primrose. Nothing excels it for constancy of bloom. It should be kept well watered but never over-watered, and no water should be allowed to fall on the foliage or opening buds. If it falls on the latter they will immediately blast. Young plants grown each year are preferable to old ones, though these can be used. I start the seed in May, and when the young plants are out of the seed leaf I pot off in thumb-pots, changing the pots as the plant seems to require it until time for removal to winter quarters. With the plants being kept in a cool place, bloom is certain.

A brilliant plant for the window-garden is the Coleus, if it be properly grown. For this slips should be started in September, pinched out to make them shapely, then later potting and transferring to real warm winter quarters. It must have plenty of heat and light. The least chill will cause it to immediately drop its leaves and then its beauty is gone. Given these simple requisites, with a good watering every alternate day, and it is one of the very easiest plants to have beautiful in the window.

To all liking house plants, but who do not care to trouble with them much, I can suggest no class so accommodating as the Cactus. Beyond watering say once a month in winter, and along with the other plants in summer, there is very little to do to them. The plants are interesting and curious, even without bloom, but when we know that they produce on some varieties some of the most gorgeous blossoms, we must admit their worthiness in any collection. They do well in any frost-proof room, but will do better in a well heated one. In summer plunge the pots in sandy soil in a sunny situation.

To raise fine Radishes, enrich the soil well, putting with it also plenty of sand, and having it deep and very mellow. Plant the seed by puncturing the ground with a small dibble, put only one seed in a place, and at several inches apart, just before a rain if possible. Never hoe, but hand weed them. In this way one cannot fail to have Radishes, crisp and good.

A certain remedy for Aphis, that pest of many plants, I find to be Tobacco. With a tea made of it I deluge the leaves infested, both on the upper and under side, and then sprinkle a little fine-cut Tobacco over the soil. When the plant is watered, the fumes arising will help in utterly annihilating them. If one dose is not sufficient, try again.

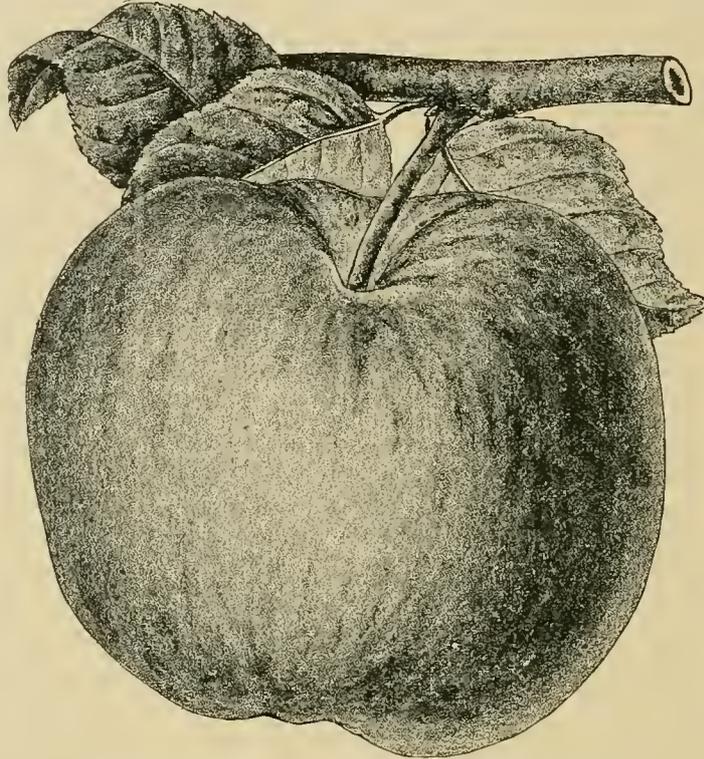
To banish Red Spider one has but to give plants in the window a daily syringing with water of the same temperature as the room. Red Spider cannot endure a moist atmosphere. A regular shower bath for all plants is very refreshing and beneficial, acting upon them as a gentle summer rain. "An ounce of prevention is worth a pound of cure," and the shower bath should come in as a preventive.

### The Pewaukee Apple.

The Pewaukee is of Russian parentage, having been raised from seed of the Oldenburgh (Duchess of) by Mr. George P. Pepper, of Waukesha county, Wisconsin. It is a winter Apple and as such ranks among the best for cold climates, because of its great hardiness. The tree is a strong grower, center upright but

spreading; the young shoots dark brownish red.

The fruit of the Pewaukee is of medium to large size, with a skin of bright yellow, striped and splashed with red over most of the surface and showing numerous light dots. The surface is also covered with a thin grayish bloom. The flesh is white, a little coarse, but quite tender. It is a juicy Apple, sub-acid, as to flavor slightly aromatic, and passes generally as being of good quality and beautiful. Its season is from January to May, and this, considering its great



THE PEWAUKEE APPLE. A SEEDLING OF THE OLDENBURGH.

hardiness, may be looked upon as one of its best characteristics. It comes in fully six months later than its estimable and hardy parent, the Oldenburg.

### The Glory Pea of Australia. *Clianthus Dampleri.*

WILBUR F. LAEE, WAYNE CO., N. Y.

Of all Australian flowers this is probably the most brilliant; no lover of rare and beautiful growths should rest content until he has grown it. In habit of growth it may be termed a shrubby climber, with leaves shaped not unlike those of our common garden Pea.

I do not pretend to claim that the Glory Pea is one of the easiest of plants to raise, but I do claim that the care it requires is not difficult to bestow and it will be well repaid. Like many another favorite from warm climes, the seeds and plants need heat to succeed in attaining to fine specimens. But this in their season of growth is easily provided.

If the seed are sown this month in heat, and after the seedlings attain a height of three inches they be placed in a position exposed to much light and sun, and a night temperature never lower than 60° (ten or fifteen degrees higher would be better), there will be little need to fear failure. It likes very sandy, mellow soil, not too rich. To promote quick germination, seeds before planting should be soaked in luke-warm water until they swell.

Another point of importance: The young plants do not readily favor being transplanted. The seed should therefore be sown in small pots, plunged in a box of sand, taking care that no roots find their way through the hole in the pot, to be broken off at the setting-out time.

As something of an assurance that the praise I have given the *Clianthus* is not unjustly bestowed, I will quote a remark an amateur friend, always on the alert for something rare,

after trying it, made: "When in full bloom it made such a *furor* in the neighborhood that to have restrained people from seeing it would have been difficult, indeed."

### Floriculture Running In Ruts.

A PAPER BY ONE OF OUR EDITORS, READ BEFORE THE NEW YORK STATE FARMERS' INSTITUTE, MARCH 16.

Reference is had to that tendency of the times which leads to the excessive cultivation of a few kinds of ornamental plants to the exclusion of many others equally or more desirable.

There are to be seen, for example, in not a few places, flower beds planted only to Zonale or Scarlet Geraniums, as if the planting of such constituted the height of desirable floriculture. Elsewhere the taste similarly may run to employing general greenhouse plants for the dress of the summer flower beds to the almost complete exclusion of everything else. In still other places a floricultural rut is clearly apparent in the use of scarcely anything outside of ordinary seed-grown plants, valuable as they are, but alone not sufficient for the best results.

Then again it is in this day no difficult matter to pass through localities where a perfect craze for the

### SETTING OUT TO ACTUAL EXCESS

of that most excellent flowering climber, Jackman's Clematis, is apparent. Of such a showy bloomer one might perhaps well ask whether it were possible to plant too many. And yet, when as along the streets of some towns, Purple Clematises are met to the right, Purple Clematises are met to the left, and Purple Clematises are met wherever place could be found in which to put Purple Clematises, it must be admitted that a degree of monotony in beauty arises that is quite undesirable, in view of the desirable variety which might be employed. Enough is enough, even of the best of things.

Stepping outside of the domain of strict floriculture, I do not hesitate to say that in Buffalo and its suburbs, for one place, the people of certain streets have gotten into a complete groove in the excessive planting on their lawns of the beautiful cut-leaved Birch tree. It is met on almost every grass plot, and sometimes it would seem as if the smaller the yard the more determined were the owners to have as many trees of this Birch in it as they possibly could. A similar state of things may be observed in some neighborhoods of the free use of the Norway Spruce as a front-yard tree.

In the planting of not a few rural cemeteries and public parks, and even such as hold to some pretensions to fine gardening, the rut is visible in an excessive use of a few kinds of plants and trees, when the use of many more kinds would serve far better for good effect.

### THE CAUSES FOR SUCH A PRONENESS

to run in certain grooves in ornamental planting are perhaps not hard to surmise, and some remedies may possibly be suggested: As for causes, no doubt these may in large part be attributed to a prevailing lack of popular knowledge, concerning the great wealth of beautiful and easily grown flowers and ornamental plants which are at the command of all planters.

While the people, on the one hand, show a great and most gratifying desire to adorn their grounds with handsome plants, on the other they too often know not well what or how to plant; unless it be to repeat on some more or less conspicuous plantings, to which their neighbors have perchance attained.

Then, too, the same unfamiliarity with kinds gives the florist, the seedsman, and the nurseryman,—not omitting the agents, who should perhaps have been named first—an undue advantage in advising what shall be planted. Scarlet Geraniums and Peony-flowered Asters, and Jackman's Clematises are all so showy, and may so readily be made to appear all that is desirable to the average planter of to-day, that the dealer and grower cannot perhaps be so much blamed for simplifying their business by growing the most of these things which they can the most easily sell. And yet I do not think that this is, all things considered, the wisest course to be taken by them. Even the dealer should prefer to see prevailing such a degree of popular education concerning all valuable plants and their appropriate use, as would enable planters to intelligently, hence independently, choose their own orders, the right kind for the right place, and that outside of beaten ruts.

Without doubt a time will come when such a state of things shall prevail, and when it does no one will have greater occasion to rejoice than the seedsman, the florist, and the nurseryman, for in that day a hundred plants and trees will annually be planted throughout our land, where one now is; and he who provides the stock will be the one to reap great money gains.

Within the limits of this paper it would not be possible to go into a very wide consideration of kinds of flowers and their culture, pointing to an improvement, for this is a broad subject. But at least some suggestions can be thrown out, which may be of service. First of all I want to be understood as saying that each one of the various plants and trees referred to as being sometimes used in excess are among the most valuable kinds that can be employed, when it is done with due moderation. The mere fact that there is a tendency to over-use them, is one of the most forcible tributes to their worth. So, I would say, let no one hesitate to use of these—not any one of them to the exclusion of the others, but all in their place and along with yet other desirable kinds.

I desire here to enlarge by inviting attention to the worth and use of several of the most valuable classes of flowering growths that can be grown in the farm yard; in the village and town garden; and in cemeteries and public grounds. I refer to the

#### HARDY FLOWERING SHRUBS AND PERENNIAL PLANTS,

neither of which classes are used with anything like the frequency of which they are deserving. The more I have to do with cultivating these plants the more am I impressed by their beauty, their cheapness, the great simplicity of their culture, their durability, the sweetness, attractiveness and profusion of their blooms over a long season, and all in all by the idea of their being among the very best of flowers for the million.

It would not do to say that these classes are not now known or used. Among flowering shrubs a few bushes of such free-growers and increasers as the Lilac and the Snowball may here and there be seen, especially in some of the older gardens. More rarely a plant of the Weigelia, Flowering Plum or some other shrub may as if by accident or through some salesman's recommendation be found in cultivation. Of hardy perennials, a limited list embracing Peonies, Delphiniums, Lily of the Valley, Daffodils and some others may in a degree be found in the gardens of the people, but of scores of others so much as a single good specimen is rarely to be met.

The thing most to be objected to in the present scant use of the classes named is the

LACK OF SYSTEM ON THE CULTIVATORS' PART to make the most of these for ornamental effect over a long season. I would emphasize the last clause of this statement, concerning a long season. So varied is the time of bloom in the different hardy shrubs and plants that a

selection from among them is possible which is easily capable of affording an unbroken season of flowers from April until October. And then a great point of superiority is this: once a good selection is planted, and with very little care and almost no expense, the long season of their bloom will year after year, for many years, go on repeating itself in a way not at all within the province of either annual or greenhouse plants to do, requiring as such do, renewal every spring.

In the use of these classes of hardy growths, one should, for best results, depend neither on too few kinds nor on too few plants of any one class. My explanation of this statement is that the best

#### WAY TO EMPLOY THEM IS IN GROUPS,

on the lawn chiefly, instead of scattering them about singly. To bed them out, both the shrubs and plants, as one would tender plants, but providing more space and giving them culture, for some years at least, should be one of the features of their management.

The shrubs in such cases may, if one sees fit, be kept by themselves and the plants by themselves, or the two classes may be brought together. Where no particularly great degree of attention is given to floriculture, as about the average home, I would recommend bringing them together in one large bed, the shrubs centrally, the others outside, and then among the latter I would intermix some plants and small clumps of such other classes as the annuals and tender greenhouse plants. In this way a wide scope may be secured for floriculture in even one single large bed, and by a course to leave the grower wholly without excuse against precipitating the pleasant art into ruts.

Allow me in conclusion to explain somewhat in detail

#### THE MAKING OF SUCH A BED

as I have alluded to for the finest possible results over the longest possible season at the least possible cost.

Let us imagine an oval bed on the lawn, size 24 feet its longest way by 18 feet across at the narrowest diameter, to be planted. The preparation of the soil in matters of fertility and deep tillage should be good, and as the bed is ready for planting I should like to see it raised a foot and a half or two feet in the center, neatly rounding it over. In the central part of the bed and occupying some 12 feet in width by 18 feet long, I would set about twenty shrubs consisting of a selection something like this:

1 Mezeron Pink, 2 Golden Bell or Forsythia, 1 Japan Quince, 1 Flowering Plum, 1 Holly-leaved Mahonia, 1 Plum-leaved Spiraea, 1 Persian Lilac, 1 Large flowered Mock Orange, 1 Japanese Snowball, 1 Double Deutzia, 1 Weigelia Rose, 1 Alder-leaved Clethra, 1 Japanese Spiraea, 2 Hibiscus or Altheas, 2 Large-panicked Hydrangea, 1 Silver-leaved Corehorus, 1 Prunus Pissardi, 1 Large-flowering Honeysuckle.

The list embraces enough kinds to never leave the bed without some shrub flowers from early spring until fall.

In the planting I would arrange for having the margin of these shrubs quite irregular as to outline. Then in the recesses formed and in the intervening space extending to the grass I would plant, say 35 different

#### KINDS OF HARDY PLANTS AND SHRUBS,

also selected with a view to covering a continuous season of bloom from March to November. In a list of this extent I would be well satisfied to have the following:

Winter Aconite or Eranthis, Snowdrops, Tulips, Hyacinths, Narcissus, Crown Imperial, Bleeding Hearts, Hardy Candytuft, Blue Bells, Low Phloxes, Lungworts, Lychnis, Saxifragas, Woodruff, Columbinas, Irises, Peonies, Pinks, Oriental Poppies, Star of Bethlehem, Aconitums, Day Lilies, Delphiniums, Monarda didyma, Lilacs, Sweet Williams, Yuccas, Hollyhocks, Upright Phloxes, Echinacea, Double Hardy Sunflower, Plantain Lily, Autumnal Aconitum, Japan Anemones, Colchicum autumnalis.

Now the border of this bed between the shrubs and the grass would average over three feet in width, and it would be nearly 60 feet long. In this space besides holding the hardy plants named there would be ample room for some dozens of tender plants, such as Gerani-

ums, Heliotropes, Salvias, Ageratums, Abutilons, Coleuses, Cannas, Lantanas and some of these should be given place.

In addition to these there would be no trouble to find accommodations in the bed for a score of different annuals and biennials like Asters, Balsams, Candytuft, Larkspurs, Marigolds, Mignonette, Petunias, Pansies, Phloxes, Portulacas, Snapdragons, Poppies, Verbenas, Zinnias, etc. Here and there too some Dahlias, Tigrisias and Tuberoses might be brought in and between the shrubs some Gladiolus and Hollyhocks.

I might go on suggesting other things, such as some climbers on slender poles along the margin of the bed, small rocky mounds in some part, especially if the bed was somewhat larger, and so on, but I must close. Enough to say that here I have outlined the planting of but a single bed on a plan which admits, within a limited space, of a kind of floriculture entirely outside of ruts, and which is at once sensible, varied, productive, economical and easily carried out, and that too, in whatever form or size of bed it might find application.

#### REPLIES TO INQUIRIES.

243. **Berries did not Develop.** Various causes might have produced such a result. There may have been a wet spring, inducing rampant growth, followed by a drought in berry time, during which the plants in the matted rows were deprived of sufficient moisture to afford complete development. Extreme wet weather about blossoming time may have prevented proper fertilization. Then a trouble similar to this is liable in the case of pistillate sorts that are not properly fertilized by the near presence of staminate ones.

244. **The Crimson Beauty.** See March issue, page 90.

245. **Chickasaw Plums Failing.** Curculio is no doubt the cause of your failure. See course of treatment prescribed on the following page.

246. **Dividing Primroses.** March or April is the time we prefer for the operation. Directions on how to proceed appear under "Work of the Season" this month. It is better that the flowers of all plants be removed before they fade.

247. **Callas Turning Brown.** We lack the definite knowledge of the case to enable us to account for the leaves turning brown. The matter of culture asked about is pretty well treated by one of our correspondents on page 115.

249. **Varieties of Plums and Cherries.** A Plum by the name of Niagara or Moony is not known by us, neither do we find it in any catalogue. Leave such and the agent who offers it alone. The Luelling Cherry is a new variety from Portland, Oregon, which possesses some promise, but we have no faith that the agent referred to had any stock for sale. It is as yet hardly found in the lists of our most enterprising nurserymen.

264. **Engine Scrapings as a Fertilizer.** This must be largely in the nature of soot, and without doubt would have considerable value for fertilizing purposes. We would not apply it in direct contact with the roots. A. H. E.

248. **Raising Winter Onions.** The yellow Danvers and Red Wethersfield are the favorite sorts, being large yielders and splendid keepers. A rather sandy loam is preferable for the crop, one reason being that this naturally pulverizes with ease, an important point in Onion culture. The soil should be thoroughly enriched with stable or other manure. Hen manure in mixture with twice its weight of lime and coal ashes seems to suit the Onion well. Sow the seed as early as the ground will work up dry and fine, in drills 15 inches apart, dropping two or three seeds to an inch of row, or from five to six pounds per acre. Hoe repeatedly and keep out the weeds. The tops will, if the sowing is early, die down in August and then they should be pulled without unnecessary delay. They are dried some on the ground, the tops are cut off, and the drying of the bulbs is finished under cover. Storing is done on slatted shelves, arranged one above the other in some dry and airy place. They may lay six inches deep on the shelves. The most suitable temperature for them is 40 degrees, although they may be carried over to spring, where it freezes, provided they are thickly covered with hay or straw to prevent hard freezing or repeated thawing.

258. **Alternanthera Culture.** The plant is a heat lover and can easily be grown in any moderately light place where the temperature indicates 65 degrees and upwards at night. To secure winter-over stock, either strike cuttings or else lift and pot some old plants in September. In March make cuttings of the available material for spring plants, or else hill up the plants somewhat with light soil, causing the branches to take root in this, after which they may be divided, potting each particle that has a root separately. A. H. E.

## A. M. PURDY'S DEPARTMENT.

Post-office address, Palmyra, N. Y.

## Briefs.

**Don't plow ground when wet for planting to small fruits.**

**Transplant Tomatoes and Cabbage at least once in beds before putting them outdoors.**

**Fruit trees when set should be well staked and tied, and heavily mulched with any coarse litter.**

**The Raspberry Patch.** Don't fail to tie the tops of the plant together, as also to trim out all superfluous wood this month. Three to four canes to a hill is enough.

**Care must be taken in trimming out the Wager Peach trees well to have good sized fruit.** We have seen double the size fruit on trees properly trimmed than on untrimmed trees.

**Whitewash the Trees.** There is no better time than this to give the trunks of fruit trees a coat of thin whitewash in which a spoonful of carbolic acid has been mixed to each pail of water.

**Tender sorts of Apples, Peaches, etc., may be grown as dwarfs in tubs in the most severe climate and removed to the cellar through the winter, and when put out in the open ground sunk down to the brim in the earth.**

**A dozen Blackberry plants will give a family a good supply.** They may be grown in the coldest climate by bending over in the fall and covering with earth, or planted in half barrels sunk in the earth to the brim, and in the winter put in the cellar.

**Water Lilies.** There are few things more beautiful than to sink a tub or half barrel in the ground to the top, fill it half full with rich earth and plant two or three roots of the Water Lily, then fill the tub with water and keep it full the season through.

**In the proceedings of the Michigan Horticultural Society we find the following as to the Niagara Grape:** Reports generally favorable, but liable to rot, at least at any place where the Concord is affected. White Grapes are not more affected by rot than other varieties.

**Increasing Plants.** Both Red Raspberries and Blackberries may be increased by digging up roots and cutting up the same into pieces one to two inches long, and sowing them thickly in rows like Peas and Beans. By fall a fine lot of plants can be had in this way. Try it.

**Don't fail to manure the small fruit plants and bushes this month, if not done before, unless on rich soil where they have made a strong growth, and in that case no manure is necessary; but cutting back of last year's wood if too long or high should be attended to at once.**

**Espalier Fruits.** A very pretty way to grow the Currant, as well as the Gooseberry, is by the espalier method on low trellises, branched and trimmed up to the trellises fan shaped. We have also seen Apple trees grown in the same way, which looked very beautiful loaded with fruit.

**If droughts do not occur till berries begin to form and come on slow, then it is not really so much of a loss to the grower, if he dries them, as it takes only about two thirds as many, so that one gets about as large stock of dried fruit, with only two thirds the cost of picking and work.**

**Garden Culture of Raspberries.** A very good plan is to grow them next to the fence and have on outside a strong wire or two fastened to stakes to prevent their falling down. Another plan is to drive crocheted stakes into the ground on each side of row and lay in these crochets poles to keep them up from the ground and out of the way.

**Peach Yellows.** We claim that the man who says the Yellows in Peach trees is not "catching" if trees are well grown on this soil or that, is certainly not posted as to this disease, and we discard any scientific theories that discards the catching part. Our own experience and observations all through this section, Michigan and elsewhere satisfies us perfectly that it is catching, and if it once gets into an orchard, farewell to that orchard no matter what the soil or cultivation may be.

**Bone Manures at the South.** It is wonderful how the Southern soil, much of it that is considered almost worthless, by putting a little phosphate or bone dust on can be brought up for small fruits. The same is true with larger fruits, if when planting the trees or plants some of the same fertilizers are thrown in at the time; it will tell for good results very soon. Ashes are also very valuable thus used. We had one bed of Strawberries at High Point, N. C., that we scattered a few ashes over some of the vines and they done splendidly.

## LARGE VERSUS SMALL TREES.

We are satisfied from long experience and observation that a great mistake is made in ordering large size 3 to 4-year old fruit trees in preference to a smaller size of 2 years old.

First, the freight or express charges are double. Second, the larger trees are more likely to die because of poorer roots, in proportion to the size of the tree. Third, they cannot be packed as well and go a long journey as safely as smaller trees. In our long experience we have found that a medium-sized two-year old tree taken up and set at same time as a large 3 or 4 year old tree, will come into full bearing first and be the healthier.

## IRON-CLAD TREES—AN IDEA FOR SHELTER BELTS.

If every farmer in the extreme cold sections would sow seeds and pits—say a row along their fence or near their hedge, and allow them to grow and fruit, thinning them out to 3 to 4 feet apart, there is no question but what seedlings would be produced hardy and of fine quality.

We had a row of seedling Peaches on our place in Northern Indiana twenty years ago, that had grown up into a perfect hedge from the pits, and while every budded tree on our grounds was killed down and but six or eight left in the seedling row that did not kill down, the latter yielded well when scarcely a Peach was found for miles around.

Now we believe that had we taken the pits from the fruit borne on these trees and planted them, letting them grow right where they were planted, we could have soon worked into sorts that would have stood 10 to 15 degrees colder weather than budded or transplanted sorts.

## SETTING STRAWBERRY PLANTS.

The most rapid way to set plants in loamy or sandy ground is to have ground in best of order, free from all clumps, roots, etc. Plow straight furrows 3 1-2 to 4 feet apart, being careful not to break in the land side in walking behind.

Before setting them out wet the plants well and have a boy walk along, carefully straightening out the roots of each one and dropping them ten to twelve inches apart in the row; a man follows placing the roots against the land side of the furrow with the left hand and with the right hand draw in earth thrown out by plow and pressing it against the plants.

We have had the best success planting in this way; the plants can have the roots spread out better and down in deeper than when set and pushed in, with roots twisted up, as when set with a dibble. The cultivator should follow soon after, filling up the furrow with earth. A little fertilizer can be dropped in as each plant is set by the same boy whose business it is to drop plants.

## CURCULIO AND THEIR DESTRUCTION.

"Take time by the forelock" is an old adage and good advice to the fruit grower, especially in the destruction of that troublesome pest the curculio that is such an enemy to the Plum, Peach, Apple and Pear, doing his work very soon after the blossoms fall. Last year we had the best crop of Pears, Plums and Cherries we have ever grown, by spraying our trees twice with London purple water, which we prefer to Paris green, as it cannot be so readily adulterated, and you know what you are getting. Many who have tried Paris green and been unsuccessful have used spurious Paris green.

The way we use the poison is to put a teaspoonful of London purple in a pint of milk and stir it up thoroughly, and this we put into a large pail of water holding 14 to 16 quarts, and then with a small hand force pump spray it on the trees, first just after the blossoms fall, and again when fruit is about half grown. If the trees are small, scattering wood ashes or air-slaked lime through the trees when leaves are wet proves quite a preventive.

## OLD BEDS GIVE THE EARLIEST STRAWBERRIES.

A common mistake in Strawberry culture is to attempt to carry an old bed along on the same plot of ground for too many years without replanting. It is better to replant as often as every second or third year than to try and clean out the old bed, particularly if one has plenty of land.

We clip the above from the Michigan Farmer. Where large fine berries pay best, no matter as to season they ripen, it is as a rule, true, but where early berries pay well and the later pickings but lightly, we prefer to leave the old beds. Keeping them well cleaned and properly fertilized, old plants produce the early berries.

We have done better from an acre of old plants that yielded but 30 to 40 bushels than from the same amount of newly set plants that yielded 80 to 100 bushels. And again there are sorts like Downer's Prolific and Chas. Downing, that on rich soil or with high cultivation, will yield better crops the second, third and even fourth year than the first. This we have proved time and again. A friend in Florida writes us that old plantations that are kept properly fertilized and cultivated are depended on for good early pickings, while the fruit from young settings come on much later.

From an old Triomphe de Gand bed, growing in grass in an out-of-the-way place, for years we obtained our earliest fruit, although that sort is a week later than others with like cultivation. Many sorts grown on rich soil make a wonderful rampant growth the first year or two, but after that yield well for several years.

## FRUIT TREES FOR LAWN PLANTING.

These are not popular with most persons, on account of decaying fruit on the grass sod and the early dropping of the leaves of some varieties. But where grounds are small and every foot must be utilized, no objection can be made to some varieties of fruit, especially the Apple.

The Siberian and Transcendent Crabs are always highly ornamental in the flower, the shape of tree, and the appearance of the fruit. Red Astrachan, perhaps the best of our early Apples for all purposes, is a graceful, upright grower and holds its foliage. The same may be said of Early Red June. Of late Apples, none are more upright and rounded in habits than the Rome Beauty, and no winter Apple grown in this latitude is of better quality or more profitable. Any intelligent nurseryman can give a list of varieties that naturally grow shapely.

Were it not for the fact that the Cherry drops its leaves early, no tree could be more suitable for lawn planting. Even with this defect, the lawn or grass plot is almost the only place where it can be grown successfully. Cultivation, which is so essential to the vigor and fruiting of most trees, is undesirable for Cherry.

We clip above from Farm and Garden. Dwarf Cherries are very fine for lawns if kept well cut back, also some of the "sour" Standard Cherries.

One of the most beautiful trees in the forest line for the lawn is the Mulberry, and while on this line, we wish to express our disapproval of training up Evergreens instead of cutting them back, that is, cutting off one-third of the previous season's growth.

## APPLE SELLING PAST AND PRESENT.

Why do not Apples sell as well fresh as they did 15 to 25 years ago? is sometimes asked. There are many reasons. First, at that time all, or nearly all, specked and wormy Apples were fed to live stock, but now these are largely converted into evaporated fruit, and skins and cores into jelly. Then there was not one bushel of small fruits—Strawberries, Raspberries and Grapes, and especially Grapes, grown, as also marketed, where there are twenty bushels now, both in a fresh, and with Raspberries, dried state. Then there was not one bushel of Pears or Plums marketed

where there are five to six now. Then there was not one bushel of Peaches dried for market where there are five to six now.

The immense amount of dried and evaporated fruit that is on the market, including jelly, jam and canned fruit, has a wonderful tendency to keep down prices on fresh Apples. Yet we believe the orchardist can do as well from his Apples now, with the facilities for evaporating and thus using up all the fruit, as he did a few years ago by selling one-third to one-half his fruit in a fresh state, even at double the prices he now gets, and feeding the other part to hogs.

Large growers in this section tell us they are doing as well now by shaking their fruit from the trees and taking them in bulk to the evaporator, or drying them themselves, than they did by the old expensive system of buying barrels, hand picking the fruit and assorting over and selling about half of it, and the other half as good as lost.

Apples we believe are paying farmers better to-day than grain. An orchard of 30 trees, occupying an acre of ground, pays as a rule as well as five acres of wheat, and with not one-fourth the work. Evaporated fruit can be held over from years of plenty to years of scarcity, which could not be done with fresh fruit. Fruit houses are now also being made that carry fresh fruit over successfully.

#### WALKS AND JOTTINGS ABOUT THE FRUIT FARM.

THAT'S RIGHT, my man, take off fully one-third of last year's growth from those Peach trees you are pruning.

WE ARE NOW starting Grapes under glass from two-eye cuttings. Tomato plants in our greenhouse are being transplanted into boxes, and give more room and stockier plants.

WE ARE NOW scattering the manure broadcast over land we shall plant to Strawberries, as also a small forkful around each hill of Raspberries. It takes but a trifle to tell well on the crop.

THERE IS one spring job that should be attended to at once. We refer to whitewashing the fruit trees and throwing a spoonful of salt on the soil around the base of the trunk on a space or circle of six inches across.

WE HAVE become satisfied that close planting of Strawberries in the row is best, unless it be rapid running sorts like Crescent, Downer's, etc. If the grower is careful to have the rows well filled with plants but little watching is then required.

WE HAD quite a long row of Grapes growing upon young Maples that had come up in the row, but for a year or two they have not borne well, and we believe it is because there are too many of the trees to extent of soil, so we are cutting out half of them.

THAT'S A good idea Southern fruit growers are working into, namely, arranging with Northern growers to ship the later small fruits from the north to Southern cities in fruit cars. This will scatter the crop more and should give much better prices to the grower.

CLIP, CLIP goes the hedge shears on our Raspberry plantations, where we had layered last season for plants, and now that the plants are dug, we cut back one-third of the growth. Of course if one does not care to increase plants, it is better to trim by nipping back while they are making growth.

PASSING UNDER some large Maple trees we notice thousands of young seedlings. We have a suggestion for prairie farmers at the West concerning such seedlings. They should order these from their friends East and plant them out in nursery rows, say six feet apart in the row, and when three and one-half to four feet high, put out belts and groves of them.

WE START Cucumbers, Melons, etc., first of this month, in old berry boxes, and put outdoors in May and have square frames covered with boards or thick paper to protect them when there is danger of frosty nights, not taking them off the next day. Pasteboard or old newspapers wound in funnel shape are also good to place over them, as also over Tomatoes, where there is danger from frost.

#### MEAT FROM THE SHELL.

The N. Y. Herald says: There is no doubt that linseed oil will destroy scale and improve the health of trees. In a few cases it has been destructive, evidently from the use of mineral oil, and not pure linseed oil. The purity of the article should be as-

certained. Trees that have suffered badly from scale often get hide-bound. A slitting up and down with the pruning knife will set them again.

The Orange Co. Farmer says: From all parts of the country come kindly words for the Lucretia Dewberry. In the points of quality and hardness, it seems to have the best of characters. It only remains to be seen if it can be successfully and profitably grown for market. We hope that it may be profitable. It is such a delicious berry, so much better than the high bush sorts that we hope to find our markets supplied with it ere another year passes.

The Am. Cultivator says: If an Apple tree has a sound trunk and roots, it is a pity to destroy it under most circumstances. It takes many years to get a young tree into bearing, and when it does bear it will not furnish nearly so much fruit as one fully grown. By grafting with the Northern Spy and liberally manuring, an old Apple tree may be made much more certainly productive than young trees of this variety, which are usually shy and tardy bearers.

Wm. Morrell of Monmouth county, N. J., writes as follows to Orchard and Garden: I have had the black knot on my Cherry trees for four years, each year getting worse. This year (1886) I tried an experiment with sulphur, mixing two pounds of flour of sulphur with one pail of water and spraying the trees till thoroughly wet. I did this about the first week in May, and again about the 12th of May, and have had no knot this year worth speaking of. As this is only an experiment, I cannot recommend it as an infallible cure until further trial.

The N. Y. Times says: Last fall a Maine farmer put a letter in one of a lot of barrels of Apples he was packing, asking the buyer to write to him. The other day he received a letter from an Apple dealer in Bradford, England, who said that he had bought the Apples at auction in Liverpool. He wrote they were a very fair lot of Apples and sound, adding: "I am convinced there would be a saving in sending American Apples through; that is, if they could be packed tight as these are. But if not packed properly tight they would not do."

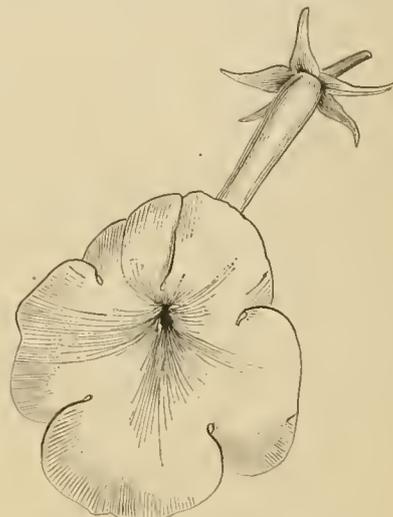
A correspondent of the Michigan Farmer says: Allow me to suggest, both from my own personal experience and that of others far more prominent in horticulture than myself, that several varieties of the Russian iron-clads have proved their superiority in many ways over the older and better known sorts, as for instance the Yellow Transparent, Duchess of Oldenburg, and Tetofsky; then again for extremely cold sections what better tree could we have than the Wealthy and Walbridge, natives of Minnesota, and the Pewankee, of Wisconsin.

A Pennsylvania Peach-grower gave his methods of pruning to the State Horticultural Society at its late meeting: In selecting a site for an orchard, he selects high ground running from a hill top down its southern slope. He sets trees 16 feet apart, in holes 18 inches deep, fills in the top soil till the trees are three or four inches deeper than in the nursery. He finds the deep setting to facilitate the culture. At planting, the trees are cut back vigorously and pruned of all branches. In June or July the new growth is cut out, all but three or four shoots to form a head. Next spring these branches are cut back to a foot or so, keeping an eye to the symmetry of the head they are to form. Then in May or June they are pruned again so as to have five or six shoots evenly distributed over the top. The following spring these are again cut back one-third of their growth, and thinned so as to preserve symmetry. After this only the leading branches are cut back. Besides a careful examination at planting he looks after horders in both spring and fall; the deep planting facilitates this search.

Mr. Roberts writes to the Ohio Farmer: To those who have not yet mulched their Strawberry beds I wish to say that it is not too late to do so; but it should be done before the ground thaws in the spring. The object in mulching is twofold. First, to keep the ground from alternate freezing and thawing, thereby "heaving" the plants; second, it is important, at least advisable, to protect the plants from the sun in winter, for the bleaching the leaves undergo affects the plants much as the Sweet Potato is affected by the sun and frost in the fall, though in less degree. For those who have not found a better way I will give my method of doing the work, which has always proved satisfactory: Cover the entire surface of the patch with straw from one to three inches deep. Spread it evenly, for there is danger of smothering the plants where it happens to be too thick. In the spring, rake all the straw off the crowns of the plants for early berries, and only a part off of those to ripen later—leaving the straw between to keep the berries clean, the ground moist, and the weeds down.

#### Achimenes. Their Culture In Hanging Baskets.

Mexico and Central America have made few contributions to our list of fine plants for cultivation under glass to excel the Achimenes. The flowers (of which the one of *A. longiflora* shown in the engraving will give a good idea as to form), are of all shades from white to dark crimson, and some are in part spotted. They are summer bloomers, coming in naturally during the early part of warm weather and affording a continual show of beauty for from two to three months. The so-called bulbs of the Achimenes may be bought of our leading

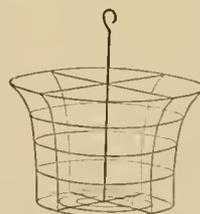


FLOWER OF ACHIMENE LONGIFLORA.

florists; once a start is made with them there will soon be an abundance. A favorite method of growing the Achimenes is in baskets. The baskets we prefer, where bulbs are abundant, are from 15 to 20 inches in diameter by 9 to 12 inches deep. They are strongly made, as per accompanying sketch.

The tubers preserved over winter in dry sand in a temperature of from 45° to 50°, are placed in boxes in the spring and then in moderate heat. The object to be attained is a sturdy growth, hence the importance of starting slowly. When the plants have made about two inches of growth they are ready for planting.

In planting baskets first suspend these in the position where the bloom is wanted. Afterwards have in readiness a lot of tough, light sods, two inches thick (those of peat being the best). Cut these with a knife in long strips about two inches wide, and commence planting the baskets by laying pieces of these strips in coils on the bottom of the baskets, with spaces between wide enough to take a row of young plants head downwards, about half an inch between plant and plant in the row. The space between the sods must not admit the rather fine soil in which they are planted to escape through.



Wire Basket for growing Achimenes.

For the sides the same course is repeated, building layer after layer, and filling the body of the basket as the work proceeds with the soil in which the plants are to grow. The top when finished should be slightly rounded. The compost Achimenes do the best in is fibrous loam, and peat or leaf soil in equal measure, and sand enough to insure perfect drainage. The compost should be moderately moist at the time of planting, so as not to call for water until the plants have fairly started in growth, usually in about ten days. They should be frequently syringed at this stage, and slightly shaded for a week, afterwards giving light and sunshine.

While the young plants are in active growth, previous to flowering, they should be syringed

twice daily during bright weather if grown in light airy houses, but if in partial shade the syringing is not necessary, but they must have abundance of water at the roots.

In the blooming stage the atmosphere of the house must be kept dry, airy and warm; the air of an ordinary conservatory will now suit them well. Dampness at this time is the greatest danger. If this can be kept away the baskets should continue in great beauty for months. It is often difficult to see even a leaf for the great abundance of the flowers. As to varieties, we may remark that shy, weak-growing ones are of no use at all for basket planting.

Achimenes may be grown in various ways, and when well grown are always interesting. We have seen very fine specimens in pans. We plant them freely on a rockery among Ferns, and also on carpets of Selaginella; where they have a very pleasing and refreshing appearance; but the method of growing them in suspended baskets seems to be superior to any other; indeed, we question if there is another plant to be found which will for the summer months, surpass the Achimenes in beauty and interest, when they are well grown in this way.

We should perhaps say to beginners, that success in managing this plant will be in proportion to the care and intelligence exercised in handling the tender plants at planting time, and placing them in a position without unnecessary damage to the roots or soft stems, and to timely attention to details of culture given.

## THE COMPLETE GARDEN.

### IV.

BY A WELL KNOWN HORTICULTURIST.

#### THE FRUIT SECTION OF THE GARDEN.

Directly towards the south from the Walnut tree, which was reached after crossing the rill, is seen a path along the slope which extends from the orchard level to the water's edge. At a point some forty feet from the Walnut tree it is observed that this path divides itself into two branches, one leading down towards the water's edge, and the other taking higher ground, and meeting again in the Nut Grove. In the near vicinity of this walk and its branches are various ornamental, and some wild, plants. The Nut Grove consists of seven trees: Pecan and Shag-bark Hickory, Butternut and various Walnuts. To the rear, or north, of the large Walnut first reached, is met a small circular turning place which forms the termination of the North Walk or cart drive. You will observe that this drive runs beside the heavy North Screen which forms such a conspicuous feature of the garden, extending as it does the entire width of the place. This screen is composed of a double row of Evergreens, broadening out in several places in the line. Its ample height (some sixteen feet) and density is such as to afford almost a perfect barrier against north winds sweeping across the Fruit Garden and other parts of the place. It is difficult to estimate its value in contributing warmth and beauty to this portion of the garden, being in the highest degree both useful and ornamental.

Following the rear drive we observe to the right, extending nearly across the place, a small plantation of standard and dwarf Apple trees; nine of the former and one hundred and twenty-seven of the latter, giving together a good assortment of summer, autumn and winter varieties. These Apple trees were located at the extreme rear part of the Fruit Garden, to provide for its enlargement by some future purchase of one or more acres to the north. At a point in the North Walk about three fourths distant across the garden and starting from the termination Circle, we reach the main garden walk with its terminal object of a large floral vase, and a seat at its rear. This is an important walk in more respects than one. In a certain sense it is a direct continuation throughout the length of the entire grounds, from south to north, of the front entrance walk from the

street. In addition to being spanned by a Grape Arbor, and hemmed in on both sides by fruit trees, plots of Strawberries and vegetables, it has on either side a well divided border five feet in width and nearly two hundred feet long. These two borders give the walk a special charm for me, as they are devoted to a nursing space for raising young plants, testing new varieties, making experiments and similar uses for pleasure and profit. Here, also, as in other parts of our garden, some space is set aside for the children, in which full sway is given them to plant and cultivate as they desire.

To the south of the rows of Apple trees, and extending across the garden, are two rows of Standard Pear trees, with Dwarf Pears placed at intermediate points. We here locate eighteen of the former and thirty of the latter; enough to provide for a splendid family supply of this favorite and luscious fruit. Next there is found a row of fifteen Cherry, and beyond, another one of twelve Plum and three Apricot trees. Still further along we see a last south row of fruit trees consisting of twelve Peach and three Nectarine trees. The Grape Arbor, a little further ahead, is conspicuous as the place where two lines of Grape trellise, affording a walk between them, cross the garden at right angles with the main walk. Covered with bearing Grape-vines and having several seats within, we find it a place of delight to all who love the sight of a carefully managed and well-kept vegetable and fruit garden. Between the line of Grapes and the Peach and Nectarine trees is seen a space consisting of six plots which are planted to small fruits, commencing with Gooseberries at the east, then with two plots of Strawberries, one of Raspberries, and a smaller one each of Currants and Blackberries. To the east of the latter, and of the lines of Grape trellise, are located a dozen Quince trees. On the south side of the Grape trellises, and extending to the ornamental hedge, is met the four plots which constitute the Vegetable Garden. As this part requires a liberal use of manure, it was located conveniently near the manure and compost shed, which is located in the rear of the barn and the poultry and pig quarters. This necessary garden adjunct is not seen from the Grape Arbor or the garden in general, being hidden from view by a screen of Evergreens. The east side of the garden is enclosed by a hedge of Honey Locust, inside of which, and along its line, is the cart drive leading from the manure yard and barn to the rear parts of the garden.

Leaving the Fruit and Vegetable Garden by the main walk passing through the splendid hedge of Norway Spruce, we come into the yard for hot-beds and frames, a little plot, which, by judicious management is, over a long season, made most prolific, of frame, early vegetable and flowering plants, in addition to the growing of liberal supplies of Lettuce and other salads, Cucumbers, Melons, Squashes, etc., during the summer in spent hot-beds, as well as supplying some of these for earlier use. Protected on the east by the barn and poultry house, on the west by the Grapery and Potting shed, on the north and south by hedges, and being in close proximity to manure for hot-beds, to the greenhouse and potting shed water supply and to the garden, it proves to be in every way well equipped as a most indispensable feature of the place. From this yard let us enter the Greenhouse department directly from the rear, which is done by way of the most useful, if not strictly ornamental department, the Potting Shed. This place every day in the year shows some degree of activity. We observe here the main floor devoted to such general equipments as soil, pots, labels, implements, etc., whilst underneath is the boiler for heating the glass houses, requisite coal space, and overhead of the ground floor, rooms for an attendant, stove closets, etc., etc. Three doors, made partially of glass, open from the Potting Shed into glass apartments, two of these into Graperies of different degrees of temperature and one

into the forcing pits; one door also leads out southwardly. Let us pass outside and take a walk around the glass range through the Formal Garden, entering the glass houses proper by the main entrance.

The Formal Garden contains a display of the extremely formal characteristics in gardening, in contrast to the more natural style which prevails generally throughout the ornamental grounds. For the sake of variety, I confess to a liking for a touch of this kind of gardening in its appropriate place. Here between the greenhouses and the hedge, enclosing the vegetable garden, is what I call an appropriate place for some of this gardening. The numerous geometrical lines pertaining to the greenhouse, as well as to the hedge, admit by way of harmony a display of similar lines in flower beds, clipped trees, etc., with pleasing results. The effect would be shocking were my entire four acres so laid out, but the slight touch of it here leaves a pleasant impression.

The main features of this garden are, first the continuous slightly elevated terrace or area upon which the glass range is located. This is defined on the south and west sides by a low slope, averaging about one foot high above the common level. To the rear of the glasshouses, are two slightly raised terraces of turf, surmounted by small Arbor Vites, Dwarf Spruce and Juniper trees kept pruned to conical and spherical forms, besides some flower and plant beds laid out in geometrical style. Other evergreen trees of stronger growth varying in size, but all kept neatly clipped, are located about on the general terrace. Some half dozen or more flower beds of good design are also cut into the sward of this level to combine for handsome effect with the clipped trees and other predominating features. The large Norway Spruce hedge with its turrets is noteworthy. It is a little above five feet wide at the base and six feet high in its main parts with the cone-shaped turrets rising two and a half feet higher. By careful pruning it has attained such density in growth that a bird would have difficulty in planting a nest in it. The small hedge at the east end of this garden is of dwarf Arbor Vita.

Coming by way of the Terrace around to the southwest or main entrance to the greenhouses, we first enter the conservatory part, containing Palms and other plants especially attractive in foliage or flowers. This part being somewhat higher accommodates a larger size in plants than the other apartments. Proceeding from this part we may enter the Greenhouse proper to the north and the Stove or Hot-house to the east, each containing respectively the class of plant adapted to the temperature maintained.

Extending from the Greenhouse to the Potting Shed at the north is a Cold Grapery and between this latter structure and the Stove are two forcing pits, each 8 1-2 by 30 feet, in which are brought forward both flowers and vegetables during the inclement season. The southeast apartment of the range constitutes the Warm Grapery, where the vine is forced to produce early Grapes.

Leaving this part by an outside doorway we find ourselves to the south of a Japan Quince hedge, which extends from the Grapery to the carriage drive and beyond to near the easterly line. To the front of the hedge near the Grapery is the Spring Garden, devoted largely to the spring-blooming plants. Directly on a line from this spot to the main street entrance we see a Rock Border, which will receive a future description. Following the walk from this part and around the rear of the house, we pass Ferns, shrubs and flowers in beds and on the lawn, reaching at once the veranda from which we started in our stroll through the garden.

#### The Flowering Almond.

HARLEIGH GILLETTE, HIGHLAND PARK, ILL.

The Flowering Almond is among the earliest and most beautiful spring flowering shrubs. Its slender shoots in May become completely

hidden by fragrant pink and white bloom, making it a most attractive object. The flowers appear before the leaves, and sometimes so early as to be blighted by frost. From this fact no doubt has originated its signification of "thoughtlessness." The Orientals, however, regard an abundance of bloom upon the Almond as an omen of a fruitful year, hence give to it the signification of "hope."

The ancients had a pretty legend to account for the origin of the Almond tree. They state that beautiful Queen Phyllis, had become enamoured of Demaphoon, who upon his return from the siege of Troy had been cast upon a foreign shore. The young queen, when her lover failed to return, died of a broken heart and was transformed into an Almond tree. On Demaphoon's return, after a long time, and in sorrow for her death, he offered a sacrifice upon the seashore, when, it is said, the bare branches of the tree burst into bloom, as a sign of her love and forgiveness even after death.

The Flowering Almond belongs to the *Rosaceae*, hence is a near relative of the Rose. It is usually hardy in this latitude, but in a severe winter has been known to have been killed. It is well to protect with straw, wrapped around and tied tightly to the stem, in all localities where the thermometer reaches zero. In the spring this covering should be removed early, or as soon as the ground thaws, and the bush will soon be in full bloom.

A row of flowering Almonds planted along an Evergreen hedge, the latter to serve as a back-ground and for winter protection, is a very attractive way of cultivating it. The deep green of the hedge sets off to perfection the lovely pink bloom of the shrub.

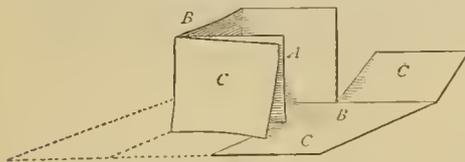
**Marking Tools.**

To mark steel tools, says a scientific exchange, first cover the article to be marked with a thin coating of tallow or beeswax, then with a sharp instrument, write the name clear. With a feather fill the place on which are written the letters, with nitric acid; let it remain from one to ten minutes, then dip in water and rub off, and the marks are etched into the steel or iron.

**Paper Transplanting Boxes.**

The extent of the roots and not the top of a plant is the true measure of its worth. This fact is recognized in the use of pots or boxes for bringing along early plants up to the setting-out time. The desire is that the shift from the forwarding place to the open ground shall be done without the loss of roots, a thing quite possible, if these are confined within a receptacle containing the earth in which they grew.

Common earthen pots answer the end referred to very well, but these are not everywhere easily or cheaply procured. A most useful substitute, and one available to all, may be found in



Paper Transplanting Boxes.—Forming the Box.

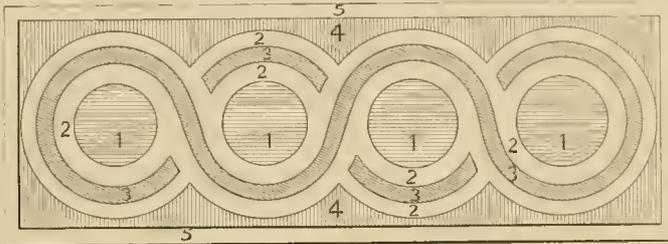
such a simple article as a paper box, made expressly for the purpose.

Our correspondent, Mrs. S. H. Sherwin, of Mitchell County, Texas, writes us that it has been her custom for some years to rely on home made paper boxes in which to bring along early plants. The same correspondent sent us a sample of the box she employs; had it not been the case that one we ourselves have seen in use was a slight improvement on it, we would have gladly described hers. As it is we give a

small descriptive drawing herewith of the other and somewhat better box.

Its construction is most simple. Ordinary manilla or wrapping paper is taken and cut into squares, varying according to the size of the box wanted. For a small one 2x2x2 in size the square should be six inches on each side. Then on two sides, at points two inches from the corners, slits should be cut in toward the center, but parallel with the outer sides and exactly two inches deep. This would leave the paper ready to fold into the form that is shown under way of construction in the engraving.

In the folding, first the two sides between the slits referred to, (A in engraving)



SCROLL DESIGN FOR A GARDEN BED.

are turned up. Then the two sides, represented in the engraving by B and C, are turned against the first two, with the end section C bent around to the outside of A. This, with a single stitch of thread on each of two sides, to keep sections C and A together, completes the box.

Our correspondent referred to says further on her use of paper boxes, "The bottom of the paper box is gashed crosswise with a knife, and at planting-out time box and all are set into the ground, the former soon decaying and the roots promptly finding their way into the soil. The making of the boxes before needed is light and pleasant evening work."

**A Scroll Design for Bedding.**

In planning for the tasteful use of tender bedding plants it should not be overlooked that simplicity of design is a prime element of all true beauty. A plan simple in its character, if it be otherwise pleasing, is quite certain with the average planter to turn out far better than is one very elaborate in design.

For a simple bedding design the scroll in some of its modifications affords an excellent pattern. Its basis is the circle and Hogarth's "waving line of beauty." In the accompanying engraving is shown one arrangement of this, so simple that any person possessing a little skill in the use of line and pegs, at laying out, may transfer it to the ground to work after. For a bed 12 feet wide the curved sections should possess a width of about one foot each, reducing or enlarging on this as the bed is narrower or wider. A bed of this style may be of any length desired from two segments upwards.

In the matter of plants suitable for use the following selections would prove effective. The numbers refer to the numbered spaces in the accompanying cut.

Selection A.—1 *Alternanthera aurea*, of golden hue; 2 *Variegated Alyssum*, whitish hue; 3 *Alternanthera parychoides major*, crimson; 4 *Othonna sedifolia*, green with yellow flowers; 5 *Echeveria secunda*, whitish.

Selection B.—1 *Coleus Hero*, black; 2 *Coleus*, golden-hued; 3 *Coleus Verschaffelti*; 4 *Achyranthes*, crimson; 5 *Centaurea*, white.

Selection C.—1 *Scarlet Geranium*; 2 *Centaurea gymnocarpa*, white; 3 *Coleus*, dark; 4 *Dwarf Ageratum*; 5 *Geranium Mde. Sollerioi*, white and green.

Of the above selections the one A would be suited to a bed six feet and upwards in width. Those of B and C consisting of stronger growers would require a width of 9 feet or upwards; 12 feet would be perhaps the best.

In the planting of such a pattern care should be bestowed upon the selection of plants of

kinds nearly uniform in size. From the setting out time on throughout the season, a systematic course of pinching or shearing should be resorted to with such kinds as will bear it, for maintaining a regular width and height, not overlooking a cleanly defined edge for each line. With due regard to these points little difficulty would be had in reaching very satisfactory results in working after the suggestions given.

**B. G. Northrop on Arbor Day.**

Teachers can easily interest their pupils in adorning the school grounds. With proper pre-arrangement as to the selection and procuring of trees, vines or shrubs, Arbor Day may accomplish wonders. Many hands will make merry, as well as light, the work. Such a holiday will be an attractive occasion of social enjoyment and improvement. The parents should be led to approve and patronize the plan.

The planting and improvements thus made will be sure to be protected. They will remain as silent, but effective, teachers of the beautiful to all the pupils, gradually improving their taste

and character. Such work done around the school naturally extends to the homes. You improve the homes by improving the schools as truly as you improve the schools by improving the homes. Our youth should early share in such efforts for adorning the surroundings of their homes, and planting trees by the wayside. How attractive our roads may become by long avenues of trees.

Arbor Day will become one of the institutions of the country, in which our boys and girls will take an eager share and genuine pleasure, and thus gain a liking for trees that will never be effaced. Nebraska has the honor of originating Arbor Day. Some ten years ago, at the request of the State Board of Agriculture, the governor appointed the second Wednesday in April as the day to be devoted to economic tree-planting, and it is claimed that twelve millions of trees were planted on that day. The successive governors have continued thus to recognize this day. The schools last Spring adopted the plan of planting "memorial trees."

The recent spring floods and summer droughts in Indiana, Ohio, and elsewhere, increasingly and now alarmingly destructive, are calling public attention to the cause and remedy as never before. The denudation of the hills and mountain sources of the springs is the leading cause of these freshets, and these can be remedied only by the extensive re-forestation of such lands. This great result, which must be the work of time, will be best accomplished by interesting the young, as well as the old, in tree-planting. The Arbor Day in schools will do immense good in this direction. We need to popularize and diffuse the sentiment of trees.

The public needs to understand that the interests of all classes are concerned in economic tree-planting. In Germany, Switzerland, Sweden, and other European countries, this subject is so taught in their schools that the people generally appreciate the value of trees and the need of protecting them. Hence an enlightened public sentiment is a better guardian of their forests than the national police.

**Grape Culture.** At a late meeting of the Hennepin County (Minn.) Horticultural Society, Mr. Isaac Gilpatrick described his system of Grape culture, which he has practiced with good results for twenty-three years. While there is still much to learn, in his opinion he believes the Grape growers of Minnesota will soon be able to compete successfully with those of California, especially so far as the quality of the fruit is concerned. His plan has been to plant the roots in holes from one and a half to two feet in depth cultivating the ground thoroughly and placing the roots eight inches below the surface. Ordinarily growers had not taken sufficient pains to set out in deep and wide holes; too much wood is left on the vines each spring and care should be taken to rub off the wood blossoms. After the preparation of the vine it was trained in a slanting direction from the bottom to the top of the trellise. Last year he had gathered thirty-six pounds of Grapes from a vine four years old. By the renewal system of cutting away the old wood, he had been able to double his crop of Grapes and their quality had been perceptibly improved.

## Robin's Return.

Robin on the tilting bough,  
Red-breast rover, tell me how  
You the weary time have passed  
Since we saw and heard you last.

"In a green and pleasant land,  
By a summer sea-breeze fanned,  
Orange trees with fruit are bent;  
There the weary time I've spent."

Robin rover, there, no doubt,  
Your best music you've poured out.  
Piping to a stranger's ear,  
You forgot your lovers here.

"Little lady, on my word,  
You do wrong a true-heart bird!  
Not one ditty would I sing,  
'Mong the leaves or on the wing,  
In the sun or in the rain;  
Stranger's ear would list in vain.  
If I ever tried a note,  
Something rose within my throat.

"'Twas because my heart was true  
To the North and spring time new;

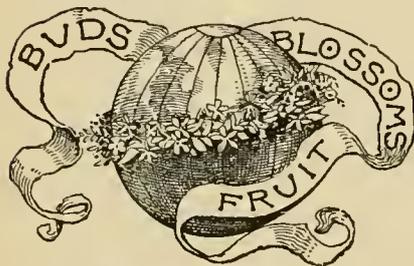
"My mind's eye a nest could see  
In you old, forked Apple tree!"

—Edith M. Thomas.

If Mother Nature patches  
The leaves of tree and vine,  
I'm sure she does her darning  
With needles of the Pine!  
They are so long and slender;  
And sometimes, in full view,  
They have their thread of cobwebs,  
And thimbles made of dew!

—St. Nicholas.

"Firstling of spring" the ancients called  
Our modest Primrose dear,  
For first among the woodland flowers  
It braves th' awakening year.



Roll the lawn.

Lilies need deep planting.

Early seed raisers—the hens.

A flower girl—Rhoda Dendron.

We should say try an Eaton Grape.

Manure directly against the root, kills.

The Chinese begin to appreciate lawn mowers.

Light soil for Onions - heavy soil for Onion seed.

The weed crop comes in where there is no other.

Zebra-striped Zinnias are among this year's novelties.

For a novelty, plant the Red-flowering Horse-chestnut.

Many a person would join our family this month if invited.

Cabbage seed beds, in the midst of buildings, escape the flea.

Genesis. The first man was the first horticulturist.—Dr. Gillett.

We like and recommend the Barberry for a low ornamental hedge

Let the back yard also be kept tidy, and adorned with ornamental growths

Lawn mowers were invented in 1830, by Edward Budding of Gloucester, England.

This year's Florida Oranges are inferior. The frosts of recent years are blamed.

The garden should be twice as long as wide, that horses may be employed to advantage.

Garden seeds kept by the corner grocer are not good enough for POPULAR GARDENING readers.

The Mezeron Pink heads the procession of Flowering Shrubs, coming some weeks ahead of Forsythia.

A good April task for each one of our readers would be the securing of one or more new subscribers to this journal.

Count upon Phlox Drummondii, well doubled, among the flowers of the near future. Semi-doubles have been out for some time.

Ten-week Stocks, sown in the house in April, with me begin blooming in June, and give a long season of beauty and fragrance.—Elder's Wife.

Sponges kept continually within the tops of Camellias or similar plants that enjoy a moist atmosphere are of value in properly promoting this condition

In the orcharding, as well as the farming of the future, what is going to count better than the buying of more land, is the taking better care of what is possessed.

**A Lesson from the Flowers.** A deaf and dumb person being asked to give his idea of forgiveness, took his pencil and wrote: "It is the sweetness which flowers yield when trampled upon"

**Red Spider.** What do some of our aged readers say to this proposition by our friend Mrs. G. W. H.: "If our grandmothers were plagued with these little pests they made no record of it."

"**Uncle Sam.**" This is the name of a new Carnation we have lately seen grown by Messrs. L. Templin & Sons, Calla, Ohio. It is a scarlet of the striped section, and is of fine form and good size.

**Moist Fingers for Bug-killing.** In killing insects with the thumb and finger, take a basin of tepid water to dip the fingers in, as the little pests are more easily caught with moist hands.—E. Preston.

No doubt there are old, soiled berry baskets about the place. They are not fit for fruit again, but all such answer well for starting plants of early Cucumbers, Squashes, etc., in, and later setting them out basket and all.

**Farfugium Grande.** Of the many house plants we have, the yellow spotted Farfugium has, during the past winter, stood at the head of all others for vigor and beauty. I would place it first on my list of fine, easily managed plants.—Jodie.

That fine manure for crops is more valuable than coarse admits of no argument. Hens can break up manure better perhaps than any one of the machines invented for the purpose. Scatter some wheat over the pile and turn them on.

One of our Wild Grapes deserving of more attention as an ornamental vine is *Vitis riparia*, a variety of the Frost Grape. It is a luxuriant grower with broad cut-lobed leaves that are extremely handsome, as well as of a most refreshing green throughout the summer.

**Potatoes in Barrels.** Mr. E. S. Goff, of the New York Experimental Station, has raised Potatoes in half barrels filled with sand and fed with water, to which fertilizers had been added. The result was Potatoes simply perfect in shape—that is, they were perfect specimens of the variety grown.

**Herman De Vry.** The death of this gentleman at Chicago February 25, at the age of 38 years, removes one of the most talented landscape gardeners this country has ever known. The magnificence of the bedding in Lincoln Park, Chicago, in late years, is to be attributed most largely to his efforts.

**Ask and It Shall be Given.** No one can fairly say that POPULAR GARDENING is without a department for him or her, as the case may be, when the Inquiry Department stands open to meet the special wants of every reader. What any other part may lack this one should make up to the exact need of every subscriber, whose wants are stated.

To raise large Pansies one must not have too many flowers on each plant. Leaving three or four shoots to a plant, and these with but a few flowers each, is about right. The application of manure water, as has before been suggested in these columns, is also one of the essentials. By observing these points the work is open to great possibilities.

**Trenching or sub-soiling,** so beneficial to nearly all crops, finds an exception in the case of heat-loving vegetables like Corn, Tomatoes and Lima Beans, the roots of which should be encouraged to keep near the surface. A very deep soil invites them downward into the cooler stratum, the temperature of which is not conducive to the best development.—Old Gardener.

**Evidently They "Knew Beans."** "Locomotive" writes as follows: "I plant Beans among my Cabbages, and since beginning they have never been infested with caterpillars. The White Butterfly passes over them, hence I have a clean crop. In use the plan has three recommendations—it is clean, it costs nothing, it saves many an hour's fighting of caterpillars."

All plants will not bear the fumes of Tobacco with an equal degree of impunity. The Heliotrope, Salvia, and some Begonias are among the first to

suffer. By syringing or else dipping such in water, to have the leaves coated with moisture, previous to subjecting the collection to smoke, even these will not suffer. Light fumigating, and often, is better than heavy smudges.

**A Bird's Appetite.** Dr. Wood, an authority on such matters, says, that if a man could eat as much in proportion as a bird, he would consume a whole round of beef for his dinner. The redbreast is a most voracious bird. It has been calculated that to keep a redbreast up to its normal weight, an amount of animal food is required daily, equal to an earthworm fourteen feet in length.

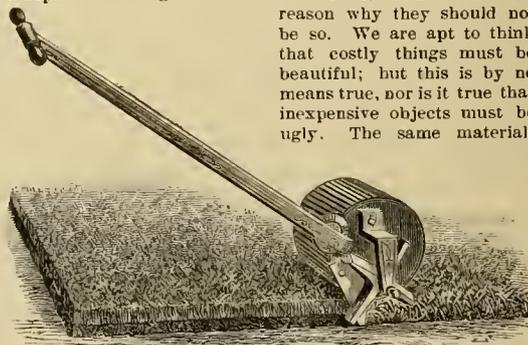
**A Handsome Picture.** All lovers of the Chrysanthemum will be interested in a large colored picture of 18 varieties of this popular flower, recently issued by Beatty & Co., of New York. Its size is 21 x 27 inches, being a reproduction of a costly oil-painting. It is not a mere fancy sketch, but faithfully delineates one of the more striking named varieties in cultivation in a way that enables one to recognize them at sight. It is a picture worthy of a place in every home and office.

**It Might Do for Some Other Things, Also.** Our sprightly correspondent, "Sister Gracious," tells of an eccentric chap living in a crowded city street, and with a back yard only fifteen feet square, who was determined to raise Strawberries of his own. He bored holes into the sides of a hogshead and filled it with rich earth, then put his plants in the holes and on top. They rooted and grew finely. The second year he picked twenty-five quarts. He says: "It is not back-aching work to pick strawberries from my bed."

**A Moss Garden.** A good idea is brought to the attention of the POPULAR GARDENING family by one of the members, Ephraim Preston, Berks Co., Pa., on this subject, as follows: "Tell your readers they can make a very pretty bed in any design they wish, of two or more shades of moss—light and dark grays, etc., that are to be found in most of the chestnut and some other woods where the soil is thin. Make the bed in a half shaded place, where the grass or weeds will not grow readily. The moss is easiest moved when damp.

A neighbor who formerly thought that "Strawberries were Strawberries," and that any kind would of its own accord produce fruit, set out quite a patch of a famous kind but never got a berry. An examination by an expert soon revealed the cause: they were pistillate or female plants, which require another pollen-bearing variety planted near by for their fertilization. He did not know this, but now he knows. Since coming to this knowledge he has, by proper improvement, gotten in the way of securing a plenty of fruit from his well tilled patch.

**Neatness and Taste.** In Brunner's work on Cottages he says: "It has been claimed that pretty and comfortable homes exert a decided moral influence. Be this as it may, we are all interested in making our homes attractive. And there is no reason why they should not be so. We are apt to think that costly things must be beautiful; but this is by no means true, nor is it true that inexpensive objects must be ugly. The same materials



LAWN EDGER—COMPANION IMPLEMENT TO THE LAWN MOWER.

used in the construction and decoration of an ugly apartment might, with the exercise of taste, be so employed that a graceful combination would result.

**Strawberry Culture.** In preparing to plant strawberries, take good land if you can get it; if not, take poor. For commercial purposes the conditions must be decidedly favorable. Plow well in the fall, plow well in the spring. Do not fool money away in trenching. Plant in the spring: not in the fall, not in the summer. Mark the ground; trim the plants; dip them in water, and place in a pail; thrust in the spade before you at forty-five degrees; a boy puts the plant in while you withdraw the spade and press the earth firmly with your foot. A man and a boy will thus put in 4,000 plants in a day.—Parker Earle.

**Orchids on the Pacific Slope.** Our subscriber, Mrs. Fanny E. Briggs, of Clarke County, Washington Territory, reports to us as follows: "Something about Orchids" in the December number prompts me to say that there are numerous Orchids in this Territory, most of them well-known, including the pretty variegated leaved *Goodyera pubescens*, and the lovely *Calypso borealis*. I find one which is very curious, being as white in all its parts as *Monotropia uniflora*, and seems to be a parasitic growth on rotten wood. Mr. Mee-



IVY-LEAVED GERANIUM IN A PENDANT VASE.

han has kindly given me its name, *Chloræa Austinae*, and pronounced it very rare.

**Successful Calla Culture.** Formerly I seldom got more than one Calla blossom per plant in a season, but I have found out how to treat them for blossoming freely. This is my method: I let my Callas grow in summer, keeping them abundantly wet. In the fall I remove half the earth and all the young bulbets. Then I repot, putting in about two inches of hen manure and filling up the pot with fresh earth. I keep the plants quite wet and later on have a succession of flowers till spring. Last year with this treatment one of my Callas had five blossoms in succession, and this winter the same plant is doing quite as well.—Mrs. M. J. Hoyt, *Fairfield Co., Conn.*

**Zinnia Culture.** This annual is rather tender, and the seed should not be started until about the first of April. Prepare some seed pans or boxes not less than 4 to 6 inches deep. The soil should be rather light, and rich, and sifted. Fill the pans within an inch of the rim, and then water well the soil; sow the seed thinly, and cover lightly with fine soil; then place the pans in a hot-bed, warm window or else in a greenhouse, at the warmest end, where in either case they can remain until May, at which time the plants should be large enough to be placed in a cold frame. Plant out in a rich soil early in June. Many sow the seed of Zinnias too early, and so lose their plants before planting out time.

**Early planting** is to be advocated; but planting in the mud, never. To sow Peas, Apple seeds, etc., as soon as the plow can be run on top of the frozen ground may seem like a gain, through getting work out of the way, but such a course is a decided loss to the season's growth. The seeds at the best will germinate poorly and the vitality of the plants be impaired from the start. A good test as to the proper time for the early planting, of the hardiest seeds, is at the earliest moment when the ground will leave the plow or spade in particles. With tender annuals, Sweet Corn and other heat lovers, it is not safe to plant until the soil is warm enough to induce prompt germination—about the time that Oak leaves begin to unfold.

**Why Seek to Patent Fruits?** One of the best arguments against the patenting of fruits, say nothing of the insurmountable difficulties in the way, is the fact that originators of new varieties possessing real merit can by good business management be sure of very adequate returns for their labors in originating such. For instance here comes Mr. George Josselyn, of Fredonia, N. Y., the disseminator of Fay's Prolific Currant, with the information that he has now paid to the heirs of the originator of that Currant over \$22,000 as their share of the sale of this plant made by him. The same gentleman informs us that he will give \$25,000 for any new Grape which will take the place among Grapes which Fay's Prolific has taken among Currants.

**A Lawn Edger.** However neatly a lawn may be kept by the use of the mower, if its edges against beds, walks, drives, etc., be not properly cut down about as often as the regular mowing takes place the effect is not pleasing. Still such an unkept

state of things is often met for the simple reason that the edging cannot ordinarily be quickly or readily done. But now a companion implement to the lawn mower appears in the Caldwell Lawn Edger, and this is designed expressly to shape up grass margins. It is propelled like a lawn mower. Our engraving (for the use of which we are indebted to Parker & Woods, the seedsmen and implement dealers of Boston, Mass.) shows the general form of the implement and its position when at work. The price of this edger is \$7.00.

**A Work on the Carnation.** Mr. Leroy L. Lamborn, Alliance, Ohio, sends us his new book on Carnation Culture. It is a work of 150 pages, and as is claimed in the introduction, it is the first work on this subject that has ever appeared in book form. A great amount of compiled and original matter that must have value to all cultivators of the Carnation has been brought together within the volume. In general its perusal could hardly fail to prove interesting to lovers of flowers, and the wide dissemination of the book should be helpful in promoting the successful culture with amateurs of the Carnation. Still we cannot but express regret that this, the first volume devoted to such a worthy subject, should have been prepared with so little regard for the most ordinary rules of correct spelling and proof reading, to say nothing of some other obvious imperfections.

**Henderson's new "Gardening for Profit."** It is twenty years or more since this eminently practical book from the pen of Peter Henderson was first written. It at once took its place at the head of American works on vegetable gardening, and since the day of its coming in it has met with a sale never equaled we think by any one other book on American horticulture. Twelve years ago a second edition was issued, and now comes forth the third and greatly enlarged edition. This edition so far leads those which have preceded it that it will prove indispensable even to the admiring readers of the former editions of the work. Besides embracing accounts of new methods of culture and of new varieties that have appeared in late years, it enters largely into the new and profitable field of forcing vegetables under glass. It also, as a new feature, treats on the culture of the leading small fruits.

**Ivy-leaved Geraniums.** No class of Geraniums has shown such rapid strides in late years as this; no class is more worthy, for as pot plants they rank very highly among others, and especially for cultivation in the window by amateurs. The richness of color shown in some of the newer varieties may easily be imagined from the following descriptions: *Horace Choisei* is a large double of glowing salmon pink color, slightly tipped with white. *M. de Lesseps*—Large, perfect formed flowers of a most beautiful shade of magenta rose. *La Rosiere*—Fine habit and very free blooming, with trusses of large-formed flowers, of a rich, warm, salmon pink color. *Joan of Arc*—Flowers perfectly double, white as snow, and literally stud the plant when in full bloom. Dense, glossy, green leaves, making a most effective background for the ivory white flowers. *Abel Carriere*—Fine, double flowers, of a beautiful currant red, tinted with dark violet.

**"Double" Gaillardias.** The so called Double Gaillardias are, we incline to think, not yet very generally in cultivation. They are among the most satisfactory of seed grown plants. The growth is of good habit, a quality not always present in annuals, and the flowers are remarkably attractive. While in character they are, as may be seen by the reduced but life like engraving herewith, wholly distinct in appearance from the old single Gaillardias, yet the culture is identical in both cases. The seeds may be sown under glass in shallow boxes or in pans, and when the seedlings are about two inches in height they will need ample light and air daily to harden or mature them before being planted out into beds and borders. It is better to allow the plants to remain in the seed boxes until the spring is well advanced, as the harder and firmer the plants the safer will they be to transplant. When from 3 to 4 inches in height, and having good roots, lift carefully out of the boxes, disturbing the roots as little as possible, and then either dibble out or transplant with a garden trowel. We advise all who have never grown the Double Gaillardias to try some. They come in a good variety of colors.

#### News and Notes Concerning the Use of Flowers in New York.

Some of our grower have been experimenting in forcing the Double *Spiræa Reevesii*, a pretty little hardy shrub, with double white flowers, like the familiar Bridal-wreath. It seems to take the forcing very kindly, and its purity of color and graceful habit should make it as useful as *Deutzia*.

Many Rose growers are coming to the conclusion that an over-fed Rose is just as unhealthy as a bilious person. Too much food, in the way of top-dressing and the like, seems in many cases to be responsible for "bull-headed" and imperfect flowers. This seems especially the case with *Perles*, which have a decided tendency to produce many ill-shaped flowers under any circumstance, particularly during unfavorable weather. A judicious use of bone with other fertilizing matter seems to produce the best results. The use of rank cow manure, spread in a semi-liquid state seems a decided mistake, judging from the results it produces.

New Roses seem to be a regular epidemic just now. Of course, a good many of them will doubtless drop into horticultural oblivion after a little trial; others will come to stay. The new hybrid perpetual *Dinsmore* promises to be first class for outdoor use, being thoroughly hardy, and a profuse flowerer. It is fragrant, and the crimson hue is very rich as grown under glass; I have not yet seen it flowering outside. It is, however, so excessively double as to be cup-shaped, like *Madame Boll*, but it would doubtless lose this characteristic.

Another striking new Rose, first shown in New York at Siebrecht and Wadley's Orchid Exhibition, is a hybrid Tea, as yet unnamed formally, though it will probably be called "Oakmont," after its birth-place. It is a cross between *Baroness Rothschild* and an old-fashioned Tea, "President," the latter being the seed-bearing plant. "Oakmont," if we may so call it, suggests Paul Neyron at first glance, both in color and in the peculiar rounded smoothness of its petals. The color is very similar to Neyron, but tinged with a silvery hue, like *La France*. And it is very sweet, with the real Tea fragrance, very sturdy of foliage, very durable, and in fact, may be described in superlatives generally. It certainly looks much more like a hybrid perpetual than a tea, but the perfume is unmistakable. It is a splendid keeper; the flowers on exhibition had been cut nearly a week, but they were crisp and firm, without the slightest suspicion of the bluish tinge that so often disfigures pink Roses after they have been cut for a day or two. The originator of this Rose, Mr. Cumley, of Oakmont, near Boston, has been testing and improving it for five years, so he is able to speak confidently of its merits.

The Orchid Exhibition was certainly worthy of all praise, appealing equally to the Orchid fancier and the mere unbotanical lover of beauty. The splendid specimen Palms, in which *Rose Hill Nurseries* are so rich, made a fine showing in the midst of the crowned heads and other waxy notabilities for which the Eden Musee is famous. The mirrored winter garden, in which the main exhibits were displayed, was most artistically arranged.

Growers at a distance were unable to send many plants, owing to the unfavorable weather, but Mr. Kimball of Rochester, Mr. Corning of Albany, Whittle Bros. of Albany, and many others supplied fine cut flowers. There were backs of flowers,



Double Gaillardias.

beautifully arranged, down each side of the room; at the end opposite the door were fine foliage plants arranged about a grotto-like recess, in which hung fine *Nepenthes*.

Superb Cycads and Palms were placed wherever they would be most effective, and a very graceful effect was produced by hanging blossoming epiphytes upon graceful Palms.

There were trees draped in Moss and hung with *Orchids*, and there was a positive bank of *Cattleyas* and *Lycastes* fringed with delicate Ferns. *Lælias*, *Cattleyas* and *Odontogloss* were especially fine, and there were superb examples of *Cypripedium Lawrenceanum*. Some spikes of *Cymbidium Lowii* were very strong and rich. The *Schomburgkias* and *Scuticarias* were attractive from their oddity; one unbotanical visitor suggested that *Dartie Nature* was taking an afternoon off in a sportive mood when she originated the orchid tribe, while the botanists must spend weary nights in dislocating the dead languages to supply them with names.

The limits of the present article are not sufficient for an exhaustive report of the show, but it may be catalogued as an overwhelming success in every way, reflecting the greatest credit upon its indefatigable originators.

EMILY LOUISE TAPLIN.

# LIGHT FROM THE SOCIETIES:

BEING MATTER THAT DESERVES TO BE WIDELY KNOWN.



## GLEAMS.

**Prunus Simonii.** President Barry having fruited it, pronounces it a fruit of no considerable value.

A child reared in the influences of horticultural surroundings seldom goes astray.—*L. D. Watkins.*

The monthly meetings of the New York Horticultural Society the first Tuesdays in March and April, will be held in Cooper Union.

**Transplanting Large Trees.** If you want to transplant such cut back the top the year before. In the case of Nut or other trees with tap roots dig down and cut off the tap root.

**An Enterprising Society.** The proceedings of the Columbus Ohio Horticultural Society now appear in the form of a monthly Journal edited by W. S. Devol, Secretary. It makes not only a valuable but an attractive periodical.

**"Fruit growing** is profitable if it be understood. The first aim should be to provide an abundant supply for family use, then consider a surplus for market. Organized effort in Societies throughout the State has had a good effect in promoting Horticulture."—*Alex. Howell, at Mich. State Meeting*

**Take Some Good Paper.** L. H. Bailey, Jr. of Agricultural College, Michigan, says: "Take one or two horticultural papers. People who take the papers are the best informed. Those who take them are seldom imposed upon. Dishonest agents find their best field among those who take no such papers."

**Planting for Quality.** President T. T. Lyon in some introductory remarks before the Michigan Horticultural Society deplored the tendency of commercial growers to plant for the eye more than for quality, thus taking advantage of the ignorant buyers in the city, instead of cultivating in them an exact knowledge of the best. "The matter has gone so far as even to leave its impress on the planting done by the less discerning who plant for a home supply, they relying on the 'market sorts,' not realizing their inferiority. So let us promote true horticulture by planting of the best and cultivating for real value more than for looks."

## Meeting of the Wisconsin State Horticultural Society.

The annual meeting convened at Waukesha, on February 16, with a good attendance. Several hundred dollars had been offered in premiums, and this led to a fine exhibition of fruits and flowers, showing what Wisconsin can do in the horticultural line during winter.

On the second day President Smith gave his annual address, containing an account of what the society had accomplished during the year. Prof. Cook, of the Michigan Agricultural College, lectured on "Insects injurious to Plaut Life and Means of Destroying Them." He made the surprising statement that the annual damage to the crops of the country from insects was not less than \$200,000,000.

In the afternoon Mr. Garfield, of Michigan, spoke on "When, How and Where to Teach Horticulture." He considered experimental stations and horticultural colleges necessary to attain the best results.

B. S. Hoxie, of Evansville, read a valuable paper on "Forestry," showing the growing necessity to the country of preserving a proper proportion of existing and of planting forests on the treeless areas to prevent our already changeable

climate from becoming more so, and to preserve a proper proportion of moisture so necessary to the propagation of our most tender fruits and flowers.

At the morning session of the third day, Mr. Jas. Currie, of Milwaukee, read a paper on "House Plants," after which came resolutions and other business. J. B. Stickney of Wauwatosa, lectured on "Insect Pests," and Mr. Kellogg, of Janesville, reported on "New Varieties of Small Fruits."

## The Iowa State Meeting in January.

At the meeting held at Charles City, President Silas Wilson urged, in view of the loss on fruit trees in recent years from unfavorable seasons, the necessity of meeting and devising means to bring about a remedy. Had a system of cross fertilization and proper selection years ago been adopted, we should, ere this, have made substantial progress. He advocated the fitting up of an arboretum, comprising ten acres of the beautiful grounds of the State Agricultural Society, and that the horticultural society should do something in this line.

**Reports.** From the report of the Third Fruit District, comprising the southwest counties, it is safe to say that the present condition of orchards in that portion of the State is decidedly better than in any other; yet Ben Davis, Jonathan and nearly all the old varieties except Duchess are injured, and many varieties prove short-lived. The recommendation of the director was to plant the most profitable of the well known varieties, and test the most promising of the new varieties. The remainder of the time was taken up with the reports from the different districts and discussion on the same, which may be summarized as follows: In the southeast portion of the State the winters have played havoc with the orchards, Willow Twig, Grimes' Golden, Roman Stern and Fameuse doing best. The Worden Grape seemed to promise well all over the State. Thorough cultivation was recommended as a preventive of Grape-rot. In reports from nearly all parts of the State complaint was made that orchards were dying and the cry was for harder trees, and the efforts of fruit growers should be largely in that direction. The great need is good-keeping winter Apples.

**Russian Apples.** Mr. Tuttle, of the Wisconsin Horticultural Society, gave his opinion on these. He stated that there could be no question as to the hardness of a large number of them, and as to quality some of them were very good; thought the south half of Iowa had no need for Russian varieties, but advocated them for more unfavorable parts where common varieties would not succeed.

## Specialties in Horticulture

[Extract from a paper by Theodore Goodrich, before the Illinois State Horticultural Society].

One could grow a dozen kinds of fruit and be considered successful; that is, make money on all. But suppose that while growing the twelve, he selects one and gives it closer care than the others; studies its requirements and brings it up to a higher point of excellence. A miller, recognizing the value of this idea, made a specialty of a choice grade of flour. He studied, perfected his plans and machinery until he could place a superior article on the market cheaper than his competitors could an inferior one, and he became a millionaire.

I was on South Water Street, Chicago, last September, when each commission house was selling a thousand baskets of Peaches daily, the great majority of which were sold for thirty-five or forty cents. I desired a basket to take home and they recommended a certain brand at seventy-five cents, as being of an honest, uniform quality of both fruit and packing. I did not regret my purchase.

Here was a man getting twice the market price, and that when Chicago was flooded with Peaches. He was evidently making a specialty of this fruit.

Nature did not give his trees any more sun or rain than those of other orchards. But he had acquired the skill to use, to the best advantage, what he did have. He had learned to thin the fruit to obtain size, to cultivate and enrich the ground, and to destroy the curculios that would mar the beauty of the fruit and lessening its worth.

Merchants, mechanics, nurserymen, men in all branches of trade have their specialties. Something they make better, or sell lower, than their competitors. So with men of science. They recognize the fact that life is to short too achieve distinction in more than one branch of learning. So they select one, and spend a lifetime in its pursuit.

Carl Linnaeus was a renowned scholar, but the world remembers him as a botanist. Newton, Franklin and David Hume, ripe scholars all, but known to us principally through their special lines of work and thought.

I do not advocate the growing of one kind of fruit, and only one; that would be putting all one's eggs in the same basket, a practice that is never safe. Grow as many kinds of fruit as you can, well and profitably, and of these select one to be treated as a specialty.

There are growers at Cobden who have become so skillful in growing Tomatoes, as never to fail to ship that fruit by the wagon load when worth \$1 a box. The Peaches of others are said to be as firm as any sold on South Water street. Others, by careful growing and storing Sweet Potatoes, have made a brand that sells in the market equal to the celebrated Jersey stock. These gentlemen are all growing Pears, Apples and small fruits like the rest of us, with about the same success as the average. But the largest part of their money is made on these specialties. All of them are reaping a pecuniary reward from their efforts to reach a higher grade of excellence in a single kind of fruit.

## Additional Notes on the Michigan State Society's Meeting.

### What Can Legislation do for Horticulture?

L. D. Watkins in a paper suggested that the aim of legislative work should be, 1st, to aid the unknowing in doing what they should do. 2d, to establish stations for solving the various practical problems of horticulture. 3d, to secure a competent State Warden for looking after the interests of horticulture, similar to those they have in all European countries. The codling moth alone has damaged the Apple crop in only several orchards enough to pay for such improvements. Horticulture he said has a wider application than simply the surroundings of our homes.

President Lyon stated that the governments of Europe do not permit people to cut down their own trees, except by permission of a public tree warden. If ours had done so it would to day be far better off; it should now be done.

Mr. Fitzsimmons moved that a committee be appointed to draft and submit resolutions to the legislature, which was carried. He believed that a suitable bounty offered for tree planting for protection, if rightly brought before the people would effect an improvement the same as a bounty for wide wagon tire had done.

Mr. Garfield had greater faith in the efforts of horticultural societies in cultivating popular taste than in laws. Spoke of the great work done in tree planting through the Arbor Day movement.

President Lyon believed that instead of a direct bounty for planting, certain tax exemptions for the work would be more effective.

**Methods and Results of Grafting.** Mr. Charles S. Crandall, of Lansing, presented an able paper on this subject illustrated by numerous stereopticon views. We expect in time to present most of these illustrations in our columns, accompanied by Mr. C.'s explanations. For the present we offer briefly some of the main points advanced in the paper:

The origin of grafting is unknown. Many ancients treat upon it, some at great length. Until the day of Thomas Andrew Knight (first half of the present century) the art was largely shrouded in absurd fables concerning its possibilities. Many problems are yet wanting solution. Much needs to be learned concerning the limitations of grafting; the necessary botanical relationship, etc. On uses of grafting he mentioned the increasing of kinds that will not come true from seed; the changing of the form of trees; the increasing of the vigor of certain kinds

by grafting on strong roots up high. Attention was called to the necessity of an actual contact of the Cambium Layer of stock and graft. He is a strong advocate of veneer grafting whenever it can be employed, this being a modified form of crown grafting. By this process wood is not set into wood, as is the case in most other modes. As the wood of stock and graft never unite there must be a certain degree of weakness present in all cases where these are brought together. A line of decayed wood is present at the point of union, and this may lead to unfavorable results.

President Lyon prefers the crown method of grafting to all others, the principle of which is to insert after cutting the stock off and dressing it, wedge-shaped grafts between the wood and the bark, afterwards tying around the stock near the top and coating with grafting wax. Its only disadvantage is that it must be done when sap flows. Would do all the grafting of a large tree in one year, cutting away not more than one-third of the top, distributing the grafts well to make the future top. A second crop of grafts will never catch up with the first. To cut off the entire top and graft is very injurious if it does not kill.

**Buying Nursery Stock. The Best Way.** E. H. Scott in a paper summed up his conclusions in substance as follows: 1. Take good horticultural papers to keep abreast of the times. 2. Live men advertise. Study advertising columns and study catalogues. 3. Know that your man is reliable. 4. Be sure yourself what kinds you want to plant. 5. Find out what kinds do best in your own locality. 6. Go slow on new varieties. Such are over-estimated. Old varieties treated as well would do much better. 7. Do not buy nursery stock which is cheap. Cheap prices mean cheap quality. 8. Pay first-class prices and insist on getting the best. 9. Have stock properly packed even if at an increased cost. 10. Examine on its receipt and report its condition back to nursery at once. He would plant young trees, never over 2 years old.

Peter Collier advised care in buying trees by the foot—so and so many feet high. You don't know whether you will get two or four year old trees.

President Lyon advocated setting young trees. He had once replaced trees in an orchard with old ones from an old nursery. They lived and that's about all. Smaller trees since planted got way ahead.

Secretary Garfield said that in his locality buying is done by the help of the horticultural society. The members talk over best kinds and then buy by the car load, sending a man to the nursery. They get better terms and better trees. Nurserymen have grades of stock that are not the best which they must sell, and will to those who don't grow; insist the right way on getting the best and you get it.

**Apples for Southern Michigan.** J. J. Fitzsimmons' interesting paper on this subject led to the casting of a vote on the best five winter Apples for Southern Michigan. Out of an aggregate of 83 names handed in the following was the order of preference:

Baldwin, - - -	17	Grimes Golden, - - -	1
Northern Spy, - - -	16	Fallawater, - - -	1
R. I. Greening, - - -	13	Wagner, - - -	1
Golden Russet, - - -	12	Peck's Pleasant, - - -	1
Red Canada, - - -	8	Ben. Davis, - - -	1
Tallman's Sweet, - - -	6	Jonathan, - - -	1
Spitzberg, - - -	2	Bellflower, - - -	1
Limber Twig, - - -	1	Golden Pippin, - - -	1

Mr. Fitzsimmons' choice for an orchard of 100 trees was stated as being 20 Northern Spy, 15 Red Canada, 15 Golden Russet, 15 Baldwin, 10 Spitzberg, 5 R. I. Greening, 5 Peck's Pleasant, 5 Tallman's Sweet, 2 Red Astrachan, 1 Early Harvest, 1 Hawley, 1 Golden Sweet, 3 Shiawasse Beauty, 1 Garden Royal.

#### More From the Western New York Society's Meeting.

**Kerosene Emulsion for the Apple-Tree Aphis.** Charles Little of Rochester in a paper said in substance that the past year found the Black Aphis on the Cherry and the green one on the Apple-trees unusually numerous and persistent. On yearling trees they tried dipping in whale-oil soap and tobacco water with success, but to dip a large tree was a slow and costly operation. They found by experimenting on a small

scale with kerosene soap, that it was sure death to the Aphis, but this too was costly. About this time the Department of Agriculture published a receipt for killing the hop-louse, the principal ingredient of which was kerosene, and this they determined to try on Apple trees. It was a decided success. After going over twice there were few or no Aphides left; the expense was trifling. The receipt is as follows: "Spray the trees with the following mixture: Kerosene, two gallons; one-half pound common soap, or whale-oil soap; water one gallon. Heat the water and dissolve the soap in it; then add it boiling hot to the kerosene. Churn the mixture by means of a force-pump and spray nozzle for ten minutes, when it will form an emulsion. Dilute before using one part of the emulsion with nine parts of cold water. This mixture will kill every louse that it touches, and the good accomplished depends only on the thoroughness of the application." It will be seen that two gallons of kerosene and one-half a pound of soap make when diluted to the right strength, thirty gallons of wash. Mr. Little found that, in using this receipt, two precautions must be carefully observed; first, the oil and water must be thoroughly mixed; soft water is preferable. When the mixture is complete the fluid becomes a milky white, and all globules of oil disappear from the surface. Second: the mixture should be applied to the trees in the form of a fine spray from a force pump. Experiments showed that unless the mixture was most thoroughly made, the young leaves would turn brown. The use of the force pump obviates this difficulty as the fine spray tends to divide into minute portions any kerosene that may be left unmixed.

**Not to be a State Society.**—The proposition to convert the present society into a state society and thus secure state aid, was after an animated discussion defeated by a small majority. The closeness of the vote signified very strikingly the demand for a state society.

**Injurious Insects.** Dr. Lintner said that no creatures lay a heavier tax on plants than Plant Lice or Aphis (*Aphides*). Their increase is something enormous. As a rule, hatching from eggs takes place in the spring, the first brood being all females. They again produce young alive and all females; the young in each case beginning to reproduce when five days old. In autumn males and a different form of females appear, and the young of these living over winter, begin a new round of increase. Under some circumstances a female may without coupling keep on propagating indefinitely in the right heat and food. This has been regarded as a kind of gemination or breeding.

Mr. Root reported the Apple Aphis or Louse had been very prevalent, showing first in June and giving the growth a dull color. Mr. Willard saw no perceptible effect from spraying with Paris green. They suck juices that should go to the Apples. Mr. Crane: Aphis on Plum were so thick as to be black; burned a wad of rags coated with coal-tar on several days and destroyed all. Mr. Bogue, thought that Aphis was outgrowth of the depressed condition of Apples as result of had storm in June; impaired juices, leading to imperfect fertilization.

**Potato Sketches.** In a paper bearing this title. Prof. Goff, of Geneva, gave an extended account of experiments with seed Potatoes under different conditions. Results strongly favored the best specimens from the best hills for seed. The smallest tubers from productive hills yielded more than the largest from the least productive hills. Indications are that small whole tubers are by no means inferior to cuttings of same weight. One experiment showed 41 pounds as against 35 pounds in favor of drying cuttings before planting; the cuttings were much shriveled. The starch in seed Potatoes as growth proceeds passes out, acting as a fertilizer to the young plant, water taking its place. Such fertility is not absolutely necessary beyond the fertility in the soil, as shown by experiment of removing some seed tubers when young plants were six inches high.

**Are Apples and Pears Smaller than Formerly?** Mr. Green thought it required more skill to grow fine fruit than years ago. Mr. Hooker said we had never seen finer fruit than that shown at this meeting. President Barry said in new, fresh soil fruit trees grew better and were less liable to suffer from insects than in that older. We can grow as fine fruit as ever, but it requires more manure and

fertilizers. The cultivation of the fruit shown by the speaker (it was a magnificent exhibit—Eo) was not of the very best order. But when the trees had shown by their growth that they needed fertilizers, they got it—perhaps once in two years. There had never been a time in 30 years when one could do better in growing fine fruits than now. The loss from Pear blight is now so slight as not to be taken into account, while 20 to 30 years ago it was very serious. Keep trees healthy and vigorous and one year with another they will do well and pay.

#### Growing the Chrysanthemum.

[Abstract of a paper by Arthur H. Feebles, before the Massachusetts Horticultural Society.]

##### GREENHOUSE CULTURE

The cultivation of the Chrysanthemum should begin as soon as the plant is through flowering. Many growers then cut it down to the pot; but this is risky, as many varieties have a weak constitution and will sometimes refuse to start into growth if thus treated. The best way is to cut the branches back quite severely at first, but not down to the pot until the shoots have begun to start quite freely from the roots.

The plants should receive as good cultivation after they have bloomed as before, to secure good, healthy cuttings. Plants are often packed in some unwholesome place, with the consequence that the root shoots become soft, weak and unfit for cuttings. This cause accounts for half the failures in their culture.

The Chrysanthemum is a sun-loving plant. The plants, as soon as they are through flowering, should be put in the sunniest place possible and have plenty of fresh air, judicious watering, and a temperature of about 50° or 55°. The matter of watering is a very important one at all times. The plants are more apt to be over than under watered at this season, but still they should never be allowed to come to a wilting condition, especially after they have begun to make fresh growth.

As soon as the young shoots are three or four inches long they are taken off for cuttings and placed in clean, rather fine sand, in a temperature of from 45° to 50°, with a gentle bottom heat, some higher. High heat is injurious.

For cuttings, choose fresh, growing shoots, and reject all rusty or unhealthy ones. Cut off all but about three leaves at the top and trim the lower end with a sharp knife. Give ample room in the sand; if too much crowded they are apt to gather an excess of moisture, which will cause them to damp off. For the greater part of the plants that are to flower in autumn, the cuttings are put in from the first to the third week in March.

The cuttings should root in about two weeks. When roots from half an inch to an inch in length are present, pot immediately into 2 3/4-inch pots. Prompt potting is important, as for as soon as roots are formed the cuttings begin to grow, and there being very little nourishment in the sand, they soon become weak and stunted if left there.

For soil use about three parts of good sandy loam and one of well-decayed stable manure. A heavy clay should be avoided. As soon as potted, place the plants in a cool, light, and airy structure, and shade for a few days from the bright sunshine. Water sparingly at first, but as they begin to grow the quantity may be increased, and from this time on they should never be allowed to want for water.

After the 3/4-inch pots are well filled with roots, but before the plants are actually pot-bound, shift to 4-inch, and from that to 5-inch, as becomes necessary, for the plants should never be allowed to become pot-bound. An April cutting that has never been checked is much better than one started in February and allowed to become pot-bound. One great secret of success: keep the plants in a healthy growing, condition from the cutting to the flowers.

Pinching may begin as soon as the plant is about six inches high. Pinch out the smallest amount possible from the growing end; never cut back to hard wood except in cases of unshapely growth. Pinch a few days or a week before the plant is shifted to a larger pot, then it will be in condition to use the fresh soil.

Even when the grower has the advantage of a house capable of being ventilated to an unusual de-



Veneer Grafting. Manner of cutting the stock (merely through the bark) and the cion. After setting, the graft and stock are bound and waxed.

gree, it is best to place the plants in a cold frame as early in the spring as it can be done with safety from frost. Here they can be hardened off. Planting out is usually best done about the middle of May. For this choose a location at all times exposed to the sun and air. But it should be protected from strong winds. A light, rich loam is the best soil; if possible it should be quite sandy. With proper soil and exposure there need be little fear of mildew, the one nearly unconquerable enemy of this plant.

Plant in rows  $2\frac{1}{2}$  or 3 feet apart each way. For each plant a hole about the size of a potato hill is dug and filled with fine manure, which is well forked into the soil. In planting fill up with loam, being careful that the surface is lower than the surrounding ground, so as to retain any water that may be given to the plants.

Keep well watered until the roots have taken hold of the soil, after which give no water unless the season is dry and they show signs of suffering, when they may have it as often as needed, occasionally substituting liquid manure. Apply at evening. Soon the young plants will push out branches very freely, which should be pinched at 4 inches long, repeating the operation as often as the branches become long enough, until about the middle of July, after which the plants may be allowed to grow at will, simply cutting back any unshapely branches. Such severe pinching is done to secure as many branches near the bottom as possible. But varieties that make shapely plants without pinching had better be left to themselves.

Soon after setting out, each plant is furnished with a strong stake, later adding others if necessary. As the season advances, many branches become so heavy that they are unable to sustain their own weight, and are in danger of lopping off. To prevent this, strings are used in such positions that one branch sustains another.

The worst insect pest is the Black Aphis, which will cause much trouble if allowed to increase. Dalmatian powder applied with a bellows is an effectual remedy while in the ground, but after housing they may be kept down by frequent fumigation with tobacco.

About the second or third week in August the plants are lifted, the best time being when the ground is very dry, for they will then recover the sooner. Taken up thus early they form their buds after potting, which is better, for, if formed before, the check is apt to result in deformed flowers.

Lift with all the roots that can be secured. To get them into reasonable-sized pots considerable of the soil should be carefully shaken off. For potting, soil now use about two parts of good loam to one of well-rotted stable manure. The pots are selected according to the size of the roots, being careful not to have them too large. The soil should never reach higher than an inch from the rim, so as to leave ample room for water and liquid manure.

After the plants are potted, place under trees where they can have both plenty of air and shade from the sun. About a week later, or when they seem to have recovered, take to the ground where they grew and plunge to the rim of the pot in the soil. Here they must have plenty of water and never become dry. Liquid manure may also soon be freely given as long as the buds are growing.

As cold nights approach, the plants are to be placed under glass, even before actual frost appears. Nights not cold enough to freeze are cold enough to check their growth, and thus to cause mildew.

For a long time after placing them under glass they require no artificial heat, and should be very freely ventilated through the day. In cold, cloudy weather it is best to introduce a little heat into the house, if only to dry out the dampness. Soon after they are brought in the Black Aphis will appear, and must be persistently fought with tobacco smoke, as long as the plants remain inside.

#### GROWING AS HOUSE PLANTS.

Those who wish to cultivate Chrysanthemums, but have no glass, will do best to procure young, healthy plants in May, giving the treatment above advised after that time, until the time for housing, when they may be taken in on cold nights and placed out-of-doors through the day. As house plants, they should be kept well watered, syringed as often as possible, being careful not to wet the flowers, and kept in the coolest, airiest place to be found.

The Black Aphis, or Black-fly, is usually found quite troublesome, but can be conquered by persistent application of Dalmatian powder.

If it is desirable to keep the old roots over the winter, they should be placed where they will be kept quite cool, and, if possible, near a sunny window. Early in the spring they may be divided and

planted out in the open ground and receive the same treatment as young plants.

The would-be cultivator must not expect that his plants will always be as large or his flowers as fine as those he sees at our fall exhibitions, for the Chrysanthemum requires unremitting care and attention from the beginning of the young plant to the end of the flowering season, and experience is valuable here as elsewhere. But he should not be discouraged, for a fair amount of success is attainable with ordinary cultivation, and he will probably feel repaid for time and expense bestowed.

#### Horticultural Education for Women.

[Abstract of a paper by Miss Sarah J. Smith, and of some subsequent remarks before the Massachusetts Society.]

Do we think when walking in our beautiful gardens of the many homes without gardens? In all the culture of soil is there no pleasant place, no welcome duty for daughters' hands? Is there no way that they may be taught that they, too, have a mission on a farm? Is it not time it should be settled that there must be schools to train girls to home life? Such girls would not be household drudges, but they can be taught to be better home-keepers, and, as home is not all within the house, they can be taught to understand the garden—both fruit and flowers—the poultry yard, the apiary and even the sheepfolds.

Every avenue in life seems broadly opening to women, excepting that opening to the cultivation of the land. The girl who is quite at home in her father's greenhouses, understanding the culture and knowing the botanical names of all the plants, is a wonder to her companions and seems not quite one of them. Yet how many a woman who breathes the close air of the factory, until the hectic flush tells of a life almost spent, wishes she could have been taught a work that should bring her daily nearer to Nature, a work she cannot learn by herself. She can catch up the broken threads in the loom. But the tender plants, the opening flowers, the bees, the soft little chickens—how dare she, untaught, handle these things, direct from Heaven?

To talk of sending the daughters of farmers away from their homes to study horticulture may seem, at the present time, rank heresy; but this must soon come, like all other things for the good of man.

Has this Horticultural Society no school to take her in and teach her to be happy in her inheritance of land? From all its knowledge of flowers, fruits and vegetables and their uses, can it not tell the world of woman how she can make the garden her kingdom, and be healthy and happy? Does not this world-wide cry for a "new education" come to rouse the lovers of horticulture, and tell them that young women need just the knowledge this society can give them?

What we want now is a new education; an education in horticulture and home culture that shall make a happier girlhood, happier because hands are full and bodies healthy, and brains less strained for book lore; more alive to Nature's truths and vivified too with a practical knowledge of what goes to make health, happiness, home and wealth.

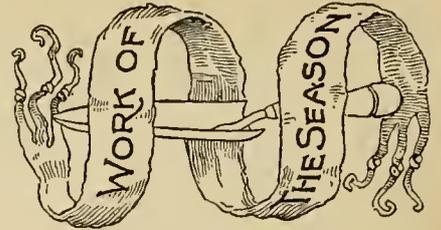
Mrs. Ednah D. Cheney gave an account of the Horticultural School for Women at Newton. The greatest lack here was pupils, the largest number at any time being twelve. The school was discontinued after an existence of a few years. The Bussey Institution classes are open to women. There has been very little success in obtaining either boys or girls as pupils. The time had not arrived for special horticultural schools.

Leverett M. Chase said there is no subject surpassing this in interest. He has 1700 pupils under his charge. He believed in the ennobling influence of Nature. He visited Fresno Plain in California and found there nineteen vineyards owned by women, five of whom made \$2000 each clear profit in one year.

W. C. Strong said many of the ladies of the society are engaged in floriculture, and are on an equality with the men.

Mrs. E. M. Gill enjoys work in her hot house, and the money it brings her makes her independent. She has been a member of the society since 1865, and has hardly been absent a Saturday, and has had her share of the prizes.

Charles M. Hovey said that in Philadelphia women are employed in greenhouses much more than here. There is a good deal of hard work in them, and it is not pleasant for either women or men to go out at midnight with the snow three feet deep and the wind blowing a blizzard to see that the furnace fires are all right.



#### HOUSE PLANTS.

**Airing.** If on mild days all but the more tender plants are exposed to full air for several hours daily, and even be subjected to occasional warm rains—getting thoroughly washed—they will be benefited.

**Annuals.** Early seedlings to be transplanted into boxes at an inch or more apart, according to size, inuring them now to more air and light.

**Begonia Weltoniensis**, that gem of spring-blooming plants, if given rich, sandy soil, good and light, with fair watering, will thrive in the window. For other varieties see last month.

**Callas.** Strong plants designed for later bloom to receive manure water. Such as have bloomed through the winter should go to rest about May 1, by planting in a rich bed. Lift in August, potting in a very rich, well-drained soil.

**Chrysanthemums** to be kept growing freely now in a cool, airy place. If properly hardened off they may go out along with the earliest of tender plants.

**Droopers.** The stock of these for hanging baskets, vases, etc., should be looked after, dividing or slipping the kinds of which an increase is desired.

**Fuchsias** with fair pot room and watering will be making material for a fine show of bloom. Some varieties (Frau Emma Topfer being a type) do well if not pinched back. In our collection Speciosa, White Giant, Elm City, Frau Emma Topfer, and Arabella are looked upon as the best for culture.

**Geraniums** for summer use ought to be making their strong growth now. If at all backward, it may be from excessive watering or from being pot-bound, in which latter case shift up. Cuttings for pot plants to bloom next fall and winter to go in.

**Hot-beds.** These are of great benefit to the window gardener from now on. During this month they will need close attention in airing and shading to prevent a hurtful degree of heat. On the warmest days the sash should be well opened that free currents of air may enter.

**Lilies.** Any that have been in bloom to have water gradually withheld, keeping them in any out-of-the-way place till planting-out time, when if given a rich, well-drained soil, they will in time come in use again for bloom.

**Roses.** At this season Red Spider, Thrip, etc., are apt to be at their worst. Free syringing or sponging of the leaves is the sure specific.

**Transplanting.** In many instances the old tin fruit and vegetable cans, that about as nuisances, could be put to good use for bringing along early plants in. In such cases let them be treated as shown in the cut by slitting down one side to spread the top, pot like, to admit of readily tapping out the plant at transplanting time without breaking the ball of earth.



Tin can slitted to form flaring sides.

#### LAWN AND FLOWER GARDEN.

**Bulbs** of many hardy sorts, like Hyacinths, Tulips, Lilies, Crown Imperials, Phlox, Iris, etc., do better if allowed to remain in the ground for years undisturbed. Such tender bulbs, as Dahlias, Tigridias and Erythrina, that were wintered in the cellar, to be planted when danger of frost is over in warm, rich soil, giving good culture later on.

**Flower beds.** Where Hyacinths, Tulips, etc., have been growing in the beds designed for summer flowers, they may, after blooming, be carefully taken up to have some soil adhering to the roots, and be put into boxes till ripened, not neglecting moderate watering. When dried off store away. The beds then to be dressed lightly with manure, and dug up ready to receive the tender plants.

**Gladiolus.** A first planting ought to be gotten in early in the month, to be followed by later plantings at intervals of two weeks until June.

**Hardy Plants.** All must desire some of those plants which remain year after year. What they require is to have the soil where they are planted dug up deeply and then later on annual applications of well rotted manure.

**Lawn.** Manure applied in the fall to be in its coarser parts taken off and the surface raked to liven it up, removing the dead grass also. Rolling should follow this operation. The mower to be set at work promptly, as the growth requires it, cutting often but not too closely. New lawns may yet be started, remembering that the best results follow on the best methods of making; full directions as to this appear on page 68.

**Planting.** April is the great planting month for all hardy things. For the best results too much pains cannot be taken to have the soil fine and fertile and to plant with great care. Some other leading points to observe are these: Do not expose the roots needlessly, especially those of Evergreens. Set all growths as deeply as they stood in the nursery. To get the soil firmly packed about the fine roots is one great secret of success. Cutting back is also necessary. If not done the top will require more moisture than the roots can well supply, and suffering must follow.

**Seed Sowing** in the open air is in order for all the hardy annuals like Candytuft, Mignonette, Sweet Peas, Larkspur, Pansy, Eschscholtzia, Sweet Rocket, Lupine, etc. The last of the month the following varieties might, throughout the North, be sown, if the soil be dry: *Amaranthus*, *Antirrhinum*, *Calendula*, *Calliopsis*, *Clarkia*, *Helianthus*, *Phlox Drummondii*, *Poppy*, *Portulaca*, *Morning Glory*, *Golden Feather*, *Godetia*, *Zinnia*, *Marigold*, etc.

**Tuberose**s to be started in hot-beds or the window, the season in the North not being long enough for them to start and bloom entirely outside in any but the lightest soil.

#### PLANT CULTURE UNDER GLASS.

**Bougainvillea glabra.** Flowering shoots to be kept in an upright position by staking. Bloom is most seriously interfered with by drought. Weekly applications of manure water, and this quite strong, is needed to induce the required vigor.

**Carnations.** Young plants to be placed in frames and kept well aired to harden off preparatory to planting out.

**Cinerarias.** Fine plants of a strain desirable for seed to be isolated from the inferior ones to prevent unfavorable mixing.

**Climbers in Pots.** As kinds like *Cobaea Scandens*, *Maurandia*, etc., make their growth, to neglect tying them upon stakes and keeping under control, will very soon result in unshapely masses that cannot be handled later without great injury.

**Colens** depend upon the well-developed colors of the leaves for beauty. If the plants are kept in full sunshine, not too wet and rather pot-bound, their color will be much helped.

**Geraniums.** For making space the surplus should go into frames or hot-beds, plunged in the soil, and here they will do well.

**Heaths** and hard-wooded plants generally to have a great abundance of air as they come into bloom.

**Plunging** the pots of plants in refuse heaps is one way to save on watering in this busy season and promoting plant growth well at the same time.

**Pots**, with *Fuchsias*, *Calceolarias*, *Petunias*, *Hydrangeas* and the like, when pot-bound, exclusive watering with manure water until after the blooming period, will usually insure satisfactory results. This is also true of hard-wooded plants, either in bloom or when making new growth, as *Azaleas*, *Daphnes*, *Neriums*, *Genistas*, etc.

**Primulas.** The double white may yet be propagated. To defer beyond the first half of this month is not well. For this, cut the shoots at near the base three-quarters through, inserting a bit of wood in the gash to keep the parts from reuniting. Then make a mound, from the soil upwards to above the cuts, with a mixture of sphagnum and light soil, keeping this moderately moist. Into this material the cuttings soon will throw roots, after which the former should be covered and be potted individually. The plants now need heavy shade.

**Roses.** A top dressing of manure at this time should help the late yield of bloom greatly. An exception to the general rule of *Roses* requiring a clayey soil for best results is the *Bennett*, which is found to succeed equally well or better in light soil.

**Verbenas** struck before the middle of April make very superior plants by June 1. The cuttings root quickly, and if put in thumb pots in a frame, they bound ahead with marvelous rapidity.

#### FRUIT GARDEN AND ORCHARD.

**Apriots.** Water allowed to settle and stand about the roots of these in the spring is very injurious. Provide necessary drainage.

**Borers.** As a protection against these a well-known orchardist recommends a preparation of cement, soap and skim milk, coating the tree for several feet from a little below the ground up. This forms enough of a shell to repel the borers.

**Grafting.** For directions see February number.

**Heel-in** all trees not immediately planted as soon as received, keeping each variety separate. To heel-in means to temporarily cover the roots with ground, bringing this firmly against them, and so to remain until the planting is done.

**Orchard.** Fruit trees require some potash in the soil, to furnish which, there are few things ahead of a dressing of unleached wood ashes. As a substitute, of fertilizing value, three parts bonedust and one part of muriate of potash can be employed.

**Raspberries** often throw up more canes than the roots can well support to a full crop of berries, making some thinning desirable. If there is an excess of canes beyond four or five, such may well be removed. The suckers from the red ones will answer for another patch. Plants should be set at about three feet by six or seven feet apart.

**Seeds** of *Cherry*, *Peach*, etc., kept over winter to be sown as early as the soil works up well. The seeds of all fruit and ornamental trees to be sown without loss of time after the soil is fit.

**Strawberries.** The sooner planting of new beds can be done after the ground can be worked, the better. Mulch any bearing beds that need it before any signs of dry weather appear.

**Tree Planting.** In order to do a good job several things are essential. The soil should be mellow and somewhat dry, the hole large enough to accommodate all the roots without crowding, and the hair-like roots to be firmly packed in fine soil, with no manure against them. To settle the ground solidly about newly planted trees is one secret of success.

#### VEGETABLE GARDEN.

**Arrangement.** The old-fashioned way of enclosing a patch of ground with a high fence, doing all the work by hand, planting in beds and calling it woman's work, has passed away. The better garden is unenclosed, and the crops are placed in rows and worked by horse power with comparatively little labor.

**Brussels Sprouts.** Given a deep rich loamy soil, well cultivated, these may be easily grown; when properly prepared they resemble Cauliflower.

**Onions.** The sets to be planted among the first of things in garden making. By transplanting seedlings as directed last month, Onions may be had nearly as early as from sets, and at less cost.

**Peas.** A gain of a week in the earliness of the crop may be had by slightly sprouting the seed in warm sand before planting.

**Potato Bugs** arrive early for the season's business. One plan for heading off their work is to feed the first comers with sliced Potatoes covered with Paris Green or London Purple, and thus cut off the laying of an endless number of eggs.

**Radishes.** To make certain of a crop of this vegetable free from maggots, see that there is enough of manure and sand in the soil in which they are sown to render it very light and rich. It is said that clay land, greatly lightened with sifted coal ashes, will raise good early Radishes.

**Sweet Corn** may be forwarded by planting in boxes, similar to those recommended for Tomatoes last month, three weeks before planting-out time, and then may be transplanted from these boxes without checking.

**Thinning out.** The earlier this is done on Radishes, Beets, Carrots and crops of like nature, down to a fair handling size, the better.

#### FRUIT AND VEGETABLES UNDER GLASS.

**Cucumbers.** Generous feeding with plenty of water will be required to keep the old bearing plants in a productive state. Young plants should be growing freely and stopped as needed. Do not manure with liquids heavily until bearing.

**Figs.** With much bright weather a night temperature of 60° to 70° may be given, but should the weather be dark a lower degree will be better. Figs, though delighting in heat and moisture, do not get along well without corresponding air or light. Top dressing the soil with fresh horse manure is beneficial, because of the ammonia thus secured. Do not allow the fruit to be too thickly placed. For young stock put in cuttings in sandy, well drained soil, in a sharp bottom heat. With good treatment fruit may be had in two years.

**Strawberries** now in fruit will need plenty of water, and until color begins to show, some liquid manure. Ventilate freely. Thin the fruit somewhat on the more heavily loaded plants for securing berries of a good size.

**Vines**, in the latest houses, should be stopped. Syringe twice daily, and promote a sturdy growth by ventilation. Water with liquid manure if growth seems weak. Keep a close lookout for Red Spider. Give good attendance to thinning.

## INQUIRY COLUMN

*This being the People's Paper, it is open to all their Inquiries bearing on gardening.*

*Replies to Inquiries are earnestly requested from readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.*

258. **Alternanthera Culture.** What is the proper winter treatment of these, and when is the best time to propagate for summer bedding out, also wintering over? S. M. A., *Council Bluffs, Iowa.*

259. **Varieties of Plums and Cherries.** Do you know anything about a Plum called *Niagara* or *Moony*? An agent has been lauding it to the skies around here; also a Cherry which he called *Lueling*. N. A., *Ypsilanti, Mich.*

260. **Roses for Market.** What are six of the best paying kinds of *Roses* to force under glass. At what price can they be procured by the quantity of 1,000 good strong plants of different ages? SUBSCRIBER, *East Weymouth, Mass.*

261. **Blood, etc., for Grapes.** I am growing some *Grapes* and have access to a slaughter house. Can I make use of the blood as a fertilizer, and what is the best mode of using? E. F., *Eaton, Ind.*

262. **Mulberries for Seed.** I have a quantity of Russian Mulberry Seed to start in the open ground. Will you please tell me the best way? A. R. C., *Union, Iowa.*

263. **Preparing Soil for Small Fruits.** Is loosening the subsoil necessary when the land is sandy loam, high, porous, and self draining? I have access to some black swamp muck; to have this on high, dry soil, would it make it drier or otherwise? Would you apply it first as a mulch? F. H., *Onehama, Mich.*

264. **Engine Scrapings as a Fertilizer.** Are coaly particles and dust scraped from engines of any worth as fertilizers, and what is its effect on flowers and strawberry beds? M. J., *Shelly, N. C.*

265. **Soap Suds and House Slops.** Are these liquids of any value as fertilizers? How are they to be used? J. L., *Delaware Co., Ohio.*

266. **Lilium auratum?** Upon repotting, I found it surrounded with weak tubercles, and also accidentally broke off the main shoot. Will it ever amount to anything again?

267. **Oranges as Window Plants.** Will some one please to tell me of the way to have *Orange* blossoms in the window? I am told that the seed require a year for germination, and that the plants need to be grafted. CITRUS, *Hennepin Co., Minn.*

268. **Grubs in Onion Land.** I have a garden in which I am told it is impossible to raise Onions because of the wireworms and other insects infesting it. Being an amateur, I am desirous of learning the best way of getting rid of them without injury to the Onions. ANXIOUS, *Litchfield Co., Conn.*

269. **Bees and Grapes.** What are the latest conclusions of experts as to the former injuring the latter? G. W. N., *Orleans Co., N. Y.*

270. **Angle Worms in Soil.** What can I do to avoid these? I had a beautiful *Rex Begonia* killed, and also a *Farfugium* that seemed to suffer badly from their presence in the pot. MRS. C. L. ANGLER, *Buena Vista Co., Iowa.*

271. **Cuttings from Young Vines and Trees.** Are cuttings and scions taken from such before beginning to bear as good as if taken after bearing has commenced? Some oppose this, but I have a few hundred *Grape* cuttings taken from young vines, and would like your opinion.

272. **Market for Sage.** Can you tell where market can be found for the product from an acre of this herb? MAS. R. D. S., *Union Springs, Ala.*

273. **Grapes Bursting.** Can you tell me the cause and remedy for this in the case of *Concord*, *Elmira* and *Martha*? W. C. S., *Muscoline, Iowa.*

274. **Oxalis not Blooming.** I have an Oxalis that has not bloomed this season, and last year it only had one bunch of blossoms (pink). It looks very thrifty. Cause?

275. **Swanley White Violets.** Two years ago I got a Swanley White Violet, which has never bloomed yet. It grows and looks well and has had buds on several times, but they always blast. A neighbor has one which acts the same way. Cause?

276. "Chinese Lily." I have a "Chinese Lily" which did not bloom. All others of the same lot bore blossoms. It grew vigorously, the leaves being nearly two feet long. What treatment shall I give the bulb? W. C. S.

277. **Geraniums not Blooming.** My plants last year grew rank but had few flowers. How ought I to treat them to get good flowers? My soil is good, with sunshine all day. I have been told to plant pots and all. I watered very freely during the hot weather. Mas. M. A. Y., Essex Co., Mass.

278. **Moles in Cemetery.** Our cemetery lot is enclosed by a stone curbing eighteen inches deep. Moles have made their way inside this and have completely upturned the beautiful Blue Grass sward, causing it to die in large patches. Is there a remedy? Mrs. W. M. L., Madison Co., Ky.

279. **Oxalis not Blooming.** I should like to know what to do with yellow and large pink winter blooming Oxalis to make them deserve their name of winter bloomers?

280. **Eucharis in the House.** Also if Eucharis Amazonica will bloom in the house? I had one three years without a flower or bud. R. E. D.

281. **Freesia Culture.** Will you tell me what is the trouble that I get no bloom from these after all my care? How should they be treated? E. M. M., West Branch, Iowa.

282. **Currant Worm Remedy.** (a) We have about 1,000 bearing Currants liable to be infested with the worm next summer—not the "web worm" but the one coming in June, stripping off the leaves. Most of those to whom we have talked recommend the use of hellebore, but we have reason to think this is dangerous to human life, and customers would be deterred from using our fruit were it known that hellebore was used. What shall we do? (b) We understand that Prof. Lintner of your State reported regarding a parasite that he thinks preys upon the currant worm. Can anything be done to introduce it west? HALLET & SON, Jo Daviess Co., Ill.

#### REPLIES TO INQUIRIES.

210. **Sweet-scented Chrysanthemums.** There is only one in cultivation, viz., Mrs. Akers Allen. The best late-flowering Chrysanthemums are Cullingferdi, Christmas Eve, Mrs. C. H. Wheeler, Mrs. C. L. Allen, Count of Germany, Purple King, Sadie Martinot, W. Falconer, The Virgin, Mrs. Wm. Mencke, Jupiter, and Lady Slade. They can be procured of Hallock & Co., Queens, N. Y. C. E. P.

223. **Potting Old Fuchsias.** As soon as they show signs of growth, trim them back into shape, turn them out of their pots, and repot into as small pots as possible. Water thoroughly when first potted, afterwards sparingly until growth commences, when a liberal supply should be given. When first potted place in as warm and light a situation as possible, and as growth commences remove to a cooler atmosphere. Repot as often as necessary until the plants attain the desired size. Do not repot too freely if flowers are wanted. A compost composed of two-thirds rotten sods, one-third well-decayed manure with a sprinkling of bone dust will suit them very well. C. E. P.

216. **Covering Grape-vines.** Manure is apt to heat and scald the buds. Dry hay, straw or leaves are much better for that purpose, but earth is the best of all coverings. If the vines are planted the proper depth the roots do not require any extra protection—unless under a combination of circumstances which does not very often arise, viz., a very dry fall followed by a hard winter devoid of snow—a heavy mulch is then necessary between the rows to prevent the wholesale destruction of the vines. ALEX. WOOD, Pottawattamie Co., Iowa.

227. **Pansies Devoured.** No doubt it was the work of Slugs, for these are great pests to Pansy growers. The reason you never saw them was because they worked at night. The best way to get rid of them is to go round with a lamp at night, after a shower of rain, when they are feeding, and put them into a vessel of quick lime. If Green-fly appears on the plants, two ounces of soap dissolved in two gallons of rain-water, with one-half ounce of dark Tobacco added, is the most effectual remedy. Water the plants with the mixture through a fine-rosed watering-can. But no fine flowers can be expected for a few days after applying.

233. **Sheep Manure for Gardens.** I regard sheep manure an excellent fertilizer for lands to be used in the culture of garden vegetables, and especially advantageous to sandy lands. It should be thoroughly composted with turf or common earth and well rotted, in equal parts each. Well-rotten stable (horse) manure I regard as most valuable for general lands to be used for market gardening purposes. HENRY MUNWARRING, Lawrence, Kan.

231, 275. **Swanley White Violets.** See article on these elsewhere in this issue.

226. **Raised or Flat Flower Beds.** So far as the mere keeping of the soil of a bed moist is concerned there would be advantages in a flat bed, but we plant flowers for looks, and a bed of these somewhat raised, or at least rounded over to be somewhat higher in the center, shows off much better than a flat one. By keeping the surface of the higher (and inner parts) somewhat irregular, where it is hid by large plants, the water from rains or the hose may be retained on the bed where it falls without any loss from shedding off. A. H. E.

232. **Bermuda Lily in Pots.** This is one of the very easiest Lilies to force, in this respect surpassing even *L. candidum*, as its season is shorter.

224. **Pruning Vines in a Grapery.** The sooner this is done the better. The best course you can pursue will be to obtain the services of a gardener, or some one who has had experience with vines under glass, and let him trim them for years. CHAS. E. PARNELL, Queens, N. Y.

261. **Blood, Etc., for Grapes.** No stronger fertilizer can be had, but it must be used with great care; first by mixing, at the rate of a quart of blood to one peck or even a half bushel of dry earth (dry sand is good) and then working, say this amount, in soil around each Grape-vine. A. M. P.

262. **Mulberries from Seed.** Put your Russian Mulberry seed in a pail and pour boiling water over them to cover an inch. Let them stand in this same water a day or two (not in boiling water) until they begin to swell, and then pour off water and mix with dust or plaster and sow like any other seed. A. M. PARRY.

265. **Soap-suds and House Slops.** There is really very little of manurial value in these of themselves. The best way of utilizing them is to use them in composting different materials for soil. Watering plants with these in moist weather may easily be overdone. During the dry months of summer they may be used about free growers with benefit. E. G.

266. **Lilium Auratum.** This should have been potted last fall when the stem had died off, rather than to have waited until new growth had commenced. As it is now, keep the soil barely moist in the same pot, and a second stem will probably be put forth weaker than the first. The small offshoots to be removed. All Lilies should be potted in autumn, usually in October, the foliage being then ripened. G. S., Erie Co., N. Y.

268. **Grubs in Onion Land.** An experienced Onion grower in this vicinity says that sulphuric acid is an effectual remedy, though somewhat expensive. It kills every living thing in and on the soil, both animal and vegetable. This acid should be diluted with twelve times its bulk of water and applied in the fall quite liberally. Nitrate of soda may also be used, at the rate of four hundred pounds or less to the acre, two or three times through the season, when the foliage is dry, if possible just before a rain, otherwise it should be watered in. If the nitrate gets on wet foliage it will burn or shrivel it. A remedy for the fly is forty bushels of soot mixed with two hundred weight of salt for an acre, sown broadcast early in the season. Onions once attacked cannot be saved, but Grubs may be lessened by destroying all affected plants. Gypsum also has been found to be effective applied at the rate of one ton to the acre during dry weather, after the first rain the ground being hoed. This is a cheap remedy if it proves upon further trial to be found generally effective. From its use the Grubs in the plants are to be found dead after several days.

273. **Grapes Bursting.** In my judgment the bees could tell the secret of Grapes "bursting." Putting paper sacks, so often described, over the clusters will stop it. A. M. P.

209. **Lettuce Forcing.** The best varieties for forcing under glass are the Tennis Ball (black seeded), Boston Market and Early Curled Simpson. The two first-named varieties being generally preferred. For growing in the open air, in addition to the sorts previously named, Salamander, Henderson's New York and White Summer Cabbage. To keep down the Green-fly, dust the plants very freely when small with Tobacco dust. Keep the walks covered with Tobacco stems and renew them frequently and fumigate very frequently with moist tobacco stems. CHAS. E. PARNELL, Queens, N. Y.

213. **Cutting Back Fuchsias, Etc.** All such plants should be cut back before they are repotted and not disturbed until they have made shoots at least half an inch in length. CHAS. E. PARNELL.

221. **Treating a Large Wax Plant.** Procure a tub several sizes larger than the pail in which the plant now is, drain it properly and place the pail in the center of the tub. Now carefully break up the pail and remove it. Fill up the space with fresh compost similar to that which was in the pail. Do not set the plant deeper. This method will be much less trouble than feeding the plant with liquid manure. C. E. PARNELL, Queens, N. Y.

234. **Propagating Fay's Prolific Currant.** Yes, this can be increased in the same manner as the common Currant.

215. **Gooseberries Under Trees.** They will not do well under spreading trees. C. E. P.

219. **Pruning Roses.** It is very difficult to teach this by merely writing about it; but it is, nevertheless, an important part of the cultivation of the Rose. An experienced Rose cultivator will first ascertain the name of the Rose, and he will thin out the wood or cut back the young growths, in reference to the general characteristics of the particular variety. As a rule the strong-growing varieties must not be cut back so freely as those of a more weakly habit. Those varieties that have a tendency to form a thicket of young wood should be disbudded during the summer; this allows a full development of leaf and growth with the consequent production of Roses of a much superior quality. Hybrid Perpetual and Moss Roses should be pruned very much alike. The young growths ought to be cut back to within from three to six buds from the base. Very weak growers may be cut back to within two good buds. ROSE GAOWEA.

271. **Cuttings from Young Vines and Trees.** We consider such, as a rule, as good as any. It might be the case that if this were to be followed up year after year with trees it would make a difference, but no difference with Grapes. A. M. P.

272. **Market for Sage.** Sage is in good demand in all Northern towns at about thirty cents per pound. Your best plan is to write to commission houses in different towns North. Names of some of these appear in our advertising department.

232. **Bermuda Lily in Pots.** Yes, this can be grown in pots inside, as well, if not better than in the open air.

236. **Chrysanthemums Dropping Leaves.** I do not understand this case. If you will give me your method of treating your plants I may be able to suggest a remedy. I think that your plants were given an unsuitable situation or else planted in very poor soil. They might, also, have been permitted to suffer severely from drought at some period of their growth.

237. **Treating Hyacinth Bulbs.** If your bulbs have been grown in water your best course will be to throw all away and procure fresh bulbs another season. To raise flowering bulbs from little bulbets requires more time and attention than most persons are willing to bestow upon them. C. E. P.

240. **Primroses from Seed.** The best time to sow Primula seed is I find from the first of March until the tenth of May. Not only do the seeds germinate better but the plants will be much stronger for winter blooming.

239. **Dahlia Planting.** By all means divide the roots and leave only one good crown to each cluster.

235. **Gesnerias in the Window.** I do not think that the Gesneria can be successfully grown as a window plant. It requires for its successful cultivation a warm, moist atmosphere as well as many other essential requisites that cannot be bestowed upon it in such a situation. CHAS. E. PARNELL.

230. **Hibiscus Ailing.** The leaves are undoubtedly infested with the Red Spider. Dissolve two ounces of whale-oil soap in a gallon of water and sponge off the stems and both sides of the leaves with this mixture, occasionally while the plant is inside. The spots on the leaves may be caused by keeping it too wet at the roots, or by growing it in a cool temperature.

226. **Raised or Flat Flower Beds.** I prefer to have all my flower beds an inch lower than the walks. When the beds are on the lawn let them be an inch lower than the sod. The advantage of this method will be apparent to all when they have occasion to water their flower beds during the summer months.

227. **Pansies Devoured.** I think that they were destroyed by slugs or wood-lice, and as a remedy would suggest placing a few pieces of boards on the ground between the plants in the evening; early the next morning carefully examine the boards underneath and in most cases the destroyers will be found underneath and can be destroyed. Repeat for several days if necessary. Turnips hollowed out and placed among the plants are also excellent for this purpose. CHAS. E. PARNELL, Queens, N. Y.

260. **Roses for Market.** Much depends upon the market. Among standard kinds that are always in demand are Bon Silene, Perle des Jardins, Marechal Neil, Niphotos, Catherine Mermet, Bennett and American Beauty. Good Plants suitable for next winter's flowering can be bought of the leading Rose-growers for \$10 per hundred upwards.

232. **Currant Worm Remedy.** (a) Hellebore is the best of known remedies and a perfectly effectual one. Properly applied no harm can possibly result from it. It should be used in the following manner: Early in the spring, as soon as the leaves of the currant have fully put forth, watch for the first indications of the hatching and commencement of feeding of the young larvæ. You have only to look for these on the lowest leaves of the bushes near the ground. The indications will be numerous small holes eaten into the leaves. Sprinkle powdered hellebore over these leaves, renewing it if washed away by rain, and the desired end is accomplished. If the hellebore remains upon the leaves during the time that the larvæ are hatching all will be killed, and none will remain for subsequent spreading over the leaves and for the need of future atten-

tion. If the first brood of worms is thus destroyed there will be few if any to form a second brood in June. Some Currant growers find it convenient to watch for the first eaten leaves, and to pinch them off by hand and destroy them. The eggs are always to be found conspicuously arranged in rows upon the veins of the under side of the leaves. (b) The parasite of which inquiry is made, (a small Chalcid fly, *Trichogramma pretiosum*), attacks the eggs of the second brood. I have been able to distribute these parasites in different parts of this country and in Canada, and I would gladly distribute it extensively could I obtain the material for doing so, but it has become rather rare in this city and vicinity. If able to obtain it the coming season it will give me pleasure to send the valuable little insect to Mr. Hallett, whose request I have added to others of the same kind. J. A. LINTNER, *New York State Entomologist*.

### Received at this Office.

CATALOGUES.—FIGURES INDICATE NUMBER OF PAGES.

Albertson & Hobbs, Bridgeport, Ind., Sm. fruits, 33.  
 Allyn Bros., Palmyra, N. Y., Small Fruits, 24.  
 Armstrong & Co., Lawrence, Mass., Small Fruits 6  
 Wm. H. Barnes, Independence, Kansas, Plants, 8  
 Paul Butz & Sons, New Castle, Pa., Plants, etc., 36.  
 John S. Collins, Moorestown, N. J., Sm. Fruits, 21.  
 Willett Conwell, Chicago, Ill., Charts, 65.  
 M. Crawford, Cuyahoga Falls, O., Small Fruits, 32  
 H. R. Cotta, Freeport, Ill., Trees, etc., 4.  
 J. A. Deever, New York, N. Y., Bulbs, etc., 48.  
 Henry A. Dreer, Philadelphia, Pa., Florist, 134.  
 J. A. Everitt & Co., Indianapolis, Ind., Seeds, 48.  
 R. & J. F. Farquhar, Boston, Mass., Seeds, 97.  
 Edwin Fewkes & Son, Newton Highlands, Mass.,  
 Florists, 4.  
 Field Force Pump Co., Lockport, N. Y., 36  
 Frank Finch, Clyde, N. Y., Seeds, 8  
 Hackett's Floral Nursery, Dubuque, Iowa., 46.  
 G. H. & J. H. Hale, South Glastonbury, Conn.,  
 Small Fruits, 24.  
 David Hill, Dundee, Ill., Evergreens, etc., 8.  
 Hooper & Co., Covent Garden, England, Seeds, 44.  
 T. S. Hubbard, Fredonia, N. Y., Small Fruits, 8.  
 W. F. Hubbard & Co., Kalkaska, Mich., Trees, 4.  
 Hurst & Son, London, England, Seeds, 75.  
 Fred W. Kelsey, New York, N. Y., Trees, etc., 18  
 I. N. Kramer & Son, Marion, Ia., Plants, 40.  
 J. M. Lamb, Fayetteville, N. Y., Plants, 36.  
 L. C. Lischy, Nashville, Tenn., Plants, 40.  
 J. T. Lovett, Little Silver, N. J., Nursery, 56.  
 Thomas Meehan, Philadelphia, Pa., Nursery, 22.  
 Michigan Carbon Works, Detroit, Fertilizers, 18  
 Wm. H. Moon, Morrisville, Pa., Small Fruits, 36.  
 Monroe Co., Nurseries, Rochester, N. Y., Trees, 10.  
 Anna B. Nikels, Laredo, Texas, Cactus, 20.  
 Parker & Wood, Boston, Mass., Seeds, etc., 234.  
 N. B. Pearsall & Co., Morris, N. Y., Seeds, etc., 20.  
 F. R. Pierson, Tarrytown, N. Y., Plants etc., 96.  
 Jos. Plenty, New York, Horticultural Builder, 32.  
 South Side Mfg. Co., Petersburg, Va., Crates, 28.  
 Chas. T. Starr, Avondale, Pa., Plants, etc., 30.  
 J. H. Tryon, Willoughby, O., Small Fruits, 10.  
 E. B. Underhill, Poughkeepsie, N. Y., Sm. Fruits, 10.  
 Veitch & Son, New Haven, Conn., Seeds, etc., 72.  
 Geo. S. Wales, Rochester, N. Y., Carnations, 24.  
 West Jersey Nursery Co., Bridgeton, N. J., Small  
 Fruits, 30.  
 Wm. C. Wilson, Astoria, N. Y., Plants, 88.  
 Chas. N. Woodruff & Co., Macon, Ga., Plants, 20.  
 F. L. Wright, Plainfield, Mich., Small Fruits, 4.

## The Exchange

172. Sophia Copley, Stoney Brook, N. Y., offers Callas, Madeira Vine, pink Oxalis, Kenilworth Ivy and pink Amaryllis for Lilies, hardy bulbs and plants.

173. G. R. Hilton, Wiscasset, Maine, has seeds of Cardis, Erysimum, Argemone, Candytuft, to exchange for Maderia Vine or Jonquil.

174. R. A. Honels, Bingen, Ind., has Hibiscus, Lucretia Dewberry and other plants to exchange for Caladium, Tritoma, and Gloxinias.

175. W. A. Mason, Crystal Springs, Miss., wants in exchange for good religious and other books Orchids, Gesneraceae, Palms, or other fine plants.

176. Ephriam Preston, Warnersville, Pa., has seeds of Begonia rubra for seeds or roots of Tuberos Begonia.

177. J. C. Bemis, Greensburg, Ind., wants hardy plants and bulbs; in exchange will crochet edgings, hoods, etc.

178. Emory P. Robinson, Sidney, Ohio, has Pearl Tuberos bulbs to exchange for Lilies, Flowering Shrubs, Laurel, and fruit and nut trees.

179. Blanche D. Walcott, Pawtucket, R. I., will exchange flower seeds or slips of plants.

180. Miss C. P. Walker, Asheville, N. C., has Achinene bulbs and seeds of Poppy Danaborg to exchange for other things.

181. Mrs. M. R. Waggoner, Buffalo, Iowa, has choice plants, both tender and hardy, to exchange for books, or Ballou's Magazine. Write first.

182. J. K. Niesz, Mt. Union, Ohio., will exchange Solly & Sons book of carpet bed plans for bedding plants or Henderson's book of plants.

183. Mrs. W. B. Orange, Harper, Kansas, offers magazines, fancy work or sheet music, for Dahlias, Chrysanthemums, White Rose, or house plants.

184. Mrs. L. C. Angier, Storm Lake, Iowa, has a large variety of plants to exchange for a spotted Calla and other things.

185. Mrs. J. C. Day, Mt. Ord, O., has 75 Black Walnut trees, 2 years, to exchange for seeds best quality Onion, Wilson hand mill, or a good churn.

## The Household

The tea canisters must not be left open.

**Before whitewashing** let the cracks be closed with plaster of Paris cement.

**A Spring Note**—Fifty cents for rubbers may save five dollars in doctor bills.

**Parsley Omelet.** Make the Omelet as usual, but mix a tablespoonful of chopped parsley with each egg used.

**Eggs in Brown Butter.** Allow one egg for each person, put one ounce of butter in the dish, and stand in the oven until the butter has melted, and become a rich, deep brown color without being at all burnt. Break the eggs carefully into this, so that the yolks remain unbroken, and let them cook slowly until they are set. Sprinkle with salt and pepper, and pour over them a small teaspoonful of hot vinegar. Serve at once.

**Moths and Cedar Chests.** Most housekeepers know, says our correspondent, what it is to find their furs or woollens ruined by this insect. We have found a chest made of cedar boards a safeguard against them during five years' use. This chest is three feet long, two wide and two high, with a close-fitting cover, and strong handles at each end—any carpenter can make one. Where all articles liable to injury from moths cannot be packed into cedar chests, shavings or chips from cedar wood—the latter preferable, because more cleanly—are excellent strewn among them. Spirits of turpentine are very good; a saucer containing some of which may be set into a closet infested by them, or as a preventive to their entering. Could paper sacks be procured tight enough to keep the tiny moth out they would fully answer our purpose, but are useful as they are. Tared paper is highly recommended by some, while the printer's ink on newspapers is claimed to make them of value for this purpose. Whatever of garments can be spared early should be well aired and packed away in April, or at least before the moths are seen flying about searching for a laying place where the eggs can develop into the destructive larvae, which not only destroy our clothing but also the anxious housekeeper's peace of mind.

## Poultry.

Young chicks do not get chilled without injury.

Soap is made from egg yolks by the Tartars of Russia.

The shell of hatching eggs will be easier broken by the chicks if occasionally moistened with warm water.

Chickens are just that dainty as to need their feed-pans and water vessels kept very clean, if they are to do their best.

Lice and tobacco dust never get on well together in the laying nests. The hens don't object to the tobacco, however.

If you wish your hens to stay close to the buildings, keep your roosters shut up; if you wish them to run far, keep a good supply of roosters to run with them. L. D. E.

That was a profitable hen which, up to the day of her death, had by actual count laid over fifteen hundred eggs. The average hen would, perhaps, not do so well, but with proper treatment, at least from six hundred to one thousand eggs might be expected during her natural life.

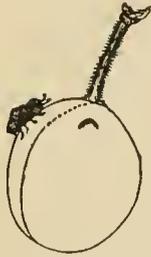
**Shipping Eggs.** The breeding of special varieties of fowl is now the order of the day, and some are preferred for one quality and some another. There is one feature connected with the breeding for producing eggs for market that egg shippers should understand, as it is an important item on the profit side of the account, and that is that eggs of a uniform size and color will sell for a higher price than mixed lots, and when breeds are mixed they must necessarily produce eggs of various sizes and colors. The Eggs of Leghorns are noted for their purity of color, and as a rule sell for about two cents per dozen higher than mixed lots of equal freshness; and such is the demand for them that dealers receive orders for them in advance of arrivals. In speaking of eggs I do not refer to the stock known as "Store Eggs," but those sent fresh from the farm; and the quotations in the market reports are for the store eggs. Cases containing 30 dozen are about the best package for one to ship in, since if one farmer cannot fill one weekly, others could unite for that purpose, for the expressage is cheaper in proportion on large cases than on small ones. C. W. LOELL.

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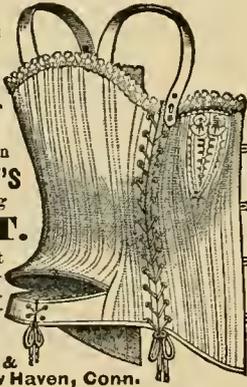
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# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

Vol. II.

MAY, 1887.

No. 8.

### Orchard Bloom.

Sweeter to me than rarer flowers,  
These sprays of pinky Apple-bloom,  
That shed throughout these morning hours  
Their delicate perfume.

Beneath me, like a foaming sea,  
The Pear-tree blossoms toss their snow;  
A robin sings exultantly  
Upon his perch below.

From them I glean a prophecy  
Of joy for summer's golden day,  
When there fulfillment fair shall be  
Of all the hopes of May.

—Boston Transcript.

IT IS WISE not to trust a warm May too far, for both chilly weather and killing frosts are liable to occur during its last half, which the more tender plants would do well to escape.

ASPARAGUS, as it accumulates from pickings too scant for the table or for marketing, may be had for four or five days to look as fresh as when cut by placing it in pure water in a covered vessel.

YOUNG OLEANDERS that are well established will come on much faster during the summer, if taken from the pots and set into a rich bed of earth for the next five months, there to be well tilled. Then about September they should be lifted and again potted.

EXTRACTS RELATING to the Michigan Fruit Exchange, Benton Harbor, Mich., are printed on page 136 of the present number. These should prove very interesting reading to commercial fruit growers everywhere. They embody a remedy, already well worked out, for that great source of dissatisfaction and loss in fruit growing, namely the management between the time the fruit leaves the grower's hands until it reaches those of the consumer. They show the application of good principles through organization to an important branch which now is in the main at extremely loose ends. Here is offered a model that must in one form or another soon be widely adopted by the intelligent fruit growers of the country.

IT MUST NOT be overlooked that many kinds of flowering trees and shrubs, as well as of fruit trees, are propagated by budding or grafting on a free-growing stock of some allied sort. Among these are Flowering Plums, about all purple-leaved, and weeping trees, the finer Maples, "hudded" Roses, and others. The mere fact that such stocks are free-growing naturally tends to cause the buds on them to start more readily than in the more delicate, improved portion of the growth. This must be promptly prevented by rubbing off every shoot below the point of union as soon as it appears. Because this many times is neglected, things that were planted as being rare and perhaps costly, have had their superior parts choked out, leaving but a coarse, weedy, unsatisfactory growth instead.

PROFESSOR MAYNARD, of the Massachusetts Agricultural College, calls attention to the fact that really considerable time is required to thoroughly test most kinds of fruit. "Our experiments in many cases only extend over a few years; and it must be borne in mind that

many conditions—such as proper or improper soil (which can only be determined after many years' trial), the peculiarities of the seasons during the term of trial, etc., etc.,—must affect the results materially. We think it is safe to say that, under ordinary circumstances, the value of a new variety of Apples cannot be determined in less than twenty years; the Pear and Cherry, not less than fifteen years; the Peach, Plum and Quince, not less than ten years; the Grape, Blackberry and Currant, not less than eight; and the Strawberry not less than five years. Varieties largely advertised and of great promise become well known in less time."

DECORATION DAY is looked upon naturally with widely different feelings by different members of the community. Those who only know from heresy of the war are apt to think of this day merely as a holiday. The old soldiers reverence the day by paying homage to the memory of those who marched, faced death, endured the hardships of war in common with them, death coming to some but not to the others. All should enter into this spirit of reverence in honor of the men who offered their lives that the nation might live, and the right might triumph, by thus strewing the graves of the dead with spring flowers. Nor should such homage detract from the death of those who gave their lives for a principle, although they stood in error. It is gratifying to observe that as years go on there is a growing tendency for the "Gray" and the "Blue," forgetful of past differences, to unite in decorating the graves of each other's dead.

THERE ARE weeds and weeds. Some kinds exhaust the strength of the soil much faster than others. Certain kinds will grow on land too poor to raise a more valuable crop, and these can hardly be classed among the worst of weeds. But there are others that only thrive on the fat of the land, taking of that kind of plant food which is most needed for crops, and which is none too abundant at the best. Chickweed, that pest of every garden and greenhouse, is one of these. The Shepherd's Purse, common to all localities, is another. Pigweed and Vervain, if less rare than the preceding, are, when in possession, all the worse, because so much stronger in growth, and possessed of far-reaching roots. A good quality of these—allowing such language to apply—is that they abound in nitrogenous matter, hence are excellent food for either pigs, fowls or milch cows. It needs hardly to be said, however, that this point should not be unduly magnified; obviously the proper course with all weeds is to "nip them in the bud."

### Japanese Chrysanthemum Culture Not Difficult.

I desire to earnestly protest against the impression lately conveyed by one writer, that it requires great and constant trouble to grow Japanese Chrysanthemums. If one grows for exhibition this may be true. I speak from experience when I say that very fine plants may be grown by amateurs with ordinary care. I know no plant that repays better the necessary attention.

The easiest way is to grow them in pots throughout, and these sunken in the border for the summer, and then lifted and brought

to the porch, and finally into the parlor as the frosts grow severe. If the amateur will but remember the following rules he can hardly fail in having fine plants at the end of the season:

1. Never keep them indoors when they can possibly be in the open air.
2. Never let them become pot-bound until they have budded to bloom.
3. Never shift *immediately* after nipping.
4. Never let them stay dry.
5. Never let them want food. Bone dust in the earth every time they are repotted is excellent, and then liquid manure occasionally till the buds show color.
6. Give plenty of sun, not too much wind.
7. Pinch freely, according to the shape you wish them to grow.
8. If fine flowers are wanted remove three out of five buds as soon as they are large enough to rub off, and toward fall all that may appear.

All this is but little trouble to one who is about his garden often attending to the other plants; the reward is worth more trouble.

There is one other possible bother—the Black Aphis. Tobacco dust, which any tobacconist gladly gives away, rubbed fine between the finger and applied dry, is better than pyrethrum and does not so disfigure the plant. But these will not appear in any great numbers if the plants are strong and healthy, and especially if they are sometimes showered with a garden syringe.

I do not bother to grow cuttings, but use the same roots from year to year. I find burying them very deep in the garden is the best protection. To cover them like Roses with the earth answers for most varieties perfectly. I never have had in years of culture a touch of mildew on my plants by the course of culture outlined.

I do not think the excessively pinched out plants, to grow which requires such constant care, as handsome or as healthy as those that are allowed to grow somewhat as nature intended, but of course they must be kept in good shape, or may be grown as trees.

I have grown bushes well worth sending to exhibition without excessive care, and I think this plant repays so magnificently any time and care given to it, and is so little likely to do badly, unless excessively neglected, that it seems to me especially a flower for all amateurs to grow, and I regret to see in print any words that will help to discourage growers. We have had so much success and delight with our plants for years, and have delighted so many friends with our great bushes, all a mass of bloom, and some also fragrant, that I want every amateur flower lover to try them and to succeed as we have done.

Above all I hope no one will be discouraged by unfavorable statements concerning the culture of these Chrysanthemums but all will go ahead and try and learn for themselves how slight the trouble, and how glorious the reward.

AMATEUR.

### On the Culture of the Pansy or Heart's-Ease.

The results which attend the growing of this universal favorite vary much owing to the differing methods of culture brought to apply. The object of the present article is to consider some of the essential features in Pansy management, with a view to the raising of fine flowers over a longer season than is usually realized by growers, and also for the effective arranging of the beds.

Presuming that the spring season finds a stock of good plants available, such as were grown from the choicest seeds, by the methods heretofore described in our columns, the matter of soil and situations for the plants first deserve attention.

The Pansy delights in a soil neither very wet nor yet dry in its character. A soil light, loamy and well drained, in which there has been incorporated enough old manure, rotted hops, leaf-mold, or other decayed organic matter, to render it very rich, hence in a marked degree retentive of moisture, suits better than any other. If the loam consists in good part of decayed turf, its value will be increased.

As for situation the Pansy may be grown to flower throughout the greater part of the growing season in almost any spot, provided it be in some degree sheltered from the mid day sun. A north or northeast exposure suits it capitolly if it be sheltered, as suggested, by tall trees or buildings, so that it may get the sun in the earlier or later parts of the day. Too much shade is objectionable, through causing a lank, weak growth that is not conducive to long continued bloom. Such growth is liable also to be troubled by Green-fly.

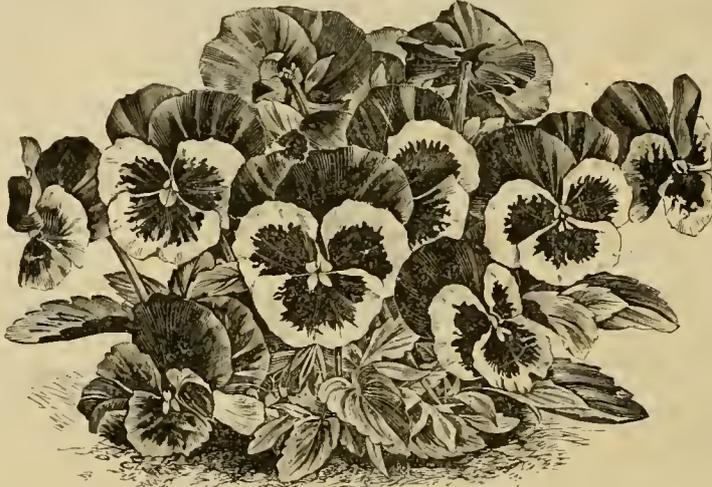
Beds may be made on the lawn, or the plants may be set in the border or the lower portions of a rock garden. Indeed it should be said that this plant, of supposed Alpine origin, enjoys the close proximity of stones and rocks, which impart that coolness to the soil so congenial to its roots. If the Pansy bed was to be made narrow and then was edged by a line of stones set into the soil to project but a few inches above the surface, it would all the better suit the plants. To plant vases, and the like with this flower, should be looked upon as a short-lived course of culture, unless the very closest attention to watering be at all times given.

In choosing plants for bedding, those that combine fine flowers in profusion, with a short stemmed stocky habit, presenting a round pleasing bush, with the blossoms a little above the foliage are to be preferred. In certain instances the more beautiful and fantastic flowers do not appear on shapely growing plants, hence some such must be tolerated. The aim should be to improve the growth of this style by crossing the flowers with those from shapely types, trusting for a better habit of growth in the progeny.

In bedding the Pansy we prefer to group the different colors and shades somewhat, rather than to mix them indiscriminately. For example, in planting a long narrow bed it has been our method to start at one end say with the blacks, then bringing those a little lighter next, then clarets, browns, yel-

lows, blues, lavenders, whites, in succession, with perhaps a touch of black at the other end also. We do not keep the margin of each color clearly defined but mingle them with the next color to some extent.

Starting with the right situation, soil and quality of plants, the course necessary to have Pansies bloom handsomely all through the season is: First, to thin out the beds somewhat for preventing harmful over-bearing; second, to pick as soon as they begin to fade, all flowers that come forth, not allowing any to seed; third, to keep the surface lightly but well stirred between the plants; fourth,



PLANT OF A LARGE-FLOWERING SHOWY PANSY.

water the beds once a week of an evening with diluted liquid manure, and fifth, in case of drought, give a thorough soaking with water at intervals of two weeks.

### Paternity In Fruits.

A. J. CAYWOOD, ULSTER CO., N. Y.

Experience has proved any proportion of the foreign Grape to be too delicate for this changeable climate, and its use should be discouraged, or an unreliable class of Grapes will be the result. During some centuries there have been several great strides upwards from the wild varieties; among these are the Delaware, Catawba, Isabella, Clinton and a few others, but these movements are rather slow for the energy of this age.

In crossing our native Grapes, either with single or double pollen, every desired result is marred by doubt. In using single pollen it may impregnate and it may not. It may not from being performed too early, too late, too indelicately, want of congeniality, and many other causes. There are undoubtedly many actual crosses that show no traces of paternity, but they cannot be spoken of as crosses, as it is all guess work, and such a record would be faulty. Who for instance is prepared to believe the light-skinned Empire State to be a seedling of those two sable denizens of the woods, Hartford and Clinton, if they think there is anything in the rule of like begetting like, and yet who can controvert the claims of the cross? Certain qualities of Hartford and Clinton may be incorporated in the new organization.

Should any of these seedlings that show no paternity be even more valuable than the parent, it is not proof that the pollen applied was efficacious; they may have been pollenized by natural agencies—before the effort was made.

Maternal characteristics are usually transmitted, but if the paternal is not convincingly visible the fact of a cross must rest in

doubt. It is well known that all of the numerous seeds in a Strawberry and other fruit are as independent of each other as are Peach, Plum, Cherry or other single seeded fruits, which proves an endless variety of pollen being dispensed over each waiting flower; each seed produces a different kind. Nearly all of our best fruits have come to us without the help of man, and who can say whether they were fertilized by the anthers of their own stamens, or the pollen was carried there by wind or insects from other sources. The supposition that we have a cross, because the pollen was applied, must

not be indulged in. Provable crosses of our native Grapes are very few; of the Vinifera there are plenty, as it seems to govern the qualities of the native fruit, and also transmits the weakness of the vine.

When we desire a cross of any two varieties, we use single pollen of course, and take the chances as to failure or success, but in the use of mixed pollen of the best varieties we make Nature's plan available slightly, which offers in every open flower endless varieties of pollen; it takes the congenial, throws off the other as so much dust.

If we have gained a point why not progress as in all other things? Why go back to first principles and take on a double dose of fox and acidity? We can breed out these two wild traits but can hardly expect to free ourselves from contagion, rot, mildew, etc. Those hardy varieties that have had the aboriginal impurities nearly bred out should be sent forward to early and still greater achievements, although at the expense of quality. Near the parallel of 43 we must go back for hardiness, and Professor Budd deserves much from the people of that section for his untiring efforts in that line.

No one can master the hidden laws which make varieties in crossing fruits. We can apply the pollen and then wait and see what Nature gives us. One says: "My seedling is a cross of so and so;" another, of "this and that;" another of something else, and not one of them resembling anything before known. If they would say they applied pollen of certain varieties, and stop there, and let the record be made out by whoever wishes to it would do away with suspicions of self interest, as any one can see as far into a blacksmith's anvil as he who hammers it.

The manipulation of the shears, brush and pollen can be performed by a child ten years of age after a little teaching; this is the smallest part of the work. Many varieties always show a retrograding tendency; a few of our best kinds are of this class. We have found it important to use those varieties the seedlings of which are on the advance, discarding all others. This requires time and patience, and as there is little, if any pecuniary profit in this enterprise, it becomes a work of love, pride or a hobby, and if the good things of the world are increased by any motive the benefits to posterity will be the same. The numbers who have recently turned their attention to the elevation of the standard of our horticulture by these methods is encouraging; and the good aimed at will be much sooner realized by united effort.

**About the Japanese Maples.**

THOMAS C. MEEHAN, GERMANTOWN, PHILA.

These beautiful ornamental trees were introduced into this country about the year 1860, nearly 27 years ago, and they are but beginning to get the popularity which they so richly deserve. Their great diversity of color and variegation, and their dwarfness of habit will mark them as indispensable in landscape adornment, and very great numbers are being planted every year.

The Japanese Maples are all classed under the head of *Acer polymorphum*, this being the original species, from which all of the great number of varieties now possessed have sprung.

There is no prettier sight than a large bed made up of the different varieties of Japanese Maples. They will set off and contrast with surrounding plants better than any other class grown, having at the same time richness possessed by no other tree. But they show off to the best advantage when set by themselves to grow as single specimens. Several large plants of the *A. polymorphum atropurpureum* growing around Germantown attract wide attention, being the admiration of all who see them.

The Japanese Maples generally make two growths in one season. The first, which is the strongest, will make from 6 to 10 inches, according to the size of the plant. The second growth is generally towards fall, and is only enough to make a few new leaves, sometimes not more than an inch or two in length. Should cold weather come on before the second growth has had time to fully ripen, it is apt to be killed back, but the growth being very small, it does not in any way injure the plant.

Some questions have arisen as to the hardiness of the Japanese Maples. I can only say, that I have seen them growing in the northern part of New York in a perfect state of health and vigor, and apparently none the worse for the severe weather which sometimes visits that part of the State. I believe these plants I refer to were not protected during the winter. A gentleman writing from New York says of them: "So far from being tender here, they are exceptionally hardy, and have not been

color, like those which first appear in the spring. The *A. poly. sanguineum* is very similar to this; it is perhaps a little stronger grower and the leaves are a trifle larger. Another form of the above, and which is very pretty on account of its feathery foliage, is the *A. poly. dissectum atropurpureum*. It is like the above in color of foliage, but its very fine leaves give it an appearance of having been cut with a pair of shears.



ACER POLYMORPHUM ATROPURPUREUM. (Blood-leaved Japan Maple.)

There is one variety of the Japanese Maples, *A. Japonicum aureum*, which, I think, should be in every collection. The leaves are not so deeply cut as in some of the other varieties, and are of a rich yellow color. It goes well with the *atropurpureum* and *dissectum*. I am well pleased with a little green-leaf variety, *A. poly. rosea marginatum*, the foliage of which is tipped and edged with pink. The *A. Japonicum uconitifolium* is a very rare variety, I believe, the leaves of which are green and deeply cut, and are very large. Leaves have been measured which were 4 inches long and 4 inches wide. It is a stronger growing kind than any of the others.

In conclusion I cannot but advise that wherever practicable everyone should have a small bed of these beautiful plants on their grounds, or at least one plant of one of the many varieties which are growing in popularity for their many fine qualities.

**Why Blossoms Fall to Fruit.**

The presence of an abundance of orchard blossoms is not a sure sign of an abundant fruit crop, as every one knows. Why there should be such a wide discrepancy between the promise and the fulfillment is hard to tell exactly, for it is difficult to know all the circumstances.

No doubt one of the most common causes of damage to fruit blossoms is occasioned by rains coming at a time to injure the pollen or prevent its distribution. We have, for one example that directly occurs to our mind, seen Plum trees the early blooms of which bore abundantly, while those that blossomed later and were subjected to heavy rains had hardly any fruit. Frost is a well recognized enemy to fruit blossoms.

A very dry continuous wind in the height of the blossoming season has been thought to have had an unfavorable effect on the flowers by drying up the pistil or otherwise preventing the pollen from properly coming in contact with it. A cold wind may also prevent the process of fertilization from being favorably carried on.

Sometimes trees that are very thrifty blossom freely but bring forth little fruit, when those about them and less thrifty bear well,

the inference being that excessive thriftiness of the trees caused sterility in the flowers.

The absence of insects from fruit blossoms for any of the above or other causes is one cause of unfruitfulness. Let us give even the insects their dues. It is not believed that fertilization takes place in fruit blossoms generally by the pollen being blown on the stigmas, but that it is usually conveyed on the legs and wings of insects as they pass from flower to flower. If the weather is fair when the fruit is ready for fertilization, so that flies, bees and other insects are very active about the flowers, the chance for a crop is much increased.

But let us look on the bright side, remembering that the time in which the pollen of any fruit blossom matures extends usually over an entire week. If therefore there be no frosts to outrightly blast the vital parts of the flower, we may usually look for at least some weather during the week or more time of all blossoms that shall be favorable to their fertilization.

**Sweet Alyssum.**

HARLEIQR OILLETTE, HIGHLAND PARK, ILL.

You pick a cluster of this exquisite pearly-white blossom and sniff in the delicious fragrance, how soothing it is! No wonder those wise ancients attributed to it the charmed property of controlling and subduing violent and ungovernable paroxysms of temper, rendering the disposition mild and passive. Its name is from the Greek *a*, nob, and *lyssa*, rage. Surely an appropriate cognomen.

Seed may be obtained from any seedsman, and should be planted early in a cold frame or seed-bed. Sow thinly and when the young plants are well up, transplant to their permanent garden quarters. An open situation, protected somewhat from the hot noon-day sun is desirable. The soil preferably should be black and rich, though we have grown some fine beds upon a heavy clay loam.

After setting out the young seedlings, they should be carefully watched and dusted often with dry wood ashes while yet covered with the early morning dew, to protect them from the attacks of the Blue Aphis, their inveterate enemy. So voracious are these imps that we have known whole beds of transplanted seedlings to disappear in a single day, nothing remaining but a few grass-like little stems to show what once had been.

A superficial observer will not always discover the Blue Aphis, as he is as lively as a Flea, and will jump two feet upon the approach of danger, his companions immediately following, and where an instant before a plant has been literally covered, there remains but the bare plant with its partially eaten leaves. However, he can be beaten off with care, and when once the young Alyssums have obtained a fair start they will bid defiance to these enemies.

A very pretty perennial species of Alyssum, *A. saxatile*, has yellow blossoms in close corymb bunches. It comes from Candia, and is very useful for rock work and stumperies.

**REPLIES TO INQUIRIES.**

274, 279. **Oxalis not Blooming.** I would say that the Pink Oxalis blooms freely with me when badly pot-bound and not too much petted in its culture. L. D. M., Buffalo, N. Y.

314. **Fruit Growing in Virginia.** All kinds of small fruits should succeed well in the vicinity of Petersburg, Va., provided of course that the soil is in a state of fair fertility. Concerning Peaches there are not many parts of the State where on land that is not low Peaches would do otherwise than well.

312. **Belmont Strawberry.** This variety has perfect flowers, hence is self-fertilizing.

311. **The "Best" Gladioluses.** The following are very distinct and beautiful varieties; and in my opinion the best in cultivation. Astree, Emma Thursby, Figuro, Gen. Sheridan, Hesperide, Lady Bridgeport, Lamarck, Meyerbeer, Martha Washington, President Lincoln, Princess Mary of Cambridge, Phebus, Shakespeare, Virginalis, Van Spandonk.—CHAS. E. PARNELL, Queens, L. I.



A JAPANESE MAPLE TREE.

injured the past winter in localities where Norway and Hemlock Spruce have been killed."

I will not attempt to go over the great list of varieties now enumerated, but will mention a few which I consider the best. First, there is the *A. poly. atropurpureum*, or the Blood-leaved variety. This I believe to be the best for every purpose. The foliage, when it comes out in the spring, is of a very light red color, but as the season advances it becomes darker. The leaves of the second growth are lighter in

### Some Points on Gooseberry Culture.

J. N. STEARNS, KALAMAZOO COUNTY, MICHIGAN.

Why this fruit is not more grown for market and family use may be based, it seems to me, upon several reasons, and it is to help dispel these that I write.

First, it seems to be the general impression that the Gooseberry will not do well excepting on certain soils, which it is fancied are just adapted to it. This is an error, as there is no fruit I have grown that more readily adapts itself to all soils than this. Moreover, I know of no fruit of which as many bushels can be grown upon a given area, or one that can be better depended upon, for a crop annually, if well cared for.

That the Gooseberry is most at home on a rich, moist soil I can admit, but yet it is a fact that I have produced, for years, perfectly satisfactory crops on very dry, sandy soil. It is a fact, also, that prices in the Chicago market have ruled much higher for this berry, for the past three years, than for any other kind of small fruits.

In cultivating the Gooseberry my advice is to set the plants fully four feet apart in the row, and the rows six feet apart. Thorough pruning is one of the essentials. Keep the bushes well trimmed out by cutting away all small branches where these grow thickly together. Give good tillage and an annual dressing of wood ashes, and I think I may say the more the better. Ashes act both as a fertilizer and for promoting moisture in the soil—so acceptable to the plants. With such treatment, if you have the right variety, you will be rewarded with crops of fruit to be proud of.

A second reason for the unpopularity of this fruit, no doubt, lies in the planting of unsuitable varieties. To my mind the Downing is by all odds the best Gooseberry (fully tested) for this country. But it should be stated that thousands of the Houghton are delivered every year by agents who have taken orders for the Downing. Of course when they come to bear the planter is disgusted with its small size and at once says he wants no more improved Gooseberries. The picture I have given is no false one for I have seen agents packing hundreds of the Houghton labeled Downing at a nursery not far from my home.

This, I should add, is not the fault of the nurseryman referred to, for the agent buys his stock at wholesale, and finding he can get the Houghton at about half the price of the Downing, as it is much easier propagated, he invests in this and the fruit buyers suffer. The true Downing, if it is well grown, sells, I learn from commission men, for the English Gooseberry.

The inference to be drawn from the above is, in all cases of buying nursery stock, send your order directly to some reliable nurseryman, and you will get what you order; give it to the average agent and you will get what he can buy cheapest—irrespective of what you order.

### Plum Culture in the Far North.

E. W. MERRITT, AROOSTOOK CO., MAINE.

The Moore's Arctic has proved with us to be the hardiest and most prolific of all our fine Plums, standing with this fruit where the Oldenburg does in the list of Apples. We have picked five quarts from one tree the next year after setting out, and four years old when set.

The trees are raised by sowing Canada Plum pits for stocks and grafting on them when one year old, as early in the spring as convenient, transplanting the next spring. The Canada Plum being a fine small-grained tree it somewhat dwarfs the Plum put on it, making the tree more fruitful. For this reason we graft as high on the stock as possible.

Root grafting has been tried but without success, not more than one out of ten growing. It is therefore not practiced, nor is the method of grafting so low as to allow the scion to root and the tree to stand on its own roots. The hardiest Plums put on the tender stocks commonly used are worthless here. We have an excellent chance to test the hardy fruits, being

on the 46 parallel; many called hardy elsewhere are tender here, we being probably 100 miles farther north than any other grower of similar stock in the United States.

### A Talk About Fruit Packages.

C. W. IDELL, COMMISSION MERCHANT, NEW YORK.

For years there has been a gradual change going on for the better in fruit packages, to realize which we have only to recall the time when Huckleberries and Wild Blackberries were marketed in soap or shoe boxes of any size that could be picked up. When a box of uniform size with broad bottoms and narrow sides, holding 16 quarts, came in they were considered a superior package. One cannot avoid smiling at the thought of the old and popular Grape boxes, and how readily purchasers paid fifty cents deposit on them; they are gone and the gift cases have finally followed them.

Then there were the little old-fashioned splint berry baskets once so popular in our market, and packed in "Dutch Hampers" in order to cart to the market, when on arrival frequently the peddlers would string them on long poles for retailing them. When Andrew M. Hopper, of Poscack, N. J., who is yet a hearty old farmer, first introduced the open skeleton crate to pack them in it was thought a model for others to copy; and for years there were no others.

I remember well when the Beecher crate and basket were introduced. What a wonder they were, but the great objection to them was the cost—three dollars. And now after repeated introduction of various kinds I am offered a crate, sufficiently strong to make one or two trips filled with quart baskets, for 32 cents.

The crates with baskets referred to are intended for gift packages, and it does not seem possible that a manufacturer can make money in producing them at that price. They will be of great advantage to the trade for out-of-town buyers, who will gladly pay the difference in cost in order to be rid of returning crates.

The spirit of invention is the order of the day, and these inventions come none too soon. They are simply the outcropping of a demand that already exists, for the cry among the fruit buyers is, "We must have packages to go with the fruit, for we will not be bothered with such as must be returned; we can sell more fruit in 'gift packages' and get better prices."

Now who are the ones to judge of the necessity of these changes, the dealer or the shipper? The dealer is compelled to meet with and contend against these demands, and it is his duty to inform his shippers of these changes. The shipper may be blinded to his own interest by owning some old packages "that cost him money," yet the fact that these packages have done duty for years and paid for themselves over and again is lost sight of, and he refuses to adopt any "new fangled gift packages" as he calls them, and sends off his old ones again and again, although he has been told that the loss arising from the sale of his fruit in them amounts to more than would buy new ones.

Fruit growers must not forget that each year creates an increased production, and it is this increase that the receiving merchants have to contend with. Take it in New York, for example, it is impossible for the local demand here to consume it, hence new outlets must be obtained and worked to get rid of this increase.

Now is it just for the grower to say to the merchant, "We do not care how much trouble or expense you are at to dispose of it, all we care for is the net proceeds." Yet take this assertion for granted, you must remember that all you do get is the net proceeds; but you want more, and yet refuse to believe your merchant when he tells you that a light new gift package will return you a larger net than the one you are sending in. But a few days since I heard a Grape grower say: "I have adopted the 'gift case' altogether and I consider that I was the gainer during the past season of one thousand dollars by so doing."

The present movement among those who handle Peaches to sell the basket with the fruit is considered by some an arbitrary act. Some growers ignore the statement of dealers who say, "We can get more than the cost of the basket in disposing of the fruit," but years of experience has convinced the dealers of this fact, for these baskets are an endless source of contest and disputes, and they frequently create breaches of friendship between shippers, receivers and purchasers. The dealers are simply "foot balls" for the shippers and purchasers to kick whenever there is the least excuse for either to kick them; and the former are so sore from this kicking that they think it time to stop and apply a remedy, and the selling of the baskets with the fruit is the true remedy.

The purchaser is required to leave a deposit on each basket he takes away; frequently he pays but little attention to the marks on them; during his possession they get marks mixed, then arises a dispute when they are returned. The dealers agree to pay for all baskets they fail to return. The dealer considers a delivery to the transportation company that brought the fruit a return, and for all deficiencies up to that point they are willing to pay for, but the shipper knowing that these companies will pay for no loss while in transit refuse to accept this as a delivery, but they must be delivered at the depot from whence they were shipped. This and the difference of opinion on the value of old baskets lost are other fruitful sources of contention. Generally the shippers claim more for the value of their old baskets, many of them having been used for years, than the cost of new ones. And often new ones are refused as substitutes and cash is demanded.

Some New Jersey farmers during the past season have demanded fifteen cents for baskets and covers when new ones could have been furnished them at 8 1-2 cents. When remonstrated with they retort, "Well if you wont pay me my price I wont ship to you." This is the real principal or basis of the demands of the growers on the dealers, who have in one season paid hundreds of dollars for old baskets that they were compelled to thus pay for. Shippers have only themselves to blame for the action the dealers have taken for self protection.

### Growing Green Peas.

MRS. J. S. R. THOMPSON, SPARTANBURG, CO., S. C.

My plan is so entirely different from that published in the March issue, and is so successful, that I wonder if both can be good. When 22 years ago I began gardening I drilled in Peas, one at a place, and two inches apart—result, one mess of Peas. Going in a garden of one of my neighbors and seeing her plant her second crop, I was astounded to see her bring out a peck measure full of seed, and walk up the open row with a handful of Peas, scattering thickly in the drill, a row full 3 inches wide with Peas, a continuous thick sowing. Noting later when in bearing the bushels of Peas gathered, I learned then and there a lesson ever since practiced.

My first and only planting of Peas was made of Landreth's Extra Early. At this writing they are up thickly, a solid green band 45 feet long and three inches wide. I plant always in double rows, i.e., two rows close together, 8 inches apart, then a space 3 1-2 feet, then two more rows.

As soon as well up I cultivate clean, and at once stick with short bushy sticks from Dogwood, pushed down into earth to where the bushes begin, which gives the very youngest Peas something to cling to for support.

My neighbor says that Peas love shade for their roots and hot sunshine for vines, and this is best obtained by thick planting. I find that after once one foot high the ground never seems entirely dry, a soft moisture pervading the ground, delicious to the drought-fearing southern cultivator.

For my own use I never plant more than three double rows, generally 45 feet long, and

have Peas in greatest abundance for a family of eleven. If nothing better can be had for supports use common lath stuck in slanting one way going down the row and a directly opposite slant returning, which forms a kind of diamond lattice work for them; but brush is better. Where Norway Spruce is abundant, to cut Pea sticks in fall of these, the spines all dropping away, leaving bare stems, would give a grand bush for Peas.

#### A Fine Vegetable Garden.--Its Rewards and Pleasures.

Last season I had quite a large and handsome vegetable garden. It was about 80 feet wide and 150 feet long. Myself and a German girl did nearly all the work in it, she being as much interested in gardening as I am, and I have a sort of passion for it.

After the ground was plowed I had a man make paths through it and get it ready for planting. Garden beauty depends much on the laying out. The paths of a vegetable garden should be straight, the main ones from five to six feet wide. The others need be only foot paths, at right angles with the main path. In the number and width of paths most amateurs make a mistake, thinking that they are so much ground wasted. I think not. Many clean paths, besides adding to appearances, allow the sun to warm the ground, making the vegetables earlier and better.

I did all the planting, except Potatoes and Corn. I had nearly every kind of vegetables in the catalogue—Lettuce, Spinach, Beets, Onions, Salsify, Parsnips, Fern-Leaved Parsley, (the two latter I used as an edging along the main paths, the Parsley was especially fine and would be beautiful as an edging in a flower garden) Peas, Corn, Tomatoes, Cucumbers, Turnips, Radishes, Muskmelons, Squash, Cabbage, Beans, Cauliflower, Potatoes, Nasturtiums, and Egg Plant.

When one has plenty of ground there should be several plantings of the same thing at intervals; for instance Beets should be sown three or four times during the season, as they are much sweeter and tender when young; Peas should be planted about three times; Potatoes twice and Sweet Corn about five or six times for a succession; on May 6th I made the first planting of Cory, Marblehead and Crosby Sweet Corn, and after that, at intervals of two weeks, I put in Crosby and the late varieties until the middle of July, and from the 25th of July to October 15th had plenty of the sweetest Corn that could be grown, both for our own use and to give away.

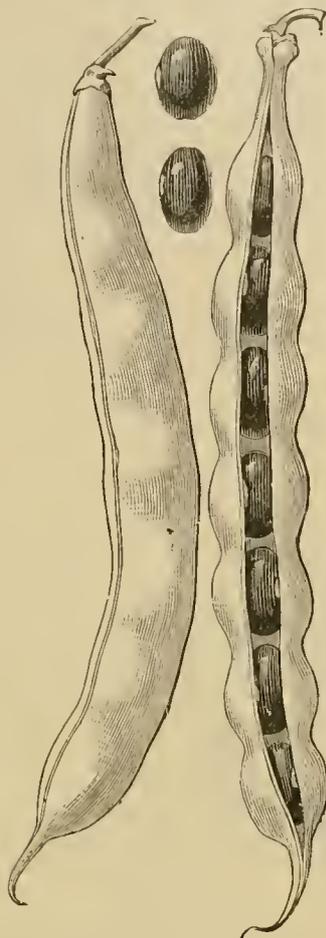
On one side of the main path that ran through the middle, I had a border about three feet wide, in which I had flowers that greatly added to the beauty of my garden. They were mostly annuals, Phlox, Sweet Peas, Zinnias, Mignonette, Convolvulus, etc.

To be successful in raising vegetables one should make the kind of soil, time and place of sowing them and planting considerable of a study. Of this one thing be certain—every weed must be kept out, as it is worse than useless to spend the time raising a crop of weeds; in a garden, which should be a thing of beauty, every weed should be excluded, a very easy thing to do if taken like a "stitch in time." I cut every small weed down with a scuffle hoe; with one of these I can go over a large space in a short time. Then weeding is comparatively easy.

Let weeds but once get ahead and I know of no more difficult task, at least for a woman, than attempting to do much with a garden. If a garden is neglected for a few days only, the weeds gain a foot-hold which they tenaciously contend for the remainder of the season, and it would be a wonder if the garden would not be swallowed up, the fate of many an one that started promising enough early in the season.

Good gardening means light but well-directed work, and such work will be crowned with

success, and the pleasure will more than repay for the toil. My garden is a great source of pleasure to me. I enjoy the work; I enjoy watching everything grow. Every hour every day there is something new and interesting to look at, and then to gather the vegetables and pick the flowers; what a reward it is? How I wish more ladies would employ their spare



THE WAX OR BUTTER BEAN.

moments in the same delightful work; how much happier and healthier they would be.

E. W. L.

#### The Wax or Butter Beans.

For home use, as well as for market, no class of Beans excels (few equal) the Wax or Butter Beans in desirable qualities. If not among the very earliest varieties, they have the valuable merit of remaining green and fit for table use longer than any other in cultivation. The pods of all are large, stringless, exceedingly tender and rich flavored, and as for beauty, with their golden, almost transparent, shells and black (in the main) beans, they stand at the head of all others.

Among the best varieties of the class are the Common Wax or Butter Bean, a popular variety wherever grown; the Golden Wax, perhaps the earliest and best variety for general use that can be grown, being at least a week in advance of the preceding; the Ivory Pod Wax, bearing long pods of a waxy white color. The foregoing are dwarf or hush Beans. Among running kinds there is the Giant Wax, with thick, fleshy, creamy-yellow, waxy-looking pods, that are as tender as a Snap Bean, and which keeps long in bearing.

In garden culture the Wax Beans should be given a light, warm soil, if possible, and the planting may be done as early as the first week in May in the latitude of Buffalo—earlier, in fact, than is generally supposed. To plant half a pint of the Golden Wax as a start, following with a succession of sowings, two weeks apart until July, and there should be an abundance of the crop for an ordinary

family. They may be planted in rows 15 to 18 inches apart, a bean to each inch of the row.

#### Strawberry Growing In Illinois.

JOHN M. STAHL, ADAMS CO., ILL.

This section—Middle Western Illinois—is quite a Strawberry-growing locality. The natural conditions are favorable, and Quincy, Chicago, and especially St. Paul and Minneapolis, furnish good markets for all grown. The Strawberries are carried to St. Paul and Minneapolis on the fast express (passenger) train, and reach those cities in good condition.

Planting is done in both spring and fall, but spring planting largely predominates. The earlier in the spring and the later in the fall this is done the better, as a general thing; but there are exceptions to this, too. Here we cannot plant before the last of April. This is not so much on account of lack of warmth as of an excess of moisture, though the ground is well drained; if not naturally, then artificially. But our springs are wet, and the rains sometimes continue long and copiously enough to injure the quality of our berries slightly, but compensating for this by a larger yield.

We test the newer sorts as they come up, but hold fast to the old varieties that we have found good. The Crescent Seedling is given a larger area than any other variety. It is very productive and the berry is of a good shape; but if the vines are allowed to bear more than two years the berries become small. Next comes the Sucker State, a variety used almost altogether for fertilizing the blossoms of the Crescent Seedling. One row of the Sucker State is set to two rows of the Crescent Seedling, thus putting a row of the former between two of the latter. The Sucker State is also largely grown alone, on its own merits. It produces more berries than any other perfect variety yet tried here. The berries are large and of unusually good shape, ship splendidly, are held well off the ground and are of good size and quality to the last. The Captain Jack is likely third, though it is not so good as the Sucker State; the berries are not so large, are of light color, a considerable percentage are small, and the seeds are large and prominent; but the berries are of good shape and ship well. We find three serious objections to the Bidwell: it blights badly; the blossoms are often caught by frost, and one side of the berry ripens before the other. The Iron Clad is perfectly hardy here—on the fortieth parallel; but like the Bidwell, it blights and the blossoms are apt to be caught by frost, and the berry is rough. The Sharpless is frosted three years out of seven, at the least.

The matted-row system of culture prevails. I know that some will object to this. I have only to say that we grow Strawberries for the money there is in the business, and that we have no trouble in raising berries that bring the top of the market. The hill system does not recompense for the additional expense. True, we use manure liberally, but this increases the crop while it betters its quality. Where labor is cheap it may pay to grow in hills, but not with us. The rows are put three feet apart and the plants a foot apart. Some varieties should not be allowed to fruit more than one year; others may well be allowed to fruit two years; and some will bear good berries the third and even the fourth years. I believe that the older varieties, as a general thing, will fruit well for a longer time than the newer varieties. The length of time a plant will bear well has something to do with its value, but is rarely, if ever, considered. Thus to prepare a bed and set out the plants is no small task; as many of us find it best and more practicable to plant, we must wait a year for a crop; if this work and waiting need be done only every fourth year it is much better than if it must be done every other year.

When the proper time comes I shall write of our methods of keeping accounts with pickers.

## OUR PERENNIAL FOES.

## Insects That are a Great Damage to the Horticulturist, and How Best to Treat Them.

With the spring-time comes the renewed warfare between the vigilant soil-tiller and his insect enemies, for these are essentially warm weather creatures. No lengthy arguments are needed to show the terribly destructive character of these quiet minute foes, which like a vast hostile army every year settle down upon the land. Indeed it would require a great invading force of armed men to be able annually to cause devastation equivalent to that accomplished by the many insect tribes.

According to the last census returns it is computed that the aggregate losses from injurious insects in the United States equals two hundred millions of dollars a year, while able economic entomologists are not wanting who place the loss at least one-half higher. It is estimated that the Apple Worm or Codling Moth alone has in recent years destroyed nearly one-half of the Apple crop of the country, representing to our fruit growers a loss that runs high into the millions of dollars yearly.

But along with the increase of injurious insects, there has happily been increased activity also on the part of the National and State Governments, and of individuals in devising means and remedies for successfully destroying the former. And with excellent results too, for it is most gratifying to note that at the present time hardly a single formidable insect enemy to the horticulturist exists but what there is also some simple remedy known for its destruction, or at least for greatly lessening the force of its damaging attacks.

It is for the purpose of laying before our readers at this time a summing up of the most approved methods and remedies, old and new, for dealing with some prominent insect enemies that the present paper is given. The remedies have been compiled from various sources, giving due credit, and it is believed that together they must possess such value to our readers as will enable them very successfully to cope with the multiple foe. But no remedy can prove successful unless it be applied promptly at the proper time, hence it is urged that whatever is done in the insect war now at hand, let it be done early, vigorously, and with all due persistence.

THE APPLE WORM OR CODLING MOTH (*Carpocapsa pomonella* Linn).

As this is by far the most injurious pest of the Apple, it should be well known in its various stages, hence we present figures 1 to 3 illustrating it accurately. For this insect a most satisfactory remedy is now in use, one easy of application, and which, if rightly used, is believed by Prof. S. A. Forbes, State Entomologist of Illinois, who has been for some years conducting elaborate experiments against this insect, will result in saving at least seventy per cent of the Apples commonly lost by its ravages. The remedy is the arsenical poison found in both of those well known insecticides, Paris green and London purple. Concerning the summary of the results of Professor Forbes' labors we quote from his record of experiments: "Summarizing still more briefly, we may say, in general, that the results of once or twice

spraying with Paris green, in early spring, before the young Apples had dropped upon their stems, resulted in a saving of about seventy-five per cent of the Apples exposed to injury by the Codling Moth. I wish especially to emphasize the fact that the results now obtained are drawn from computations so made that they may be expected to hold good without reference to conditions other than variations in the treatment itself."

Referring to the use of arsenites for this Apple Worm, Professor A. J. Cook, of the Michigan Agricultural College offers the following:

**Remedy 1. ARSENICAL POISONS.**—By far the best remedy for this Codling Moth, is to use either London purple or Paris green. The remedy is not only efficient, but is also easy of application, and not expensive. I have now tried this thoroughly for six years, and in each and every case have been more than pleased with its excellence. I know of no one

the spraying is done before the Apples have begun to hang downward.

THE CANKER WORM OF THE APPLE, ELM, AND SOME OTHER TREES (*Anisophteryx vernata* Peck).

While this insect is not of frequent occurrence outside of the New England States, it is of the utmost importance to fruit growers and others that it be not permitted to increase and extend until it shall become established. Its sluggish wingless female moths rise from the ground and creep slowly up the trunks of Apple, Elm, and less abundantly many other trees, chiefly in March but also later and somewhat in the fall, laying their eggs in clusters on the bark, these being secured by a grayish varnish. The eggs usually hatch about the time the Red Currant is in blossom, and the Apple leaves begin to grow. The little worms attack the tender leaves near by, first piercing them with small holes, which later become larger and more irregular, and at last nearly all parts but the midrib and veins will be consumed. When young they are generally of a blackish or dusty brown color, with a yellowish stripe on each side. When fully grown, at which time they measure one inch or less in length, they usually assume an ash color on the back, and black on the sides, below which the pale yellowish line remains. They vary in color somewhat however, being at times found of a dull greenish yellow, or of a clay color, and even green.

**2. BANDING.**—Banding the trees with strips of heavy paper or cloth, coated with tar or printer's ink, early in the spring, to prevent the ascent of the wingless females, is an old and effective remedy. It has been found that the residuum of kerosene oil is one of the best remedies that can be used on hands, it being both cheaper and lasts longer (about six days) than ink or tar. The latter articles must be frequently renewed. Traps made of tin and muslin to prevent the ascent of the worms are also in use.

**3. ARSENICAL POISONS.**—The spraying recommended in Remedy 1 for the Codling Moth on Apple trees answers at the same time to destroy the young Canker Worms. On Elm and other trees this same remedy may be applied for its destruction.

## PLANT LICE OR APHIDIDÆ.

It is probable that every kind of tree, shrub and herb has some species of louse of the family of Aphididæ infesting it. The common Green and Black Lice or Flies which trouble our house, greenhouse and garden plants, those of similar colors infesting the Apple, Cherry and other trees, and the Hop Louse, afford familiar exam-

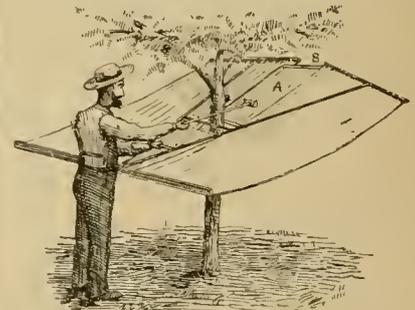


Fig. 8. POPULAR GARDENING'S non-patented Curculio and Rose Beetle Catcher. See Remedy 11.

ples. The past year or two has found the kinds which trouble fruit trees, and especially the Apple, unusually numerous in many sections, causing immense damage.



Fig. 1. The Codling Moth, (perfect insect of Apple Worm).



Fig. 5. Rose Beetle, Chafer or Bug.



Fig. 6. Rose Saw-fly (perfect insect of Rose-slug, enlarged).

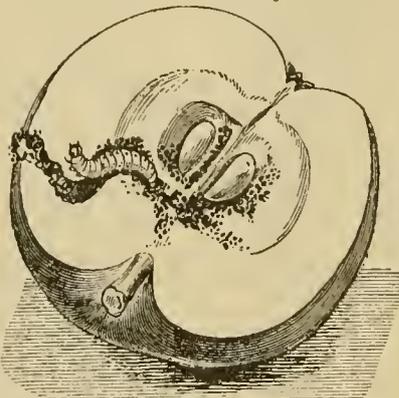


Fig. 3. Worm of Codling Moth in the matured Apple.



Fig. 2. The young Apple Worm working in towards the core.



Fig. 4. Curculio Beetle stinging a Plum previous to laying its eggs.

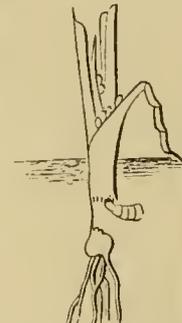


Fig. 7. Eggs of the Onion Fly; Onion Maggot at work.

## A GROUP OF SOME OF OUR WORST INSECT FOES

who has tried it in vain. I have, found London purple just as effective as Paris green, and as it is cheaper, and rather easier to mix in the water, is to be preferred.

I mix the powder one pound to fifty gallons of water. It is best to wet the powder thoroughly and make a paste before putting it into the vessel of water, that it may all mix, and not form lumps. For a few trees we may use a pail, and a hand force pump, always keeping the liquid well stirred. One common pail of liquid will suffice for the largest tree. A teaspoonful of the poison is enough in a pailful of water. For a large orchard common barrels should be used, and drawn in a wagon. I prefer to have the barrels stand on end, with a close movable float, with two holes through it, one for the pipe or hose from the pump and the other for a stirrer. If very large orchards are to be treated a good force pump should be fastened to the barrel. In western New York the handle of the pump is fastened to the wagon wheel (see Fig. 11), so that no hand power is required other than to drive the team and manage the pipe which carries the spray. The spray may be caused by a fine perforated nozzle or a cyclone nozzle. The finer it is the less liquid will be required. The important thing is to scatter the liquid on all the fruit, and get just as little on as possible. The larva is killed by eating the poison, and we find that the faintest trace suffices for the purpose. Again, the poison should be applied early, by the time the fruit is the size of a small pea. I have found one such application to work wonders. There is no doubt but that the first application, followed by one or two others at intervals of two or three weeks, would be more thorough, yet I have found one application, made early, so effective that I have wondered whether it was best or necessary to make more than one application. I do think, however, that it must be early. In May and June the calyx of the Apple is up, (see Fig. 2) and so the poison is retained sufficiently long to kill most of all the insects.

One more count in favor of this treatment is the further good we receive by killing the several phytophagous larvae that attack the foliage of the Apple at this early period when defoliation is so harmful. Thus the terrible Canker-Worm, the several destructive Leaf Rollers which even eat out the very buds, and the old pest, the Tent Caterpillar, are all made to bite the sod. Very likely, too, the Plum Gouger, which so deforms the Apple in Wisconsin, may also find this remedy its death warrant.

As to the danger of using these arsenites, it is argued that this is nothing at all, provided

4. **TOBACCO**—For use on a small scale as about Roses, Geraniums, Salvias, Verbenas, Chrysanthemums, flowering shrubs, etc. the old remedy of whale-oil soap and tobacco water, or the more recent and more convenient one of sprinkling the affected parts with tobacco dust, or mulching the plants with tobacco stems are entirely satisfactory.

5. **KEROSENE EMULSION**.—On a large scale, as for Apple, Cherry and other trees, the Kerosene Emulsion Remedy, first published by the Department of Agriculture, at Washington, is perhaps the best one known. It is prepared as follows: Kerosene, two gallons; one-half pound common soap, or whale-oil soap; water one gallon. Heat the water and dissolve the soap in it, then add it boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for ten minutes, when it will form an emulsion. Dilute before using one part of the emulsion with nine parts of cold water.

Fig. 9. The Daisy Pump.

This mixture will kill every louse that it touches, and the good accomplished depends only on the thoroughness of the application. It will be seen that two gallons of kerosene and one-half a pound of soap make, when diluted to the right strength, thirty gallons of wash. Two precautions must be carefully observed: First the oil and water must be thoroughly mixed; soft water is preferable. When the mixture is complete the fluid becomes a milky white, and all globules of oil disappear from the surface. Second: the mixture should be applied to the trees in the form of a fine spray from a force pump. Experiments show that unless the mixture is most thoroughly made, the young leaves would turn brown. The use of a force pump obviates this difficulty, as the fine spray tends to divide into minute portions any kerosene that may be left unmixed. Mr. Charles Little, of Rochester, has reported that he finds no better device for applying this emulsion than the Daisy Pump, (of Fig. 9). Any syringe or force pump with spraying attachment will answer. The one known as Lewis' Combination Force Pump with Tree Spraying nozzle, which may be changed from a solid stream (for mixing) to a fine spray while the pump is working, is one of the best for applying any kind of remedies to trees. After going over Apple trees twice with the emulsion it has been found that few or no Aphids are left; the expense is trifling.

6. **FUMES OF COAL TAR**.—Mr. Crane, a successful fruit grower of Lockport, N. Y., stated at the last meeting of the Western New York Horticultural Society that he had found the burning of a wad of rags attached to a pole and coated with coal tar, a safe and complete remedy for the Aphid Plum trees that were black with this pest were, by a few applications, perfectly cleaned. The wad should be burned underneath and not too near the foliage.

7. **PROMOTING GROWTH**.—Owing to the universality of Plant Lice, it should perhaps be stated that they are always more troublesome on plants or trees in an enfeebled condition than on others. Any course that tends to promote vigor will be helpful in withstanding their attacks.

**SCALE OR BARK LICE ON APPLE, PEAR, ELM AND OTHER TREES AND PLANTS.**

These insects are very common and destructive in many places, especially so on the Apple tree, the young shoots of which are in many cases completely covered by them.

8. **SOFT SOAP AND CARBOLIC ACID**.—A strong solution of soft soap is the old and reliable remedy. Professor Cook has improved on this by the addition of crude carbolic acid, making the mixture as follows: One quart of soft soap to two gallons of water heated to the boiling point, when one pint of crude carbolic acid is added, stirring the solution well at the same time. This should be applied early in June, and again some weeks later, with a cloth or scrubbing brush, to all affected parts.

**CURCULIO OR WEEVIL OF THE PLUM, APRICOT, CHERRY, ETC., (*Conotrachelus nenuphar*.)**

This is the greatest enemy of the Plum and some other stone fruits, while also affecting the Apple and other kinds. Dr. Harris says that the Cherry Worm, which is very common in this fruit, is identical with the Plum Curculio, but unlike the effects of the insect on the Plum, it rarely causes the Cherry to drop prematurely to the ground.

9. **THE JARRING PROCESS**.—This is a simple and adequate remedy within the means of everyone's employing. It consists of spreading cloth sheets, or frames of some form, covered with cloth, under the tree, jarring the tree sharply by striking on an inserted spike or on the stump of a lower limb

removed for the purpose. An excellent device of our own for this purpose is illustrated in Fig. 8. The cloth at the rear end of the frame is attached to a single light strip of board, while at the centre of the entire area it is divided into two parts, the further end of each being attached to a short cross piece, which in turn is supported by one arm of a light frame, as shown in the figure. The two further cross pieces are one foot apart at B, to admit of bringing the frame under the tree, with its center and main cross arm resting against the trunk during the jarring. A flap of cloth A extends from one of the projecting parts to the other, to be raised and again let down in adjusting the frame. Concerning the jarring operation, this should be begun as soon as the insect commences its work, which is soon after the fruit is set. From "Lut's Guide to Plum Culture," we quote: "The work of the insect may easily be detected by the small crescent-shaped mark that is left on the fruit. The jarring process need not necessarily be performed early in the morning while the dew is on, or late in the afternoon. It will not so readily let go its hold, as when it is actually at work, and this is not until the dew has dried off and the atmosphere has become warm. The number of times that an orchard should be gone over depends upon the varieties. Those that become hard and downy soon, like Richmond, Lombard, Reine Claude etc., require much less jarring than large, smooth kinds like Pond Seedling, Yellow Egg, Coe's Golden Drop, etc. It should be repeated daily for one week, and then at intervals of a day or so between, so long as the insect remains at work."

**WORM ON THE CURRANT AND GOOSEBERRY. (*Nematus ventricosus*.)**

This very common pest is so readily dealt with by the timely application of remedies that there can be no possible excuse for the shocking damage often seen done to these useful fruits about town and country homes.

10. **HELLEBORE**.—Concerning the use of this specific, we reproduce in substance the directions recently given by Dr. Lintner, N. Y. State Entomologist, in our columns: "Hellebore is the best of known remedies and a perfectly effectual one. Properly applied no harm can possibly result from it. It should be used in the following manner: Early in the spring, as soon as the leaves of the Currant have fully put forth, watch for the first indications of the hatching and commencement of the young larvæ. You have only to look for these on the lowest leaves of the bushes near the ground. The indications will be numerous small holes eaten into the leaves. Sprinkle powdered Hellebore over

**THE ROSE-SLUG AND SAW-FLY.—(*Selandria rosæ*.)**

These pernicious vermin are known to all Rose growers. The Rose Saw-fly, shown greatly enlarged in Fig. 6, is a shiny black insect which appears in the latter part of



Fig. 10. The Hose in the young which appear in the tree top.

May and up to about June 15th, and also again in August, the female laying its eggs in incisions made with its saw obliquely into the skin of the leaf. The young which appear from ten to fifteen days are the greenish almost transparent Slugs that are frequently met in such great numbers feeding on Rose bushes until the whole foliage looks as if scorched by fire.

- 13. **TOBACCO**.—Same as 12.
- 14. **HELLEBORE, DRY**.—Promptly dust the powdered drug lightly over the affected bushes by the use of a tin can with a piece of muslin tied over the end; the foliage should be moist at the time. Professor Lintner suggests that before using Hellebore its strength should be tested by applying a small pinch to the nostrils, if it fails to produce a tingling sensation it should be rejected as comparatively worthless.
- 15. **WHALE OIL OR OTHER SOAP SUDS**.—Whale oil soap dissolved in water in the proportion of two pounds of the former to fifteen gallons of water, adding also a double handful of salt, and with this wetting the foliage affected. Ordinary soap used instead of the other makes nearly as good a remedy.
- 16. **PARIS GREEN SOLUTION**.—Same as 1.
- 17. **KEROSENE EMULSION**.—Same as 5.
- 18. **DUST**.—Dry air-slaked lime, plaster of Paris, wood ashes, or even road dust, if regularly and repeatedly applied, will destroy the slugs.

**ROSE BEETLE, CHAFER OR BUG, ATTACKING**

ALSO THE APPLE, PLUM, CHERRY, GRAPE, VEGETABLES, ETC.—(*Macrodactylus subspinosus*.)

This insect, shown in Fig. 5, is one of the greatest pests known to the gardener. It devours buds, blossoms, young fruit, and leaves. Not only does the Rose suffer badly from its depredations, but entire crops of Peaches, Grapes, Apples, Cherries, etc. have been blasted by the same insect. They seem to have a special fondness for the Ox-eye or Field Daisy; it is a pity they do not confine their attentions to that weed. They are of a grayish or ashen yellow color. Their time of attack continues for a month or more from the blossoming of Garden Roses.

- 19. **JARRING AND BURNING**.—Same as 9.
- 20. **HAND PICKING AND BURNING**.—This is the most common remedy for small bushes and not so serious as it might seem. Gather them early in the morning by picking or brushing into a vessel of water. Afterwards they should be burned.

**THE ONION FLY AND MAGGOT.—(*Au-thomyia ceparum*.)**

These have long interfered seriously with the Onion crop. They appear in successive broods, the fly laying eggs in the young Onion, as shown in Fig. 7, and which hatch usually within a week, the larvæ at once burrowing down into the root. Usually

a number of these maggots may be found in a single young Onion, the earth about the part of attack being wet and slimy. When the bulb is consumed, as shown by the tops turning yellow and dying, they desert the plant and attack and destroy others one after another.

- 21. **UNLEACHED ASHES**.—Scattering these over the Onion bed, while the plants are wet with dew, once a week throughout the month of June, has been found of service in keeping off the fly.
- 22. **DESTROYING AFFECTED ONIONS**.—In case of an attack all affected plants should at once be taken up by means of a broad-bladed knife to lift the larvæ, and then promptly burning or otherwise destroying the soil and other matter lifted.

To be continued next month.



Fig. 11. Moody's Wagon Wheel Power for Spraying Remedies 1, 3, 5 and others.

these leaves, renewing it if washed away by rain, and the desired end is accomplished. If the hellebore remains upon the leaves during the time that larvæ are hatching all will be killed, and none will remain for subsequent spreading over the leaves and for the need of future attention. If the first brood of worms is thus destroyed there will be few if any to form a second brood in June.

11. **HAND PICKING**.—Some find it convenient to watch for the first eaten leaves, and to pinch them off by hand and destroy them. The eggs are always to be found conspicuously arranged in rows upon the veins of the under side of the leaves.

12. **REFUSE TOBACCO STEMS**.—Laying some refuse tobacco stems, from the cigar maker's, in the centre of each bush about May 1st, or mulching the bushes with tobacco stems, or these mixed with strawy manure, afford a complete remedy.

## A. M. PURDY'S DEPARTMENT.

Post-office address, - - - Palmyra, N. Y.

## Briefs.

It is not necessary to sift coal ashes. One way of using them is to scatter on the surface of all plants, and not plough them under.

**To Exchanges.** We hope the old exchanges of the Recorder will keep up their exchange with this department, sending such exchanges to us at Palmyra, N. Y.

If **Strawberry** plants have not been mulched and it is desirable to keep the fruit clean, it must be done when fruit is not over half grown, keeping clean up to that time by shallow cultivation.

The practice of putting a small piece of soap in a cloth and tying it in the crotch of the tree where the limbs divide off from the body is a good one, as the strength runs down the body with heavy rains.

**Mulching** is necessary, not only to hold moisture to the surface, but to retain moisture. In fact plants and trees should be mulched with some coarse material, if watered through dry spells in the summer.

**Rotation in Small Fruits.** It is a fact that we have demonstrated time after time that ground that has been run with an old Blackberry or Raspberry bed will grow full Strawberries for two or three years, and vice versa.

**Root Pruning the Pear.** It is claimed that root pruning serves in a degree to prevent Pear blight. Certainly on our grounds where the highest cultivation is given, and the most stimulants, and thereby a heavy growth, blight is the worst.

**Potatoes Running Out.** We would like to know why it is that Potatoes "run out" so quickly and new sorts have to be introduced every few years. It was not so when we were young. For years and years the old Mercer, Kidney, Neshanock, etc., were grown, and for long years the Peach Blow.

**Grape Pruning.** Dr. Chute, in a letter, says of pruning Grapes: "When the leaves are well grown and the Grapes begin to form, you can cut off, as you please, all the branches or saw off the vines; there will be no bleeding. I prefer the spring, for the entire growth of the last year is before you, and the best bearing wood can be seen.

**Forestalling the Grubs.** Mrs. Harmon Pierce, of Mississippi, writes that she tried the following remedy to prevent grubs working at Strawberry roots when set out, and the same too with other transplanted plants, like Tomatoes and Cabbage: One large spoonful of salt and one ounce copperas to a pair of water, and dip plant roots in this before setting.

**Muslin sashee** for hot-beds are largely used, especially for transplanting beds. Take good stout unbleached muslin and thoroughly soak it with linseed oil. It proves better than glass. Plants do not freeze or scald, and have a better color and grow more stocky and much better for early transplanting. Sashee 3 by 6 feet are best. They should have a fresh coat of oil every year or two.

**More About Curculio.** R. B. T., of Nevada, writes us: "I will give you my way to keep the Curculio off the Plum and Cherry trees. Take refuse wool and tie it around the trunk so as to let it hang down, and then every morning turn up the wool and catch them. Another way we recommend is to wind the body with a strip of paper six inches wide, and keep this paper well coated with printer's ink or similar substance.

**Shade as an Enricher.** If one will lay a board on the ground for a few weeks and remove it and plant on that spot Corn or Beans, they will see a great difference in the growth from that planted a little way off, where the ground has not been thus shaded, that is, if shading is done in dry weather. This plainly shows the importance of mulch shading, the surface holding moisture and taking in the nitrogen from the air. We say mulch well as a rule.

**Apple Culture.** To be successful with an Apple orchard we advise setting out on a westerly slope, as the blossoming is kept back thereby, and hence less danger from late snow, frost and cold north-east winds. Train trees with branches low, have the land well drained and tile put in deep, prevent limbs from crossing by cutting off one. In eastern sections keep ground well cultivated for years, while on the rich lands of the West, after trees get started, seed down.

To have a good hedge largely depends on starting right. Set plants of Osage or Locust six inches apart in the row, cultivate well for a year or two and cut back thoroughly. Cut back to two or three eyes when set, and at close of

season cut back to 8 or 10 inches from the ground. The second summer clip off side branches of new growth fully one-half to two-thirds and the top back fully half. Evergreens should be cut back when set to make them branch low, and after that one-half of the previous season's growth each year.

**Evergreen Hedges.** One reason why so many are unsuccessful in growing these is that they do not begin right. Many will go to the woods or fields and get trees grown from seed, tall and spindling, not one out of ten of which will grow. Others want the hedges "right away," and get large trees, and many of these fail to grow, leaving breaks in the hedge. The proper course is to get small trees from the nursery, setting them not over one foot apart, and cutting them back at least one-third to one-half when set, and mulching them well with any kind of coarse material. Each year the new growth should be cut back at least one-half. By this course a stocky well formed hedge can be had.

## SMALL FRUITS ON THE FARM.

We know of a farmer who has all the small fruits he needs for his own family besides selling and giving to those around him. He has a garden near his house, ten to twelve rods long and three to four rods wide. He plants in rows 2 1/2 to 4 feet apart—the Raspberries and Blackberries—two rows on the outside. After the first year the work is largely done with horse and cultivator, and done quickly, too. The trouble with too many farmers is they plant too closely together, and in short rows, and the work has to be all done by hand, which makes a tedious job.

## SOME CONCLUSIONS CONCERNING PRUNING.

In pruning trees of any kind it is better to have one strong branch or limb than two or three weak ones. It's better to keep heads low than high. It's better to keep limbs thinned out than to cut back and make too close heads. Let the sun's rays in all through the tree.

It will be noticed that the highest and richest colored Apples grow on trees having spreading branches and that are well thinned out. Keep suckers off the limbs and body in midsummer. Spring trimmed trees produce the most suckers.

If blight strikes the Pear trees, slit the bark on one side of limb or body from affected part downward at once and give a coat of pure linseed oil. This slitting is especially beneficial to "hide-bound" or stunted trees, with a good coat of whitewash added.

A very good time to prune trees is right after they have leaved out. We have cut limbs from trees at all seasons in the year and find no better or safer time than this.

If there is one thing more than another that we dislike to see, it's evergreen trees having the bodies trimmed up. We call them giraffes of the Evergreen species. Instead of trimming up, cut back and make a thick low tree, and after well formed at bottom, let them grow, but even then it's well to cut off half the leader (new growth) each year for three or four years.

## SWINE IN ORCHARDS.

I am very sorry to see the advice to pasture hogs in the orchard. Fifteen years ago this was taught and practiced by many, and as a result I can show you some of the worst wrecks in what were fine orchards. Last fall I saw the boys digging out some large dead trees at one I have in mind, where the trees were about twenty five years old. The father while he lived (and the practice began with him) was a very careful and enthusiastic horticulturist. For three or four years the boys followed his example, turning fifty to seventy five hogs in to keep the clover down and pick up the windfalls. The hogs were probably lousey (as it is very common here), and with many trees the bark was rubbed through to the wood. A few were nearly girdled by this rubbing. A short time since I asked an intelligent German if he pastured hogs in his orchard of 1,000 trees. "No sir; I would soon have no orchard if I did." was his reply, and this fairly represents the sentiment of our orchardists.

We clip above from the N. Y. Tribune, and must say in our forty years of experience and observation we have not known a single instance like the above. However, it would be

a very easy matter to protect the trees with stakes or, winding loosely with barbed wire to prevent rubbing against trees.

## FRUIT JELLIES PURE AND OTHERWISE.

Dr. Cyrus Edson, one of the Inspectors of the New York Health Department, tells in *Babyhood* about the composition of cheap fruit jellies, as they are found put up in fancy packages in our grocery stores. A sample of Currant jelly consisted of the following ingredients: Dried Apples, water, low grade glucose, tartaric acid and arsenical fuchine (a red aniline color). To this mixture was added a sufficient quantity of French glue to give it the consistency of jelly. A large package of salicylic acid was also found stored away in a cupboard, which, after some pressure had been brought to bear on him, the proprietor admitted he used in warm weather to keep his jellies from spoiling.

Herein is a chapter of sound information to all fruit growers, as also to the fruit consumer. If only pure jellies and jams were allowed on the market what an opening there would be for fruit growers to work up their small berries into such, sending to the market only large, fine assorted fruits and putting the small specimens into jelly or jam, and too to stop turning into jelly and jam half-spoiled fruit bought up for less than the cost of picking and marketing, by the hoodlums and frauds of the city, and made into "pure" Strawberry or Raspberry jam or jelly, by adding the above ingredients.

Years ago we put up one thousand glass jars of first-class Strawberry jam, made from berries picked fresh from the vines, and putting in plenty of pure granulated sugar. It was delicious and so pronounced by all who tried it. We sent samples of it to leading commission houses. They acknowledged it to be first-class, but wrote us that there was so much fraudulent jelly and jam on the market that they could not sell it at paying prices, and even private individuals who ordered twelve to twenty-five glasses, as an experiment, at fifteen cents per glass, wrote that it didn't pay to buy and pay charges when they could get it so much cheaper in the city. Perhaps if some of these economizers (?) will read this they will see what it is that they are getting "cheaper."

We, as well as other growers, would have been glad to have entered into jelly or jam making on a large scale, and thus save hundreds of bushels that are lost in wet weather or glut in the market; but so long as our law-makers and law-enforcers will take no steps to stop this traffic in an adulterated and poisonous compound, honest, hard-working fruit growers must suffer, and the health of thousands be broken down who are using the stuff described above.

## WALKS AND JOTTINGS ABOUT THE FRUIT FARM.

THAT'S RIGHT, give those trees, my boy, a good swabbing with that whitewash, being careful to get well into the crotches with it.

THERE'S THAT old Raspberry bed to clean out. We have found the best way is to cut off the tops close to the ground and run a strong plow under them throwing them out. Then clean up and burn and pass over and plough the ground well.

STOP THERE, my man, don't double up Strawberry roots in that way in setting. If you do, they will dry out the first dry spell. Straighten out the roots and put them into the holes, with roots spread out fan-shaped, and press earth well against them.

THERE IS NO plan for training Grapes that is more successful and that we like so well as the Kniffen plan, that is, having two wires on strong posts 3 1/2 and 4 feet from the ground—having bearing vines on one wire this year and training new vines to bear next year on the other wire.

WHILE IN VIRGINIA the past winter we saw a Black Raspberry plantation that will not yield more than half a crop the coming season, simply because it was not grown right. The plants had grown tall and spindling and had been brushed around and broken off by the winds. Now, all of this might have been prevented by nipping off the

new growth at tip end when not over two feet high. The party had made another mistake and that was plowing up to them. We don't use a plow the first two years, but simply cultivate them, drawing up around the plant with the hoe as much earth as we would to Corn. After the second year we begin plowing up to them and follow it up until the plantation has run out.

THERE IS NO question but what the hedge system is the best for growing Black Raspberries and Blackberries, for by the limbs growing together it prevents the fierce winds of winter blowing them around and breaking them off. We know it is some more work to keep them clean than when we can cultivate both ways, but if kept well cultivated and cleaned the first year or two, it requires but little more than ploughing up to them once a year and cultivating between the rows. We find it strictly necessary in the fall to plough up to the trees young planted two deep rows to prevent heaving in such an open winter as the past. This leaves a furrow away from trees for water to stand in and prevents heaving of young stock. The old wood in those large Red Raspberry and Blackberry plantations must be cut out this month before the leafing season comes on, as it makes bad picking.

#### MEAT FROM THE SHELL.

The Journal of Agriculture says: For Grapes growing in a dry situation stable manure answers as well as any fertilizer; on damp ground it is different. Here diseased vines would result from its use. A much better article is found in wood ashes, bone dust and the like. It may be added that the roots of vines in damp places should be encouraged by culture to keep near the surface.

The N. Y. Tribune says: The trouble about using glass, under the sudden bursts of burning sunshine to which we are liable, is the necessity of noting such times, and of running out to move the glass and so prevent the otherwise inevitable scorching of the plants. A great merit of the water-proof muslin is that it does not transmit heat as glass does, although admitting light to almost a sufficient extent. It is light, less liable to break, and easier of storage. For a row of early Peas, a board on the north side leaned forward and panes of glass leaned against it on the south side make an admirably simple and efficient shelter. There is sufficient air circulation between the panes to carry off excess of heat under full sunshine.

The Farm and Home says: Kainit should be applied very carefully to Strawberry plantations, if they are not covered with mulch. If the mulch covers the plants, it may be sown broadcast, or it may be sown upon the snow with safety. If there is no mulch upon the bed, it should be sown between the rows. The quantity may vary from one-half to one ton per acre. Generally better results will be obtained by sowing equal value of some more complete fertilizer than the kainit, says Prof. S. T. Maynard of the Massachusetts Agricultural College. We should add that kainit is a coarse grade of German potash salts, 100 lbs. of which contain about 12 lbs. of pure potash, the rest being salt, lime and magnesia principally.

We clip the following from the Planters' Journal. It may do for amateurs, but we think will not pay on a large scale: A new style of growing Strawberries has been introduced in California. The Strawberry bed consists of a brick mound, 16 feet long, 5 feet wide at the base, nearly 4 feet high and 6 inches wide at the top. The interior of the mound consists of rock and manure. The bricks are laid about an inch apart, and between them the plants are set. There are 600 plants in the mound. The bed is watered through a wooden chute in the top of the mound, which empties into the rock in the interior. The gardener says the Strawberries thrive better by this method of growing, and that each mound will produce a bushel and a half of berries twice a year—in the months of March or April and July or August. The bricks, warmed by the sun, burn off the tendrils of the plants and thus prevent them from running. The berries produced are large, clean and luscious, and the beds are ornamental. Each bed costs somewhat less than \$20.

H. F. Womer, of Dakota, writes to the Prairie Farmer as follows: When I commenced experimenting with Apples in Dakota, four years ago, I planted the Duchess, Wealthy, Pewaukee, Haas, McMahon, Wolf River, McIntosh, Decarie, Brockville Beauty, Peach of Montreal, German Calville, Charlamoff, Peppoff, and Zolotoreff; since then I have planted nearly a hundred varieties of the Russian and new northern Apples, but they have not been sufficiently tested as yet to determine their merits. Taking for our standard of hardiness the well-known Duchess and Wealthy (they lose

their terminal buds here in hard winters), there are four varieties in the above list that stand pre-eminent for this climate, and may be described in following manner: Zolotoreff is as strong a grower and as hardy as the Box Alder. Prof. Budd says that at Ames it is inclined to blight, but with me it has shown no sign of blight. The fruit is very large, oblong, with well defined crimson stripes. It is a true Russian, of the Alexander type. Season, October and November. . . . McMahon is a northern Wisconsin seedling that seems to defy alike the cold of winter and the heat and drought of summer. Fruit large, waxen-white, with red cheek, tart; early winter. . . . Charlamoff is a Russian of the Government importation; a good tree in every way. Fruit large, oblong, streaked carmine, good; season, October. . . . Wolf River, a Wisconsin seedling of the Alexander. A handsome tree in the orchard. Fruit large, showy, striped, looking very much like that of its parent.

#### The Starvation Theory for Peach Yellows.

JOHN WILCOX, CUMBERLAND COUNTY, N. J.

That the disease known as the yellows in Peaches has its primary origin in the deficiency of the requisite plant food in the soil is a position capable of being sustained by the greatest accumulation of evidence.

A Mr. Locuson, of Willow Grove, in this county, has a Peach orchard of five hundred trees, transplanted two years ago. The trees are very fine and vigorous; but in one spot, where undoubtedly the germs of yellows were in the soil, four trees are what might have been regarded as hopeless cases of that disease. He concluded to apply four quarts of German kainit to each tree last spring, thinking that it would kill the trees, which he had resolved to take out; but, to his astonishment, they commenced, in June, to change color from the yellow sickly appearance that the disease indicates to a dark green hue; and, the first of October, every shoot had grown two feet, and the trees are, to all appearances, perfectly healthy. He left one tree without the application of the kainit, and it has shed its leaves without making more than three inches of sickly, slender shoots.

A couple of years since we, in company with a friend, passed through a block of Peach seedlings, which had been sown the current spring. The men were engaged at the time in budding them. They were grown upon land which had been used for growing nursery trees, but had not been used before for growing the Peach. In this lot of trees we discovered a half-dozen which showed incontestable evidence of being in the worst stages of yellows. Thinking, possibly, that they might be dying from the effects of borers, as they sometimes get into trees the first season's growth, we took them up, and found that the roots bore no appearance of having been disturbed. Here were trees grown from Tennessee seed, where the yellows are unknown, and yet the soil imparted the disease to the trees the first season.

Another instance of incontestable proof of this theory was observed in two cases where we sold to two farmers orchards of about five hundred trees each. The trees did well in both instances, except a spot of a half acre, or thereabouts, in each orchard, where the trees leaved out, commenced growing, and soon after mid-summer died with yellows. We were astonished with the result, and made a close examination of the trees and soil. We could see no difference in the soil, and the trees of different varieties, which did well on each side of these spots, died as they came within the limits of the pieces of infested soil.

Not fully satisfied with the result, we reset the trees the next spring, only to have them all die again. The following spring we had the owners of the orchards dig out large holes, and dump in half a wagon-load of sods from the road side, upon which the next lot of trees were set, and did well in every instance. While we could give other corroborative proofs to sustain the theory that the origin of the disease is in the soil, we do not deem it necessary to devote our limited space to so doing.—"Peach Culture."

#### Growing Large Chrysanthemums.

Knowing Mr. Arthur H. Fewkes, of Newton Highlands, Mass., to be a most successful grower of the Chrysanthemum, and that his achievements in the raising of large blooms have been quite remarkable, we invited him to prepare for POPULAR GARDENING some

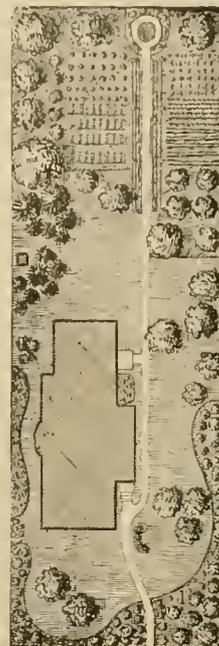


Fig. 1. A one-fourth Acre Garden embracing many pleasing features. See next page.

directions on the best methods of culture having such an end in view. To this request he very kindly complied as follows:

To produce large Chrysanthemum flowers the start may be made by taking cuttings late in March or April and potting directly into 2 3-4 inch pots. As soon as these are well rooted place in a cool, airy house, or cold frame, and shaded for a few days until they begin to grow freely. Here they should remain until all danger from frost is past, when the pots should be plunged to the rim in either a bed of coal ashes or in the open ground. The place should be one at all times fully exposed to light and air.

The pots should not be allowed to become pot-bound early in the season, but as soon as the roots have reached the sides of the pots they may be shifted into the next larger size, and from this into a still larger size, if need be, for the plants should be kept growing freely until the buds have formed.

The soil should be rich and free from clay; well decayed stable manure or hot-bed soil and sand makes a good compost.

When the plants have reached a height of six or eight inches they should be pinched back, taking out the smallest amount possible from the growing end. This will cause them to break into three or four shoots, which should be allowed to perfect but one bud each. By so doing the whole strength of the plant is thrown into these three or four buds, which will develop into flowers of an enormous size, if properly fed with liquid manure. Each shoot, as it approaches maturity, will have formed several buds, all of which should be removed, but the largest, which is usually the one at the extreme end. This disbudding should be done as soon as superfluous buds are large enough to be taken without injury to those to remain.

The plants should be watered as often as they may need it, for they should never be allowed to become dry. As the pots begin to get well filled with roots rather weak liquid manure should be given them frequently, and later on they may be fed with it entirely. By plunging in the ground nearly half the watering may be saved. They can be prevented from rooting by turning the pots around in the ground thus breaking off any roots that may be inclined to run through the drainage hole.

Each plant should be provided with a stout stake early in the season, to which it may be tied, from time to time, as it increases in size.

In the Autumn they may receive the same treatment, as to housing, as ordinary plants, but as they are more apt to be pot-bound great care should be taken that they do not suffer from want of water, and liquid manure must be given to them very freely until the flowers begin to open, when it should be discontinued.

THE COMPLETE GARDEN.\*

V.

BY A WELL-KNOWN HORTICULTURIST  
ON ARRANGING GARDENS.

We have now beheld somewhat closely a four acre garden that is remarkable no less for its completeness, than for its pleasing arrangement throughout. From first to last in our walk, feature after feature was met, each possessing peculiar qualities of ornament or use, and all contributing harmoniously to a delightful whole. But it is one thing to visit and become charmed by a single fair garden, another for each person who might desire to possess such a one to take the best course for securing the end. A leading difficulty encountered is, that any attempt to apply the plan of some given garden, however perfect in its place, to another, must almost invariably fail, because such important existing conditions as size, shape, soil, location of buildings, trees, etc., of one place are rarely if ever identical with those of another. It is for this same reason that the plans found in works on gardening are so rarely of avail, beyond the one respect of suggesting features that might desirably be adopted. These facts lead naturally to the conclusion, that the best plan for arranging each garden is the one that by intelligence and good taste is made for it, and to acquire such a plan is one of the most important matters connected with the having of a garden capable of yielding a high degree of satisfaction.

How then shall a good plan be secured for each one of tens of thousands of home gardens, the owners of which desire to see them well improved? In those cases where the area is large and the means to apply are ample, perhaps no better course could be suggested than the employment of a capable landscape gardener to plan and direct the work. But such cases are exceptional, hence, in addressing the American people at large, I prefer to encourage the average person to lay out his or her own garden. Several other reasons why this is my choice may be stated. For one, it is certain that vastly more pleasure and satisfaction comes from gardening when one designs his own garden, provided it is well done, than when an outsider is employed for this. Then the study which the preparing of a good plan, embracing many features and a large assortment of useful and ornamental growths naturally calls forth, is equivalent to a schooling that should fit the student for the better enjoying of all future gardening operations. There is the gain in economy also through doing for one's self what would otherwise be somewhat costly in hiring a landscape gardener.

The question of skill and intelligence concerning what to do and what to leave undone arises. In answer let me say that I am well satisfied that the various principles and rules which should govern all good work in this line can be so imparted in writing and by illustrations that any fairly studious person may master and apply them in a way both to avert serious blunders and on the other hand to lead to gratifying results. It is within the province of the present writing to in brief advance some of these, such as have by wide application proven themselves to be fundamentally sound and not very difficult of adoption.

In entering upon the principles and practices of designing garden improvements,

let us at the beginning notice that in all cases of this kind certain primal elements are inherent. These may be summed up as follows: First, there is the area of land to be improved; second, there is the world's contribution of organic growth in the line of trees, shrubs and plants for furnishing the land; third, there are inorganic materials needful for making walks, fences and other structures, also water, rocks, etc., that may, in their natural form enter as features into fine gardens; fourth, as found in the majority of places, some buildings, trees, fences, and other objects possessing permanency

X O, etc. refer approximately to the main variations of the surface and are useful in all similar map making and planning. As employed by the writer they signify as follows:

- X X indicates highest points of land.
- X " " slight elevation.
- X O " " the ordinary level.
- O " " slight depression.
- O O " " the lowest points of land.

It must be obvious that wherein the marked advantage of deliberate advance map making is realized, is that the work on paper appears, as a whole, comprehensively under the eye as the

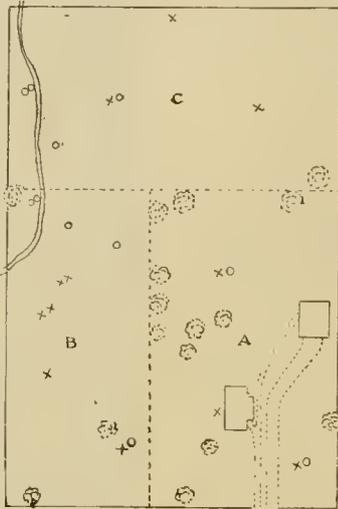


Fig 5. Showing Original boundary, buildings, fences, walks, etc. A represents former home grounds. B and C added plots embraced in the enlarged garden.

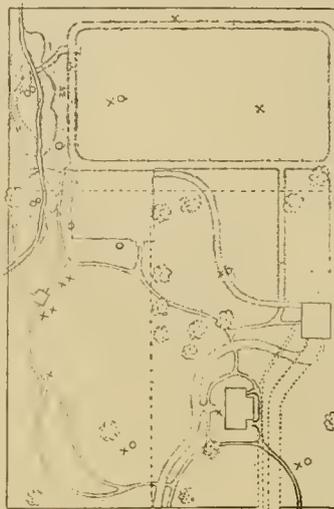


Fig 6. The same, representing in addition one of several studies in pencil line, of improvements, which although pleasing was not adopted.

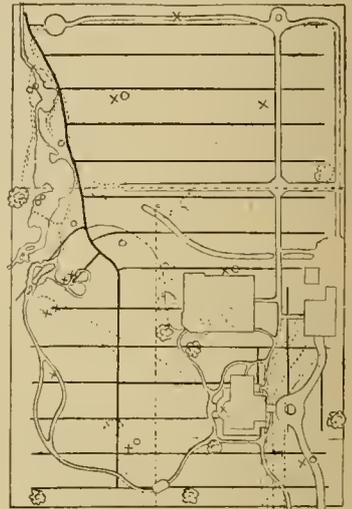


Fig 7. The same showing the adopted study completed to walks, drives, drainage system, etc. The heavy lines showing the course of drains.

PLANNING THE GARDEN SHOWN ON PAGE 88.—PROGRESSIVE MAPS MUCH REDUCED.

of character in some degree, may already be present and which require to be considered.

The problem: Given the foregoing, how shall the garden maker in each respective case proceed to utilize and combine them? To make my instructions on this subject as clear and convenient as possible, I shall present them in a progressive and numbered form very nearly in the order of their application.

1. MAPPING AND PLANNING. An early step is the making of a map of the place to be improved, in the style shown by figure 5, and which is to serve as a basis of the new plan. This map should be of firm, smooth paper, such as will take both pen and pencil marks. It is to embrace the boundary lines, buildings and other prominent features of the place, and these should be represented in ink, each properly in its place, working on some reduced scale. A scale of eight, sixteen or thirty-two feet to the inch answers well, for then the marks on an ordinary foot rule clearly show the length in feet on the map.

In locating objects on the map first ascertain their distance in feet, from the boundary lines, buildings or other objects, indicating each one in its exact relative position on the map. It is best to make measurements from several directions to secure accuracy. Objects that are strictly permanent in character, such as the boundaries, buildings, etc., should be represented by full ink lines, others, liable to be changed, by dotted ones. Then, in the devising of the new plan, this should be done by the use of a pencil, so as easily to admit of erasure and change. There should be several maps like the one referred to, on which to design different arrangements, then at the end choosing the best. Duplicates may easily be made by laying the first map over sheets of paper and puncturing down through with a pin or fine awl at the various points of angles and elsewhere, to locate the objects on the clear papers beneath, afterwards tracing out the lines on these, being guided by the dots. The accompanying figures 5, 6 and 7 show a series of reduced maps of the garden illustrated on page 88 in the course of the planning. On these maps the characters X,

planning proceeds. Then further, the planning may be done in the leisure of winter, during periods of bad weather or evenings when ample time may be taken for considering every feature and detail, from all points of view involved, thus reducing the liability to mistakes to a minimum.

2. EXTENT OF THE GARDEN. How large to have the garden is a leading question. A terse answer might be given: as large as it can be well made, well planted and, above all, be well kept in the future; and not a foot larger. One point is settled: it is that a small home garden, even though it contains not above one fourth of an acre, provided this be judiciously laid out to fruits, vegetables and ornamental growths, and is rightly made and maintained, is capable of yielding more enjoyment and substance than one many times as large but shiftlessly managed. Size can never make up for neglect and disorder. To give an idea of what may be accomplished on one fourth of an acre, and also as presenting a contrast with the plan of the large garden heretofore shown—the one of Figure 8 on page 131 is offered. Here it will be seen the area is devoted about one third to ornamental trees, shrubs and plants (the three last classes mainly in borders, of which a conspicuous one is seen at the extreme front end); one third to the house, walks and clear lawn, and a similar extent at the rear to fruits and vegetables. Summing up the variety and number of growths that are well accommodated in this space, having also ample unobstructed spots throughout for admitting an abundance of air and light to the home, it would stand about as follows:

- Flowering and Evergreen Shrubs, 70
- Ornamental Deciduous and Evergreen Trees, 24
- Hardy and other Flowering Plants throughout. 120
- Climbers on extreme rear arbor and over verandas, 10
- Fruit Trees, 18
- Small Fruits: the area to left of walk in rear part.
- Vegetables: the area to right of walk in rear part.
- Grape-vines: on trellises flanking walk and flower borders in rear part.

That a garden of such size and character may by good planning and management be rendered

a most delightful beauty spot, as well as one prolific of substantial products, is readily seen.

3. APPARENT EXTENT. In home improvement, no argument is needed to show that a course which will make a plot of one acre appear as large as another twice its size, and involving in the former but one half the expense of the other in keeping, is a very decided gain in many respects, not the least of which would be seen in case one chose to sell, or in those cases where property is directly improved to market. Attainments in such a direction are easily within the province of practicability, and should be sought for. Take in the case of Figure 8, for example, it may be observed that for a person to behold any fenced-in plot of exactly the same size (one-fourth acre) but clear of trees and other improvements, or a similar sized plot planted by the dot-a-tree-everywhere system and with all the line fences within range of the vision, and then entering this garden he would at once judge the latter to be much larger than either of the others. Everyone must have noticed something similar to this in the erection of buildings. The foundation walls when started, and as they are easily compassed by a single glance, seem to indicate a disappointingly small structure; wait for its erection and it appears by some power to have expanded far beyond the size of the early foundations.

The things in garden improvement which are of the greatest value in augmenting the true area in effect, may be named as follows:

Bold, continuous curving lines, and especially when they serve to describe the outlines of marginal plantings, as in the fore part of Figure 8. Why these answer well thus is because within given areas such curved lines are of a greater length than it is possible for continuous straight lines to be. If then the marginal plantings consist of pleasing and variable selections of growths to divert the eye, the end sought for is increased. In a measure bold curving walks, like the one in the left part of Figures 4 and 7, serve to similar ends.

On the other hand a long straight walk brought in conspicuously, being viewed lengthwise to its far end, conveys the idea of great length in the direction followed. To best promote this quality by such means, however, it is well to have a conspicuous terminal object at the further and least used end, as is shown in the arbor, both of the straight walk of Figure 8 and of the Shrubby Walk of Figure 4.

The opening up of some vistas towards the more distant parts of the garden, likewise help to increase the appearance of extent. Such vistas to be most helpful should be in part broken by projecting clumps of shrubs and trees, that the eye may be prevented from exploring the extreme limits of the place.

By having the garden features arranged in some degree systematically, as shrubs, plants, evergreens, deciduous trees, and often the different classes of these, each by themselves in the main. Through such a course not only may we gain in the number of distinct garden features, but in each one there may, by numerical strength, be such a degree of character and interest imparted as to occupy an observer's attention and give an idea of comparatively great extent that would be wholly impossible with an indiscriminate mixing of kinds.

To be Continued.

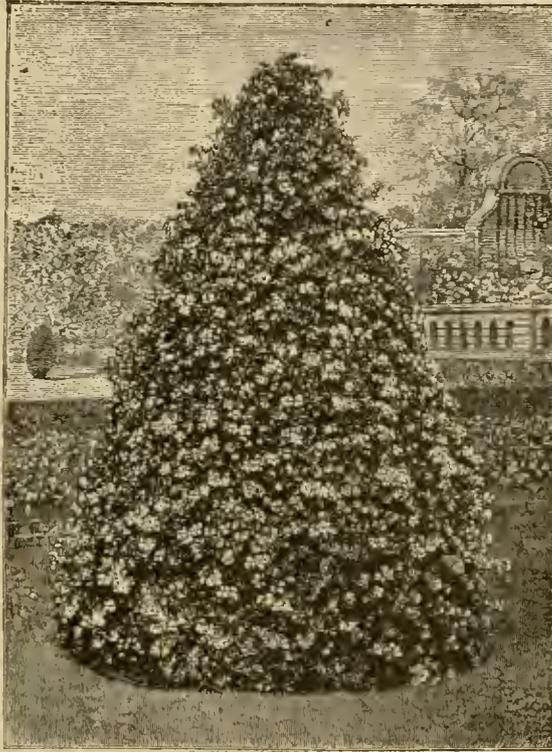
#### Geraniums and Other Plants Grown to Pyramidal Forms.

Under various conditions the spiry or standard forms of growth are very appropriate in the garden. This is especially the case for purposes of contrast amongst the dwarf and flat

forms of our bedding plants and bed masses. Pyramidal forms are easily secured in a number of our Evergreen and deciduous trees and shrubs, but in the character of perpetual bloomers such can only be had by some special planning.

In the accompanying illustration, which we re-engraved from the London Gardeners' Chronicle, is shown a pyramid of free-blooming Ivy-leaf Geraniums, from an actual specimen in an English Garden. The pyramid is described as having been constructed of young plants that had not been allowed to become pot-bound, and which were planted out in circles big and little, as suited the particular purpose required, and as the plants grew they were trained up the pyramidal trellise.

Other subjects equally attractive in leaf and color as Ivy-leaf Geraniums might be pointed



A PYRAMID OF IVY-LEAF GERANIUMS.

out, viz., Abutilons of any kind, especially A. Thompsoni; Heliotropes of strong growing habit; but best of all for elegance and beautiful color is *Plumbago capensis*. The various Hybrid Clematises which flower in early summer and again in the autumn, together with *Jasminum revolutum*, are also to be considered.

Some annuals of a scandent habit are well adapted for pyramids. These are the varieties of *Lophospermum scandens*, of *Maurandya*, of *Cobæa scandens*, *Loasa aurantiaca*, etc. The seeds of annuals for such purposes require to be sown early in the spring, and the plants grown on quickly, until planting-out time.

To make the trellise for pyramids like these is a simple matter. They should be made staunch, so as well to support the growths against the violent rain and wind storms of summer. Drive a stake uprightly in the center of the bed to be planted. When this is fixed drive in half a dozen more in a slanting direction, having them enter the soil at what is to be the circumference of the mound and meeting the center stake at the top. The stakes should be firmly bound together at the apex. By the use of slighter poles, branches or wire, the space between the outer stakes may be sufficiently filled in for tying all branches to.

In the work of tying the plants to such a pyramid, pains should be taken to make the outline as nearly correct as possible when tying is first done, and then the form will scarcely need to be touched later. It must occur to any one that the first aim should be to

have all parts of the form perfectly covered.

In the line of flowering shrubs suitable to be pruned into rounded or other forms, few if any excel the different varieties of Japan Quince. These can be made decidedly attractive by pruning them with the shears each year just after the flowering season is over. By this course the habit of the plant becomes very dense, and the annual growths short, and with the essential proviso that the situation is in full sun, so that the shoots coming after the summer pruning get well ripened, the plants become year by year more floriferous.

#### Improvement in the Gladiolus.

D. S. MARVIN, WATERTOWN, NEW YORK.

The Gladiolus is a flower which has not been as extensively cultivated or even as generally known as it has deserved. We have not all kept pace with the grand improvements that have lately been made in these flowers by hybridizing them with other allied genera. The new hybrids with *Ramosus* and *Purpureo auratus*, when more generally introduced and studied, will come as a new revelation to most persons. Until these new flowers are actually seen and studied no idea can be formed of the exquisite beauty of many of them. We can unhesitatingly claim that in form, habit and colors, they have never before been equaled by any other class of flowers.

A few years ago as a doubtful experiment I procured an amateur collection to test in this climate; the experiment has turned out a most gratifying success. From June until November I have beds of the most gorgeous and brilliant colors, and in greater variety of colors than I have ever seen in any other species of flowers. We seldom, in this far northern climate, get sight of a humming bird, but I have taken a seat under an adjoining Evergreen tree during a morning in August and counted no less than eight of these brilliant visitors from the Tropics, hovering over my flower beds and sipping their nectar; some of the beauty of those sunny lands was thus brought to my door.

I find the bulbs healthier here than on Long Island. I got more or less decaying bulbs from them whenever I sent for them, but I seldom see a diseased plant here after one year's cultivation. Of course I have gone into seedlings. In a few years I shall be able to gratify my friends with a look at some most brilliant varieties originated upon the 44th parallel north; I can even do so now.

*Gladiolus gandavensis* must be a native of a mountainous country; they seem to enjoy the cool air here. I often leave the small bulbs in the ground over winter. They go on and blossom as if in their native clime. I had the pleasure of carrying off the first premiums upon these flowers last fall at our County and State Fair.

PACKING PLANTS FOR MAILING. A flower lover can generally get hold of all the plants she can care for cheaply. Slips are easily raised, and a little money goes a great way in getting a start with plants, as one finds by consulting the advertising pages. It takes a little ingenuity and skill to send a package of plants by mail, so that the postman will not be distracted, and the plants arrive safely and not be much retarded in growth. Select the small rooted slips and tie a little piece of damp moss around the roots. Put the slips as closely together as possible in a paper box, and tuck a damp piece of cotton batting over the top. Cover the box, tie a piece of wrapping paper around it, and direct carefully. I have received several sent in this way, and on opening there would be a delicious mossy smell, and pleasant greeting. I put the slips in warmish water for a little while before potting and rarely lose a plant.—*Sister Gracious*.

**Lilac Time.**

While the Lilacs are in bloom,  
Call me not from elsewhere  
From the Lilac-scented air.

While the Lilacs are in bloom!  
Oh! to lose their beauty's spell,  
This, my friend, were never well.

While the Lilacs are in bloom!  
Oh! the city stones will stay—  
Soon the Lilacs pass away.

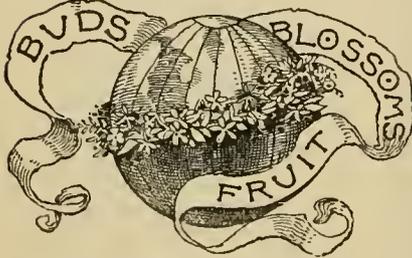
While the Lilacs are in bloom,  
Heart, my heart, go not away;  
Keep, oh, keep the Lilac's day.

—*Ida A. Ahlborn.***Dropping Corn.**

Sturdy, helpful, little Bill,  
Trudges slow from hill to hill,  
Where the brown-backed corn-field lies  
Underneath the sweet May skies;  
Drops the seed with patient care,  
Just enough and none to spare—  
"One for the black-bird, one for the crow,  
One for the cut-worm and two to grow."

—*Mrs. H. G. Rowe.*

Now nature hangs her mantle green,  
On every blooming tree,  
And spreads her sheets of Daisies white  
Out o'er the glassy sea.

—*Burns.*

**Make straight rows.**

**Nature dons her new suit.**

**Get the vine baskets around.**

**Mossy lawns require fertilizing.**

**Catch and punish the plant thieves.**

**Delay in tree planting is now dangerous.**

**Apply the remedy before the mischief is done.**

**Plants in flower should not be watered overhead.**

**African Marigolds are not African but European.**

**Hubbard Squashes do well planted among early Potatoes.**

**For supreme pleasure seek the garden at early morning.**

**No Strawberries are so fine as those of one's own raising.—*Meq.***

**For brilliancy we think the Tulip called Standard Gold excels all others.**

**The Strawberry is at home in almost every inhabited part of the globe.**

**Verandas are health givers, inducing people to live more in the open air.**

**Agapanthus. Lack of free airing for these now is not conducive to the best colored flowers.**

**The Chinese look upon the Peach as an unwholesome fruit. Now we know they are queer chaps.**

**"The finest fruit under the sun" is what Editor Robinson, of the English Garden, calls our American Apple. Right.**

**In the Arnold Arboretum at Boston trees are planted in pits of good soil ten and twenty-five feet square to insure long life.**

**To keep our different sorts of Peas from mixing on our small place, we plant them respectively at the four corners of an oat field, writes J. W., Hatch Hollow, Pa.**

**One thing we would like to see, namely, our subscription list largely increased during May. It is work in which every member of the family could help very much.**

**Proclaim the Secret.** One who is very successful at Rose culture when asked for her secret replied that it lay mainly in manure, pruning knives, attention and sunshine.

**Rainfall per Acre.** People scarcely understand by rainfall in inches, what it really means, but an inch of rain means a gallon for every two square feet, or one hundred tons per acre.

**A thick soft-soap wash is disliked by the borers that affect some trees; apply it to the bark a few times in the spring of fruit trees and such ornamentals as the Mountain Ash and Rose Acacia.**

**Assuming that the Apple is the king of fruits the American Cultivator would accord to the**

Peach the place of queen, because queens are popularly supposed to be clothed with velvet.

**The Blueberry fraud,** formerly conducted by Delos Staples, West Sebewa, Mich., seems still to exist under a change of name and address, as "L. D. Staples, Portland Co., Mich." It is a thing to be left alone.

**Caterpillars on Gooseberries.** For several seasons I have tried a simple remedy for these, with such excellent results that I think it should be widely known. It is to spread some dry slacked lime half an inch deep under the bushes some way from the stem. This we do in May.—*B. Ligg.*

**Flower Growing a Key to Character.** "Sister Gracious," of the POPULAR GARDENING family, reports that a discerning census taker out her way paid a tribute to flower growers as follows: I always found the folks who had even a small flower bed in their front yards, or a solitary window box filled with thrifty plants, much more intelligent and accommodating than those houses entirely bare of floral adornments.

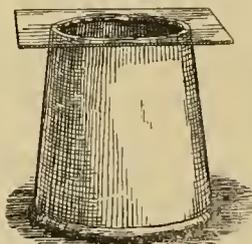
**A Large Vine.** What is supposed to be the largest Grape-vine in the world is thus spoken of: It is growing at Oys, Portugal, and has been in bearing for more than eighty years. Its greatest annual yield was in 1864, in which year it produced a sufficient quantity of Grapes to make 165 gallons of wine; in 1874, 146 1-3 gallons; in 1884 only 79 1-4 gallons. It covers an area of 5,315 square feet, and the stem at the base measures 6 1-2 feet around.

**The Best Annuals.** Mr Henry Ross, of Middlesex Co., Mass., calls attention to the Dwarf Antirrhinum as a most beautiful one. The Dwarf Sweet Alyssum is also desirable. He means to grow Verbenas from seed, for they have been brought to such perfection that one is pretty sure to get good ones, and seedling plants are not diseased like those raised from cuttings. Petunias raised from good strains of seed make one of the most beautiful shows in the flower garden.

**The Unpleasant Side.** Growers of magnificent Roses and other choice winter flowers, are sometimes congratulated on being engaged in such a delightful occupation. Congratulations of this kind usually come from those whose only point of view is the perfect blooms. These persons do not see the close attention, day and night, the stokey-hole operations, the liquid manure tanks, which play such important parts. Said one overworked florist, in response to the compliments of a visitor, "Madam, when you come to know them as I do flowers are as disgusting as any other business."

**Halliday's Practical Azalea Culture.** This is a work the name of which is in no sense a misnomer. It is simply a plain, straightforward account of the propagation and culture of this favorite plant, from the cutting through all the stages to a plant thirty years old, as told by a practical and experienced florist, Mr. Robert J. Halliday, of Baltimore, Md. The language is direct and to the point through all the thirty-one chapters embraced, while the text is in itself remarkably clear and free from needless words. It is accompanied by some thirty odd engravings illustrating operations of culture throughout, and all designed to make the work one of great value to the inexperienced florist and amateur. Mr. Halliday is his own publisher.

**Flower Pot Hand-glass.** Your engravings of hand-glasses recently, leads me to send this rough



*A Simple Hand-Glass.*

drawing of several home-made glasses I have in use. They are simply large flower pots, with the bottom broken out by the aid of a cold-chisel and hammer, and covered with a pane of glass each. I find them very effective for protecting the tender plants. I imagine that the porous sides have something to do with their value.—*Mrs. W. B., Kent Co., Del.*

**Degeneration.** Concerning the degeneration of fruits and vegetables Mr. W. H. Hills, of Massachusetts, reports that he has made many observations bearing upon this matter. When the Early Rose Potato was introduced he bought two pounds and raised 240 pounds from that quantity, and though some consider the variety degenerated, he thought that with the same care he could get as good results to-day. His Baldwin Apples were so small last year that he felt some alarm lest they had deteriorated, but he found they were as large as any one's.

Disease is distinct from degeneration. The Flemish Beauty Pear cracks; is this degeneration or disease? Apples crack more every year, and though the crack seems to heal, inside the fruit is still worthless; he thought this was disease. The manner of



**A TRI-COLORED GERANIUM.**

cultivation and peculiarities of the seasons are continually affecting fruit.

**Peas and Potatoes.** Subscriber "H. H.," of Erie Co., Pa., sends in the following practical note on planting these vegetables together: "In every hill of Potatoes we put also from two to four Peas, using some fertilizer at the same time. The Potatoes afford all the support the vines need, and it is very little trouble to move the latter enough to get at the bugs, and Paris green for them does not hurt the Peas in the least. The Peas are easily picked without injuring the Potato vine. My husband thinks if he had acres of Potatoes he would have acres of Peas. We have tried this for years, and I always sell from fifteen to twenty-five bushels of green Peas, and in that way save considerable pocket money. The Peas seem in no wise to detract from the Potato crop, while the culture bestowed results in an immense yield of the former."

**Mulching and Pruning Raspberries.** We mulched some of our Ohio Raspberries in the spring of 1886 with manure direct from the street-car barn. The result is that the canes on the plot mulched were injured quite extensively by the past winter, while the canes in the adjoining rows of the same sort are in perfectly good condition. We have always advocated and practiced cutting out the old wood and surplus canes as soon as berry-picking was over, hauling off and burning at once. Last season we decided to let them remain until this spring. Many canes show that borers have matured in them, and as they are not now present they must have survived to do us damage this year. We shall hereafter try to do our "mulching" with the cultivator and burn the useless wood of Raspberry plantations as soon as it becomes a nuisance.—*F. E. Skeels, Kent Co., Mich.*

**A Productive Onion Patch.** Last fall I concluded to try a small piece of land and see if I could raise Onions to advantage. I measured off one-seventh of an acre of land (which had been well worked the year before), spread a heavy coat of horse manure on it, and plowed it under; this spring I plowed again and spread on 10 barrels of hen manure mixed with about 15 barrels of sandy loam, harrowing it well in. My Onion seed rows were 12 inches apart, and the result was 149 bushels of as fine Onions as one would care to see (1043 bushels to the acre). I do not think there were 10 bushels of small ones and scullions in the lot. I am selling my Onions readily at \$1 per bushel at my door. I shall prepare one acre of land in the same manner for next year, and although I can hardly expect such a yield again, I hope my one acre of Onions will compare well with other growers' in quantity and quality.—*F. S. Smith, in Farm and Home.*

**Easy Science in Watering.** From the moment that the soil becomes so far dried that the fibers of the roots cannot absorb moisture from it, the supply of the plant's food is cut off and it begins to suffer. Some plants can bear this loss of water with more impunity than others; some are in this way soon destroyed. The object in watering should be to prevent this stage of dryness being reached, at least during the time a plant is growing, and at all times in the case of those of very rigid structure; at the same time, that excess which would sodden the soil and gorge the plants is also avoided. Within these limits the most inexperienced persons may follow sound directions for the application of

water with safety. But whenever water is given to pot plants, enough should be employed to wet the soil thoroughly, and the difference between plants that require less or more water should be made by watering more or less frequently, and not by giving greater or less quantities at one time.

**Deppe's Oxalis** (*Oxalis Deppei*) is thus referred to in a note from our correspondent Mrs. E. B. Dickinson, Hampshire Co., Mass.: "Last summer I had a large bed of Geraniums of various colors, and edged with these. The bulbs were set about 6 inches apart in May, and the foliage soon formed a round, unbroken border, until the frost came. The bright salmon pink blossoms well above the foliage made the bed very attractive. The leaf is four lobed, bright green with a chocolate tone. If the bulb never bloomed the leaf is handsome enough to pay for cultivation. After frosts I lifted and stored the bulbs as I would *Gladiolus*." To which we may add that let one but get a start with this bulb and he will never want for planting stock. A single bulb has been known in ordinary culture to reproduce itself a hundred and fifty fold in one season. In the north where any bulbs remaining in the ground would get winter killed the plant is a safe and desirable one for culture; in the warmer Southern States they would soon prove to be decidedly troublesome.

**Natural Gas is the Fuel.** So believes florist Albert Williams, of Sharon, Pa., as the following letter to us shows: "I came out from my breakfast the other morning when the mercury was 13° below zero, and found my greenhouses in apple-pie order, so far at least as temperature goes. I retired the night before at 9 o'clock, and as I have no fireman, the fire just had to run itself, which it did, and always has when the gas is turned on. I have never lost an hour's sleep since I began its use, and to say that I am pleased with it is putting it mildly. I have 9,500 feet of glass, and I use a Tift Locomotive boiler with 37 2-inch flues for generating steam, and can so regulate the fire as to maintain a pressure of six pounds of steam for 48 hours in the coldest weather without varying in the least, and this steady heat is just the thing for Roses that are being forced. There is no dust, no ashes, nor any disagreeable odor arising, and taking all together it is the greatest boon imaginable, to florists in particular, and if any florist is handy to a gas line stands in his own light when he refuses to use it."

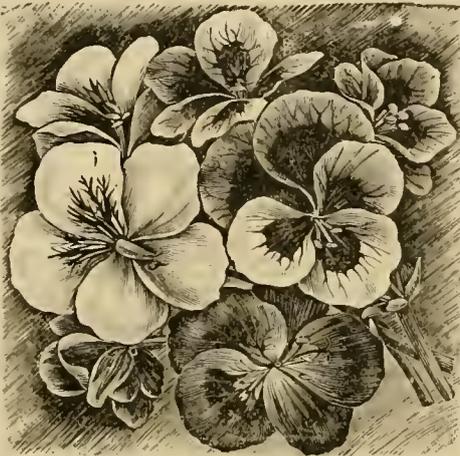
**Our Sentiment Exactly.** One reason why we so rarely publish any of the thousands of kind letters that come in from our subscribers concerning the value of **POPULAR GARDENING**, is the want of space. As it is, our columns are always crowded. But right here we must take room for one letter, which so exactly corresponds with our sentiments, and seems so well fitted to help the good cause in which the paper is engaged, that it should be printed. It is from E. G. Sayles, Berkshire Co., Mass. "Of four papers we take yours suits us best, because it is a paper for the people by the people. The many articles and notes in every department, and especially among the Inquiries and Replies, right from the hands of the people themselves, are what I like the best. The writers freely speak out or ask in a way that usually leads to practical information. In style as well as in name it is popular." To which we add: We are bound always to find room for all items and inquiries bearing upon gardening information. Even many more such from our readers would be welcome.

**Tri-colored Geraniums.** The beautifully marked foliage of that class, which embraces the Golden Tricolored, Silver Leaved and such oddly variegated kinds as the Happy Thought Geraniums, make them among the most valuable of ornamental plants. There is one peculiarity of the class, however, which we incline to think is not sufficiently recognized by amateurs who are restricted in plant cultivation to the window and the veranda. We refer to the fact that the very condition of retarded growth usually present here is one that is conducive to developing the leaf-beauty of these, provided the plants are not otherwise misused. Given the dry air of the average window garden, along with a well lighted position next to the glass, and a degree of beauty may, with good treatment in other respects, be reached for these that would be hard to excel by any other accommodations provided. What the term good treatment in their case additionally implies is the use of clean, porous and rather small pots, light, well-drained soil, and moderate watering always. While plants of this class should occupy a very light place, still the direct and fierce sunshine of spring and summer ought to be modified as much at least as a thin intervening shade of white paper would serve to do.

**The Niagara or Mooney Plum.** When in response to an inquiry about this Plum, a member of

our staff last month expressed ignorance concerning the variety, he acted on the best of his knowledge as based in part on not finding it offered in the fruit catalogues of numerous leading nurserymen. But we are glad to note that the information which was lacking or was unavailable to our scribe, has been promptly supplied by several of our many wide-awake readers, who do so much towards making this journal the valuable medium of information it is. We gather from these sources that the Mooney, or as it is more generally called, the Niagara Plum, has been under culture for some years, and enjoys a very excellent reputation wherever known. It is supposed to be of Canadian origin and is described as being large, hardy, early and very prolific. It resembles the Bradshaw, but is hardier. A point especially aimed at in the reply referred to, was the guarding of the reader against investing in highly lauded novelties offered by unknown agents, but which are as yet not generally in the hands of reliable nurserymen. And this is a very safe course for all planters to, as a rule, pursue. However, the writer referred to would now be ready to plant the Niagara Plum, with confidence.

**Pelargoniums, or Lady Washingtons.** When well grown under glass, these plants as easily captivate the plant buyer's money as any plant that a florist may offer. They look so robust and stately,



FLOWERS OF PELARGONIUMS, MUCH REDUCED.

the flowers are so large, rich in coloring, beautifully penciled and blotched, and so exquisite of texture, that for a lover of flowers, with money in hand to invest in plants, to resist buying is next to impossible. The fact that they are "a kind of Geranium" is another argument in favor of the purchase, for who does not succeed in growing Geraniums, hence why should not every one succeed with this magnificent, healthy looking class? The purchase made, the plants are carried home, enjoyed, watched over and tended with a view to their present and future usefulness, but in spite of close care nine times out of ten no amateur succeeds in ever getting a good second crop of flowers. They may give enjoyment for a time, but so often disappoint in the end. Why is it that amateurs thus fail so commonly with this plant in window culture? That it can be grown in a light bay or other window has been repeatedly proven. That it is more difficult to grow here than in a greenhouse no one denies. Let us outline some of the conditions vital to its successful culture. First of all be it borne in mind that the Pelargonium is not in the nature of an everblooming plant. It throws off a grand crop of flowers during a few months, and that is all. For the remainder of the year all treatment should be centered towards preparing it for the blooming stage. The pots used are, for one thing, very often much too large. An 8-inch pot, inside diameter, should grow a plant four feet in diameter, with the assistance of some liquid manure. After flowering the plant must be rested and ripened off by exposure to the sun and giving only enough water to prevent the wood from shrivelling. In this period of midsummer rest many err by applying water freely, as they would to ordinary Geraniums. In September let the soil become quite dry, then cut back all of the current year's shoots to within from two to four eyes of their starting place. The soil should after this yet remain moderately dry until new shoots an inch long have been formed. Then shake the old earth from the roots and re-pot into pots two inches smaller, using good light soil well enriched with rotten manure. A chief point is to pot very firmly; they delight to have the soil made quite solid. From now on keep only moderately wet, and during winter give the lightest place possible and about 45° of heat. As

the new growth begins to push rapidly, rest as required. Always water lightly. The common mistake of too much moisture leads to an excessive leaf growth, which is fatal to free bloom. For Green-fly sprinkle with tobacco powder or fumigate. As the new flowering season approaches tie the branches somewhat outward to stakes thrust in at the rim of the pot, for admitting air and light into the head of the plant. Pelargonium culture may be in some degree difficult; the reward, when it comes, is large in proportion.

#### How Flowers Are Being Used In New York.

Some ingenious but artistically depraved florist recently produced a pink Lily of the Valley, the unfortunate flower being artificially colored. It might be slightly pretty, but a person who would use dyed Lily of the Valley would be ready to whitewash the Venus of Milo.

The spring show of the New York Horticultural Society, to be held in the Eden Musee the last week in April, is expected to call out a good many novelties. The new and energetic president, Mr. Spaulding, offers a fine silver vase for the best new design, an inducement which should call out some clever creations. A week previous there is to be a show at Orange; without doubt both exhibitions will display the usual new Roses. One of the recent things in this line is a seedling between Baroness Rothschild and Mme. Falcot; it is of a yellowish pink, and quite a large flower.

It is probable that the fashion of hanging a floral wreath on the door of a mourning house, instead of the stereotyped crepe, will be extensively followed, since it was suggested by the Beecher family. A crescent wreath of *Leucadendron* leaves tied with ribbon is lovely and appropriate.

The flower trade did not seem to languish greatly during Lent, though there were few large entertainments and really no weddings of any note. The florists were saving their ingenuity for Easter decorations, which grow more elaborate every season. A few years ago only the Episcopal and Roman Catholic churches made any display on this day, but now all the religious bodies seem disposed to follow their example. Palms, Azaleas, and Deutzias seem the standard plants for such work, and of course Callas, Lilies candidum and longiflorum take first rank among flowers. Naturally showy rather than fine flowers are necessary in this work.

Pretty Easter souvenirs were filled with flowers in great variety. Spring flowers are most appropriate—Daffodils or Narcissus, Tulips and Primroses. An old yellow hamper filled with Daffodils and strapped with yellow ribbons makes a very spring-like gift. At this season floral gifts are all the more charming if they have a sort of woody suggestiveness.

As spring advances there is usually a little *Trailing Arbutus* in the market, and it is warmly appreciated by those who love flowers for their own sake. No flower could be more charmingly appropriate for filling a pair of baby's boots, for the *Arbutus* is just like a botanical baby itself. A pair of cute little boots filled with woodland flowers is a favorite gift to a newly-made mother.

The gipsy hat on an easel still remains in high favor, as a flower basket; it is also made the receptacle for a plant. A pot of Daffodils in a dull green hat, with a mingled silk scarf draped loosely around the pot, has a distinctly æsthetic aspect.

Fashionable women seem disposed to reduce the corsage bouquet for the street to a single handsome flower. One fine, long-stemmed Hybrid Rose has a really handsome effect, and seems in better taste for street wear than a large bunch. But with evening dress elaborate floral garniture is the rule, though the perishable quality of natural flowers renders them often unsatisfactory. A berthe or plastron of natural flowers greatly enhances the beauty of a bodice, but skirt garniture is really a mistake. The favorite buttonhole bouquet is a round bunch of Violets about the size of a dollar. It is more than pretty; it is British. But we rarely see a man on the New York streets wearing a *Camellia* in his buttonhole, and this is even more truly British than the Violets.

It is noticeable now that our florists are always eager for anything novel and striking, or in any way out of the beaten track. The ordinary run of florist's flowers,—Roses, Carnations, Violets, and the like—must be supplemented by anything that is strange. *Pancreatium*, *Vallotas*, winter-blooming *Amaryllis*, and all such showy flowers, have sold this winter, whereas formerly a commission man would hardly handle such stuff

EMILY LOUISE TAPLIN.

# LIGHT FROM THE SOCIETIES: BEING MATTER THAT DESERVES TO BE WIDELY KNOWN.



### GLEAMS.

**Power of Example.** I hold that a person beautifying his own place is a great stimulus to his neighbors to do the same.—Downs, of Ontario.

We have Robins here that rob us all. Last year was a poor year for Cherries; there were not enough to make it worth while fighting the Robins.—Mr. Jarvis, before the Ontario Association.

**Walnuts for Highway Trees.** For tree planting on the roadside I should say plant Walnut, not because it is the most beautiful tree, but because it grows very rapidly. It will make in ten years a larger and more handsome tree than the Maple in a much longer time.—Mr. Beal, before the Ontario Fruit Growers' Association.

**The prize-list of the first floral show of the Manitoba Floral Association, of Winnipeg, has reached our table.** First, second and third premiums are offered on 61 distinct floral articles or collections. The show will take place August 10th, 11th and 12th next. Winnipeg is to be congratulated on possessing such an enterprising young society.

**Plant Flowers.** I have been thinking of their influence on our home life. The wives and children of farmers are generally deprived of many of the enjoyments that city people have at their doors. We should strive to cultivate in our homes that which to them by nature is lovable—flowers which add so much to the pleasures of our homes. If we expect our children to follow us in rural pursuits, we should make our homes as attractive and pleasant as possible. Our public schools should be surrounded with flowers, and botany should be taught in them.—W. R. Ward, before the New Jersey State Society.

**The Value of Honeysuckles.** I would call attention to the value of these for many purposes—for flat beds on lawns, for mounds of any height desired, for columns closely compact or loose, for covering dead trees or fences. There is no hedge which has half the beauty of a wire fence covered with Honeysuckles; it has compactness, without stiffness; grace, with wildness and beauty both of flower and foliage. A gap is fatal to the appearance of an ordinary hedge, for it is difficult to fill. A gap in a Honeysuckle hedge can be at once filled by the adjacent vines. For the purpose I have mentioned the best adapted are the Scarlet Trumpet, *L. sempervirens*; Japan Evergreen, *L. Brachy-poda*; Hall's Japan, *L. Halleana*; Magneville's, *L. Magnevillea*; Chinese, *L. Sinensis*; Monthly Dutch or Fragrant, *L. Belgica*; Golden-leaved Japan, *L. var reticulata aurea*.—S. B. Parsons, before Pennsylvania Horticultural Society.

### The Michigan Fruit Exchange of Benton Harbor, Mich.

[Extracts from a recently published Statement showing its Character, Plan of Operations, etc. By the courtesy of W. A. Brown, Inspector, Benton Harbor, Mich.]

When the projectors of the Michigan Fruit Exchange, less than one year ago, with faint hearts, joined themselves together to promote their mutual interests by securing a better system of packing and marketing their products, "They builded better than they knew," for no one dreamed of the strong and vigorous support that has gathered around them and transformed their hopes into assured success.

The objects of the Exchange are the advancement of the interests of its members by promoting a better system of packing and grading fruit, whereby the quality shall be guaranteed to the purchaser and by co-operation securing a more systematic and profitable method of shipping and marketing our products.

The officers of the Exchange consist of a President, Vice-president, Secretary and seven Directors, who constitute an Executive Board to direct the policy and control the business interests of the Exchange. Also three Auditors and five Arbitrators.

The Executive Board have the general business management of the Exchange, the appointing of a Treasurer, Inspector, and Manager, and all other business or financial agents thereof and make such rules and regulations for their guidance as the interests of the Exchange require.

The Inspector is required to devise such methods of inspection and packing and such rules and regulations necessary therefor as shall improve the character and enhance the reputation of all goods shipped under the stamp of the Michigan Fruit Exchange.

The Board of Arbitration is required to consider all grievances and adjust all questions of right and duty and all differences of whatever character arising in the Exchange on application of any interested person. Such adjudication to be final.

The membership fee for the first thirty members of the Exchange was fixed at two dollars each, and for others such sum as the Executive Board may determine.

A division is made among the members of all cash in the treasury in excess of five hundred dollars at the end of each season's business, such dividend to be declared by the Executive Board pro rata on the net cash business of each member with the Exchange.

We have made a distinct step forward in commercial horticulture and shall hold what we gain and advance as fast as we can with safety. We shall encourage and sustain our package manufacturers in securing fair prices. We shall support transportation lines, if they encourage us to do so.

We shall try to sustain every honest commission house on the market with whom we deal and who desires our friendship. Worthy firms in legitimate business are our best friends, while on swindlers and dead beats we shall wage war. These and the irrepressible drummer must go; they have become a nuisance and we propose to abate them.

While we look forward to the time when, united with our brethren of the South and West, and worthy dealers in our large cities, we can propose and sustain a system of large distributing houses and auction sales of fruits from all points on their arrival, as is now done in the English markets, yet, for the present, we must content ourselves with what is within our reach and encourage all honest efforts for improvement.

The seal or stamp of the Exchange is placed upon the packages of its members; each package so sealed is guaranteed to contain full measure of first quality of fruit. The seal at once made a reputation. The Exchange requests of its patrons to return any packages not up to the standard; the money will be refunded and the purchaser reimbursed in every way. As the Exchange requires every man using the trade-mark to place his name upon his package, a delinquent is traced out easily and he is expelled from the organization.

The system of inspection adopted contemplates the actual inspection of all fruits which the shipper deems worthy of the stamp of the Exchange.

The stamp of the Exchange shall be placed by the Inspector only upon packages containing fruit or vegetables which are strictly first-class at the time of shipping, and as designated by the stamp used.

The minimum working force of the Exchange will consist of three men and will be able to handle about 1000 packages daily at an expense of \$10, or, about one cent each. This will include all necessary telegraph, postage and stationery expenses; with more business the proportion will rapidly diminish.

Under the head of Benefits the principal sources of income are the legitimate difference between wholesale and retail prices on packages, transportation, cartage and commission, with some small incidental saving in postage, exchange, etc.

These savings we estimate on a very conservative basis as follows:

#### Estimated saving on business to Chicago:

	Package.	Freight.	Cartage.	Commis'n.	On each package.	On 1,000 packages.
Berries.....	2	1	1	4	8	\$ 80.00
Melons.....	1	1	1	3	6	60.00
Peaches.....	0.75	1	1	2.25	5	50.00
Grapes.....	1	1	0.6	1.6	3	30.00
Apples.....	3	0	2.6	4.5	10	100.00
Vegetables.....	3	0	3	3	9	80.00

#### Average saving on each package, 7 cents.

#### Estimated saving on business to Omaha:

	Package.	Freight.	Cartage.	Commis'n.	On each package.	On 1,000 packages.
Berries.....	2	1	1	7	10	\$500.00
Melons.....	1	1	1	6	48	480.00
Peaches.....	0.75	1	1	6.25	30	300.00
Grapes.....	1	1	1	2	17	170.00
Apples.....	3	1	3	7	30	300.00

#### Average on each package, 35 cents.

Estimate of aggregate saving for the season of 150 days, based on the average saving on different goods, to the following points:

	Chicago.	St. Paul.	Omaha	La Crosse
1000 Packages Daily	\$ 10,500	\$ 55,050	\$ 52,500	\$ 43,600
2000 " "	21,000	110,000	105,000	87,000
3000 " "	31,000	165,150	157,000	130,500
4000 " "	42,000	220,200	210,000	174,000
5000 " "	53,000	275,250	262,500	217,500

Large as these estimates are, there is nothing wild or visionary about them, as we will undertake to prove by actual results. There are shipped from within ten miles of this lake shore an aggregate of over 9,000,000 packages annually which should yield the producer at least \$1,000,000 more than he now receives.

The indefinite benefits that accrue to the shipper by doing his business through the Exchange, consist of—

1st.—A more even distribution of goods to points where they can be sold to best advantage.

2d.—By better handling under the personal supervision of our agents.

3d.—By securing more honest returns of the actual sales of our products.

In the old way when everything was shipped haphazard to Chicago, to one firm to-day and to another tomorrow, no dealer could depend on a regular supply for his customers. Overstocked one day and selling goods at a great loss the next, he may be compelled to buy of his neighbors to fill his orders.

This we remedy by giving our customers a reliable daily supply and by directing our goods where they are most needed. Our agent on the ground can best judge of this and places them where they can be used to best advantage, if left to his discretion. We can also ship to outside points with better judgment and guard against an oversupply in the smaller markets.

In the old way of handling after our tender fruits have been brought to the shipping point and loaded with the greatest care, they pass from our sight and the next we know of them some are reported "damaged," and sold at a low price. How was it done? Let us follow them and see: Unloaded by careless hands; sorted by worse; carried from pile to pile; thrown into the wagons, some on the bottom and some on the side; hurried to the commission house and unloaded as carelessly; or, if going further, taken to the express office, unloaded, sorted and loaded again in the same way; then to a hot express car and forwarded to their destination. Is it any wonder some of them are damaged?

This we can remedy. Our agent in Chicago will have the cartage under his own control. He will refuse to receive damaged goods, and will see that our tender fruits are properly handled in transit and, if they go beyond the city, will load them direct into the cars for their destination. Or, if we ship by rail, they can go in refrigerator cars, undisturbed from the grower's wagon to their destination.

While an individual shipper is helpless and must say, "Give me what you please," the Michigan Fruit Exchange is able to protect its patron, and will do so with every means at its command.

Our agent in Chicago wires the shipping agent here the full particulars of each morning's market

about noon each day, so he can benefit by it on that day's shipments. We keep thoroughly informed of the wants of each market daily.

**Apples for the Export Trade.**

[Mr. MacD. Allan Before the Ontario Fruit Growers' Association.]

I speak for my own section only (Western Ontario). There is a good deal of money in the Baldwin, an Apple that does well; is a regular and abundant bearer of good size, and a splendid shipper, and packs well. The Northern Spy is a splendid market Apple in the Old Country, although you have to wait nearly a lifetime before bearing. Then it bears regular crops that pay well. The American Golden Russett comes next. The King of Tompkins County is very attractive, and commands a very high price in the Old Country. It ships well: not a heavy bearer, but does fairly well. It is liable to be blown off by the wind.

The Wagner is an apple I think more and more of; it is just the size wanted abroad for dessert, and is therefore of much value for export. The R. I. Greening for two or three years was cried down in the British markets, but it is coming up again. It stood higher there this last season. I believe for general purposes it is better than the Baldwin, which loses its flavor and becomes too woody to be a good cooker.

The Mann this last season brought a really high price. As a shipper it keeps splendidly; it is for use towards spring and retains its high quality. You can pit it like Potatoes. It is as good in quality as the Greening.

The Cabashea is an Apple not spoken much about. It holds its own in the foreign markets. It has a good deal of the Baldwin quality; is large, fairly colored, and commands a good price. The Esopus Spitzenburgh, one of the finest Apples we have, is not a good cropper. Roxbury Russet is a later cropper than the American Golden Russet; fetches a good but not high price. The Cranberry does very well in the English markets. Another good variety is the Ribston Pippin. If you saw ours and then those grown in the Old Country, you would hardly believe them the same; the difference is only one arising from difference of location.

There is no question that we have the inside track of the entire world on Apples. In foreign markets we have met those of Holland and the United States; but the Canadian Apples are quoted from one to two shillings and sixpence higher.

The Wealthy is a good Apple, and will keep a long time; it is not inclined to spot; is a good shipper. Swayzie Pomme Grise is a nice Apple, but it is not one that at the present prices will pay; it is on the small side; it fetches \$4.00, but would require to fetch about \$8.00 or \$9.00 to pay. The Esopus Spitzenburgh is not profitable; a great pity, for it would command a nice price in any market.

**Rational Fertilization of Garden Crops and Fruits.**

[From a paper by Dr. C. A. Goessmann, Mass. State Farm, read before the Mass. Horticultural Society.]

We prefer to-day to speak of feeding plants. To do this intelligently implies the possession in a fair degree of two kinds of information, namely, a knowledge of the special wants of the plant under cultivation, so far as the absolute and relative proportion of the various essential articles of plant food are concerned, and a familiarity with the composition and the general physical properties of the different kinds of manurial matter at our disposal.

A brief statement of the principal results of a systematic and careful examination into the circumstances which control a healthy and vigorous growth of plants may show in what special

directions the growth of many of our garden and fruit-bearing plants needs more experimental investigation to secure a more reliable basis for a proper mode of cultivation, with reference to a full supply of suitable plant food.

1. All our cultivated plants on the farm, in the garden and in the orchard contain the same elementary constituents, yet no two of them in the same absolute and relative proportions

tial articles of plant food. These changes may be in our favor as well as against our interests.

5. The particular form in which we can apply various articles of plant food, as well as the special association in which they may be applied, exert quite frequently a decided influence not only on the quantity of the crop but also on its quality.

The observations recorded in this and the preceding statement deserve the most serious attention of horticulturists and nurserymen.

6. The natural resources of the soil in available plant food have proved, as a rule, ultimately insufficient for a remunerative management of the farm, the garden, and the orchard. Older systems of agriculture have faded on account of a scanty supply of manure, and many failures in horticulture will be most likely ascribed at some future day to an indefinite system of manuring.

A careful consideration of the different points stated cannot fail to impress us with the fact that to manure our lands efficiently means to-day something more than to incorporate into the soil an exceptionally liberal amount of some incidental refuse matter of an ill-defined composition, as barnyard manure, vegetable compost or wood ashes. The steadily increasing consumption of agricultural chemicals and of commercial manurial compounds for the purpose of supplementing our home resources of manurial matter is a gratifying indorsement of the good services which systematic, scientific experimental investigations into the causes of a successful production of remunerative crops have rendered to practical agriculture and horticulture.

A due consideration of the character and extent of the existing available plant food of the soil and some more definite information in regard to the composition of the plant we propose to cultivate ought to guide us in the selection of the kind and quality of the manurial substance. Care should be taken in this connection to secure within certain limits a liberal supply of every essential food constituent of the plant under cultivation to meet promptly its periodical wants when called for. The heavier the crop the larger should be the return of the constituents carried off from the soil, keeping in mind, however, the fact that success does not depend on an exceptionally large amount of one or the other prominent articles of plant food, as phosphoric acid, potash or nitrogen, but on a liberal supply of every essential plant constituent, for that one of the essential articles of plant food which is present in

**ANALYSIS OF CROPS FOR FERTILIZING CONSTITUENTS.**  
ONE THOUSAND PARTS OF THE PLANTS CONTAIN:

NAME.	Water.	Nitrogen.	Ash.	Potash.	Soda.	Lime.	Magnesia.	Phosphoric Acid.	Sulphuric Acid.	Chlorine.	Silicic Acid.
CORN—(kernels) ...	144.	16.0	12.4	3.7	0.1	0.3	1.9	5.7	0.1	0.2	0.3
(stalk and leaves)	150.	4.8	45.3	16.4	0.5	4.9	2.6	3.8	2.4	0.6	13.1
POTATO—(tubers) ...	750.	3.4	9.5	5.8	0.3	0.3	0.5	1.6	0.6	0.3	0.2
(vines) ...	770.	4.9	19.7	4.3	0.4	6.4	3.3	1.6	1.3	1.1	0.9
PEAS—(seed) ...	143.	35.8	23.4	10.1	0.2	1.1	1.9	9.4	0.8	0.4	0.2
(vines) ...	160.	10.4	43.1	9.9	1.8	15.9	3.5	3.5	2.7	2.3	2.9
BEANS—(seed) ...	150.	39.0	27.4	12.0	0.4	1.5	3.1	9.7	1.1	0.3	0.2
(vines) ...	180.	...	40.2	12.8	3.2	11.1	2.5	3.9	1.7	3.1	1.9
CARROTS—(roots) ...	850.	2.2	8.2	3.0	1.7	0.9	0.4	1.1	0.5	0.4	0.2
(leaves) ...	822.	5.1	33.9	2.9	4.7	7.9	0.8	1.0	1.8	2.4	2.4
SUGAR BEET—(roots) ...	815.	1.6	7.1	3.8	0.6	0.4	0.6	0.9	0.3	0.3	0.2
(leaves) ...	897.	3.0	15.3	4.0	2.0	3.1	1.7	0.7	0.8	1.3	1.6
WHITE TURNIP—(roots) ...	920.	1.8	6.4	2.9	0.6	0.7	0.2	0.8	0.7	0.3	0.1
(leaves) ...	898.	3.0	11.9	2.8	1.1	3.9	0.5	0.9	1.1	1.2	0.5
SWEDISH TURNIP—(roots) ...	870.	2.1	7.5	3.5	0.4	0.9	0.3	1.1	0.7	0.5	0.1
(leaves) ...	884.	3.4	19.5	2.8	0.8	6.5	0.8	2.0	2.3	1.5	2.1
WHITE CABBAGE—(head) ...	900.	3.0	9.6	4.3	0.8	1.2	0.4	1.1	1.3	0.5	0.1
(roots) ...	890.	2.4	15.6	5.8	1.5	2.8	0.6	1.4	2.4	1.3	0.1
SAVOYAN CABBAGE—(head) ...	871.	5.3	14.0	3.9	1.4	3.0	0.5	2.1	1.3	1.1	0.7
CAULIFLOWER ...	904.	4.0	8.0	3.6	0.5	0.5	0.3	1.6	1.0	0.3	0.3
HORSE RADISH—(roots) ...	767.	4.3	19.7	7.7	0.4	2.0	0.4	2.0	4.9	0.3	1.5
SPANISH RADISH—(roots) ...	933.	1.9	4.9	1.6	1.0	0.7	0.2	0.5	0.3	0.5	...
PARSNIP—(roots) ...	793.	5.4	10.0	5.4	0.2	1.1	0.6	1.9	0.5	0.4	0.2
ARTICHOKE—(roots) ...	811.	...	10.1	2.4	0.7	1.0	0.4	1.1	1.3	0.5	0.1
ASPARAGUS—(stems) ...	...	...	...	...	...	...	...	...	...	...	...
(sprouts) ...	93.	3.2	5.0	1.2	0.9	0.6	0.2	0.9	0.3	0.3	0.5
COMMON ONION—(bulb) ...	860.	2.7	7.4	2.5	0.2	1.6	0.3	1.3	0.4	0.2	0.7
CELERY ...	841.	2.4	17.6	7.6	...	2.3	1.0	2.3	1.0	2.8	0.7
SPINAGE ...	923.	4.9	16.0	2.7	5.7	1.9	1.0	1.6	1.1	1.0	0.7
COMMON LETTUCE ...	940.	...	8.1	3.7	0.8	1.5	0.2	0.7	0.3	0.4	1.3
HEAD LETTUCE ...	943.	2.2	10.1	3.9	0.8	0.5	0.6	1.0	0.4	0.8	0.8
ROMAN LETTUCE ...	925.	2.0	9.8	2.5	3.5	1.2	0.4	1.1	0.4	0.4	0.3
CUCUMBER ...	956.	1.6	5.8	2.4	0.6	0.4	0.2	1.2	0.4	0.4	0.5
PUMPKIN ...	900.	1.1	4.4	0.9	0.9	0.3	0.2	1.6	0.1	...	0.3
RHUBARB—(roots) ...	743.5	5.5	28.8	5.3	...	5.0	1.1	0.6	...	...	...
(stem and leaves) ...	916.7	1.3	17.2	83.6	0.3	3.4	1.3	0.2	...	...	0.1
APPLES ...	831.	0.6	3.2	0.8	0.6	1.3	0.2	0.3	0.1	...	0.1
PEARS ...	831.	0.6	3.3	1.8	0.3	0.9	0.2	0.5	0.2	...	0.1
CHERRIES ...	825.	...	3.9	2.0	0.1	0.3	0.2	0.6	0.2	0.1	0.4
PLUMS ...	908.	...	2.9	1.7	...	0.3	0.2	0.4	0.1	...	0.1
GOOSEBERRIES ...	903.	...	3.3	1.3	0.3	0.1	0.2	0.7	0.2	...	0.1
STRAWBERRIES ...	902.	...	3.3	0.7	0.9	0.5	...	0.5	0.1	0.1	0.4
GRAPES ...	830	1.7	3.8	5.0	0.1	1.0	0.4	1.4	6.5	0.1	0.3
(seeds) ...	110.	19.0	22.7	6.9	0.5	5.6	1.4	7.0	0.8	0.1	0.2

(carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, potassium, sodium, calcium, magnesium, silicon, chlorine, and perhaps manganese).

2. These plant constituents are furnished in part by the surrounding atmosphere; in part by the soil, and sometimes in varying proportions by both.

3. The essential plant constituents are not needed in different plants in the same corresponding proportions at the various successive stages of growth, but are wanted at different stages of growth in different absolute and relative proportions. Each plant has its own wants at different stages of its development. Grain crops require much nitrogen in an available form during their later period of growth, blooming and forming seeds; Grape-vines need a large amount of potash during the growing and maturing of the Grapes.

4. The absolute amount of essential mineral constituents may vary in the same plant without affecting, as a rule, the general character of that plant; yet not one of the essential elementary mineral constituents can take the place of another to any marked extent without altering, in many instances in a serious way, the relative proportion of the organic constituents of the plants. Quite a number of our cultivated plants are more or less susceptible of change in that direction, in consequence of a liberal application of one or the other essen-

the soil in the smallest proportion controls the ultimate result.

The essayist has compiled analyses of garden crops and fruits, which show the amount, the character and the relative proportions of the fertilizing constituents they contain. A close examination of these analytical results reveals in many instances an exceptional variation of almost every essential fertilizing constituent of plants. Some contain one part of phosphoric acid to one part of potash; others one to two, three, four, and even five parts of the latter. A similar relation may be noticed as far as the relative proportions of phosphoric acid and nitrogen are concerned. In most instances we find more phosphoric than sulphuric acid and chlorine; yet in some species of plants the reverse may be noticed. Similar circumstances exist as far as lime and magnesia are concerned.

The recognition of these conditions obliges us to concede that none of our current manurial refuse matters can be considered in the majority of cases the most suitable fertilizer, without the addition of one or more articles of plant food in a suitable, available form. Good economy and healthful condition of the soil advise that course.

Another important point to which the essayist desired to call attention is the careful selection of manurial substances with reference to their most advantageous form.

A productive agricultural or horticultural soil implies for several reasons the presence of decaying vegetable matter; this condition we secure either by a direct addition in form of barnyard manure or some other vegetable refuse material incidental to our industries, or by green manuring or a judicious system of rotation of crops. The latter course is in

many cases the safer, as far as the preservation of a healthful condition of the soil is concerned.

A moderate use of these substances, supported by a proper addition of concentrated commercial articles of plant food for the purpose of rendering them complete fertilizers, deserves, in the majority of cases, particular commendation on account of the directness and certainty with which we can reach the object in view.

#### The Rose—Culture, Enemies, Etc.

[Extract from a paper by John Poste before the Columbus (Ohio) Horticultural Society.]

When you plant Roses, you desire an abundance of blossom and luxuriance of growth; to produce these results you must give the necessary conditions of soil, judicious pruning, climate and location.

Your soil, if not naturally so, must be converted as nearly as possible into a deep, porous loam; not too light and sandy, nor too stiff and cold a clay, a retentive but thoroughly drained soil. Almost any soil can be brought to proper condition by spading to the depth of fifteen inches, and incorporating with the natural earth well-rotted stable manure and sand if too heavy, and of well-rotted manure and clay and wood ashes, if too light and sandy.

The Rose is a hearty feeder, therefore will bear annual manuring, and as results are desired to follow annually also, none but well rotted stable manure or sod should be applied, or such other stimulant as can be readily assimilated with the soil.

In planting in such a prepared bed, make your holes large enough to place the roots so as not to cramp them, then press well to the roots the earth first put in, but leave the surface dirt loose, so as to admit rain or such artificial watering as may be necessary in a dry time. An excellent liquid manure for watering the soil in immediate proximity to the roots can be made by soaking the scrapings of the chicken house in a barrel of water a few days before using.

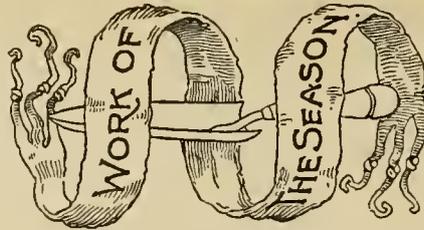
Since the Rose bears its blossoms only on the young shoots of the current year's growth (as with the Grape), therefore in the spring cut back the last year's wood freely, entirely removing any dead and half-dead branches, and cutting back those you leave to the strongest buds; cut the unbranched shoots or canes to such a height as the bush is desired to be; each bud left will make a blossom bearing branch, so don't be afraid to cut back, as from such you will get your finest blossoms.

Roses that bloom more than once during the summer, such as the Tea, Noisette, Bourbon, China and the so-called Hardy Monthlies, or Remontants, should be pruned back after the first blossoming to a strong bud, then a vigorous new growth will start which will bear the next crop of blossoms. Never allow haws or seed capsules to mature on your bushes, for in bringing the seed to perfection they will so far sap the vitality of your plants.

Of the insect enemies of the Rose I will first mention the slug, which by skeletonizing the foliage destroys Nature's well devised economy of atmospheric absorption through the leaves and their adjunctive assistants—the very lungs of the plant—thereby preventing that vigorous new growth which we have seen is absolutely necessary to the production of blossoms. Any dry dust or powder coming in contact with their slimy bodies will destroy them; having thoroughly applied the dust, whether it be road dust, lime, or any of the powdered insecticides of commerce, after a few hours thoroughly syringe off the foliage and restore it to its normal condition of respiratory organs.

The Green-fly, which, however, is most likely to prove troublesome in the conservatory, or to house plants, readily succumbs to tobacco water or smoke, or to immersion of the affected limbs in water as hot as the hands will bear. The Red Spider may be routed by systematic watering alone.

The bug which attacks the opening bud fortunately is comparatively rare; it is best removed by hand picking or eradicated by persistent syringing with any insecticide, or even pure water; but recollect that bushes from which dead and half dead limbs and rubbish have been seasonably removed, and are getting proper food, are rarely much affected by any insect pests. Imperfect blossoms, stunted growth, a general consumptive appearance, are a mute appeal to you for better soil, more food and the removal of superfluous wood—the incubus of an unhealthy past. My long acquaintance with her majesty, our Queen of the garden, enables me to promise you right royal favors in return for the tender treatment you will accord her.



#### HOUSE PLANTS.

**Abutilons** can go outside at the time of bedding out. By growing them in good soil, with fair shifts, syringing, pruning back, etc., fine specimens, effective for lawn decoration, may soon be had. With a top-dressing of manure, later, their blooming will be nearly continuous.

**Begonias** of the flowering section to be kept inside during the summer will need ample light, but no direct sunshine. A sunny window kept lightly shaded will just suit. The showy leaf section will stand even less sun than the preceding.

**Boxes.** For large specimen plants boxes are better than pots. Handles and castors on them will facilitate moving about. For such plants a good dressing of manure, except for every third year, may often be made to answer in place of a shift.

**Callas.** Sometimes the plants seem healthy enough but have had no flowers during the winter. Plunge the pot of such to the rim outdoors, thus reducing their vigor and they should bloom well a year later. Soapy water given several times a week is helpful.

**Clerodendrons** from the cellar should, after a start, be repotted in rich, light soil. Ample pot-room is needed for the best flowers. A somewhat shady situation with free airing suits them well. Propagating had better be done while the plants are in bloom or afterwards.

**Ferns** need a shady window and to be well but not over watered.

**Ficus elastic** or India rubber Tree may serve well as a plant for the window the year around. Sponge the leaves frequently, that no Red Spider may gain a foothold. Once in a while give a little stimulant in the water in order that the pot may be kept of moderate size.

**Fuchsias** that have bloomed during the winter may with advantage be given partial rest, through less frequent watering, before being pressed into use for summer or fall decoration.

**Hydrangeas** if treated to liquid manure will make a stronger growth and yield finer bloom.

**Palms.** Unless making a very rapid growth, these only need a shift every second year. With such as require it shifting should be done just previous to their being placed outside.

#### LAWN AND FLOWER GARDEN.

**Annals** generally, may be sown in the open air. The more tender ones, like Nasturtium, Thunbergia, Glaucium, Perilla, Swan River Daisy, Sensitive Plant, Salvia, Four O'clock, Gaillardia, Browallia, Gourds, Striped Maize, Cockscorn, Lychnis, and *Cubæa scandens*, should not be trusted out too early, not before the Oak leaves start.

**Deep Planting** of Gladiolus, Tuberoses and Sweet Peas, say two to four inches down, will usually give better results than the more shallow covering suitable for the generality of growths.

**Evergreens** may be replanted a little later than it is safe to reset deciduous trees, in fact, any time before the new growth commences, and again in the summer, after the new growth becomes hardened. In handling these use extreme care to keep the roots from drying. As in all good planting, the ground is to be well firmed about the roots.

**Ferns** to be planted early in shady or partially shady spots; the soil to be rather light and drained. Our native hardy Ferns are among the most ornamental and easily managed of hardy plants. A little care to water them in dry seasons, and giving them a little protection during the winter, with an occasional top-dressing of manure, will make them permanent features.

**Lilies.** Green-fly sometimes trouble these early in the season, to prevent which mulch with wet tobacco stems two or three inches thick.

**Morning Glories,** from the best seed, sown in good soil, form a screen, beautiful and effective.

**Planting** of all tender plants is in order, beginning with the hardier sorts, like Carnations, Hollyhucks, Stocks, Verbenas, etc., then following with Geraniums and other greenhouse plants, finally

coming to the most tender kinds, like Coleus, Alternantheras, etc., which, if not set out before June, often go far ahead of the earlier planted.

**Walks.** To prevent weeds growing in the walks, the use of the following solution is recommended: One part low grade carbolic acid in one hundred parts of water, applied in a spray form. Guard the hands and permit none of the solution to come against the grass or box-edgings.

**Yuccas.** These plants should have a light, rich soil. *Y. filamentosa* is one of the handsomest and the most reliable bloomers. *Y. aloifolia* and the variegated variety of the same are very ornamental.

#### PLANT CULTURE UNDER GLASS.

**Cactus.** As they begin growth shift as needed. Many sorts answer well for summer bedding.

**Camellias** succeed outside after frosts are over in situations somewhat sheltered from wind, and partially shaded. They must never suffer from lack of water or infrequent syringing.

**Chrysanthemums** in pots to be kept shifted, not allowing them to become stunted. Syringe daily, and this will also keep the Red Spider down. In bedding out, the plants succeed best in strong soil.

**Cinerarias.** To increase true to character any variety of special value, simply fill the pot nearly full of sandy compost and into this roots will soon strike. When well started divide the plant, potting each rooted part separately, using good soil.

**Cyclamen.** For summer treatment the plants may go into the border, there to remain until fall.

**Orchids.** Such as Dendrobiums, Stanhopeas, Aerides, Saccolabiums, Vandas, etc., may with anything like neglect easily suffer from drought. For the Indian section an atmosphere highly charged with moisture is indispensable.

**Pelargoniums** of the Lady Washington section, in bloom, to receive shade, air and a cool position.

**Propagation** of such plants as one needs for next winter's use may be continued through the month, including such soft wooded plants as Geraniums, Justicias, Heliotropes, Euphorbia, Begunia, Sweet Alyssum and other quick growers.

**Shading** in some measure is congenial to the majority of plants at this season. Some, like Dracænas, Ferns, Fuchsias, Camellias, Orchids, Palms, etc., require the shade to be heavier than do Roses. Geraniums and the average of bedding plants. Either common lime whitewash or naphtha and whitening as thick as milk are the materials usually employed. To apply, no better means exists than the syringe. It should be applied on the exterior, varying the thickness according to the plants underneath, as suggested above. In the line of screens of lath, some made by nailing ordinary lath one inch apart to light frames some four by six feet in size are admirable.

**Shelf Plants.** Lycopodium, Moneyvine, Othonna, Linaria, Tradescantia, etc., can, for economy of space at this crowded season, be grown on narrow shelves placed midway from the walk to the bottom of the stages, as the shade here does not hinder their growth materially.

**Watering.** Now that the houses are filled with prime stock subject to free airing and high sun-heat, it is no time to slight the watering. Neglect now is liable to do more damage than at any other time, Wet down the walks and side walls daily.

#### FRUIT GARDEN AND ORCHARD.

**Berry Baskets** and crates or other packages used for marketing to be got in readiness before the season fairly opens. All crates should be neatly and plainly marked with a stencil plate.

**Budded Stock** requires all the buds, except the one inserted, to be removed as they begin to grow.

**Crooked Trees** to be helped by judicious staking.

**Cultivation** of all young trees, at least for some years after planting, is a most essential condition of their making vigorous growth. By planting hoed crops in and between the rows, it may be done thoroughly and continually with double gains. Corn, because of its height, is to be avoided, as its shade will tend to impair maturity of growth.

**Currants** are a much neglected crop usually. Given decent treatment in the way of cultivation, a dressing of manure and summer mulching, and no plants are more satisfactory croppers. For worms infesting the bushes, apply Hellebore as directed by Dr. Lintner last month.

**Grape-vines** set in the spring should be allowed to grow but one bud. Those of last year's planting may have two. The superfluous buds should be nipped off as soon as they appear. When the

clusters of buds show, nip the top of the shoot. For Grapes the soil need not be of the richest, but such as it is requires constant cultivation.

**Insects.** See article elsewhere on this subject.

**Planting** of trees yet undone must be hastened with all possible speed.

**Shoots.** All superfluous shoots on stalks that have been grafted or budded to be removed immediately they start, as by neglect till the growth of the former should occur, a more or less serious check would necessarily follow to the graft.

**Strawberries.** Young plants require a season of growth before they will bear well. Old beds covered with straw should have this parted to allow the plants to grow, but leaving it in place until after the frost is gone. Beds not having a winter mulch, to be hoed, and a light mulch put on before the fruit forms. On small plots liquid manure may also be applied early with advantage.

## VEGETABLE GARDEN.

**Asparagus.** The cutting of this excellent vegetable is too often done in a manner that spoils more shoots than are gathered. The time to cut is when the spears are six or eight inches long. Then a sharp-bladed knife should be used, thrusting it down alongside the shoots, as shown at A in the accompanying engraving, until the point is about two inches deep, when with a downward shift of the handle, and pushing the knife ahead merely to sever the stalk, the end is gained, with little or no harm to neighboring shoots. This method is in striking contrast to the reckless one shown at B. Beds that have been planted but for one or two years must not be cut very close.

**Beans.** As the soil becomes warm, both bush and Limas may be planted. Where Limas have been started under glass the putting out should be delayed until June 1st for northern sections.

**Beets.** As soon as they come to a handling size, fill out any vacant places in the rows by transplanting from spots too thickly set, choosing a moist day for the operation.

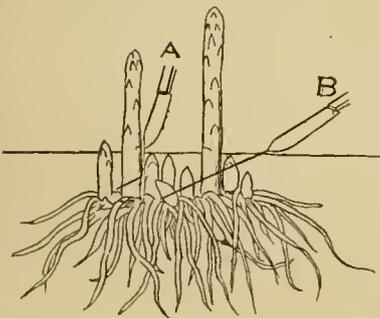
**Sweet Corn** not to be planted before Cherry blossoms begin to fall.

**Cucumbers** may be grown in vacated frames and hot-beds, planting the seeds or such plants as have been started inside, giving protection with glass at night for some time to come.

**Egg Plant.** This vegetable delights above all else in heat, requiring a temperature of 70° to 75°, and to be kept growing, without check, from the first, and not planting out earlier than June first.

**Herbs** may be sown early this month, either for transplanting, or where they are to grow. The varieties usually sown for market, growing them after early Cabbage is gone, are Summer Savory, Thyme, Sage and Sweet Marjoram. Herbs require a moderately strong soil, with good tillage.

**Horse-radish** roots one-quarter to one-half inch in diameter, cut into pieces four to six inches long, called "sets," are used for planting. This vegetable is usually grown as a second crop in alternate rows one foot apart, with Early Cabbage or Beets. Plant the "sets" deep enough to bring their tops three or four inches below the surface.



Asparagus Cutting.—Good and Bad.

**Martynia** for pickles should be sown in rich soil, transplanting them a month later to a distance of two feet by two feet apart.

**Peas** to be trellised or bushed as soon as fairly up. Sowings for a succession may yet be made.

**Pepper.** See directions for Egg Plant.

**Tools.** It is true economy to have good working tools, kept in a clean, sharp condition, and when not in use, to be housed in a proper place.

**Weeds.** If the weeds are allowed to get ahead in the beginning, the usual result is a deal more labor in keeping the crops clean, than if the noxious growth is taken in hand early, even before it starts

much, by going over the soil just as the rows can be discerned with a rake, thus destroying one batch with little effort. The crop thus getting a start ahead of the weeds, may the easier be kept clean.

## FRUIT AND VEGETABLES UNDER GLASS.

**Cucumbers** should have all the sun possible, with somewhat free ventilation. Some night protection is yet necessary.

**Figs.** As soon as the fruit is off from the early trees, the foliage is to be copiously syringed for dislodging whatever red spider has gained a foothold. A fresh supply of manure should take the place of the old mulch. Ventilate freely and for second crop repeat directions just given.

**Pines.** At this season of strong growth they should be plunged near the glass, ventilating from the ridge of the house. Some covering will be necessary at night. A night temperature of 70° to 75°, with 95° during the day, is about right. Wet down the walls, walks, etc. To promote fruit swelling, water the plants with guano water.

**Strawberries** in pots should not be kept in houses in which Grapes or like plants, which at times might be injured by red spider, are growing.

## INQUIRY COLUMN

This being the People's Paper, it is open to all their inquiries bearing on gardening. To ensure replies in the following month's paper the inquiries must reach us prior to the 13th inst., and then answers may not always be possible.

Replies to Inquiries are earnestly requested from our readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.

283. **Soot Water for Plants.** I see this frequently recommended as a fertilizer. Will some one tell me how it should be prepared, and whether it will answer for pot plants? J. L. V.

284. **Mildew in the Early Grapery.** Will some vine-growing reader please give a cure for mildew in my new grapery? Sulphur on the pipes, as recommended, does not help the case. G. R., Philadelphia, Pa.

285. **Peaches in West Virginia.** I am 24 miles from the railroad, but in a section where Peaches succeed well. Will it pay me to grow them?

286. **Beautifying a Rock Mound.** How can I beautify a natural mound of rocks, not quite boulders, but too large to be removed, situated on a hillside and in front of the dwelling. Also a mass of boulders on the banks of a dry brook that is devoid of shade.

287. **Arranging Trees, etc.** Can you give me an idea of planting trees, shrubs and flowers and situating rustic objects on a large sloping lawn, bounded by a brook? No view beyond brook but pine forest. W. M. B.

288. **Grafting Question.** Can I graft Pear and Quince on Apple, or bud them? Mrs. H. G. M.

289. **Evaporating Question.** When an evaporator is said to dry 100 bushels of Apples in a given time how many bushels of black or red Raspberries should it cure in the same time?

290. **Gloriosa Superba.** Will you please tell me how this plant should be managed? I received one lately, but am so afraid of spoiling it that I ask you this. Mrs. S. B., Philadelphia, Pa.

291. **Culture of Aquatics.** Will Nelumbium and Water Lilies grow in same depth of water, and what depth is best? Will mixture of old cow manure and loam make a suitable rich mud, and what depth is required? J. B. Duff, Allegheny Co., Pa.

292. **Mice Destroying Bulbs.** In uncovering the bulbs that were set last fall I find them almost wholly consumed by mice. What can be done to prevent such a trouble being repeated with my plantings this fall?

293. **Canning Strawberries.** Can you give us a rule for putting up Strawberries in jars so as to retain their color and firmness? A. S. Rounds.

294. **Calla Flowers Failing.** Will you please tell me why the blossoms on my Calla don't open. The plant is nice and thrifty and the blossoms seemingly are almost ready to open, yet never do so? Mrs. E. H., Tidout, Pa.

295. **A Selection of Annuals.** May I ask you to name the annuals which you deem most appropriate for a flower garden? H. W. L., Ottawa, Canada.

296. **Snails Devouring Lettuce.** If you could give me a remedy to prevent this trouble you would do a great favor. R. W. L., Dayton, O.

297. **Pruning Grapes.** Recently you said: "Do not uncover Grape-vines until well on in April." Here we prune before that time. If we prune late in April would not the vines bleed too much?

298. **Ground or Root Aphis.** Is there any means by which the work of this insect may be checked? G. G., Swampscott, Mass.

299. **Root Pruning.** Do you recommend root pruning of non-bearing fruit trees early in the spring? R., Toronto, Ont.

300. **Paint for Tree Wounds, Etc.** What paint, tar or mixture would you use on the bare wood, where limbs have been sawed off for any reason?

301. **Loose Bark on Trees.** Is it beneficial to fruit trees to remove any or all loose bark?

302. **Bark Peeling Off.** What should be done with fruit trees where the bark has partly loosened by atmospheric influences, sometimes showing sun-cracks? A. G. M., Kokomo, Ind.

303. **Rings in Wood Indicating Age.** There is a dispute between myself and a friend as to whether each ring seen in the cross section of a tree indicates a year of age, as is generally supposed, and we would like your opinion. G. L. M., Harford Co., Md.

304. **Gooseberries for Profit.** Is this fruit considered to be one profitable for market culture by those who have tried it? C. M. W., Niagara Co., N. Y.

305. **Trellising Grapes.** Will some experienced vineyardist give an inexperienced grape grower a few points on trellising an acre of this fruit?—BEGINNER, Black Hawk Co., Illinois.

306. **Worms in Lawns.** I am satisfied that my lawn last season was badly infested with angle worms. Can any one give a remedy; also a fertilizer for grass? AMATEUR, Chester Co., Pa.

307. **Weeding Lawns.** What is the best course to take in dealing with weeds here—Dandelions, Plantain, Buttercups, etc? C. E., Brantford, Ont.

308. **Saving Cineraria Seed.** I would be obliged for some experienced florist's ideas on how this is best done. JULES RAZE, Kalamazoo Co., Mich.

309. **Dwarf Apple Management.** I have planted some Apples on Paradise stock this spring and would feel obliged for instructions on treating them. YOUNG ORCHARDIST.

310. **Bed for Bog Plants.** I should be glad to know how best to prepare a flower bed in which I wish to grow moisture-loving plants. To keep the ground moist I presume that there must be a constant, slight flow of water on to the bed. How is it drained away? S. D. M., Buffalo, N. Y.

311. **The "Best" Gladioluses.** Will you please name fifteen of the very best Gladioli without regard to price? J. W. C., Rockville, Mass.

312. **Belmont Strawberry.** Is this variety a pistillate or self-fertilizing flower? SUBSCRIBER.

313. **Reports of Horticultural Societies.** Where can I get these and at what cost. E. V. K. H., Crawford Co., Pa.

314. **Fruit Growing in Virginia.** I can buy a large farm near Petersburg, and would like to ask if all small fruits would do well in that part of the State. Will Peaches succeed? A SUBSCRIBER.

315. **Crates for Pint Baskets.** What size would you recommend these to be, giving general dimensions so I can make them? FRUIT GROWER.

## REPLIES TO INQUIRIES.

267. **Oranges as Window Plants.** Oranges are easily grown and bloomed in an ordinary sitting room window. Sow the seed separately in small pots in light, rich soil, watering with tepid water, and keeping in a warm place covered with glass over each pot, till the seedlings show, which will be in about a month. Then place in a window, watering with care, as the ground must not become sodden. By November fine little plants should be had, and from then until March but little water will be needed to keep the roots moist. At this time, as the plants begin to grow, shift into 5-inch pots, with rich soil and good drainage. Remove the dust from the leaves with a sponge. With a continuance of this and care in giving water, a few flowers will sometimes show the second year. But grafting is usually performed on such stock, causing more certain and profuse blooming, as in some instances seedlings may be years without showing signs of flowering. E. S., Erie Co., N. Y.

269. **Bees and Grapes.** We can safely say that bees do not injure sound Grapes. In the fall, when they are over-ripe, and the weather is just right, the Grapes crack and then the bees make trouble. Which is practical, to shut up the bees or to protect the Grapes, or is either? In some places Grapes can be raised only by bagging them, because of the rot. This bagging greatly improves the Grapes and furnishes protection against bees as well as rot. There is another side to this matter. It can be proved, and our best horticulturists now admit, that Grapes cannot be successfully grown without the aid of the bees in fertilizing the blossoms. PROF. COOK, Agricultural College, Mich.

289. **Evaporating Question.** In our judgment an evaporator should dry 20 to 25 and possibly 30 bushels of Raspberries in the same space required for 100 bushels of apples. A. M. P.

290. **Gloriosa Superba Culture.** This handsome climber, in common with the other species of this

genus, delights in a very sandy loam, and the treatment in general suited to Gesnerias. After the roots are potted, which should be done in clean pots, covering with an inch or more of soil, they will not, if the soil is in good order, require water until they show new growth. After that a good moist heat is necessary, such as might be provided in a warm greenhouse, and care must be taken to keep Red Spider and Thrip from them. The plants, as they grow, must be promptly trained upon a trellise, or in a greenhouse to the rafters, otherwise the tendrils, with which each leaf is furnished at the apex, will become so firmly fixed to other plants within reach that it will be impossible to remove them without injury. After flowering and when the bulbs are quite mature, which will be ascertained by the foliage dying off entirely, the pots should be stowed away in a cool, dry place, and the tubers allowed to rest until they are required the following season. These plants are usually increased by division of the roots, but as seed can by artificial impregnation be procured, young plants may also be obtained in this way.

277. **Geraniums not Blooming.** Sometimes it happens that Geraniums, from late spring cuttings, planted in rich moist soil, grow all to leaf and yield but few flowers. To do better than this they should become pot-bound and show bloom before planting out. Planting pots and all is of doubtful benefit. Better have the soil less rich, but digging deep. With a moist season and rich soil no Geraniums flower as well. Old cut-back plants, full of shoots and bloom, planted out the latter part of May, should flower well all summer.

291. **Culture of Aquatics.** Nelumbium and the hardy Water-Lilies (*Nymphaeas*) succeed in the same depth of water, that of a depth of eighteen inches to two feet being suitable. In case the strong-growing *Nymphaea Deventensis* is grown this should have at least a foot more in depth of water. When artificial tanks are constructed a favorite depth to make them is two feet, with a foot deeper for the strong-growing *Nymphaeas*. Then the soil should take up about six inches of this depth. For soil a good loam mixed with its own bulk of the best stable or cow manure is as good an article as could be provided. The addition of black woods earth or peat is also desirable, but not really essential. Instead of the loam suggested some rich mud from the bed of a slow creek or a pond might be used with the manure. Whatever the ingredients, they should be well mixed, and after placing in the tank should be covered with an inch of clean sand to keep the manure down. In a rich soil the leaves and flowers come much better than from poor soil.

283. **Soot-Water for Plants.** In answer to J. L. V. I can say from experience that soot-water is a safe and excellent fertilizer for plants, including those in pots. I use it for all plants that require manure-water at all—for Roses, Pelargoniums, Abutilons, and such vigorous-growing plants. When the pots are full of roots it seems to be specially beneficial. The water is thus prepared: Tie up one-half a peck of soot in a cloth bag, throw it into a 9 gallon cask of hot water, work the bag well in the water, which should stand until clear, when it may be used, after being diluted with clear water. No hard-and-fast rule can be laid down as to the strength it is safe to use it at. Each one must use his own judgment, according to the class and state of the plant requiring it. One had better use it too weak than too strong. A. H. E.

284. **Mildew in the Early Grapery.** In future do not wait for the appearance of mildew before applying a remedy. As a preventive measure, and one which I have always found effectual, distribute flowers of sulphur, by means of a sulphurating bellows, or otherwise, over the growing leaves and fruit, commencing when the young shoots are about a foot long or less, and repeating the process, say twice subsequently, at an interval of a month or six weeks. This is the method adopted by the grape-growers who supply the market with Grapes. AMOS PARDEE, Erie Co., N. Y.

285. **Peaches in West Virginia.** Provided you can secure the help to pick, handle and evaporate the fruit, we should think Peaches would pay you well. Generally speaking Peaches are not a successful fruit on a large scale far north of Virginia, hard winters and the yellows making them too risky to grow, except in favorable localities. Evaporated Peaches sell quick and well, and hence such parties in such localities as our correspondent can do well growing them to evaporate. They are sure to average one dollar per bushel net, that is, for budded and best quality of seedlings. A. M. P.

295. **A Selection of Annuals.** Our own selection of annuals (or plants that can be treated as such) for general use in summer flower beds would run about as follows: *First choice:* Asters, Balsams, Candytuft, Larkspur, Marigold, Mignonette, Pansy, Petunia, Phlox Drummondii, Portulaca, Snapdragon, Verbena, Zinnia, Sweet Pea, Nasturtium, Morning Glory, Cobæa scandens. *Second choice:* Ageratum, Calliopsis, Calendula, Campanula, Cockscomb, Bachelor's Button, Dwarf Convolvulus, Centranthus, Clarkia, Escholtzia, Erysimum, Godetia, Sunflower, Lychnis, Lupines, Cactalia, Gaillardia, Salpiglossis, Salvia, Scabiosa, Sweet Alyssum, Sweet Rocket, Swan River Daisy, Hyacinth Bean, Maundia, Cypress Vine, Canary Bird Flower, Scarlet Runner, Everlastings, Amaranthus, Perilla, Castor Oil Bean. *Third Choice:* Those offered in the catalogues but not named above.

259. **Varieties in Plums and Cherries.** The Niagara or Mooney Plum has been propagated and fruited for some years by a leading nursery firm of Lockport, N. Y. The Luelling Cherry was introduced from Oregon some fifteen years ago, and is grown by a number of nursery firms in this section. On most soils it is not a luxuriant grower so that most nurserymen grow it in small quantities only. With us it is a tree grower and makes a handsome tree. The fruit is large and handsome. JONES & ROUSE, Rochester, N. Y.

308. **Saving Cineraria Seed.** I would not advise the attempt to save Cineraria seed from flowers which open earlier in the year than April. The air before that time is generally too damp for the flowers to stand; after that time place your plants in a cool, airy part of the greenhouse, and they will ripen seed freely, that is, if there are a sufficient number of flowers open after that date. If you have any plants going out of flower early in the month of May place them in a warm, sheltered corner out-of-doors, and they will seed even more freely than those in the greenhouse, if you keep late spring frost from reaching them. A. H. E.

288. **Grafting Question.** Both the Pear and Quince may be grafted on the Apple with some degree of success, but in neither case is the course to be recommended for practical value. The usual range in grafting or budding fruit trees is as follows: Apples on Apple or Crab seedlings for standard trees, on Paradise stock for dwarfs; Pears on Pear seedlings for standard trees, on Quince stocks for dwarfs, and sometimes on the Thorn for clayey soils; Peaches on their own seedlings for general orchard culture, on Almonds for hot and dry climates, on Plum stocks for planting in cold or moist soils or to secure them against the worm; Apricots on Plum stocks, for heavy soil or to render them more hardy, on Peach to fit them for light or gravelly soil, or on their own seedlings to render them long-lived. Nectarines are usually worked on the Peach or Plum; and Cherries on Mazard seedlings, or on the Mahaleb or Morella for forming half dwarfs.

296. **Snails Devouring Lettuce.** Various remedies are advised for the extermination of these pests. Some suggest placing a layer of sawdust, lime, soot or ashes round the plants, all of which are effective in dry weather, but after the first shower they cease to be efficacious. One good remedy is to apply a weak solution of paraffin oil and water—about one wine-glassful of oil to four gallons of water—and the solution applied through a syringe to the plants; at the same time the surrounding surface of the soil must be moistened. The time to apply the solution is the evening. But the only sure method of dealing effectually with these pests is to lay traps. Pieces of Orange peel if laid on the ground may be examined in the morning with a fair chance of rewarding the searcher, for the slug is so fond of Orange peel that instead of returning to its home at daybreak it clings to the peel, and may be found underneath gorged with over-much feeding. Pieces of board placed firmly in the ground are good traps, as these keep the soil moist, and slugs and snails love moisture and take refuge underneath them. Much execution may be done by these and similar traps, but a night search with the light of a lantern after a shower of rain will afford the best opportunity for catching large quantities of snails and slugs, which can then be put into a strong salt bath, where they will speedily die, or the fowls in a confined run will be very grateful if they are thrown to them in their prison. A. C. L.

297. **Pruning Grapes.** Our practice is to prune the vines in the fall and to uncover and layer them in May. A. M. P.

299. **Root Pruning.** We can recommend root pruning in the spring for cases of unfruitfulness. A. M. P.

300. **Paint for Tree Wounds, etc.** Pitch tar is good, and so is any ordinary wood-preserving paint stirred up in linseed oil.

302. **Bark Peeling Off.** Your trees are damaged by severe freezes, and we doubt if removing bark or leaving it on will make much difference. Binding on hay or straw on the bodies where affected may be beneficial. A. M. P.

303. **Rings in Wood Indicating Age.** It is now generally conceded that the concentric rings visible in wood do not correctly indicate the age of the tree. As a rule it can be said that the number of rings are in excess of the years a tree is old, but at least one instance has come to our notice, in which a tree was cut the exact age of which was known, and there were actually less rings than the age of the tree. Examples have been reported by reliable men of trees that had been cut which contained two rings for every year's growth. It may be assumed that if two rings are produced in one season, there must be two separate and distinct periods of growth to account for this.

306. **Worms in Lawns.** Water with clear lime-water in the evening, and sweep up the worms in the early morning. For making the grass grow I have found excellent help by the use of finely-sifted loam and wood ashes, two thirds of first to one-third of last-named; or, falling the ashes, I either use the loam alone, or by mixing it with guano in the proportion of one part guano to twenty of loam. A. H. E.

270. **Angle Worms in Soil.** Turn the plants out of their pots, reduce the balls of earth as much as possible so that all the worms can be picked out by hand, and then repot in clean pots, using fresh compost. To avoid them do not plunge your plants during the summer season; always plant them out. CHAS. E. PARNELL, Queens, L. I.

271. **Cuttings from Young Vines and Trees.** Yes they are just as good taken before bearing as after. CHAS. E. PARNELL, Queens, L. I.

278. **Moles in Cemetery.** Procure an Isbell Mole trap, and faithfully follow the directions which accompany it. C. E. P.

280. **Eucharis in the House.** This plant cannot be successfully grown as a house plant, as it requires for its successful cultivation certain essential requisites that cannot be bestowed upon it outside of a warm greenhouse. C. E. P.

280. **Roses for Market.** The best six are Perle des Jardins, Catharine Mermet, Souvenir d'un Ami, Niphotos, W. F. Bennet and Bon Silene. La France is also very extensively grown, and among the newer varieties, the Bride and American Beauty promise to prove to be of great value for market purposes. C. E. P., Queens, N. Y.

264. **Engine Scrapings as a Fertilizer.** Yes, they are of considerable value, and I should use all that I could procure. Spread them on the soil and harrow in thoroughly before any crop is planted. For flower beds mix them thoroughly with the soil by digging in with a fork. Mixed with an equal quantity of loam they form an excellent top dressing for lawns if applied very early in the spring. CHAS. E. PARNELL, Queens, N. Y.

265. **Soap Suds and House Slops.** These are of considerable value as fertilizers for fruit and some varieties of ornamental trees, Grape-vines, Currants, and Gooseberries. Dilute them with an equal quantity of water, and apply so that they will reach the roots, which often extend for a considerable distance. Stir the soil occasionally to prevent a crust being formed. The finest Quinces I have ever seen were grown in this manner. C. E. P.

251. **Fuchsia Ailing.** The plant was probably kept too wet, with the effect of first inducing a strong growth, which, during the season of its development was not unfavorably felt, but later and in damper weather it so proved to be. By resetting in light fibrous soil, cutting back well, the plant should recover reasonably if not too much injured. A. H. E., Erie Co., N. Y.

315. **Crates for Pint Baskets.** The size used should depend on the customers who take the fruit. I find crates holding 24 to 36 pints the best for my trade, using two of the former to one of the latter. I made my 24 pint crates 18 x 13½ x 6 inches inside, and the 36 pint crates are 18 x 13½ x 8½ inside. This allows ¾ inch for cleats on the cover. As the baskets of different manufacturers differ somewhat in size, it would be best to get these and make the crates to fit snugly with no chance to move or chuck. D. N. LONG, Erie Co., N. Y.

235. **Gesneras in the Window.** The plants at present known as Gesneras may be divided into two classes. One of these classes has solid tubers and bears long-lipped tubular flowers, scarlet or crimson (in one species yellow), which have the appearance of velvet. These are produced all the year round on successive stems, which come up one by one as the old ones die off. The leaves of this section are in appearance like brilliant green velvet. The tubers should be planted very near the surface of the soil; even if they are partly out no harm will come of it. The best kinds are Blassi, Bethmanni, Macrantha, Regalis, Barbata, Leopoldi and Elliptica-lutea. The other section has rhizomatous bulbs, which are produced at the base of the flower-stalks to the number of five or six, which resemble a catkin of the Alder in shape and structure. Their leaves are very like green plush, variously marbled with crimson, purple or black. The flowers stand well above the leaves in a branching panicle of from ten to thirty, and are more varied in their colors than those of the other class, being yellow, white, crimson, scarlet, cream, etc., barred and spotted, laced and tipped in endless variety. These are of the section often called Naegelian, and flower but once a year—in the late autumn—and then die off completely above ground. They should be started again in the following April. The varieties which hybridists have originated are very numerous and all are very good. Both sections are excellent for window culture, needing ordinary soil, a little lightened with leaf-mold or sand, and a considerable amount of water in the growing season. W. E. ENNICOTT, Norfolk Co., Mass.

263. **Preparing Soil for Small Fruits: Muck.** Loosening the sub-soil of high, porous, sandy soil is no advantage, rather the reverse. The application of muck to such land will prove of great value, both in rendering it more fertile and more retentive of moisture. Muck is organic matter, resulting from the partial decaying of former vegetable growth under water, and it contains most of the elements of cultivated crops. It is best fitted for use by digging in the fall when the bogs are comparatively dry, throwing it out on ridges, where it soon loses its excessive moisture and then composting it with lime at the rate of three bushels to every cord of muck, mixing them well together, to cause nitrification for making the contained nitrogen

available as plant food. If lime cannot be had then potash or soda in smaller proportion would answer. On light land such as yours it is likely that muck might with less beneficial results be applied directly to the surface, where in time it would become fine and fit to act as a helpful element in the soil.

**281. Freesia Culture.** In some way you fall to meet the requirements of these somewhat delicate little bulbs and flowers, although it cannot be said that their cultivation is really difficult. The proper course of treatment may be outlined as follows: Plant the bulbs in September, and later, in the pots or boxes in which they are to bloom. The soil should be a light, rich loam, such as suits the majority of pot plants. Set the bulbs about two inches apart both ways, and covering to a depth to well hide their tips, pressing the soil moderately firm about them. After this they should be watered once, and placed in a cool moderately light place, that they may gradually start into growth. Where some make mistakes is in treating them like Hyacinth and other Dutch bulbs, by covering the pots in some cold situation with soil to induce root action before the tops start. Others attempt on the other hand to force them too rapidly, making a failure in this way. Freesias will not well bear over 55° of heat, and must be permitted to "take their time" in coming into bloom. After the flowers begin to appear the temperature may be increased somewhat. The plants should at all times be kept near the glass, and be given an abundance of air in favorable weather. After blooming keep in a light, cool place, but gradually diminish the water, to bring them to a state of complete rest. When the bulbs are well matured place the pots in a dry, cool place until the next planting time, when they should be removed from the soil, re-potting the fair-sized ones for a new crop of bloom. By planting the bulbs at intervals of two or three weeks from September until the end of December they may be had in flower from January throughout the spring. All things considered Freesias are among the most desirable of flowering pot plants for window culture.

#### Received at this Office.

CATALOGUES.—FIGURES INDICATE NUMBER OF PAGES.

William B. Reed, Chambersburg, Pa., Roses, Shrubs, Small Fruits, etc.; 18.  
F. M. Augur & Sons, Middlefield, Conn., Small Fruits; 6.  
H. S. Anderson, Union Springs, N. Y., Nursery; 26.  
A. M. Snyder, Bellfontaine, Ohio, Seeds and Plants; 14.  
H. H. Sanford & Co., Thomasville, Ga., Plants; 44.  
J. W. Manning, Reading, Mass., Nursery Stock; 110.  
Jno. Curwen, Jr., Villa Nova, Pa., Hardy Plants; 20.  
Wm. Parry, Parry, N. J., Small Fruits; 36.  
D. Lee & Son, Madison, Ohio, Plants; 10.  
Geo. A. Bonnell, Waterloo, N. Y., Seeds; 6.  
B. B. Critchell & Co., Cincinnati, Ohio, Plants; 90.  
Alfred Bridgeman, New York City, Seeds; 54.  
J. T. Latts, Youngstown, N. Y., Plants; 168.  
Matthew Crawford, Cuyahoga Falls, O., New Strawberries; 32.  
Louis C. Lischy, Nashville, Tenn., Nursery; 44.  
Chas. T. Starr, Avondale, Pa., Plants; 36.  
Wm. C. Wilson, New York, Florist; 92.

#### MISCELLANEOUS.

"A Practical Treatise on Grape Culture, with instructions How to Prune and Train the Vine on the Horizontal Arm System," by J. H. Tryon, Willoughby, O. 20 pages.

Central Experimental Farm, Ottawa, Canada, Bulletin No. 1, Wm. Saunders, Director. 8 pages.

"Peach Culture—A Complete Treatise for the Use of Peach Growers, describing best modes of cultivation, treating the Yellows and other Diseases," by John Wilcox, Bridgeton, New Jersey. 86 pages.

Twelfth Annual Report of the New Jersey State Horticultural Society. Meeting at Trenton, N. J. E. Williams Secretary. 188 pages.

Third and Fifth Annual Report of the New York Agricultural Experimental Station, Geneva, N. Y. 308 and 468 pages.

Annual Report of the Nebraska State Horticultural Society. Meeting at Lincoln, Neb. Jas. T. Allen, Secretary. 99 pages.

Thirty-Second Annual Report of the Western New York Horticultural Society. Meeting at Rochester, N. Y. P. C. Reynolds. 156 pages.

Reports of the Portage Co. (O.) Horticultural Society, for 1885, '86. Meeting at Ravenna, Ohio. Andrew Wilson, Secretary. 79 and 64 pages.

Fourth Annual Report of the Trumbull (O.) Horticultural Society. E. W. Turner, Secretary, Newton Falls. 53 pages.

Report of the Horticulturist to the New York Agricultural Experiment Station, Geneva, N. Y., Emmett S. Goff. 245 pages.

Report of the Columbus (O.) Horticultural Society, for January, 1887. W. S. Devol, Secretary, Columbus. 19 pages.

Sixteenth Annual Report of the Entomological Society of Ontario, Canada. Edmund B. Reed, Secretary, London, Ont. 60 pages.

Transactions of the Illinois State Horticultural Society for 1886. A. C. Hammond, Warsaw, Ill., Secretary. 424 pages.

Sixteenth Annual Report of the Secretary of the State Horticultural Society of Michigan. Chas. W. Garfield, Grand Rapids, Mich., Secretary. 359 pages.

Plan of Operation, Benefits, Tables, etc., relating to the Michigan Fruit Exchange. W. A. Brown, Benton Harbor, Mich.

Michigan Crop Report No. 66.

"Forests and Orchards in Nebraska—A Handbook on Prairie Planting," S. L. Allen, Omaha, Neb.

## The Household

It is a great compliment to the entertainer, if not strictly polite, to ask for a second help from any dish.

**Wall-paper** colored with bright and poisonous arsenical dyes, especially the greens, are to be rigidly avoided. Their use is in the highest degree detrimental to health.

**Eggs in Sunshine.** Take a dish which will stand the fire, and which is not of such a size that the eggs when broken into it will spread much. Melt a slice of butter in this, then move the dish about so that it is greased in every part. Break the eggs in carefully, so that they shall be compactly together, and let them cook slowly, either in a gentle oven or on the stove, until they are set. Pour a cupful of Tomato-sauce over them at the last moment, and serve. If the sauce were omitted, eggs thus cooked would be "eggs au plat," a dish well known at French restaurants.

**Bananas,** at this season, are, in many places, really the cheapest of fruits as well as of the most wholesome and nutritious. From most persons they do not receive the appreciation that they deserve, being equal to the best bread, while, it is said a pound of Bananas is superior to three pounds of meat, and many more of Potatoes, in nutriment. By frying and baking appetizing dishes may be had. Cut up with Oranges and sugar they make a delicious dessert. Excellent preserves are also made from them, while they may be kept a long time in a dry state, either sliced or powdered.

**Cooking Dandelions.** Clean and wash the leaves well, as there is usually fine sand or earth between them, and let them stand in cold water for two hours. Drain and throw into boiling salted water, and boil for twenty minutes if young, and half an hour if full grown. Put the leaves in a colander and press them to extract all the water, and then chop them fine. Put two ounces of butter in a steppan to two quarts of leaves and set it over a brisk fire. As soon as the butter is melted sprinkle in a teaspoonful of flour and some salt and pepper. Add the dandelion, stir until thoroughly heated, and then moisten with broth or milk, and serve.

**Turkey vs. Whales.** Who would think that fertilizer, mattresses and imitation whalebone, better than the real, could be made out of the quills of geese and turkeys? But this is done. In Three Oaks, Mich., a factory turns out large quantities of an article known as "Featherbone," a substitute for whalebone. It consists of goose and turkey quills split into shreds and fibres, bound with thread and sewed into a flat tape of great strength and elasticity. It is unbreakable, lighter and cheaper than whalebone, and extensively used in dress and whip making. The plumage stripped from the feathers is used for mattresses, and the pith of the quills as a fertilizer, being rich in nitrogen. The factory consumes 30,000 quills and 125 miles of thread daily.

**Preserving Fruit with Salicylic Acid.** Last year we tried this new process, but not with favorable results throughout. Some fruits have turned out very nice, and some very poor. Raspberries, Blackberries and Strawberries appear nice when opened but after a few hours grow poor very fast. Blackberries, those that were good, were better than cooked fresh berries, but like the others, for a short time only. Cherries, not one in a dozen cans were fit to eat. Peas did not keep for over a month, and Peas were good for nothing. We gave the process a fair trial to the extent of 33 cans and consider it a failure for table use; but for show purposes say, if wanted "for the Fair," nothing could look nicer than fruit put up with salicylic acid.—A. T. GRANT, Worcester, Mass.

**Sunshades for the Babies.** Has it ever occurred to those who purchase coaches for their babies, and who make it a point to select the brightest colors they can find for the screen that is interposed between the eyes of the child and the sun, that they are liable to do irreparable injury to the vision of the little one? An infant generally lies on its back, its eyes, of course, upwards towards the bright covering above it, its gaze being the more intense the brighter the covering and the more direct the rays of the sun upon it. Nothing but injury can result from such thoughtless exposure. An experienced nurse says there cannot be a doubt as to the injurious effects of those bright so-called shields upon the tender eyes of children. Parents who are wise will select the darker and denser shades, even though they may not be as handsome or showy in their eyes as some of those which are more fashionable.—*Am. Cultivator.*

## Poultry.

Ganders have often killed young chicks.

Oat Meal is one of the best foods for chicks.

Not even ventilation can set steaming filth aright.

Growing fowls cannot be overfed. Early broilers in mind.

Too much whole grain may stop the laying by causing excessive fat.

Night Feed. If fowls get soft food when going to roost, it is digested early in the night and they are hungry before morning. This is avoided by giving whole grain.

Ducks and Geese should have liberty, and be well fed at this season. They require but little attention, but being apt to lay away, should either be kept closed up until they lay or the quarters they frequent carefully searched for eggs.

If you have a hen noted for her laying qualities save her eggs and hatch them and raise a few cockerels for next year. This is the way to increase the egg production of your whole flock. Stick a big pin in this item.—*Farm Journal.*

**Eggs in New York.** The receipts of Eggs in the City of New York for the year 1886, were 69,692,855 dozen, which sold at an average of eighteen cents per dozen, wholesale, making the enormous amount of \$12,544,713.90 in money. The lowest price reached was 11 cents, in June, and highest price reached was 28 cents, in December. The receipts of Eggs in 1885 were 51,583,745 dozen sold at an average price of 19½ cents, making \$10,058,830.27. The lowest price reached was 12½.

**Away with the Roosters;** they are not needed after the hatching season, being in fact worse than useless. They consume food. The hens lay better without their company. In the summer, when eggs are cheap, these may be preserved for winter use with more certainty if laid by hens not mated. Experiments have demonstrated that a fertile egg will not keep one-half the length of time as will those that do not contain the germ of a chick. The roosters may therefore be disposed of with advantage in various ways.

**Unfertile Eggs.** A piece of card-board, about four inches by six inches (an old cover of a book will do), with a hole cut in the center the shape of an egg, but smaller than an egg, makes a good egg-tester. On the sixth day, the hen having set steady, take a candle at night when it is dark, and removing an egg from the nest, place it against the hole made in the cardboard, holding it between you and the candle. In this way you will see by the light whether the eggs are fertile or not. The fertile eggs will have a dark, muddy appearance, and those that are unfertile will be quite clear, no change having taken place; such eggs should be removed.—*Cor. English Exchange.*

**About raising Turkeys.** Select good stock; do not set too early, as young Turkeys chill easily; Turkeys make the best mothers, but hens will do, if not lousy; do not feed for several hours after they come out of the shell; take the least particle of lard, grease heads a little and under the wings; hold in hand and with shears clip the down from the hind parts or vent; feed Johnny-cake, bread, curd, millet, but no meal in its raw state; give water or milk, but not enough to wet themselves, for if the weather is hot they will die of sunstroke; don't feed after sundown, and keep them up until the dew is off; after they shoot the red they can eat almost anything.—J. W.

**Chicks Just Out.** For the first 24 hours after they are out they must have warmth and absolute freedom from dampness. If they are incubator hatched transfer to a warm nest, lined with old flannel, and leave them covered with a piece of the same. If thirty-six hours without food no harm will follow. It is reasonable that the first feed should be the yolk of the egg. Let the egg be hard-boiled and crumbled very finely, and then mixed with dry bread crumbs. Give no drink until the third day, then only in the morning and again at night. For the next three or four days give bread crumbs slightly moistened with milk, and coarse oatmeal, and later every variety of food. A thick oatmeal and rice porridge thickened with cornmeal is a good change. For diarrhoea, give rice cooked and uncooked, and rice water to drink, but do not continue this diet too long. Once a week give chopped lettuce, onion or cabbage, and twice a week a little chopped meat, if the chickens have not a large range where they can pick up insects. Give them also plenty of fine sand or gravel. Sand containing small shells is best.—*Poultry Monthly.*

# The Exchange

Amateurs often have an excess of certain seeds, plants, etc., while in want of others. This department is designed to bring about free exchanges in such cases.

In The Exchange may be named what can be spared, what is wanted and the address. No price figures omitted. Any offer that may appear objectionable to the publishers not admitted. No responsibility will be assumed for any results connected with The Exchange. Those using the column should correspond before sending articles.

186. Chas E Parnell, Queens, L. I., will exchange seeds or plants for odd numbers or back volumes of any agricultural or horticultural magazines. Correspondence invited.

187. F L. Wright, Plainfield, Mich., has Roses, Climbing Plants, Grape-vines Small Fruits, to exchange for Scions of Yellow Transparent or other Russian Apples, or any other novelty.

188. W. R. Carter, Pomona, Cal., will exchange Pearl Tuberoses for Foliage Plants; fancy Caladium preferred.

189. Mrs Jennie Wheeler, Hatch Hollow, Erie Co., Pa., has choice Peas, Canada Tree Beans, Mammoth Sunflower Seed, for Plants, etc.

190. Mrs. L. O. Greene, Long Cane, Ga., will exchange Passion Vines, Calycanthus and Grape Myrtles for Japonicas, Gloxinias, etc.

191. Mrs. J. H. Cutler, Peterborough, N. H., will exchange cuttings of the new double Petunias Lucy Longstreet, J. G. Drayton, Mrs. Coleman, Marandi and Exquisite, and spotted Coleus for cuttings of Coleus or Geraniums.

192. J. E. Cole, Branchville, N. J., offers Gladioli, Rare Tuberoses, Amaryllis, in exchange for New Cinnas

193. Mrs Cora Jewell, Shannondale, Ind., wants Anemone fulgens, Trillium, White Moss Pink, Spiderwort, Lupinus, white and yellow Monk's-hood, in exchange for 200 varieties of plants.

194. Mrs. M. G. Tompkins, Warsaw, Mo., wants choice house-plants or bulbs, in exchange for Shells, Ferns, Bignonia Grandiflora, or Bitter Sweet.

195. Mrs. J. H. Lewis, Rockville, Conn., has Passion Vine, Constance Elliott, Fuchsias Storm King, Phenomenal and Mad Vandes Straus, Spotted Callas, Zephyranthes rosea and Treatea, Dahlias, Cyclamen and named Chrysanthemums, to exchange for choice Lilies, Amaryllis and Gesnera.

196. Mrs. M. S. Paw, Ellington, N. Y., has small fruits, plants and stamping outfits, to exchange for bulbs or flower seeds.

197. E. V. K. Hopkins, Townville, Pa., offers Lawton Blackberries, Philadelphia Raspberries, Roses, and Box Alders, in exchange for Cuthbert, Sonbegan, or Hansel Raspberries, Snyder Blackberry, May King, Ironclad, or Jersey Queen Strawberries.

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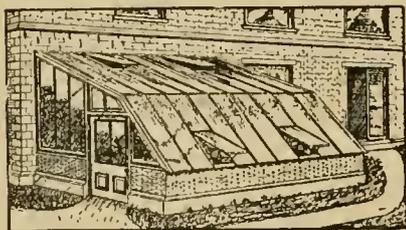
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# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

Vol. II.

JUNE, 1887.

No. 9.

### June.

O month of verdant beauty,  
Of Strawberries and leaves,  
Of sentiment and Roses,  
Of balmy moonlight eves,  
Of Bobolinks and rosy haze,  
Of careless mirth and easy ways,  
O couldst thou stay forever  
And weave thy simple arts  
There were no withered leaves then,  
Nor many withered hearts.

—Susan Hartley Swett.

WITH THE early fruits coming in plentiful, Rhubarb should have a rest from much cutting.

THE MARKET GROWER is liable to make a great mistake who overlooks the neighboring home market, trusting to the large towns only.

WITH GREAT care to secure all the roots possible, and not allowing them to dry during the operation, trees and shrubs can, if necessary, be reset even in this month with fair success, by first removing all the leaves. New leaves will appear later.

IN HOT DRY weather Gladiolus will repay the attention of a mulch of rotten manure over the beds, and applying water freely if thought needful. Another thing, it is the right course to place supports to the plants in the earliest stages of the spikes, as the broad leaves are much acted upon by gales of wind, and if the roots get loosened the plants soon suffer.

THOSE HAVING spots about the home so shady that grass will not grow may rely upon the hardy Ferns for embellishing here. Wild Ferns abound in all parts of the country in woods and waste places, and can usually be had for the digging. Even if one is obliged to depend upon the nurseries, there can be nothing serious in the case, for the best kinds are low-priced, and they ship and grow readily.

THE FACT THAT Grape-vine shoots so early get into a tangle, by reason of their hook-like tendrils getting a firm hold of each other, difficult to be displaced without injury, suggests the need of early pinching away all needless shoots and the proper direction of others. As soon as the buds burst forth it is best to remove at least every shoot which has not more than one or two clusters. This will throw the strength into the shoots having more fruit, with the result of a better general yield.

SHALL WE HAVE an American Society of Horticulture in every way worthy of our great nation? A large stride towards the solution of this important question was made when, in January, 1885, the flourishing Mississippi Valley Horticultural Society took the initiative, and by an almost unanimous vote changed its name to that of the American Horticultural Society. It was a good move, and one which meets with wide approval. But now that a national society of the beloved art horticulture is well under way, and officered by such able and representative men as Parker Earle, president; T. V. Munson, first vice-president; W. H. Ragan, secretary, what is more than all else needed for assuring to it a great and useful future is a large increase of members. That there is a growing sympathy among cultivators,

a coming together of sections throughout the country, is more and more apparent, and in no way can this be better promoted for the good of horticulture and the horticulturist than in the better founding of this new society. We have, it is true, a grand American Pomological Society, and several flourishing American Societies representing the nursery, seed, and florists' trades, each with a clearly defined mission of its own, but in this more recent organization is set forth a general society for all horticulturists, and which should be the most popular and influential association of its kind in America. And there are, aside from the mere fact of one's aiding a worthy association, certain special inducements which should lead all gardeners and fruit growers to become supporters of the Society referred to. The annual membership fee is \$2.00, and this, besides admitting members to all ordinary privileges of the association, entitles each one to a copy of the current edition of the published transactions. This in each case is a fine cloth bound volume of the proceedings of the last general meeting of the society, and which, in the two latest editions, has amounted to a book of several hundred pages respectively. Than the contents of such volumes, it may be said, there can be no more valuable matter to the horticulturist, consisting, as it does, of essays and discussions by the ablest practical horticulturists of America. We trust that this statement made to our readers may lead many of them to become enrolled as members of the American Horticultural Society. It is a society which should be pushed on to a great success, and our readers should be foremost in the good work. The secretary, W. H. Ragan, may be addressed at Greencastle, Indiana.

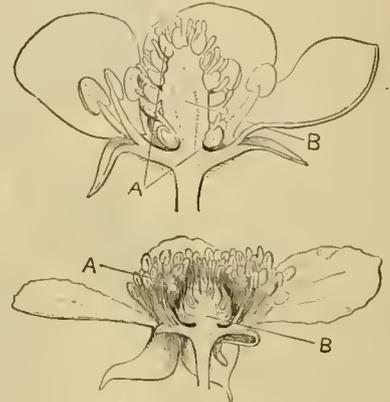
### The Strawberry not a True Fruit.

That universal favorite of its season, the Strawberry, presents in its fleshy part the strange botanical anomaly of being no fruit at all. The ordinary definition of a fruit is the matured ovary (seed vessel) and all it contains or it is a part of. Now while this definition applies well to all common fruits, such as the Apple, Pear, Peach, Grape, Cherry, Blackberry, etc., in the Strawberry is found a decided exception. Here the fleshy edible portion, instead of being in any true sense a part of the ovary, is that part of the flower known as the receptacle (the support of the essential floral organs which develop into fruit), but which here is monstrously developed.

To carefully cut a Strawberry and for example a Raspberry flower, through crosswise of the centers, as is represented done in the engraving, and this matter may be better understood. In both figures—the upper one being the Strawberry—the letters AA indicate the ovaries of the flowers, in other words, the undeveloped fruit, and BB the receptacles which support the fruit. It is at once seen that this part in the Raspberry, as is the case with the generality of fruits, has but its normal use and beyond that proves worthless. In the Strawberry this receptacle, supporting the true fruit, in this case mere seeds, develops into the

delicious edible part, but which cannot be the fruit in a strict sense.

Bearing in some measure upon this interesting matter we have received from Mr. Joseph H. Bourn, of Providence Co., R. I., a brief dissertation on the Strawberry and its improvement, which we are, in this connection, glad to lay before our readers, as follows:



Flowers of Strawberry and Raspberry Compared.

"It is wonderful to reflect that the first Strawberries had no ancestors; that they came into existence by spontaneous generation or special creation; and the question still awaits solution, From what source do the new series of development arise? From seed production, the cause of their duration is obscure;—by fertilizing the pistil of one kind with the pollen of another novel results are produced; and still further, the pistil of a flower may sometimes be fertilized by the pollen of one of a similar constitution, and the fruits raised from the seeds combine the properties and characteristics of both parents. Those changes brought about in a plant by the nature of its food and other external conditions must not be confounded with variation, for characters which may become hereditary arise independently of the direct influence of soil, locality, climate, or other outward influences. Hybridism is so difficult to effect between nearly related species that hybrids rarely occur in nature; are usually sterile and incapable of perpetuation of seed, therefore different sets of hereditary characters must be combined, even to produce a tendency towards a new formation.

The knowledge of a century devoted to structural investigation has thrown much light upon the mystery of plant organization; but the origination of the improvements and the successive adaptations to meet new conditions still remain inexplicable, and suggest the inquiry why so few new varieties of Strawberries are worth growing, and why do those that have good qualities so soon loose them? Modern science, now reaching out towards the new, mysterious and the beautiful, will doubtless soon unravel many hidden truths, and enable us to better interpret and practically apply Nature's constant or eccentric laws, now wondrous and abstruse

### A Great Rose and How to Grow It.— The American Beauty.

This new American Rose, introduced two years ago as a cut-flower variety for winter blooming, has, up to date, achieved a most remarkable success. Its strongest qualities are the very ones recognized as being of the greatest value in a Rose suitable for popular culture, namely, great vigor of growth, and remarkable blooming powers, coupled with fine form, striking color, and, not the least, a most delicious true-rose fragrance.

Having ourselves much confidence in this sort, as based upon watching its deportment from the first, we, however, desired to lay before our readers the opinion of that expert Rose grower and careful observer, Mr. Charles Anderson, of Flushing, N.Y., concerning its value to amateurs in garden culture. This he has kindly advanced, at our request, in the form which follows:

As a forcing Rose for winter flowers its reputation has been so well established during the past two years that any comments from me would be superfluous. It is sure to be valuable for the above purpose for years to come. But it is to the amateur Rose lover that this Rose must prove to be of the greatest value and interest.

There seems to be some hesitation among rosarians where to class or place this remarkable sort. In my judgment it should be placed in the class of Hybrid Perpetuals, for it is a true Remontant, throwing up its lovely bright, rosy pink flowers continuously, as long as the conditions are favorable to growth.

Certainly there is no Rose sent out in recent years possessing so many excellent qualities as this. It is of strong, vigorous habit of growth, with great freedom of flowering, and fine foliage. The flowers, of a bright rosy pink, with a slight carmine tint on the inner petals, and of the most delicious fragrance. These are thrown up in great profusion when most of the Hybrid Remontants are taking a rest. As to its hardiness or ability to stand out all winter, it would be well to protect it from severe weather just the same as for many other varieties of our hardy Roses in the North.

As to its culture in the open ground, I would urge for this, as for all other Roses, the best kind of treatment. And, first let

me say that, to procure a few small plants and set them in the mixed flower bed, to take their chance along with Zinnias, Salvias and other rank feeders, will never do. I have long been of the opinion that whether one buys and sets few or many it is best to invest only in good strong, healthy plants.

The course I would suggest is to start in by making a bed with soil that has never grown flowers before. If the place is the site of a former bed, I would remove the soil to a depth of 18 inches, filling it with any good,

suited to our hot summer sun. It thus possesses staying qualities that must make it popular with all lovers of the Rose.

### The Bagging of Grapes.

That the process of enveloping growing clusters of Grapes with paper bags for protection against insects, mildew, rot, etc., is one of value, has been proven to the satisfaction of many cultivators. Comparatively a new idea, the season of 1887 will see it applied far and wide, more extensively than ever before. It is one of those simple processes that every amateur, even though he have but a single vine, may readily adopt with advantage. One grower who experimented in bagging his Grapes last year reports that in his case it made just the difference between success and failure.

The course is a most simple one. Common light manilla bags, the size known as two pound bags, are usually employed. These are slipped on over each cluster of the fruit and secured somewhat loosely by pins or stitches of thread. If the stem of the cluster is brought against one end of the opening a single pin to a bag will answer, if in the middle, to have the paper bear evenly on all sides, then several pins or stitches are needed. A small slit should also be made in the bottom of each bag, to allow escape for any water that may enter into it along the stem. From 500 to 1000 bags can be put on in a day by one person, and costing from  $\frac{1}{2}$  to 1 cent per pound of fruit.

The advantages of bagging Grapes may be summed up as

follows: Freedom from the attacks of beetles, grasshoppers, fowls, birds, etc.; prevention of mildew and rot; protection against frosts; improved appearance and development, the bloom more perfect, the berries larger and uniformly fine, and the general appearance more attractive. While the color of red and white Grapes may be somewhat lighter for the bagging, black Grapes are said to be fully as black and covered with a heavy bloom. There is said to be no material difference in the ripening of bagged or unbagged clusters.

A common error in the formation of beds for Roses is to make them up too high above the surrounding ground so that the rain runs away from the plants. A few inches below the level of the grass or walk is better, using then also a little mulching of manure or litter in extreme hot or dry weather.

The best effects in Rose culture outdoors are produced by planting in groups of not more than one or two varieties in a group. I should add that the American Beauty is of undoubted American origin, hence is well

follows: Freedom from the attacks of beetles, grasshoppers, fowls, birds, etc.; prevention of mildew and rot; protection against frosts; improved appearance and development, the bloom more perfect, the berries larger and uniformly fine, and the general appearance more attractive. While the color of red and white Grapes may be somewhat lighter for the bagging, black Grapes are said to be fully as black and covered with a heavy bloom. There is said to be no material difference in the ripening of bagged or unbagged clusters.

The time to bag the fruit is early in the summer, as soon in fact as it is well set. If it be done before the berries are as large as Peas, they will be saved the depredations



A GREAT ROSE—THE AMERICAN BEAUTY.

from the little beetles which some years begin very early their attacks on the fruit.

For family use especially the satisfaction of having the fruit turn out so much better in general should lead to this course being adopted by all who have vines. There will be ample compensation for the small trouble and expense involved. To what extent bagging will come into use with market growers remains to be seen; perhaps in the more favorable localities for the Grape it would be looked upon as a needless outlay, but without question in many others the improvement in the fruit would easily outweigh the cost and trouble of the bagging.

#### A Cherry-time Monster of the Air.

So the birds are to believe, and our engraving well shows how horribly ugly, yet not unlife-like, the monster may be made to look. It is an improvement on the Potato stuck full of feathers, but which birds soon become accustomed to, finding it unpossessed of life. This present affair is anything but tame in looks and actions, and has been found effectual in frightening birds from Cherries and other fruits when other means have failed.

For the body, a long Mangel Wurzel, or a large Parsnip or Beet, the uglier the better, is used. Into this feathers are thrust along what is to be the back and sides, with two set in the head end for horns. For the tail the feathers are mounted on light twigs, the object of this being to keep the suspended monster lively by turning with the wind. The eyes are important parts for giving a life-like appearance. These consist of two bits of broken porcelain, thrust into the root from the top downward, and with eye-holes gouged out of the sides to these.

Two small spin-wheels are projected forward of the eyes, to add horror to the look. They are made of circular pieces of tin about four inches across. These are cut from the edge to near the center into about ten or more radiations, and the parts given a slight twist, wind-mill like. A wire nail through the center attaches each wheel to the end of a stick and on this it should revolve in every slight breeze.

For suspending it a cord which encircles the body, is carried up to one end of a half hoop-shaped iron rod, the other end of which is bolted to a pole that is raised slightly above one of the trees to be protected. Then the monster bobs about and turns with the wind, the spin-wheels fly and clatter, and altogether there is a dreadful look to strike terror to evil-doing birds, even those disposed to boldness.

#### Raspberry Culture in Canada.

E. WORDEN, NIAOARA FALLS, ONT.

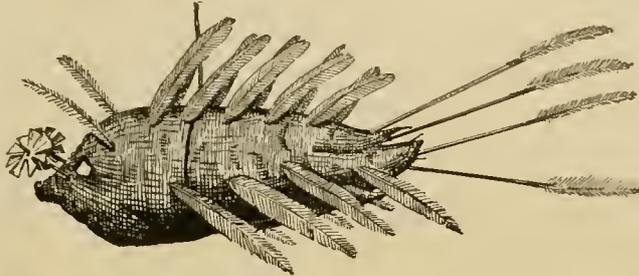
In Ontario Raspberries are grown by the acre as successfully as in Pennsylvania. The Cuthbert, which is less hardy than some, has never been seriously injured with me. It has displaced such older kinds as Philadelphia, Highland Hardy, Clark, Turner, Brandywine and the Antwerps. Of these the Turner, Brandywine and Philadelphia are safer for northern Ontario.

The past winter has been unusually severe. The lowest thermometer with me was 10° below zero. In February the lowest was 4 above. Snow fell the same month about 7 inches; rain fell nearly four inches.

Western Ontario is warmer than the greater portion of New York State. Black Cap Raspberries are of course hardy with us. The Gregg is not entirely hardy as we go north. Enough Reds and Blacks are raised to interfere greatly with the profits. Many rush into the business, having heard some foolish boasting about the large profits, only to regret it later.

A Raspberry plantation can only be a success in the hands of a specialist with a special soil and a special situation. The man must be careful, tidy, intelligent and be able to look after his plantation for eight months in the year. The soil must be dry, rich, soft and not over ambitious to form a sod. A few weeks of neglect will allow the sod to become established and then your patch will deteriorate with great celerity. Raspberries should be planted about 4 by 6 feet, and be cultivated both ways during the season. Frequent hoeing is also necessary.

The profitable Raspberry plantation is found



A CHERRY-TIME MONSTER OF THE AIR.

near to market or shipping station, and within reach of manure. The general farmer should grow only the berries for home use. The merchant who invests in every style of goods heard of will not succeed. The farmer with his broad acres who attempts to engage in all kinds of fruit and vegetable culture will not make a great success of his undertaking.

#### A Sod-Cutting Machine.

In the vicinity of all our larger towns many acres of sod are annually cut for use in lawn making. All who have engaged in this work know that it is slow and laborious, and of a kind in which the use of machinery has in the past played no important part. We believe, however, that sod-cutting machines have been in use in England for a long time.

Our attention some time ago was called to a machine made for cutting sod, and invented and patented by an American. This is the Richmond Sod-Cutter, of which we give an engraving herewith, from the catalogue of Mr. E. Y. Teas, Dunreith, Indiana. There is no good reason that we can see why a machine of this kind should not do effective work, while it certainly would appear that a smooth-

ness and uniformity of thickness in the sod could be attainable that would be far superior to hand-cut sod, as such runs. Every gardener knows that a sod of uniform thickness, and especially if it lie in rolls, as left by this machine, makes a better lawn than one in which the sod varies in respects such as these.

#### REPLIES TO INQUIRIES.

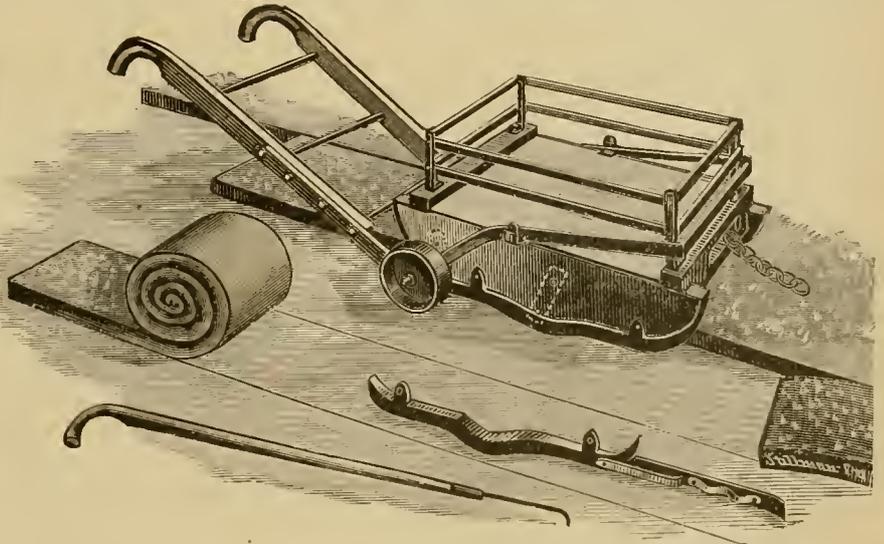
285. Peaches in West Virginia. In part answer to this inquiry I would say that yellow Peaches, evaporated, sell from 2 to 3 cents per pound more than white ones in this market. C. W. IDELL, Commission Merchant, New York.

313. Reports of Horticultural Societies. These are seldom if ever offered for sale apart from the consideration that becoming a member of a society entitles any one to receive the report of such society without further cost. Usually the price of membership in societies of this kind is from \$1 to \$2 per annum, a sum that would in almost any case be for the report thus secured alone, well spent. Indeed in some cases where liberal state aid is had

in publishing state horticultural society reports, as in Michigan, Illinois and Missouri, these are large volumes of from 400 to 600 pages, bound in cloth, and which if they had to be bought from ordinary publishers would cost two or three times what it would cost to secure membership in the societies issuing them.

304. Gooseberries for Profit. Gooseberry culture is made profitable by some persons in our Province. A responsible gentleman has told me that he had sold his Gooseberries the past year at twelve and a-half cents a quart in his district. His plants produced half a bushel each, and that they were planted six feet by four. A little calculation shows that that would pay pretty well; it would beat Strawberries without costing near the time to care for them. He managed to get these high prices by leaving his Gooseberries until the Strawberries and Raspberries were nearly over, when he was only about a week selling them. This summer they have been selling at various prices up to twenty cents a basket. The way they were prepared for market was to separate the large ones from the small ones, by means of a perforated zinc, the former being sold at a higher rate than the latter. For mildew the bushes attacked were treated with a dusting of sulphur. CANADIAN.

284. Mildew in Early Grapery. Attend very carefully to the ventilation. A sudden chill will mildew your vines no matter what other preventive measures you use. Open the ventilators a very little to begin with, and as the heat of the day increases, ventilate a little more fully. Never syringe with ice-cold water; never soak your vine borders (in the case of early started vines) with icy waters.



A SOD-CUTTING MACHINE.

ness and uniformity of thickness in the sod could be attainable that would be far superior to hand-cut sod, as such runs. Every gardener knows that a sod of uniform thickness, and especially if it lie in rolls, as left by this machine, makes a better lawn than one in which the sod varies in respects such as these.

323. Gladioluses in Pots. We have seen numbers of Gladioli admirably grown in pots. In order to have the flowers early the plants may be started in frames, evenly plunging the pots in coal ashes or other refuse, and growing the plants in the open air as if they were Chrysanthemums. One large corn may be placed in a 6-inch, and three medium-sized corns in a 7-inch, and a greater number in larger pots if bold masses are desired. BRIT.



know at any time how many quarts have been brought in you can foot it up in a minute.

Each evening the record is footed up, the total number of quarts brought in during the day by each picker being written in the last column opposite her number. Then the pickers form in numerical order and pass in a line between your table and the bulletin board. Each picker is given a check upon which is written in ink the date, the number of the picker, and the number of quarts she has brought in during the day. To the use of these checks there can be no objection. As the picker gets her checks she can glance at the bulletin board and see that she is credited with the proper number of quarts.

As the pickers go home at once, and each check represents a day's wages, it is very rarely the case that a check is lost. If lost, there can be no dispute. No other picker can present it, as it has the number of the rightful owner upon it. By referring to the record sheet for that day, the number of quarts represented by the lost check can be determined.

A job printing establishment will rule the record. The date and numbers can be put on the checks in odd moments during the day. And as they are arranged in numerical order, the quarts can be called off and written on the checks as fast as the pickers can walk by.

Each evening the record sheet is taken down, folded, and the date, number of quarts picked, and whatever other memoranda may be desired, are endorsed upon it. It is then filed away. These sheets furnish a complete account of the season's picking. They also furnish valuable information for future use. They will reveal which were the most speedy or reliable pickers; on what days the most berries ripened; when the season properly opened and closed, etc. Of course it is necessary to keep a book of accounts, not to replace the sheets, but in conjunction with them. And the sheets will furnish data that cannot be put in a book account.

This system is easy, simple and accurate; it avoids mistakes and misunderstandings; the record is open during each day, and gives in convenient form a showing for each day during the season. It occasions less expense and trouble than almost any other system.

We pay off Saturday night for the week ending with the previous day. There is more time for paying off Saturday night than any other, for the pickers must quit earlier, that all berries may be got to the railway station or near-by market. We do not carry many berries over Sunday. As very few, if any, of our pickers waste their wages in saloons, or other vile resorts, being mostly German girls, there is no objection to paying off Saturday nights. We do not include that day in the payment, as we want more time for the preparation of the money envelopes. The amount due each picker is enclosed in an envelope, and the amount and her number endorsed thereon. The pickers form in line, in numerical order, each picker hands in her checks and is handed her envelope, which she must open and count the money enclosed, to avoid misunderstandings.

#### Iron Sulphate as a Manure.

A. B. GRIFFITHS IN JOURNAL CHEMICAL SOCIETY.

**MANGEL-WURZEL CROPS.** Two equal plats were winter manured with 10 tons of farmyard manure, and in spring one cwt. of kainit and one of nitrate of soda, four of superphosphate of lime, and two of common salt. Later a top dressing of one cwt. of nitrate of soda and one-half cwt. of ferrous sulphate were applied to plat A, and only one cwt. of the former used on B. The crop gave in weight for A, 97,682 lbs., and for B, 78,369 lbs. In composition the albuminoids and soluble carbohydrates were increased in the crop manured with iron, and the ash analysis gave a larger percentage of iron oxide in both root and leaf in A than in B, while the phosphoric oxide in A was much greater than in B.

**BEAN CROPS (*Vicia faba*).** Plats of equal size received equal weights of farmyard ma-

nure, and the same number of seed was planted in each. On A plat was strewn a top dressing of one-half cwt. of commercial iron sulphate, on B, nothing. A yielded of grain and straw, gathered, 7,016 lbs., B, 5,192 lbs.; when dry, A yielded 5,828 lbs., B, 4,726 lbs. In both plants and seed the albuminoids, soluble carbohydrates and ash were increased in A. In experiments for three years, in 1883, A yielded 21 bushels more than B; in 1884, 16 bushels more, and in 1886, 20 bushels more. The iron oxide was increased in the ash in all the experiments in which iron was used.

**WINDOW PLANTS.** Palm and India-rubber trees were grown in a window that never received any direct sunlight. One tree of each was treated with iron manure, and one each not so treated. In those fed iron, the leaves increased in size, and became rich green in color. Those plants given no ferrous oxide lost nearly all their leaves, while the remaining ones were light green in color. The ashes of the leaves of iron fed plants contained nearly twice the quantity of ferrous oxide as those not so fed.

**FERROUS SULPHATE VS. KAINIT.** Two equal plats of land each received 15 tons farmyard manure in the fall, and were planted to six cwt. of Potato tubers each. A received a top dressing of one-half cwt. of ferrous sulphate, and B two cwt. of kainit (containing 16 per cent potash). A yielded 20,160 lbs. of tubers, B, 13,440 lbs., and the albuminoids and soluble carbohydrates were greatest in A. The ash analysis of both tuber and haulm gave much more iron and phosphoric oxides for A than B, and the iron seems to replace the potash.

#### An Amateur's Success in Raising Winter Squashes.

Last season a friend gave me some seeds of Essex Hybrid Winter Squash, after my large garden was nearly all planted. The soil in the only available spot I did not think suitable, it being on the clayey loam side of the garden. It had, however, been filled up somewhat with rubbish when the house was repaired, and contained some mortar, bricks, stones, etc.

In this place I planted three hills of seed on the 4th June. They came up quickly and well. Three plants were left to give to each hill. Knowing that Squashes require very rich soil, I put a few tablespoonsful of Bowker's fertilizer in each hill at planting time.

By the 18th of the same month the Striped Cucumber Bug put in an appearance, and then I saturated pieces of muslin in kerosene and strewed them around the hills, and at intervals of several days would pour more kerosene on the muslin; after that they were not troubled by any enemy, but continued to grow and travel very rapidly.

I must say I never saw anything grow more finely. The vines were yellow with blossoms, and soon the Squashes began to set. There was quite a severe drought for about three weeks, and during that time I gave them water.

On Oct. 1st I harvested my crop; I took them from the vines, being careful not to bruise them, and laid them on a table in the cellar under the heater pipes. There were some beautiful specimens, and in all I had 164 lbs.!

And now, April 14th, I have several yet in a fine state of preservation, two weighing eleven and twelve pounds respectively. Being such a late keeper makes this variety very valuable. It is of fine quality, although entirely different from the Hubbard.

Several years ago I raised three hills of Butman Squashes in very much the same kind of soil, but in rather a shady spot. Then the grubs in the vines near the roots troubled them; these I cut out and killed, and covered the cut with earth. I gathered in the fall 109 lbs., and they were very handsome, and to my taste more agreeable than either the Hubbard or Essex Hybrid, being more like Summer Squash. But the Butman is not so valuable with respect to winter keeping; it will keep only until about January. E. W. L.

#### Protection, the Price of Fruit.

D. S. MARVIN, WATERBURY, N. Y.

No reference is meant to tariff or politics, but I use the word in reference to the protection that evergreens and other natural objects afford to vineyards, gardens and orchards, in ameliorating and shielding trees and plants from the deadly influence of cold winds.

People in general seem to believe that during winter trees and plants are quiescent, but this is wide of the truth. No vegetable organisms remain entirely quiet during the winter.

The functions of plants that go on during what is called the resting season are just as necessary to the plants' welfare as the growth made in summer. In one sense they may be likened to hibernating in animals. But it is in reality more than this, for hibernating is a process of living upon stored up nutritive matter in the shape of fat.

Plants probably live during winter upon stored-up matter within the cells, their protoplasm. Now just as an animal might become exhausted and die if the winter were unusually prolonged and inclement from exhaustion of the stored nutritive matter, so a plant may become exhausted by unpropitious atmospheric conditions and because the winds and storms have been too severe for the plant's vitality and stored economies to surmount.

This view of the plant's functions and economies will explain why our orchards and domestic plants are more or less dying out year after year, and why we can no longer grow fruit as we did when the country was new. It was the protection of the forests that made fruitful orchards.

We must again restore some of the conditions that formerly prevailed. We must not sit down and throw up the sponge as some are disposed to do. Man's control over the forces of nature, to be sure, has its limits, but in this respect *he is master of the situation*. This kind of protection has been destroyed; it may be restored.

The thing I refer to has been done about Boston and other places, by setting out rows of evergreen trees around the orchards, and interspersing them among the trees. There is herein, happily, a double advantage, yes, triple and quadruple. In this way we can again grow our own fruit, and at the same time are reclothing our hills with valuable forest trees that will in a few years be more valuable than the orchards they protect. Then there are domestic and æsthetic advantages innumerable.

#### Trees by the Roadside Again.

WM. H. YEOMANS, TALLARD CO., CONN.

Much as has been said and written regarding the planting of roadside trees, both for pecuniary advantage and public comfort; the practice is comparatively little indulged in. Occasionally in New England, in some of the older settled towns, the roadsides will be marked by lines of beautiful and majestic trees that stand as the living memorial of some former benefactors' work. How gratified are both man and beast, when upon the dusty highway, under the rays of a scorching midsummer sun, to be permitted to enter the refreshing shade of the archway of overhanging trees. But these cases are the exception rather than the rule.

We can call to mind some portions of road thus provided with shade trees; would there were many more. Village improvement societies are doing a good work in beautifying parks and adding to public comfort, but their influence is not far reaching enough.

How grand, how noble would be that influence that should move public sentiment to an extent that would lead land owners to set out lines of shade trees by the roadside adjoining their own possessions. What a beautiful change would come over the face of the country; and how there would come the longing of city residents to be granted so rich a boon as a residence among such delightful scenes. There would no doubt be a stronger desire for rural life, and a consequent draining of our cities.

## OUR PERENNIAL FOES.

(Continued from the May issue.)

SLUGS ON CHERRY, PEAR AND OTHER TREES, RASPBERRY BUSHES, ETC., (*Selandria*.)

In the various species of Slugs, one of which, the Rose-slug, was referred to in the May issue, we have a very destructive class of insects. The time of their depredations is mainly in June and July, with some lesser broods at work later. They feed on the leaves, as shown by figure 15, devouring the upper skin and leaving but the bare net work of veins. In a short time the growth of the affected parts is completely stopped, with the result of giving such parts a decided set-back for the season.

23. DUST, ASHES OR DRY SLAKED LIME.—Such substances applied to the slimy coat of the slugs will cause them to sicken and die. Lime, or ashes are more effective than common road dirt but also unpleasant to apply. The operation should be repeated as necessary. In parts of trees not easily accessible, a light muslin salt bag filled with the dusting material and attached to a long light pole may be shook over them the dust sifting through the meshes of the cloth. A thing in favor of these substances is that they are non-poisonous, hence may safely be applied at any time.

24. LIQUID HELLEBORE.—One pound of Hellebore powder to twenty-five or thirty gallons of water, finely sprayed over the affected trees or bushes, is one of the best and most easily applied remedies. The Hellebore kills not only by contact but also by being eaten. Hence Professor Lintner finds that the addition of a small quantity of flour to the water gives it greater adhesiveness and worth, over a longer period.

25. KEROSENE EMULSION.—Same as 5.

## BORERS IN APPLE, PEACH, MOUNTAIN ASH, ACACIA, PINE, FIR AND OTHER TREES.

Of Borers there are different species, operating mainly by boring underneath the bark or in the wood of the trees. The one most commonly known is the species which affects fruit trees near the ground. Another kind called the Western or Flat-headed Borer affects the tree more or less throughout the length of its trunk and large limbs, and especially on the southwest or sunny side.

26. The same as Remedy 8, applying the wash during June.

27. COAL TAR PAPER.—Bands of paper thoroughly saturated with coal tar, and eighteen inches wide, tacked around the base of trees troubled by the Root Borer have proved successful.

28. COAL TAR DIRECT.—Mr. Chas. A. Thesher, of Shawnee Co., Kansas, recently wrote to the Prairie Farmer as follows: "I have lost one orchard by the Round-headed Borers. In another orchard I am having better luck, keeping them out with coal tar. I apply with a brush to the tree up 18 inches, after first looking for any borers then in the tree. It has no bad effect. As the tree grew, open spaces of new bark appeared up and down the trunk. Next year I filled these up. That year the bark under the tar loosened more or less, exposing healthy new bark. Next year I scraped off the rough loose scales and put on a new coat. That, or something else, has kept out borers. Any way it don't kill the trees."

CATERPILLAR ON HORSE-CHESTNUT, ELM, FRUIT, AND OTHER TREES, (*Orygia leucostigma*).

The well-known Caterpillar, to which attention is here called, is the larva of the White-marked Tussock Moth, and is shown feeding on a leaf in figure 16. It is more commonly familiar in the cities than elsewhere, owing to its depredations, often severe, on street

and other shade trees, and calling for the common but questionable remedy of cotton bands about the trunks. It is a slender creature, measuring, when full grown, from about three-fourths of an inch to an inch and a quarter in length. In color it presents the rich and varying diversity of cream yellow, (sometimes changing to white), velvety black and brownish spots, stripes and brush-like hairs, with a coral red head. There are also two long plumes of black hair rising from the head and a similar one from the last dorsal joint. Those who are not prejudiced against all Caterpillars on the score of general repulsiveness, must admit that

the tree, the band will prove a positive evil, in preventing migration to other feeding ground. The barriers, too, prevent the mature Caterpillars from descending to the rougher bark of the lower part of the trunk, in the crevices of which they prefer to build their cocoons, and would confine them to the tree, where it would be difficult to discover the egg-clusters, and destroy them.

32. WAR UPON THE ENGLISH SPARROWS.—Our troublesome English Sparrows not only decline to eat this Caterpillar, but by force of numbers and their pugnacious dispositions, they drive away the few birds that would feed upon them. Of such, according to Prof. Lintner, there are but four, namely: the Robin, Baltimore Oriole, Black-billed Cuckoo, and the Yellow-billed Cuckoo, all of which should be cherished.

GRAPE LEAF HOPPER, ERRONEOUSLY CALLED THRIPS, (*Erythronura vitis*)

This active little insect is one of the most troublesome ones known to the Grape grower. It is hardly above an eighth of an inch long; it jumps with great vigor, and dodges around quickly with a sidewise motion when approached. It congregates in great numbers on the underside of the leaves where it sucks up the sap, causing numerous brown spots and often killing the leaves. Of this insect there are

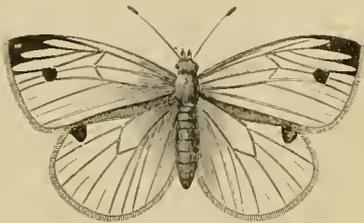


Fig. 12. Butterfly of the Cabbage Worm. Remedies 36 and 37.

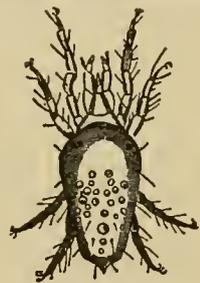


Fig. 13. The Red Spider greatly magnified.

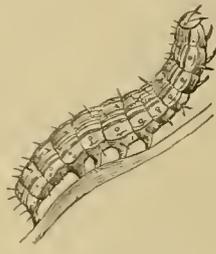


Fig. 14. The Corn or Boll Worm. Remedies 53, 54.

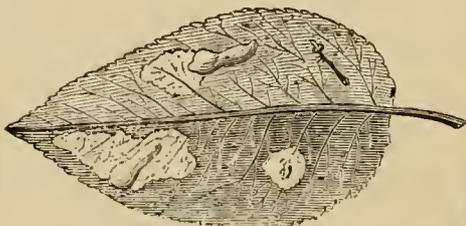


Fig. 15. Slugs at work on a Pear leaf. Remedies 23-25.

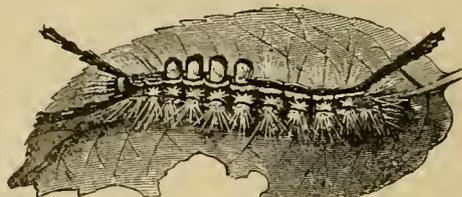


Fig. 16. Caterpillar of the White Tussock Moth. Remedies 29-32.

## GROUP NUMBER TWO OF DESTRUCTIVE INSECTS.—(See page 128.)

this troublesome one on close examination reveals a marked degree of beauty.

29. ARSENICAL POISONS.—Same as 1. "London Purple, as already shown," says Professor Riley, of the Department of Agriculture, in his recent report, "is perhaps preferable to white arsenic or Paris green, in that it is not so liable to burn the leaves, while its color enables one to readily distinguish poisoned from non-poisoned trees. Moreover it is very cheap. From one-quarter to three-quarters of a pound of this substance and three quarts of cheap or damaged flour, to render the mixture adhesive and to lessen the tendency of the poison to burn the leaves, should be used to a barrel of water. The greater quantity of the poison may prove too strong for delicate young trees, and it will be best for general application to make the amount from three-eighths to one-half pound to the barrel. An apparatus for applying can be readily constructed, such as has been used on the grounds of the Department. It should consist of a water tank mounted on a cart and furnished with a strong force pump, operated by one man and furnished with two sets of rubber tubing, each supported by a bamboo extension pole (figure 10, May issue), with a cyclone nozzle at tip. With such an apparatus as this three men could drive along the streets and thoroughly spray two trees simultaneously; while if it were found advisable, four independent tubes and four men to work them could be employed, with a sufficiently powerful pump, and thus expedite the work.

30. DESTRUCTION OF THE *Orygia* EGGS.—This Professor Lintner suggests, may be accomplished to a great extent with moderate labor. During June and later, and especially late in fall and during winter, the egg-masses may be seen as glistening, slightly woven white objects, becoming weather-worn after long exposure, and often occurring in patches of a dozen or more. They may be met on the trunks or larger branches of trees,—a favorite location being where limbs have been cut,—in the corners of angles about fences, under window sills, etc. Childern prove ready collectors for a small reward. Those out of arm's reach can be removed with a scraper, prepared for the purpose. To show how effective may be this means of preventing the Caterpillar's appearance, it may be said that over 700 eggs of these have been counted in a single egg-mass.

31. COTTON BANDS.—The indiscriminate use of these, says our able State Entomologist, Prof. J. A. Lintner, in his last report, must be condemned. They may be of service, and they may be decidedly objectionable, from the fact that the attack, in almost every instance, proceeds from the eggs deposited the preceding year upon the tree. If, therefore, remedy 29 could be applied with the certainty that no egg clusters are upon the tree, then a band applied would prevent any wandering Caterpillars from ascending its trunk. But with the eggs or the young larvæ being already upon

several species, differing only in color.

33. TORCH REMEDY. Pass between the rows with a strodd torch at night, one person to carry the torch and one on each side to slightly shake the trellise for starting them towards the flame. They fly readily to the light and being small are at once destroyed.

34. KEROSENE EMULSION.—Same as 5.

35. CLEANLINESS.—As they pass the winter under leaves, loose bark of the stinks, etc. Cleanliness in removing and burning the leaves in the fall as well as cleaning away all lodging places is of the first importance.

THE CABBAGE WORM OF THE RAPE BUTTERFLY. (*Pieris raphæ*.)

This worm, produced from the eggs of the white Butterfly represented by Fig. 12, is a most injurious pest to Cabbage in most places, and especially in small gardens. They come in two broods, the first Butterflies being seen

in May, the second in August, and the progeny of these cause the most trouble. Either the same or else a very similar worm also devours the Mignonette and some other plants.

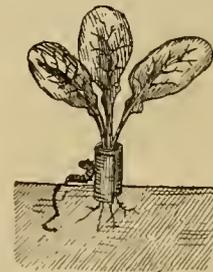


Fig. 17. Cut Worms turned away. Remedy 44.

36. PYRETHRUM—LIQUID FORM.—A teaspoonful of the pure powder to a gallon of water, applying it by sprinkling with a watering pot, or better yet, by force with a pump. A remarkable peculiarity of this powder is that it is not poisonous to human beings, but strangely enough it kills most kinds of insects or spore-breathing creatures. Pains should be taken to procure the article fresh and pure and to keep it in air-tight bottles or boxes, for its active principle is reduced through exposure to the air. This powder is the insect powder of the stores, but in that form apt to be adulterated.

37. PYRETHRUM—DRY FORM. One part of the dry powder mixed with forty parts of water or finely sifted wood ashes, dusting this over the Cabbages. If the mixture is prepared a day or two before using, keeping it in a perfectly tight vessel in the meantime; it will have even a better effect than when used freshly mixed.

**STRIPED BEETLE ON CUCUMBERS, SQUASHES AND MELONS, (*Diabrotica vittata*.)**

This is a well known, small destructive insect which makes its appearance as soon as the leaves begin to expand, and a number of broods are produced during the course of the season. It is to the young plants that the insect is most injurious, and the great secret in dealing with it is to begin the treatment positively in advance of the insect's appearance.

**38. PLASTER OR ASHES, ETC., AND KEROSENE.**—To two quarts of plaster, wood ashes, or flour of bone, add one tablespoonful of kerosene, rubbing the mixture between the hands until the oil is well distributed. Sift or hand sprinkle this over the plants as soon as the first leaves appear, repeating it a few times until all are through the ground, and also later if this be required.

**BLACK SQUASH BUG, (*Anasa tristis* De Geer).**

About the last of June throughout the North, these troublesome bugs appear on Squash-vines, and lay their patches of eggs, which soon develop into troublesome broods. A most striking characteristic of the insect is its offensive odor when handled or crushed. As the eggs are not all laid at one time, the young appear in successive broods.

**39. PLASTER AND KEROSENE.**—Same as 38.

**40. TRAPPING.**—By laying shingles about the hills the bugs, after feeding in the night, may be found collected on the underside of such. Proceeding to the patch early in the morning with a pail containing some kerosene, the shingles should be gently raised and the insects jarred or brushed into the kerosene, returning the shingles again for successive catches later.

**BORERS OF THE SQUASH, MELON, AND PUMPKIN VINE, (*Melitta curcubitæ* Harris.)**

This worm, which seems to be on the increase and in some seasons is very bad, works in the vine mostly near the root, often causing the plant, after it is nearly grown and set with fruit, to suddenly wither and die. Upwards of a hundred borers have been taken from a single vine.

**41. COAL TAR.**—Placing Corn cobs dipped in coal tar among the plants about the first of July is known to greatly lessen the attacks by borers.

**42. CUTTING OUT.**—This, on a small scale, is a successful remedy. In practice one may soon become quite expert in discovering the location of the borers and digging them out with a knife point.

**43. LAYERING.** A Mr. Milton, in the Ohio Farmer, says that the best remedy he has found for this pest is to go through the patch with a hoe when the vines have attained a length of two or three feet and throw a large hoeful of earth on the first or second joint from the hill. The vine will form new roots from this joint, which will enable it to perfect its fruit should the borer kill the old root.

**CUT WORMS, (*Agrotis*, etc.)**

Of these destructive worms, which have the habit of leaving their places of concealment in the soil at night, coming to the surface and cutting off almost every kind of newly set vegetable and flowering plants, there are now known to be many species. Those of the genus *Agrotis*, being mostly thick, greasy-looking Caterpillars of some shade of gray, brown or green, variously marked, are the best known and well to be looked upon with dread.

**44. SHIELDING THE STEM.**—By encircling each plant that is set with a bit of tar paper, or even other paper, as shown in figure 17, its ravages may be prevented. The paper should extend upwards several inches from a point just beneath the surface of the soil.

**45. FALL PLOWING OR DIGGING.**

**46. HUNTING AND KILLING.**—By closely examining the surface of the soil in the morning, in the vicinity of their spoils, their place of retreat may usually be discovered, and the worms be killed.

**THE RED SPIDER, (*Acarus tellarius*.)**

This well known minute insect pest is one that is peculiar to dry and warm conditions of the atmosphere. It is not only troublesome on window and greenhouse plants, but often in dry weather greatly so to garden plants. The insects, generally in large numbers, attack plants when they are in a weakened state, from want of sufficient water or other causes, spinning webs over the under side of the leaves, and sucking out the sap. They are not spiders at all, as may be seen by the greatly magnified

representation of one in figure 13, but belong to the family of mites.

**47. WATER AND MOISTURE.**—These provided with persistence are complete specifics. As the insects exist on the underside of the leaves, the best way to destroy them is by repeated forcible syringing. In the case of pot plants there is some danger of getting too much water to the soil and roots hence the methods of preventing this suggested by figures 18 and 19 are useful. With garden plants there is little danger of excessive moisture at the root from syringing.

**48. SULPHUR.** Where plants are confined, as in a greenhouse, the fumes of sulphur are also employed as a remedy. This, however, must be provided with

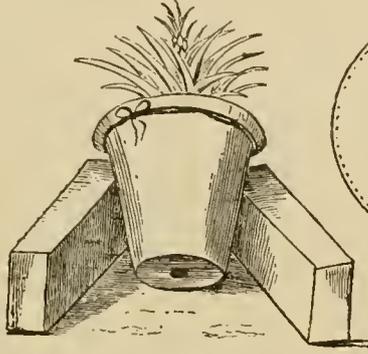


Fig. 18. Plant inclined for Syringing the underside of the leaves.

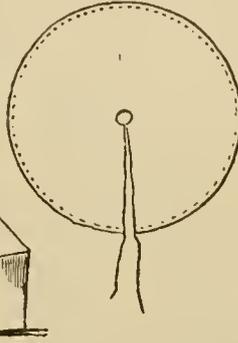


Fig. 19. Cloth Shield having draw string in edge: to be placed over pot.

**TREATING POT PLANTS FOR RED SPIDER. REMEDY 47.**

caution, as excessive fumes will also kill the plants. A safe course is to put flowers of sulphur on tin or iron plates and set in the sun near or under the plants. Applying a wash of sulphur mixed with guano or lime and water to the hot water pipes is another common mode of applying sulphur.

**ANTS, (*Formica*.)**

These are sometimes very troublesome in the garden, not only annoying us by their manner of throwing up hills but also through being destructive to vegetation.

**49. TRAPPING WITH SUNKEN BOTTLE.** The advantage of this course as suggested by one of our readers, L. M. Walling, Mitchell Co., Kansas, and shown in figure 20, is that no injury can possibly result to the roots of adjacent plants, as is the case when such remedies as pouring boiling water or turpentine on the hillocks is practiced. The bottle should be partly filled with sweetened water.

**50. TRAPPING WITH SPONGE.** Obtain pieces of large coarse sponge. Dip them in sweetened water and place on old dishes where the Ants abound. When they are black with Ants throw them into boiling water, afterwards washing them out and renewing the process till the colony is destroyed.

**51. FRESH BONES** By laying these about where Ants are troublesome they will quickly gather on them. When these are black dip in scalding water, repeating the operation.

**52. POISONING.** Place a dish containing a mixture of molasses and Paris green or London purple where the Ants have access to it.

**THE CORN OR BOLL WORM, (*Heliothis armigera*.)**

This pest, so destructive to the Cotton and Corn-fields of the Southern States, has in recent years made its appearance as an injurious insect in the North. Fig. 14 represents the worm at about its ordinary size. It not only attacks growing Corn, devouring the soft kernels in patches, as well as the same when somewhat hardened, but, as Dr. Lintner suggests, it shows itself destructive to many other plants. It bores into the fruit and stems of the Tomato; it eats into the pods of Peas and Beans, and burrows into Squashes, Peppers, Pumpkins, as well as into the stems of Gladiolus, etc. While it is not certain that this worm will go on increasing its ravages throughout the North, it is so destructive wherever it obtains a hold that it is well deserving of consideration here.

**53. HANG-PIECING.** Experience in the South has shown that if the first brood of the caterpillars are collected and destroyed their ravages may be controlled. Their presence can be discovered either when at work on the surface, or else, as in the case of Corn, by the holes eaten into the husks.

**54. ATTRACTING BY ODORS AND DROWNING.** Where the insect occurs abundantly it is very successfully dealt with by attracting the moth to a mixture of

molasses and vinegar. The odor, it is said, will draw them quite a distance, and in their attempts to feed they readily become caught and drown.

**REPLIES TO INQUIRIES.**

**287. Arranging Trees, etc.** In general the growths should for best effect be arranged somewhat in groups, with each class together, and these located mainly towards the margin of the lawn. Some groups of shrubs, plants, etc., as well as of trees if the place is large, might be brought in at intervals along the brook, but these also to be in the main kept towards the sides rather than centrally.

As for vases, while some might prefer to place them on the center of the grass plot, our taste is for keeping this entirely clear of any kind of embellishment, and these should also be set towards the margin.

**303. Rings in Wood Indicating Age.** The statements of the best botanists are uniformly to the effect that as a rule the rings of growth in trees of temperate latitudes are annual rings and indicate the age of the tree. Apparent or partial exceptions to this rule sometimes occur from an interruption to the growth of the tree by a protracted drought followed by liberal rains and a renewed growth of wood, which circumstance might cause an appearance of two poorly defined rings in one season's growth. The same appearance may be produced by the insect defoliation of trees. There are also a few well known instances of certain woody vines and shrubs in which the arrangement of the woody matter is anomalous. The statement which has been made within a few years in contradiction of the common view cannot be said to have much weight. It would require a great many seeming exceptions to break down a rule which is based upon extensive observations on this subject recorded. It is desirable that investigations should be made, and so far as it is possible, through correspondence and other available means, this department will endeavor to obtain information on the subject. COMMISSIONER COLMAN, Dept. of Agriculture, Washington, D. C.

**304. Gooseberries for Profit.** In reply to C. M. W., I would say that all the large handsome Gooseberries sell at from \$3 to \$3.50 per bushel in New York. But such ones are about as scarce a fruit in our market as one can name. Each season in looking over the horticultural papers we see these extra large ones offered for sale, but we see none in our market. Even the common varieties when free from rust and of a fair size sell from \$2 to \$2.50 per bushel. For years past we have been glutted with some little fuzzy trash called Gooseberries, but no one wants them. Even the bakers say they would not pick them over if given to them. This fruit carries well if ventilated. C. W. IDELL, Commission Merchant, New York.

**317. Raspberries Ailing.** The trouble described strongly suggests the Raspberry root borer, *Aegeria rubi* Riley. This insect works in the lower part of the canes and in the roots, often causing the death of the canes. The appearances often indicate that the trouble is due to the cold of winter, when it is really due to the borers. Little can be done towards the destruction of the insects other than laying bare the roots and cutting out the infested portions. If examination should show that the borers are really the cause of the difficulty they can be removed, and if the young canes start vigorously I see no reason why the plantation may not remain, though, of course, no crop can be produced this season. E. S. GORFF, N. Y. Experimental Farm.

**318. Pruning Raspberries.** If he will take a



Fig. 20. Trapping Ants with a Bottle of Sweetened Water. Remedy 48.

ride with us from our place to Palmyra and keep his eyes open he can have this question answered; one plot a party had partly trimmed out last season soon after it was through bearing, but something interfering when this was partly through, he left the other and it was not trimmed till this spring. The part of the plot trimmed last fall has much larger and more stocky plants and will yield this season at least one third more fruit. If any one can prove the contrary, we would like to know. A. M. P.

**344. Apples on Wild Crab.** We see no good reason for such a union. A. M. P.

## A. M. PURDY'S DEPARTMENT.

Post-office address, - - Palmyra, N. Y.

## Briefs.

Keep up a succession of Radishes by repeated sowings.

Nothing better for Cabbages than a good dressing of wood ashes.

Run a wire through cog wheels to make a nice support for running vines.

Huckleberries are not a success on upland. On a low, wet place plant them, not otherwise.

If Strawberries are foul clean them out by working the surface very shallow up to the time of fruiting.

We have saved newly set Sweet Potato plants from frost by drawing a little earth over the plant at night and removing in the morning.

If Pear Blight strikes your trees slit down one side of the limb and body through the bark with a sharp knife, also run over body and limbs with pure linseed oil.

We sow Peas in succession a week apart up to first of June and in that way have this delicious dish daily for weeks. The Champion of England is our favorite for a general crop.

This Spring in furrows where we had planted Red Raspberries we sowed Peas. The soil is strong and the Peas coming off so early we question if they will damage the Raspberries any.

Layering. Lay old wood of Grape-vines under the earth now and you will have a lot of fine vines this fall, and by backing up the Currant and Gooseberry bushes now you can pull off fine roots this fall.

Don't fail to use the London Purple or Paris Green water on Cherries, Plums, Apples and Peaches at once, if not done before. A teaspoonful in a large pail of water is sufficient, and with a small hand pump, such as is advertised, spray the trees thoroughly when leaves are dry.

Raspberries on Mucky Land. We have seen plantations of Black Raspberries on low mucky ground where water stands. Last fall we put our one-horse plows in there and plowed up to the bushes, leaving dead furrows between, and this spring the plants look one hundred per cent better. In planting in low land it is better to plow ground up in "lands," say two rods wide, leaving deep, "dead furrows" between each "land," and thus carrying off surplus water. Black Raspberries will do well on such land.

Nubbin Strawberries. "Why do my Strawberry plants bear so many 'nubbins'?" we are asked. We answer: First. Because they have not been properly fertilized with the varieties necessary for that purpose. If long, continued rains come while in blossom even "perfect" blossoming kinds will not get properly fertilized. Then again care should be taken to so plant as not to have more than five to six rows of pistillate kinds to alternate rows of fertilizing sorts, like Downer, Wilson, Sharpless, Chas. Downing, etc.

To Prevent Heaving of Fall-set Plants. We have found a very good way to prevent Strawberries set in the fall from "heaving" through the winter or spring is to draw or plow a ridge of earth up to them late in the fall, and drawing it away in the spring. Tip Raspberries set in the fall may be protected in the same way, that is, by making a small bank of earth over each plant, and drawing it away in the spring. Tip Raspberries set in the fall and thus cared for make a third more growth the first season than if set the following spring.

Asparagus Culture. It is so strange that Asparagus is not more grown and used. One soon learns to like it as well as Peas. It can be grown from seed. The seed should be placed in a tin pail and boiling hot water poured upon it and let it stand therein (not keeping water hot) until it begins to smell and sprout, then pour off the water and mix the seed with dry sand, when it can be easily sown and will sprout very soon. Plants should be set a foot apart in row, and rows two feet apart, for garden use, or three feet for market.

The Same Old Story. A party living in a Southern town writes us when he first went there he could sell but little fruit in the town where he is, but that each year he sells more and the demand is larger. So it is everywhere. Grow the fruit and you will soon make a demand for it. We remember well when a crate or two of Strawberries would supply our native village at even 6 to 8 cents per quart, but now it takes ten times that quantity. People soon learn that fruit and sugar is the most healthy as well as the cheapest food for the table.

Gains from Fall Plowing. It is wonderful what a difference it makes in many respects by plowing ground in the fall and then again in the spring. First, by killing out and putting back weeds. Second, by making the soil more porous and loamy and more easily worked. Third, by killing out grubs and vermin of different kinds. Fourth, by opening the soil so that snow and rain work into ground instead of running off; and fifth by putting back weeds. We shall hereafter try and do all the plowing we can in the fall, then again in the spring.

Distance of Fertilizing Sorts. We are often asked: "How far will it do to set pistillate sorts of Strawberries away from fertilizing sorts to get the former properly fertilized?" This is a matter in which really the weather has much to do with distance and results. If it is dry and there is considerable wind in blossoming season they will fertilize well 4 to 6 rods apart; but should the season at blossoming time be wet they must be nearer. It is best to alternate, say 5 to 8 rows of one and the same of the other. Red Raspberries and Blackberries the same.

Seed Sowing. Work may be lessened in all sowed garden seeds, like Onions, Carrots, Beets, etc., by spitting with the back of the hoe the surface of the soil over the seed, and then passing over the rows, just before the seed germinates and comes up, with a fine tooth-iron rake and raking the surface shallow but thoroughly. This kills the little weeds that were starting and puts the plants ahead of them a week to ten days, and saves finger work and back ache. A trifle of wood ashes or superphosphate scattered on the surface over the seeds just before they come up is very beneficial.

Old Strawberry Plants Transplanted. It may not be generally known that many kinds of Strawberries will form more runners and plants the first season from old plants transplanted than from new. Some kinds we have run so low on that we have taken up all the old plants from an old bed and set them thickly in new beds, to make allowances for dying out. In fact we have had as fine fruiting plantations from a bed set with old plants as any we have grown. To set them well we plough a furrow with a one-horse plow, place the plants against the land side of the furrow and draw in earth against them. Try it.

Setting Raspberries in Late Spring. We have the best success in setting both Red and Black Raspberries as late as June in this section, by having ground all prepared and holes dug in furrows ploughed, and right after a hard rain that had soaked down to the roots taken up green young plants of the same season's growth, keeping roots from the sun and cutting tops back half to two-thirds. In fact we have had good success in every month from June to September with such, and too with setting old plants. Tip roots of Black Raspberries when new growth has not got over one foot high, and new growth cut back half way, do well set thus.

New Set Trees and Drought. More trees die from neglect than from any other cause, and the chief neglect is in not mulching well when set, or else keeping surface well worked around them through dry spells. When a few trees are set in the door-yard we find a heavy mulch necessary, especially if watered through the dry season. Watering without mulching in times of drought does more harm than good, unless the ground is thoroughly soaked just at evening. The mulch retains moisture near surface and prevents leaking of the surface. If young orchards are watered in dry weather see to it that the surface when water is put on is shaded with mulch.

From Old to New. A correspondent enquires if he can change his Black Raspberry plantation from an old to a new one? Yes, easily; layer in August or September half way between the old plants in the row a strong tip of the new growth, and when this gets well started dig out the old plants. Another way: plant Blackberries half way between the Raspberries in the row, and when these get a year old clean out the Raspberries, thus leaving a Blackberry plantation nicely started. Another correspondent asks if it will do to plant anything the first year or two among Raspberries newly set? Yes, we put a row of Strawberries half way between, let them bear one crop then plough them under.

Mixed husbandry in gardening and fruit growing is necessary for success. For years we have relied largely upon our berry crop as our chief support, but within three or four years have found it well to grow a good and well assorted supply of vegetables, including Asparagus and Pie-plant. We usually keep two to three wagons on the road peddling and find that even when we are selling berries it is easy to work in a few bunches of Radishes, Beets, Lettuce, Onions, as also Peas,

String Beans, Cucumbers, Tomatoes, etc. And too many times when pickers cannot be kept going on gathering Strawberries they like to turn in and pick Peas and Beans. Currants and Gooseberries are good selling fruits and work in well with Strawberries and Raspberries.

A New Idea in Growing Raspberries. We shall try it any how. We have a plantation of Greggs that have been fruiting for some seven or eight years. We have this spring cut them off close to the ground and plowed up to them and thrown a forkful of manure onto each hill. Half way between we have put in a row of corn, as we have to fill up all such places for feed for our six horses and three cows. We believe by thorough cultivation we shall get a full growth of canes this season, and by nipping off when only two feet high and nipping side branches when not over a foot long, we can make splendid bushes for planting next season. We have often noticed hills where the last year's canes got broken off would send up strong young canes and yield splendidly the following season.

## GIRDLING FRUIT TREES.

Mr. Spaulding, of Illinois, practices girdling in his orchards with great success. When his Apple trees are six years old, he takes off a narrow strip—say half-inch wide—of the very outer bark, all the way around the tree; which he claims, sets them to at once bearing a full crop of fruit. He has thus far found no disastrous results from the practice.

The above is from the Geauga Bulletin. In this practice it must be observed that it is only the outer bark that is to be removed. If to be followed up we would advise thick planting of the trees, say not over 12 feet apart each way, and girdle only every third tree or row each way, from the time they are five to six years transplanted until limbs grow together a little and ground is shaded, and then cut out those entirely that have been girdled, and then girdle one of the rows left each way for three or four years, and then take these out, leaving at last the trees 36 feet apart each way.

Another way would be to set them one rod apart each way and girdle first every other row till tops of trees grow together, and then cut out this row, and afterwards for four or five years girdle every other tree in rows left. Then these should be cut out, leaving trees 32 feet apart. We are inclined to think this constant or yearly girdling must shorten the lives of trees; hence this advice.

Younger orchards can be set out to come on as the old orchards are thus cut away. Persons having trees "that blossom but never bear" should try girdling.

## WALKS AND JOTTINGS ABOUT THE FRUIT FARM.

THE DEMAND for Plum trees is very heavy from all over the country; showing that growers see their value and plant accordingly.

AS PEACHES are so liable to winter kill, or crop be killed by late spring frost, we are setting largely of the hardy kinds of Blackberries, to take the place of Peaches; this fruit being in great demand.

A LITTLE ITEM here may be of value to many: In setting plants we draw a large line straight and walk on it leaving a plain mark to set by. This is much better than setting by a line—especially on a windy day.

WE PRACTICE mulching heavily with forest leaves all cuttings that we set out, and leaving them thus. A lot of two-eye green Currants that we transplanted from our green houses this spring we covered with hay for a few days after setting.

WE ARE SETTING Raspberries—both red and black—thicker in the rows than formerly; so as to make a hedge row, and the first fruiting season get a very good paying crop from the same. Our plan is to set rows six feet apart and a row of corn or potatoes between.

WE USUALLY put off setting Red Raspberries till the last of May and first of June, and even up to the first of July, and take up the new—this spring's growth—on damp, cloudy days. Keeping roots from drying out, and set as soon as possible after digging and have good success.

STRAWBERRIES are very late with us this season—shall not pick any ripe fruit before June 15th to 20th. Last year the crop was very late South and early here; so that the seasons come nearer together

North and South than has been known for years, making the Southern crop bring less; as also Northern berries.

THAT THEORY that is going the rounds that pistillate Strawberries are changed in appearance and flavor by the sort they are fertilized with is only a theory originating in the mind of a theorist. Soil and location will change the flavor and appearance of fruit. We remember two well-known horticulturists eating Concord Grapes from our gravelly south side-hill vineyard, and they could hardly believe they were Concord—they were so sweet and delicious. Theirs grew on heavy clay soil.

THE NEW PROCESS of knocking off black and red Raspberries may make a revolution in Raspberry growing. Henceforth the paying two cents per quart for picking (which is too much and has been a harvest to the pickers) has been used up the profits to the growers—we shall try it this year and report. Of course they cannot be knocked off for marketing fruits, but for evaporating purposes it does not matter how many sticks and leaves are among them, as these are easily cleaned out by passing the fruit through a fanning mill.

### Condensed Cleanings.

**Copperas for Grape Rot.** I believe that copperas is a preventive of grape rot. In a vineyard in Ohio, where a quart to the square rod has been sown in July for three years, there has been no rot, while other Grapes in the same neighborhood have rotted more or less every year. They formerly rotted here too.—M. CRAWFORD, in *Wine and Fruit Growing*.

The Field and Farm says: Experience has proven that nuts may be raised successfully in many of the Northern States, while the climate of the more Southern States opens up an avenue for large revenues from Nut culture. Our Colorado farmers have caught on to this idea. Farmer G. W. Webster, of Hygiene, in Boulder County, has a grove of cultivated Walnut trees but a little more than a decade old, but from which he harvested a nut crop last season that brought him a net profit of five and more dollars a tree. In this country a Black Walnut will bear fruit in five or six years after planting.

**New Method of Strawberry Propagation.** A Tuscarawas County, Ohio, fruit grower adopts the following method for rapidly increasing his stock of plants of high-priced varieties. As runners get ready to root the help pass along the rows, cut off all the young tips and drop them into a pail of water. The cuttings are then planted in rows 3½ feet by 18 inches, watered and shaded for a day or two, when they grow more readily than young plants with tender milky roots. Half an acre planted in this way last year was in fruiting this year, the best of any out of four acres planted last year. Another method is to place the plants close together in a cold frame, shade and water a few days, when they will at once make roots and become fit for summer planting. New tips will be rapidly thrown out from the parent plants, which in the same way can be cut into water and bedded out from time to time with a wonderful increase. From 1200 to 1500 plants have been propagated from one stock plant in a single season. This same method is also being tested on Raspberries that root from the tip with promise, as there need be no loss from drought or by being blown away by the winds. The tips should be cut when they begin to ripen by turning a reddish brown at the ends. After these are cut off the plants will oftentimes throw out lateral tips for field propagation later.—J. H. HALE, in *Farm and Home*.

**Lima Beans Without Poles.** Two stout, hardwood stakes about four feet long are driven into the ground at an angle of 60 degrees, leaving one foot above ground. These stakes are placed 300 to 400 feet apart. Three or four feet from the stakes two poles are raised; these are crossed and tied together near the top, at about seven feet above the ground, with a piece of small wire. The wire cable is then fastened to the stake and passed over the crotch of the poles. Twisted wire is best for this purpose, as the expansion of heat and cold

affects only the twist and not the metal. The cable is carried to one of the stakes and fastened with a staple; two other poles are then placed near this stake with crotch under the cable and pushed up to pull the wire as tight as a bowstring. A No. 14 wire is then stretched at the bottom from one stake to the other and intermediate supports are placed at intervals. Cords can then be tied between the upper and lower wires, and the trellis is ready. I like the lower cable composed of No. 16 wires. Common tying twine can be used to form the net. The trellis should be run in the direction of prevailing winds. The intermediate supports should incline a little towards each other. I prefer to plant the beans four to five inches apart. This



PLANT OF DIPLADENIA TRAINED OVER TRELLISE, allows a share for the grubs. With a good wheel hoe the vines can easily be kept clear of weeds.—Mr. WM. HEWITT, in the *Rural New Yorker*.

**Clover as a Fertilizer.** It has long been a mystery how clover was such a fertilizer from merely growing on the soil. It was evident that the plant drew the elements of fertility from some source, but where from? It is now said that science has solved the problem. It is demonstrated that all leguminous plants, shrubs or trees, act as nitrogenous fertilizers, and among these clover is one of the best. Dr. Voelker, a distinguished German scholar, by a series of the most exhaustive analyses of soils and plants, has discovered and established the important fact that an immense amount of nitrogenous earth food accumulates in the soil during the growth of clover, amounting, including that in the roots and tops of the clover, as well as that conducted to the soil, to the almost incredible volume of 3½ tons of nitrogen per acre, "equal to 4½ tons of ammonia." This is important, and this learned scholar announces it as an established fact, backed by his reputation as a scholar. And this is why the close observing farmer has discovered that while some crops are exhaustive, others are recuperative. Clover, Vetch, Peas, Trefoil, etc., of plants, and among the trees of the forest are the Walnut, Logwood, Rosewood, etc., and among shrubs, the Cercis, Acacia, etc., are all leguminous, and are ever conducting nitrogenous food to the earth. Among us it has long been known that Walnut only grows on the richest soil, when the fact is now elicited that it is the tree which produces the rich soil, and not particularly the rich soil which produces the tree.—Cor. *American Cultivator*.

### The Dipladenia.

This is a genus of handsome summer flowering plants, all of which are climbers. The species make excellent specimens for the decoration of the hot house or for exhibition purposes. If for exhibition, they should be trained upon

wire trellises, as shown in our engraving, but the young growths should be allowed to grow upon strings up the rafters of the house, and a short time before the blooms open they should be taken down, and fixed upon the trellis.

Dipladenias will be found to succeed admirably under the following treatment: Pot them in a mixture of turfy loam and peat, in equal proportions, with the addition of a good portion of silver sand; good drainage is also of particular importance with these plants. They require a moist atmosphere, and a bottom heat ranging from 80° to 90°, together with full exposure to the sun's light. But although we recommend bottom heat for these plants, we by no means consider it desirable that they should be plunged into it; rather let them stand over this heat, and keep the atmosphere moist by sprinkling the stages and paths with water.

Towards the end of summer, after they have done flowering and have finished their growth, remove them to a cooler house, and fully expose them to sunlight, to ripen the wood. The temperature they enjoy is in summer from 65° to 85°, with a moderate quantity of water, which must be applied with great care. In winter very little water will be required, and the temperature should be reduced to 60°-65°; from this, if they are wanted for exhibiting in May or June, they must be brought and placed in heat again about the beginning of January.

Among the more valuable Dipladenias may be mentioned the following: *D. amabilis*, one of the finest of the family, and a garden variety. The flowers are borne in clusters, and are very large, of a rosy crimson color, the lobes of the flower

being very round and stiff. It will continue blooming from May to September, and makes a fine exhibition plant.

*D. amana*.—This in habit of growth is even superior in some respects to *D. amabilis*. The lobes of the flowers are round, and do not reflex, and it is a great bloomer. The color is a deep rose, with orange-yellow throat.

*D. Bolivense*.—A plant of less robust habit than the preceding, and differing from all the other known members of the genus in the color of its flowers, which are pure white with a lemon-colored throat; it is an abundant bloomer.

*D. insignis*.—A superb variety of garden origin; the leaves are oblong-acuminate, dark green on the upper side, paler below; the flowers are large and of great substance; the lobes of the limb are bright rosy carmine in color, the throat slightly darker, and yellow at the base; whilst the tube outside is pure white.

*D. Williamsii*.—This fine garden variety is thoroughly distinct from any of the previously named kinds; it is remarkably free, both in habit of growth and flower. The leaves are stout, oblong, tapering to a sharp point, and upwards of six inches long, by about an inch in breadth at the widest part. The flowers are produced in large clusters in the greatest abundance, indeed a marked feature of this variety is the great length to which the spike reaches, and consequently the greater quantity of blooms; the flowers are large and of good substance, measuring upwards of four inches across the limb; the lobes are round and full; the color is delicate soft pink, whilst that of the throat is deep warm rose. As this combination of colors is not found in any other kind it renders it a valuable addition to our stove climbers, and also to exhibition plants.

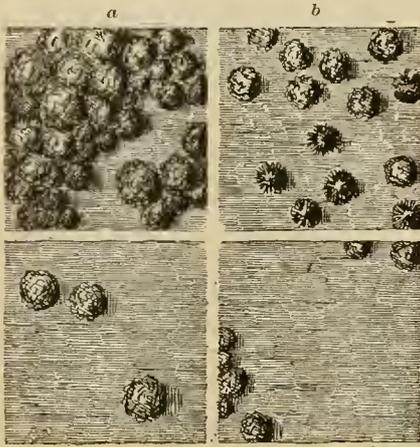
THE COMPLETE GARDEN.\*

VI.

BY A WELL-KNOWN HORTICULTURIST.

(Continued from page 133.)

4. STRENGTH OF FEATURES. Some materials and some methods of arranging it is important early to observe are more freely admissible for ornamental effect in gardens than others. The employment of a good grass sward, for one thing, can hardly be overdone;



a. The heavy group. b. The light open group. c. Isolated plantings. d. The open central area.

FIGS. 9-12. VARIOUS RELATIONS OF TREES, ETC. TO THE LAWN.

however extensive the area, even though bare of all other growths (a thing never desirable), yet it cannot outrightly offend the eye. What is true of grass is also in a lesser degree true of shrubs and trees naturally arranged in groups, plants seated upon the grass, water, rocks, etc. These, in places and in a manner in which they are not in a general way inappropriate, may be brought in very freely without danger of marring the effect.

In the line of embellishments, which although most useful, and in many cases positively necessary, but the use of which may easily be overdone are to be mentioned:

- Trees and shrubs arranged in formal lines.
- Trees and shrubs clipped into unnatural shapes.
- Hedges and edgings.
- Flowers and plants geometrically arranged.
- Formal terraces and slopes.
- Statuary, fountains, vases, trellises, etc.
- Arbors and seats.
- Ornamental walks, drives, areas, avenues.

These might not inappropriately be called adornments in gardening, occupying a place similar to jewels and like adornments in dress. They are very desirable in their place, but used to excess and their power to gratify is at once greatly lessened.

5. DIVERSITY OF ARRANGEMENT. The grass sward serving as the ground work of the pleasure ground, trees and shrubs naturally occupy the position of permanent furnishings. Looking upon these together as constituting the major features of ornamental gardening, it should be observed that in all the best specimens of landscape and garden effects they bear relation to one another somewhat as follows, and illustrated in figures 9-12: First, trees and shrubs in the form of thick groups or masses, as in a; second, the same in somewhat open groups as in b, and of which a pleasant grass carpeted grove affords a type; third, trees, shrubs, etc., standing singly, in pairs or as small groups, more or less isolated (c); fourth, an absence of trees or other natural embellishments besides grass, as in an open meadow or as shown centrally at d, in the figure referred to. To arrange a garden for displaying all of these distinct qualities, each one in its appropriate place, and in fair proportion, is always desirable. Let it be borne in mind that it is the attempt to make a handsome garden by unduly enlarging upon any one of these, at the expense

of the others that leads to faulty work. More as to these principles further on.

6. THE OPEN AREA. As the grassy plot stands first in importance among ornamental garden features, so therefore the open area shown at d, figures 9-12, and which best provides for this, is entitled to leading consideration in arrangement. Without its presence in a marked degree in one or more parts of the garden, that garden must unavoidably present a more or less confused effect to the eye. It will be devoid of a natural seat for the trees and other features, and through which openness they can be viewed to advantage. It is the presence of this condition more than any other which contributes that air of breadth and repose, which is one of the most enjoyable qualities of a good garden. This open area should be given a somewhat central location as related either to the entire garden or to one or more of its main parts, and varying in size proportionally with the part in which it is located. Even so much as a vase or flower bed should never occupy a position centrally in the open area. Receding from this area in all suitable directions, the other features of figures 9-12 may find their appropriate location.

7. ON GROUPING OR MASSING TREES, ETC. Next to the open area in importance stands the group in its endless modifications as a means of providing garden beauty. It has well been called the keystone of natural, modern garden arrangement. It is the very opposite of the stiff and formal arrangement of trees, etc., in rows peculiar to the Dutch school of gardening, and of which too many illustrations in some form exist even to the present day. No matter how few or many trees or shrubs are to be used in embellishing a place, they will prove vastly more effective in every way when arranged naturally in groups than when brought in as if one were setting out the fruit garden. This we attempt to show by way of contrast in figures 13 and 14, which represent the front grounds of the same place, each planned to use about the same number of trees and shrubs, but these arranged entirely different as to style. Observe the comparatively open and uncramped effect of figure 14; here everything is arranged in an easy, graceful style, at once restful and satisfactory to the eye, and making the place what it should be, a true pleasure ground.

Having explained that the open areas of a place should occupy central places, it naturally follows that the groups should be given position towards the boundaries. The plantations consti-

For excluding prevailing winds or the sight of unpleasing objects it should be made a study to have the marginal groups heavier in the direction of these.

Where there are undulations of the surface, the elevations and their sides in part should be clothed with groups of trees or shrubs, while all low places should, as a general thing, be devoted to grass if not devoted to water.

The inner bends or bays of walks and drives (See figures 18-20) are appropriate points at

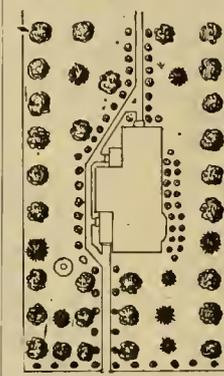


Fig. 13. Trees, Shrubs, Walks, etc., stiffly arranged in straight lines.

which to introduce groups of trees, shrubs, rocks, etc., as providing an apparent cause for the desired bend.

8. ON CURVES. Graceful curves in walks, drives, borders, plantation margins, etc., possess marked value in producing ornamental effects in grounds, as they do in every other kind of embellishments. Hence the old saying, curves for beauty, straight lines for use. Still it is not to be supposed that curves in order to

be beautiful must necessarily be so positive or indirect as to be inconvenient of use in gardening. When so made, as indeed they too often are, it is not that they are thus either more perfect as curves or more beautiful, the reverse being usually the case. In order to convey correct ideas on this important matter I present in figures 15-20 numerous views of garden curves both good and bad, mostly taken from actual examples that have fallen under my eye. Fig. 15 represents a very common as it is a very faulty style of curve, namely the serpent-like curve. The objections to it are its numerous uniform and useless bends, robbing it of character, and its deviations so slight from a straight line that a carriage following its course would be sure to leave the inner bends, as at A, unused, while shaving the opposite projections, as at B. Another fault is its indirectness, for if the middle of it was strictly to be followed as by one on foot the distance from end to end would be considerably longer than a straight walk, but without compensation of any kind for the increased length. In contrast with this and to illustrate the true princi-

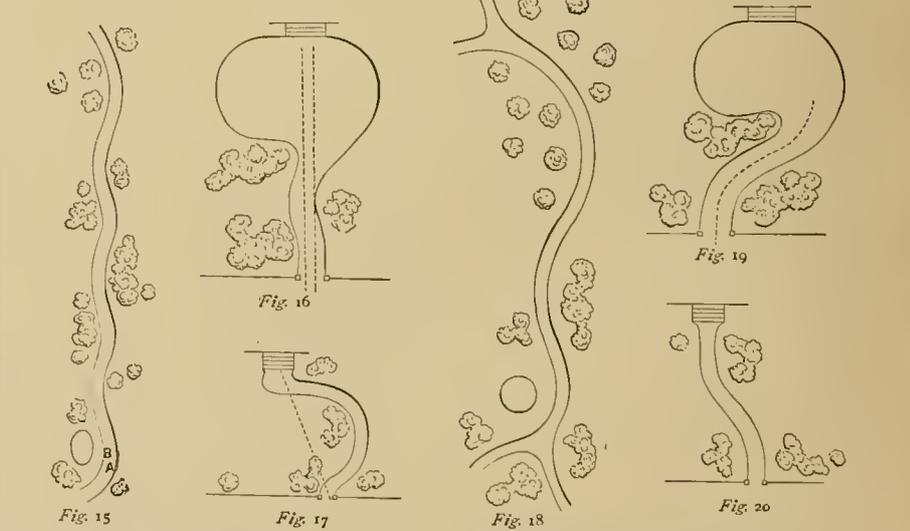


Fig. 15. The faultry Serpentine Curve. Fig. 16. An Approach in which the Curves are too slight. Fig. 17. An Entrance Walk with too much sweep either for looks or utility. Fig. 18. Curves in Walks as they should be. Fig. 19. Fig. 16 improved: Short bold curves. Fig. 20. How Fig. 17 may be improved to be simple, direct and handsome.

SOME CURVES, GOOD AND BAD, ILLUSTRATED.

tuting these should as a rule be the heaviest at the extreme outside, employing more or less Evergreens here, and then have them break or lighten up towards the central plots, employing deciduous kinds more largely here.

ple figure 18 is presented. Here for a similar distance there are not only less bends but these vary much in their length, and this is desirable. There can be no objection to almost any number of bends in a walk or drive provided the

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one point is observed, as in this instance, of having some of the curves possessed of great boldness, and the others subordinate as to this.

The fault conspicuous in the front approach of figure 16, is that with the curve not being very decided, there is a constant tendency of vehicles, as well as of pedestrians, to follow a curve like that indicated by the dotted lines, instead of along the curve as was designed. Perhaps the short distance that lies between the highway and the residence was the ostensible cause for the insufficient curves. But in figure 19 is shown how the same case is susceptible of treatment for having the curve bold and continuous, and with the effect of leading the user of the drive to follow a line very nearly as indicated by the dotted line. For here, unlike in figure 16, the objective point—the door—not being in view from the gateway, and the curves being easy and natural, there would be a tendency instead of steering by the shortest course towards the door to have in mind keeping only the main course.

Figure 17, on the other hand, represents a front walk some time since met by the writer, in which the opposite extreme of a bend too long and indirect for either beauty or utility was adopted. Here, no matter how the place was to be planted, there would be a natural inclination, especially on the part of children, delivery boys, and dogs, to cut across the lawn, somewhat as shown by the dotted line. Figure 20 shows how the curved walk sought could be had simple, direct and in every way pleasing.

#### Planning Before you Plant.

N. ROBERTSON, SUPT. GOVT. GROUNDS, OTTAWA, CANADA.

Laying the foundation, no doubt, is the material point in garden work. Then nature, aided by culture, has to do the rest, and under the most favorable circumstances several years must elapse before the work can be matured.

A man may build a house, and if he finds it don't suit his wants he can, in a short space of time, pull it down or so alter it that no traces of his mistake may be seen. But in planting the mistakes made may take years to remedy, and may be an eyesore for years to come.

In the decoration of grounds how often is planting done a tree here and there without the slightest consideration or idea of suitable variety and harmony. No work should be more carefully considered than this, and none better deserves being done after a plan.

One should never plant even a flower bed without first maturing a plan, drawing it to a scale to enable the better allotting of the space to the plants. In such work I color the plans to be nearly like the plants to be used. I also always

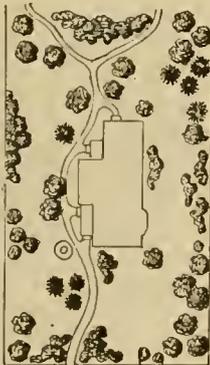


Fig. 14. Same as Fig. 13, but with the growths aim to have some sur-grouped in a more free and natural style.

of kinds used for fear of any accident or misses after they are planted. This work should be done in good season. Men have been employed to get out designs for beds without any knowledge of what they are to be carried out with. But this is the material point. It is an easy matter to design when you are not held by the nature of things you have to construct with. But to do so is quite another thing.

Concerning the use of novelties, I would say no matter what they may be—trees, shrubs or flowers—all should be tested in the position near where they are to be grown before attempting any permanent work with them. When I speak of novelties, I mean novelties, not things that are well known to every one.

In planting I generally look about the neighborhood to see what succeeds the most natur-

ally here. This gives me an idea of what will be most likely to succeed. For instance: If I find hard wooded trees, soft or evergreens, then I know at once that such kinds will succeed.

#### The Cactus Dahlias.

Within the last half dozen years the name Cactus Dahlia has appeared in the florists' catalogues. Of this class there are two sorts described, namely, Dahlia Constance or Ariel, which is by no means a new variety but one rarely cultivated, and having elegantly shaped dead-white flowers, and the Red Cactus Dahlia *D. Juarezii*, an engraving of which is here-with presented.

It is the last named sort which won for this style the appropriate name of Cactus Dahlia. This is due to the fact that the flowers of *D. Juarezii*, aside from being of a brilliant scarlet color, suggestive of Cactus blooms, are as to their parts flat and pointed, quite unlike those of



THE RED CACTUS DAHLIA (*Dahlia Juarezii*).

the ordinary garden varieties. The floral parts are also never cupped and being of varying lengths and overlapping each other, give to the heads an irregular appearance, wholly unusual to the common Dahlia, which if it be specially noted for any one thing, it is that of excessive monotony of form throughout.

The kind referred to originated under cultivation in Mexico, the home of the Dahlia, although as usual in such things, it reached our own gardens by way of Europe. It is remarkably distinct in character; whether it shall finally be conceded that it is a species or merely a variety has not yet, it seems, been decided. The foliage and habit of the plant are good; the tubers, like those of the older sorts, are decidedly tender, requiring to be preserved through the winter like Cannas or the common Potato.

The White Constance, although somewhat dissimilar from the Jaurezii, is yet, aside from the pure white color, very different from the ordinary double white Dahlia. Its petals are singularly creased down the center, a trait entitling it to be classed as a Cactus. The flowers also are of elegant shape and freely produced, being very useful for bouquets and decorations.

These new Dahlias may now be had of the leading dealers in plants and bulbs, and at prices no higher than those for the best named varieties of the common type.

#### On the Gathering and Care of Flower Seeds.

Many persons gather seeds for the season all on one day and that far along in the season. I commence with the first flower of spring, and keep it up all through the season.

I usually carry in my pocket a small ball of twine, and when I see an extra fine flower from which I would like seed, I tie a bit of twine around the stem, and when among my flowers I am on the lookout for the ripened seeds of such. These I gather and tie up in the corner

of my handkerchief or in cheesecloth, narrowly hemmed on purpose, which I provide expressly to gather seeds in, they taking up but little room when carried in the pocket.

Phlox and Pansy seeds must be covered with something to admit air, yet retain the seeds, else they will fly away while curing. Morning Glory, Phlox and other kinds with heavy seeds and light shells can be easily cleaned by putting in a cup, shaking this and blowing into

it lightly or hard, according to the kind of seeds. Fine seeds with coarse husks can easily be separated by sifting; and still others, like Scabiosa and Calendula, require no cleaning.

All seeds must be carefully cured before storing away, and even then should not be closely packed into bags. Choose a bag considerably larger than you think will be needed for the amount of seeds, label it plainly with the name of the flower, so there need be no guesswork as to its contents.

For seed bags take bleached muslin, tear off strips from 2 to 4 inches wide. With the narrowest hemmer on the sewing machine hem them on one edge; cut the 2 inch strips into 3 inch pieces, 3 into 4, and 4 into 6, sew these into bags, leaving the hem outside. Cut pieces of twine, such as druggists use, into 3 or 4 inch pieces, tie a knot in each end, sew one fast by the middle to each bag near the top, and you are ready for the seeds as they are cleaned.

To me seed gathering is one of the pleasures of floriculture; quite as delightful as any other part, and this is especially so to one who saves more than are needed for her own use, that she may be liberal to others.

Is there not in each one's circle of acquaintance some child, invalid or poor person who would be pleased to have a pretty flower bed if only they had some seeds? If so, then apportion into little paper bags, writing the name of the seeds plainly on each, and send them to such. "A good deal of trouble" do you say? A little pleasant recreation if one enters into the spirit of it rightly. ELDER'S WIFE.

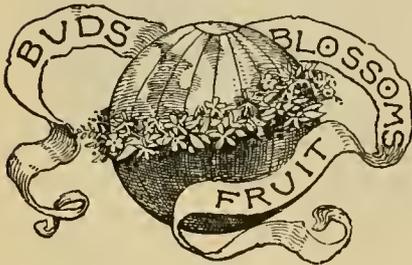
324. Wire-Worm in Vine Border. The wire-worms were without doubt introduced into the border with the turf; they can be caught by burying near the surface pieces of Carrot or Potato, which may be run through with a stick (to save trouble in search) and examined daily. Applications of soot and lime are distasteful to them, and could be given over the roots after removing the upper layer of soil, which should be charred to destroy the worms, and replaced with clean soil, etc. AMOS PARDEE.

### The Message of the Roses.

O royal Rose, so full and bright,  
That blushes in the garden fair,  
Bathed in the sunshine's warmest light,  
And filled with perfume rich and rare;  
Thou art the queen, the floral queen,  
Of all beneath the warm, blue sky,  
And through the summer hours serene  
Thou charm'st the beauty-seeking eye.  
Alas! that beauty such as thine  
Must perish in a summer day,  
And all the fairest flowers that shine  
Are born to blush and pass away!  
If all the beautiful here must die  
That shines like thee with royal pride,  
What gems of splendor must there lie  
In endless life beyond the tide!  
—Wm. J. Johnson, in *Youth's Companion*.

What do I see?  
An empty nest in the Apple tree,  
Where the Mother-Robin is calling and crying  
To her mate on the hough above replying,  
Wild for the touch of a downy breast  
In the vacant nest!  
Ah, woe is me  
For the mired nest in the Apple-tree!  
Could the little robber have known the sorrow  
Left to linger for many a morrow,  
Would he have come on the cruel quest  
That spoiled the nest  
—Kate Putnam Osgood, in *Companion*.

Sweet, single Rose of the woodland wild,  
I can see straight to thy heart.  
Rose of the garden, by man beguiled,  
Thou hast grown double in art.



Six papers in one.

To be pitted—Cherries.

A sharp hoe for good service.

Many June subscriptions wanted.

Destroy suckers on budded Roses.

Well done is twice done in weeding.

Sow seeds of perennials as they ripen.

A window box of plants all may have.

Asters are gross feeders; remember that.

The healthier the leaves the finer the fruit.

In pruning always cut slightly above a bud.

The flower stalk of Rhubarb is to be cut away.

A Mock Orange bush in this city is sixteen feet high.

Keep to the windward of the dust poisons when applying.

Buffalo's six-hundred acre park is a charming place now.

A smart workman should dibble out his 7,000 to 9,000 plants a day.

Flower growing about the railroad stations is pleasing on the increase.

Lilies, when throwing up their flower spikes, can hardly have too much water.

Unlike the true Lilies the so-called Day Lilies (*Hemerocallis*) close at night.

We know of one shady lawn that is covered with the true single English Daisies.

Roadside Daisies go to waste until the city belles arrive, and then they—go to waist.

Thinning fruit should be commenced as soon as it becomes visible on overloaded trees.

To have a beautiful Rose in your garden you must have a beautiful Rose in your heart.

A rule for resetting Lilies—do so after the leaves are dead, a season varying with the kinds.

When we plant a climbing Rose we prune almost to the ground. This could yet be done. J. & G.

Strawberry Mildew. A writer in *Gardening Illustrated* says he has found sulphate of potassium an efficient remedy.

Grape-vines that mildew badly should not be bothered with; plant the space with something that will thrive with moderate care.

The difference between one garden's thrifty plants and trees and another's sickly unproductive ones, is often one of manure pile.

Away with fresh cut flowers once they are faded; stale blossoms in a vase and the water putrid are as unhealthy as they are loathsome.

If a tree leans, prevent sun-scald to the exposed side of the trunk by clapping on some lath, held at about half an inch apart by twisted cross wires.

**Serious Floriculture.** Waiting through to dawn for a Night-blooming Cereus to open, only to find your anticipations were dated one day ahead.

Suppose you save and sow some Strawberry seed. Someone has yet got to originate a genuine rival of the Wilson's Albany, and perhaps it is to be a reader of these lines.

Where barbed wire is objectionable for fences the use of hoop iron answers very well on a small scale. It should be well painted, or better yet, be galvanized. A. C. K.

Let us stop talking of overproduction until the distribution of fruits is so perfect that all, in city, village and country, who would do so, can buy at a fair price. Not there yet.

**Salt as a Fertilizer.** According to a report of the N. Y. Experimental Station salt possesses little value for Beets; one ton to the acre gave only 3 per cent increase over those on unsalted ground.

**Pear Blight.** E. Moody of Lockport, N. Y., tells the N. Y. World that he has used a wash of lime and sulphur upon his fruit trees and has had no blight for years. Others in his neighborhood are troubled with blight.

**Don't have to Climb.** I prune my Peaches very low, so the branches start within a foot of the ground. Then I can trim, thin the green fruit, gather the ripe, almost all from the ground. CHAS. J. WEEKS.

A great increase of subscribers and renewals is what is needed to make a yet better paper of POPULAR GARDENING AND FRUIT GROWING. Such improvements must come, and you, reader, are to help in the matter.

Welcome! say all the family to the horticulturists of the Ohio Horticulturist, who since the last month's "Buds" department was printed, have joined the ranks of this journal, which knows no state or section, but is national in character.

This journal is calling forth any number of compliments for its value and beauty. Well, as to that, where can its equal be found for instructive matter, costly engravings, good paper, good printing, and careful editing, and all for \$1.00 a year.

**Seats in the Highway Shade.** These put up at public expense are common all along the tree-shaded boulevards of Paris and many other European cities. A good idea to be taken up in this country in many places where streets are adorned with shade trees.

**Caldwell Lawn Edger.** Referring to this implement, which was figured in our April issue, Professor Bailey, of the Michigan Agricultural College, informs us that he has not found complete satisfaction in its use. It does tolerable work on very low, even borders, but for practical work on lawns of any extent it has proved a failure with him.

**Ladybirds and Green-fly.** Mr. W. L. Wilson writes as follows: "My wife noticed a week ago that Lilies that had a Ladybird on them were free from Green-fly. She, therefore, put two Ladybirds upon an Arum Lily, and now to-day the lovely flower is entirely free from the pest, and the two solitary Ladybirds are searching about the blossom for more flies, and are looking very well-favored."

**Gardens in Mexico.** A correspondent who has been there writes that the parks of the City of Mexico are really a novel as well as a beautiful sight. Comfortable seats shaded by venerable trees, winding walks encircling large beds of flowers and fine fountains form a picture of perpetual springtime. They are the breathing spots for those who reside near them, as well as for those whose poverty causes them to live in narrow stifling streets. The student can be seen in them at an early hour buried in his books; the invalid in carriage or on horseback, or perhaps being carried in a chair upon the back of a stalwart porter. Every one seems to be out for a Sunday morning airing.

**Poisoning from Plants.** The cases where people are badly poisoned by coming in contact with the Poisonous Sumachs, Wild Parsnip, etc., are numerous each season. It is important therefore to note that Dr. J. R. Flowers, of Franklin Co., Ohio, finds in the well-known plant called Thorough-wort and Bonaset, a complete cure. He says that his attention was first called to it in a severe case, when an old Indian gathered a quantity of this herb, and after pounding the tops and leaves to a pulp, applied it to the parts affected during the night. The next morning the swelling had all disappeared. Since that time he has used the fluid extracts of

the same for all his cases, and the result has been an immediate cure.

**Look on the Bright Side.** If one goes into his garden to seek cobwebs or insects, grubs and creeping things, if he looks for decay, destruction and death, he may find them, but if he goes to admire his flowers and fruits, he will probably return with one of the former in his buttonhole. This is only another way of saying you may find very much in the garden what you go to seek. The pessimist finds the caterpillar fat and flourishing, and the cankerworm busy and big. The optimist—and nearly every gardener is an optimist, or ought to be—cannot see blight for blossom. He loves his plants more than he hates his enemies, and works "for love," as the children say when they do not play for gain.—London Horticulture.

**An Acre-and-a-half of Strawberries.** Two years ago I ventured on Strawberries, believing that what had been done by some could be done by others. I procured good plants and set one acre in the spring and one-half acre the following fall. These I kept clean, and mulched well the beginning of winter, then waited for the result. Last season, the first crop, I picked a full 150 bushels of nice berries from the above ground. I supplied our home market with what I could, and had arrangements made beforehand to ship my surplus to dealers direct. The result was, I found market for my berries at fair prices, without the loss of a bushel. I aimed to furnish full measure and to establish a reputation for good, clean fresh stock. A. M. N.

**Praise by the Yard.** Let no one imagine that because we so rarely take space to print any words of commendation for this journal from its readers, that such kind words are at all scarce with us. On the contrary, they are so abundant (and for which we are most thankful), that we could scarcely make a beginning at setting them forth in the paper, if disposed to take the space to do so. But that interested friends may see how the talk runs throughout the family, we have had some six feet in length of column-wide, fine type matter of this kind struck off, and of this a copy will gladly be mailed to any applicant, enclosing one stamp. And even these, interesting and inspiring as they certainly are, are but a mere sample of a great many more.

**Currants in the New York Markets.** Mr. C. W. Idell of New York informs us that large, handsome Currants are becoming a very popular fruit, and the demand for them by fashionable dealers is increasing yearly. The package, he says, is an im-



A RASPBERRY GATHERING DEVICE.

portant item also, for the old way of shipping in bulk is discarded, and now the most popular style is the 32-quart berry crates and baskets. As the new gift crate costs only 35 cents, growers can afford to purchase them to ship this choice fruit in. When sending these cases the cups should be well filled before starting, and the upper tier should be full enough to touch the lid, so as to retain in place, for any jolting of them is bad for the fruit. The Red Dutch is sold to preservers for jellies only, for a few cents per pound.

**Raspberry Gathering Device.** Mr. Jewett Benedict, a fruit grower of Dundee, in this State, came to the conclusion that much of the expense and many of the annoyances of hand-picking Raspberries on a large scale could be done away with. So he got up four of the devices shown in the engraving, and putting these with the same number of men to work them in his field; he claims to have saved the work of forty hand pickers. All there is of his plan is the harvester or receiving canvas, to rest under the bush, as shown in the engraving, a

hook to draw the bush over this and then a bat to brush or jar off the berries. It is said, and we think reasonably enough, that less berries fall to the ground by this means than by hand picking. A patent for this harvester has been applied for.

**Two Drugs as Fertilizers.** Nitrate of soda, says an English gardener, is the quickest of all fertilizers, but it is liable to adulteration with common salt. It should be purchased under a guarantee of 5 per cent. refraction, which means 95 per cent. of pure nitrate of soda. For cold wet soils sulphate of ammonia, though a little less quick in action, is preferable, for it is in the nature of the nitrate to make such land still colder and wetter, and this is not desirable; moreover, sulphate of ammonia is more lasting in its effects, containing about 5 per cent. more nitrogen. It is open to adulteration with sulphate of magnesia (Epsom salts), and should be purchased under a guarantee that it contains 24 per cent. of ammonia. A simple method of testing the purity of sulphate of ammonia is to spread some on a nearly red-hot shovel, and if the manure entirely disappears it will not be far from genuine. It is a great friend to the gardener when rightly used, but incautiously applied or abused it is like fire, dangerous. It has spoiled hundreds of *Chrysanthemums* that it might have benefited.

**"The Bee-keeper's Guide,"** Horticulture and bee-keeping always have been closely allied, so we think whatever is of wide interest to those who have bees must prove widely interesting to our readers. We would here call attention therefore to the book named at the beginning, from the pen of that able apiarian and entomologist, and our correspondent, Prof. A. J. Cook, Agricultural College, (P. O.), Mich. This is a work of 337 pages, exclusive of the index, which numbers nearly eleven pages more. It treats upon the subject of the honey bee and its management in a manner more full and satisfactory than any similar work of our acquaintance. This may be inferred from the fact that nearly 200 engravings are used for rendering all matters perfectly clear. As might be expected from an author who is also engaged as an instructor in his specialties, before the students of the Michigan Agricultural College, the work is one remarkably well adapted to beginners in bee culture. Mr. Cook is his own publisher; price of the work, \$1.25 post paid. Orders sent to this office will be forwarded to Mr. Cook with pleasure.

**What ails the Snowball Bushes.** Of late years these old favorites have been unpleasantly affected in some localities by the leaves curling up before being fully grown, with the result also of preventing fine bloom. To many the cause has been a mystery, but any one who has examined the underside of such curled leaves carefully could have had no trouble to discover innumerable plant lice in possession, and thus the seat of trouble. They are Aphides and closely related to, if not identical with, the plant lice of a green color on ordinary house plants. Tobacco in one form or another, or the kerosene emulsions, described on page 129, and applied with a force pump, are sufficient remedies. In the case of the former, if the bushes are low, by scattering some tobacco (refuse stems from the cigar maker's are as good as anything) among the shoots, near the ground, and occasionally moistening it, the fumes will destroy the aphids. If the growth is in the form of a tree, then some tobacco stems might be bound in a sheaf and hung in the top. Cheap smoking tobacco would also answer, folding some into narrow strips of light cloth and applying these as directed for tobacco stems.

**Reform in Names.** In Agricultural Science, an article by Professor L. H. Bailey, Jr., gives good sound reasons why the late reform in reducing the names of fruits as to length should be carried to all cultural varieties. This confusion, he says, owes its origin to an aping of botanical methods. There is no reason why Latin adjectives should be applied to cultural varieties, while there are several reasons to the contrary. We need to distinguish between natural and artificial varieties. The former should be designated by Latin adjectives, the latter by English. For instance, *Juniperus Sabina* var. *noveboracensis* is a natural variety. *Juniperus Sabina* var. *variegata* is a cultural form, yet the names do not designate the fact. Again, we have lots of such catalogue names as *Petunia hybrida grandiflora fimbriata flore pleno*. This might better be expressed in English as the "Large"-flowered, fimbriated double *Petunia*, which answers every purpose of the Latin jargon, is more intelligible and does not mislead. No such plants exist as *Petunia grandiflora* and *P. hybrida*. These names are untrue. The very trinity of excellence in the binomial system—accuracy, periphrasis, elegance—falls by this method into confusion and repulsiveness.

**Half a Loaf better than None.** Mr. Hoopes, in a sensible communication to the New York Tribune, would apply this adage to Apples as well. He says: "Side by side in my orchard of several years standing are two Apple trees of about equal size and health—one, the Tewksbury Winter Blush; the other, Tompkins County King. From the former I never expect to miss a crop and generally get a very large one at that, while the latter seems to depend more upon its reputation in other localities. The Tewksbury is small and of little flavor, but I always



A STRONG SENSE OF DUTY.

have plenty in my bins. My King rarely gets so far as the cellar, as a few warm days are sufficient to clear the trees in advance of the picking season, where the animals help themselves. The question of educating the tastes of the masses up to a high standard so that they will not purchase inferior fruit is very well in the abstract, but when we cannot grow the King and Northern Spy, there is no resource but to fall back on Apples that will produce freely, like Smith's Cider and Long Island Russet, if even of very questionable quality and size. The price is also an important factor in growing fruit for profit. Varieties that produce freely, even at a less price, pay better in the long run."

**"A Strong Sense of Duty"** was the title given to the engraving herewith presented, when it originally appeared in a well-known juvenile magazine. The little florist's act in watering her pot plants in a shower of rain, because told by mamma that they must be watered twice a day, was meant to be humorously touched off, and as if no one but a child would water out-door plants when it rained. Now to the popular mind undoubtedly, this idea seems a fairly sensible one, but POPULAR GARDENING, as a public instructor, takes this opportunity to defend the childish act and to say that it was a most gardener-like act. No plant grower who understands his business, would stop a moment in watering plants, the roots of which are confined in pots, boxes, or vases, because perchance, a shower came up, unless it was to save his own skin from a drenching. It was one of the sound principals in the art of plant culture in pots, which the writer of this early was taught, namely: to trust no ordinary shower for supplying the needs of dry plants, of the class referred to. He learned to water and to water thoroughly whenever plants needed it, rain or no rain, and years of experience, on a considerable scale, has fully justified the wisdom of such a course. Because amateurs often fail to act as well as does the child in the engraving—their thirsty pot and vase plants suffer tortures from drought at the root, even in the midst of a rain storm. Nothing in that line short of a long-continued rain could adequately meet a case of this kind.

**A Plea for our Birds.** I come to the sportsmen and boys with a plea for our birds. The school vacation season is here, and the city and some country boys, released from the restraints of school, delight in going a-gunning through fields and pastures. I am sorry to see boys and men think it proper to kill and cripple useful birds. The cruelty of leaving the latter wounded and starving on the field, unable to get shade or water, is not an act to boast of, and is condemned by all right thinking people and in the sight of God. And how can any boy

rob a useful bird's nest when its mother pleads for mercy? To me it appears that of all inferior creatures Heaven seems to have intended birds as the most cheerful associates to the human family. It is an evident fact in this day that some birds are wholly indispensable to the successful fruit-grower. But I would not claim that all birds are useful. Such kinds as the Screech Owl, Hawks, English Sparrow, Wax-wing Sapsucker, are the enemies of the cultivator and deserve killing. The Hawk and Owl, especially, will not stop with chickens, but are ready to kill and destroy our useful birds and toads. Of course they do some good, but not enough to balance against them, so these may be treated as foes. That some useful birds eat and destroy some fruit and grain I freely admit, but not near enough to balance for the insects they kill. I am willing to give them what fruit they eat, and especially Russian Mulberries. I am a friend to the weak in this unequal warfare.—JACOB FAITH, Fruit Grower, Vernon Co., Mo.

#### Notes by our New York Correspondent.

The late spring show of the New York Horticultural Society has been the most noticeable affair among plantmen lately, though it was not by any means a great exhibition. The competition for the beautiful silver cup offered by President Spaulding for the best floral design was decidedly meagre, which was rather a surprise to all concerned.

The successful winner was Mr. LeMoult, whose design was most original, like all his work. It consisted of a table, the top being about six feet square. The cloth was made of Pansies, dark purple and cream colored, arranged in bands. This cover hung in handsome folds at the corners, and was arranged with exquisite smoothness. Lying on the top of the table at each corner was a trailing bouquet of roses, Catherine Mermet and Pink Moss, at two opposite corners, and Marechal Neil at the other two. In the center of the table was a gracefully formed vase; its base of Violets rested on a mat of white flowers, Jasmine and Passiflora, from which sprang sprays of Lily-of-the-Valley. The body of the vase was made of Mignonette, Forget-me-nots and pale yellow Pansies. The handle was of Bon Silene buds. The vase was filled with a large bunch of Roses. The workmanship of the design was most excellent, and the whole conception was so original and so well carried out that there was no doubt of its success, from the first. Another design was a large oval basket, filled with Roses and Lily-of-the-Valley. The handle was wreathed with buds and foliage of the old-fashioned hardy rose Mme. Plantier, which had a very pretty effect. But the aesthetic harmony of the design was completely wrecked by the addition of two toy bears, clasping paws, and surmounted by the motto "Bear and Forbear." They were cloth bears with shoe-button eyes, and the effect was truly saddening. The fascinating Mrs. Langtry was one of the judges of the designs; she shed the light of her presence on the show several times, with the gratifying result of inducing a lot of the horticulturists to go and see her play "Lady Clancarty."

The display of plants at this exhibition was extremely poor, positively shabby, in fact, and this gave the hall rather a forlorn aspect. One can never produce a showy effect without big foliage plants, and plenty of them.

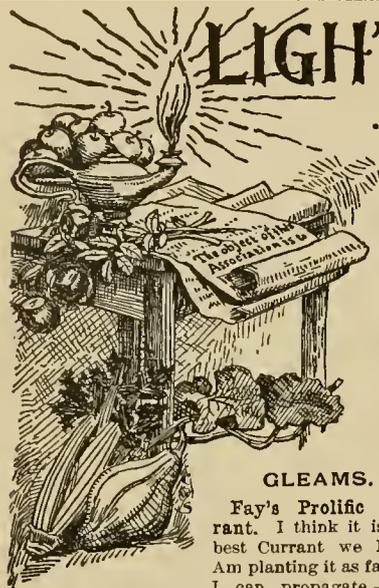
All the new roses were there, of course. Mr. Peter Henderson showed his new Hybrid Perpetual, Dinsmore; it is a good, showy crimson, and I should think will prove effective for outdoor blooming. We are told that it flowers very profusely, and is certainly very hardy. Mr. Evans of Philadelphia showed two of his Roses, Mrs. John Laing and Meteor. The first is a rose-pink hybrid, very pretty in shape; Meteor is a Hybrid Tea, dark velvety crimson in hue and very full petalled. It has handsome clean-looking foliage, and is certainly a very handsome flower.

Mr. John Henderson showed two new teas; Mme. de Watteville, a shell pink shading to a deeper pink at the edge of the petals, a beautiful thing; and Gabrielle Drevet, buff shading to pink at the edges, something after the style of Capucine.

Mr. May showed his new yellow tea, Comtesse de Frigneuse. The flower is larger than I expected from the habit of the plant, which is rather like Niphotos; it is a clear golden yellow, and very shapely. Mr. May also showed Her Majesty—the finest flower we have been favored with so far.

Mr. Kimball of Rochester sent some superb Orchids, so the show was not without interesting features, though much below the mark in many respects; rather a discouraging reflection for the busy workers who got it up.

EMILY LOUISE TAPLIN.



# LIGHT FROM THE SOCIETIES:

·BEING MATTER THAT DESERVES  
·TO BE WIDELY KNOWN·

## GLEAMS.

**Fay's Prolific Currant.** I think it is the best Currant we have. Am planting it as fast as I can propagate.—Mr.

Holland, before Alton-Southern.

The moisture of a room containing a large stove and water boiling on the stove a great part of the time is very favorable to window flowers.—Dr. Hunt, Montreal.

**York and Lancaster Rose.** This is a satisfactory but old-fashioned hardy Rose with us, producing white, red and often striped flowers on the same bush. The bush becomes very large.—Anna Jack.

**The North Screen.** Last spring in getting scions I traveled over a large part of Warren County, and wherever I found an orchard protected on the north and west I found my soundest cuttings.—A. G. Drane, before Kentucky Society.

**Prefers Late Planting.** Mr. Wm. Jackson, at the April meeting of the Alton-Southern Illinois Horticultural Society, said he preferred to plant Strawberries after the fruit stems had developed somewhat, in order that these could be removed at the same time, to a saving of labor.

**The Niagara Grape.** In the proceedings of the Michigan Horticultural Society we find the following as to the Niagara Grape: Reports generally favorable, but liable to rot, at least at any place where the Concord is affected. White Grapes are not more affected by rot than other varieties.

**Watersprouts on Apple Trees.** Mr. Maitland, before the Lafayette Co. Society, said he thought it a mistake to remove them all. He would prefer to let some of the thrifty ones remain, especially on aged trees, and rather cut off the ends of enfeebled limbs. Mr. F. Neet had found some of the finest fruit on such sprouts. Dr. W. A. Gordon had the same experience with Peaches.

**A Fine Volume.** The enterprise of the Michigan horticulturists is well shown by the annual report of their State Society. The report for 1886 is now before us, a large volume of 600 pages, gotten up in the usual handsome and painstaking style peculiar to the work of its efficient secretary, the Hon. Chas. W. Garfield, of Grand Rapids, and as backed by its enterprising members and by legislative aid.

**Best Evergreens for Small Lawns.** George Ellwanger, of Rochester, N. Y., the well known nurseryman and horticultural authority, said before the Western New York Society that his choice of twelve Evergreens for this latitude is Small-leaved Hemlock, Colorado Blue Spruce, Glaucous Spruce, Nordmann's Spruce, Venusta Juniper, Reeves' Juniper, Stone Pine, Erect Yew, Variegated Yew, Golden Arbor-vitæ and Pyramidal Arbor-vitæ.

**Ornamental Value of Grass.** Prof. Buckhart, before the Pennsylvania Society, very truthfully said that the commonness and apparent simplicity of our humble and useful friends, the Grasses, lead us to think lightly of them, if at all, as plants of ornament. It needs but little thought to show that they are as valuable among ornamental plants as they are among plants of use. They fill a niche in the ornamental world as they do in the useful.

**The Crooked to be Made Straight.** Many fruit trees are out of perpendicular, which not only looks bad but is an injury. The branches of a tree should shade the trunk, this they cannot do when the tree leans badly. The roots of a leaning tree are subjected to unnatural strain and often yield to the pressure. When a tree first leans it is easily righted up; and may be held in its place by a stake, a prop, or if small, by earth or sods weighted with

stones.—Wyoming Co. report to the Western New York Society.

**Tea Roses and Balsam Culture.** My experience with Tea Roses I am proud of, having Roses constantly during summer's heat. The first of May I set the plants in well enriched ground; kept them growing rapidly by working the earth and keeping as moist as possible. During the heated term mulched with straw from stable. The Etoile de Lyon and Perle des Jardins are especially fine, both for buds and bloom, and one is always sure of flowers. Both of these are yellow, so will add La France, Bon Silene, Souv' d'un Ami and Hermosa for pink; Presse Guillot, for red; Michael Saunders for crimson, and Mad. Rachel and Cornelia Cook for white. I must have Balsams and have succeeded in keeping them as double as Roses for years, by saving the seeds from center stalk of plant. All small shoots should be pinched off, leaving only the strongest to grow, and one need have no fear of digging in too much hen manure, if well rotted, if the best success is desired.—Mrs. Lathey.

## Ohio Methods of Gathering and Marketing Berries.

[Gathered at the State Society's Meeting]

A paper was read by W. W. Farnsworth on this subject, in which he said: In order that the expense be reduced to the lowest point, we should get everything ready—crates, baskets, pickers, and wide paths. He uses stands, and each picker's berries are emptied and inspected before he receives his ticket. He thinks commission merchants cannot afford to do crooked business, and we should give them credit for faithful service when we can.

Prominence was given to the matter of picking berries on the Sabbath. Quite a number stated that they had to do this or suffer loss. A still larger number never picked on the Sabbath and never will. One man went so far as to say that no man should engage extensively in raising berries who is too conscientious to have his crop harvested on the Sabbath. Another expressed his opinion that fruit growing is a business for the people, and that when a man spreads over more than he can attend to in six days every week, he has undertaken more than he can manage, and no good will come out of it.

B. F. Albaugh employs a woman to pick all his berries at a specified price. She employs all the help she needs, and is responsible for the work. No small berries are sold in the market. They are disposed of to pickers or some one at a nominal price, or made into jam. Mr. Scott, of Ann Arbor, Mich., sorts all his berries, and removes every defective one. He never picks on the Sabbath, and he thinks there is as much money in the business now as there ever was.

## Successful Rose Culture in Quebec.

By Annie L. Jack, before the Montreal Society.

The old Cabbage or Provence Rose, once seen in nearly every cottage garden, is fast dying out, although excelling many others. The curving inward of its petals is close and Cabbage-like, a quality few Roses possess.

The Hybrid Perpetuals are a cross between the Hybrid China Rose and the Bourbons and Teas, thereby improving the blooming qualities of the Roses, without impairing their vigor. They are the most valuable of this class of flowers for their full bloom in June and a succession of flowers in limited quantity later, but sufficient to sustain their reputation. Some gardeners believe in cutting back after the summer flowering, but my experience has proved that, if well cultivated and manured, with a mulch around the roots, they go on giving us their loveliest buds and flowers until the hard frosts of October or November. Of the newer Hybrids, both Baroness Rothchilds, in her pink satin gown, and Mabel Morrison in the same of white, did not survive the winter, though protected as all my Roses.

Nor would I be without the Sweet Brier, with its perfumed leaves, unlike anything else that we grow, and its wild flower of beauty, though there are now several varieties with double flowers. The hardy Yellow Rose is allied to this family, and is very beautiful, though its flowers are short-lived. The Lord Macartney (*R. bracteata*) is a half climber, and lives out-of-doors with the protection we give it.

A new species of Rose, *R. rugosa*, from Japan, was first sent to this country by Commodore Perry in 1855. It has taken some time to be native as it deserves, but is really one of the handsomest in cultivation. The foliage is dark green and glossy, resembling that of the Rose, and the flowers are in terminal clusters from ten to twenty, crimson or white, and very fragrant, continuing in flower all summer, and into the late autumn, if the season is not too dry. It is perfectly hardy, and stood without protection last winter on a terrace where snow did not lodge at all. The flowers are single, and the fragrance that of Sweet Brier.

**Cultivation.** My method is very simple. The Rose-walk is between two rows of Apple trees, 12 feet apart, and kept cultivated early in the season with a one-horse plow. After the July blooming, the ground is once more thoroughly stirred, and a mulch put on, and allowed to remain. It is a favorite promenade, and has many beauties, for between the Roses grow clumps of *Lilium longiflorum*, that come into bloom just after the first flush of Roses is over.

Liquid manure twice a week during the growing season is of great benefit, and it is only by this rich feeding that Hybrid Perpetuals are kept in bloom.

Mildew has never troubled our outdoor Roses until the latter part of last summer, when Giant des Bâttles and Magna Charta were attacked by it. We attributed it to the very damp season, and the close growth of trees around the Rose walk that prevented the free circulation of air. To cut off the infected shoots and dust the plants with sulphur is the only remedy.

Let no amateur be discouraged from cultivating Roses in good garden soil. With a little care and good feeding, no plant better repays attention, and one grows to love them as dear friends.

**Wintering.** When laying them down in this climate they require the same treatment as Strawberries and Raspberries, which, with the latter, is to peg down and then throw a furrow of earth over them. If, at this time, soot is scattered among the shoots and on the crowns, it prevents the attacks of field mice that are very troublesome in winter, and is said to enhance in richness the coloring of the flowers the next season. All varieties are the better for a little protection in case of a winter of severe snow. Our climate is considered severe for many things, but the protection afforded by snow enables us to winter safely many things that do not live unprotected in New York.

## Birds and Insects; Which to Kill and Which to Protect.

[Secretary Riehl, before the Alton Southern Illinois Society, May 7.]

Some persons conclude that we must wage a continual war against these foes. I do not think so and have followed a different course. I make war only on such as do me positive injury. Most birds do so little damage that the good probably overbalances the harm.

In my experience of over twenty years I have never had to make war on but two kinds of birds, the Cherry bird, or Waxwing, and the Oriole, both of these I have killed by the thousand, and find that a No. twelve breech-loader, with plenty of shells loaded with No. ten shot, in the hands of a boy ten to fifteen years old, is about the best means to do it with. I also kill the English Sparrow whenever I can find them on my place, as I prefer our native birds, which the Sparrow will drive off if allowed.

Some birds never do harm and should be encouraged to breed on our premises. Foremost among these I consider the Wren and Bluebird. These can easily be encouraged by putting up boxes for nests, where they will be secure from their foes, especially the cat.

Crows and Hawks should also be protected, although by many these birds are considered great nuisances. The Crow, I think, never does us any damage except when he pulls some late planted Corn, which can be prevented planting the Corn so deep that the grain will not come up when the

Crow goes to pull it up, or by tarring the seed before planting. The Crow is a knowing bird, and getting on to your methods leaves the field in disgust to try some other. But, don't Hawks kill chickens? Sometimes, and when they do I kill that Hawk. Hawks live largely on field mice and should, on that account, be let alone, except when one gets a taste of chicken meat and goes to raiding the barn-yard.

Some thought the Jay should be killed because he destroys the young and eggs of other birds. But nature intended he should in order that birds should not become too plentiful, and in these things it is best for man to let nature take her course; she usually does these things about right.

A good word for the Skunk. This little animal, despised and killed by almost everybody, is one of our best friends, living as it does almost exclusively on insects, and unlike most insect-eating creatures, those it eats are largely injurious. And don't kill the Snakes, except the rattler; they are great destroyers of field mice and do us no harm whatever.

As to insects, kill all that do harm, otherwise let them alone. Some are great foes, others friends, and do more to protect crops from depredation by kinds that are injurious than all the birds combined. The practice of killing insects by attracting them into traps by lights should never be practiced, for we are as apt to destroy our friends as our enemies.

### May Meeting of the Grand River (Mich.) Horticultural Society.

*Reported by F. E. Skeels, Grand Rapids, Mich.*

The meeting was held at the house of C. W. Garfield, "Burton Farm," on May 3d.

Under "Economic Management in Commercial Fruit Growing" Mr. Pierce said he had found a small bag in which to carry twine while tying Grape vines to trellises a great saving of time and patience. With but one exception all members present would prune the Peach tree down to four buds before setting out. The use of rubber bands for bunching Asparagus was recommended in place of twine, which is used by most gardeners in the market.

At the close of the discussion of the above topic the association took a stroll over Mr. Garfield's farm, returning to the residence to enjoy a repast which the ladies had spread.

Under "Fruits for Home Use" all agreed that quality was the thing to be attained at the expense, if need be, of quantity or size.

By request one of our most prominent grocers attended the meeting and led in the discussion of "What Shall Consumers Require of Those who Furnish Them Fruits?" He deplored the fact that so much fruit was put upon the market in a "mussy" condition, in old musty boxes; such fruit glutted the market occasionally, good fruit never. Small fruits should be marketed in dry measure packages to be taken home by the consumer instead of the present system of emptying the boxes and returning them to the producer, thus compelling the consumer to receive their berries poured out into paper sacks or baskets. People would use more fruit if it were made more inviting to the eye.

Many members favored planting fruit trees for shade. Several spoke of having narrow sidewalks across low places along highways, and thought farmers' families would be more social if it were not for the fact that at the time when farm work was least urgent the roads were almost impassible for pedestrians, especially ladies. Under suggestions concerning the fight with insects numerous remedies were given, but as many of these were referred to in your last number I will not offer them.

The attendance at this meeting was very large and made up quite as largely of farmers' wives as of gentlemen. Our next meeting will be in June, at the residence of one of our members, who has a large Strawberry plantation made up of nearly two hundred varieties; and all our meetings during summer will be with members at their respective homes, at the time when some product in the growing of which they are specialists will be at its best.

### Fruit Growers' Convention at Dover, Delaware, May 12.

Over 300 delegates representing the fruit growers of Delaware, Eastern Maryland and New Jersey, together with invited commission men and dealers from Philadelphia and New York, met at this convention, and aided in making perhaps the most imposing meeting of its kind ever held in this famous fruit region.

The most prominent business before the convention was that of considering the perfecting of the Fruit Exchange and the better distribution and marketing of the fruit crop. Although disclaimed by Chairman Martin that the "gift package" question was a leading one, it could easily be seen that it occupied no small place in the minds of most of those present, and before the meeting adjourned it led to a very spirited, and in some measure, unpleasant discussion, resulting in the passage of two resolutions against gift packages. But this result, after all, is believed by fruit growers of good judgment to not fairly represent the position of the majority on this vexed subject, the passage of these resolutions being attributed to the sharp tactics of some determined friends and to the confusion in which the meeting at the time had become involved. Following are the resolutions in substance, as adopted:

"Resolved, That it is right and proper that we, as fruit growers, make it our study and pleasure to improve the quality and add to the attractiveness of fruit, so as to uphold the character and reputation which our peninsula has so long enjoyed in the eyes of the country.

"Resolved, That it is the well-grounded opinion of this convention, based on the experience of six years, that it is to our interest to dispense with the services of all middle men, of whatsoever kind, and to use our very best endeavors to bring the buyers face to face with us in our orchards, and to sell them our fruit ourselves at home.

"Resolved, That in this determination we mean no disrespect to those who have been selling our fruit in the large cities, but simply that if we can save the commission and cartage and freight, and avoid the risks naturally incurred to the transportation of produce so perishable, we will greatly add to the profit to be derived from our fruit of all kinds.

"Resolved, That to accomplish this most desirable purpose the growers at every fruit shipping station should raise a fund to be placed in the hands of the Fruit Exchange [now established] to employ suitable agents to travel through the different cities and towns accessible and solicit dealers to come to us and purchase the fresh fruit directly from us out of our own wagons.

"Resolved, That we will use the most strenuous efforts to organize branches of the Fruit Exchange at all the principal shipping points on the peninsula, and by all possible means discourage the shipment of Peaches on consignment, whenever they can be sold on the spot.

"Resolved, That it is the sense of this meeting that we are unwilling to donate our Peach baskets to the commission merchants and tradesmen of New York, as has been so discourteously demanded by them, because of the fact that all Peach baskets, heretofore and now manufactured and offered for sale are too high in price to be given away.

"Resolved, That a committee of three be appointed, who shall visit all the principal cities accessible by railroad, and ascertain the best and most reliable commission merchants who will agree to sell our Peaches and pay the sum of 5 cents for all Peach baskets not returned, and that the names of all such be posted at every railroad station on the peninsula, and that we recommend and advise all growers not to ship to any commission merchant who will not pay for lost baskets."

Concerning the work of extending the market, the plan of Mr. Polk's, for a Bureau of Information, was adopted. This plan involves an executive committee of seven persons, to be elected annually and to have full power to organize the scheme in all its details; the committee is to appoint a "distributor of ability" and a secretary and treasurer, who are to give bonds. This distributor may be an officer of the Pennsylvania railroad, with his headquarters at Clayton or at any point where the Delaware division railroad shall have its headquarters. The powers of the distributor are set forth in the following clauses:

The distributor shall keep a map and list of all towns or cities (within forty-eight hours communication by railroad with Clayton) that can daily consume, at profitable prices, one or more carloads of our Peaches.

The distributor shall establish the quota of each of said towns and cities.

When 300 baskets of fruit are loaded in a car (and not before) and the bureau's local agent has on the day of shipment endorsed O. K. on a telegram or message to that effect, any member or

agent shall forward said message to the distributor, mentioning therein the number of the car, the owner's name, the consignee, and the destination whither he or they desire said car to be consigned.

The distributor on receipt of such communication, if the quota of the town or point thus selected be not already filled, shall telegraph or reply to said member or agent, "Your car number — is consigned to — (the point named by said member or agent). If the quota of the town so selected had that day been previously filled, the distributor shall so state, and the owner or agent may then in a similar manner select some other town whose quota is not filled.

Whenever any member or agent shall wilfully or by mistake consign a car to any town or point whose quota is already full, the distributor shall have absolute authority to change the destination of said car to some point whose quota is not complete.

The bureau shall be accountable to the owner for the sale of any car of fruit whose destination is changed by the distributor without said owner's or his agent's approval.

The proceeds of sale from all cars of fruit thus arbitrarily transferred by the distributor shall be returned by draft to him, and he shall immediately endorse the same to the treasurer, who shall forthwith forward said returns, minus the regular commission, to the owner or owners of said fruit.

The utmost efforts are to be made for the prompt dissemination of information concerning the markets. Blackboards shall herald the information at every railroad station where the members of the bureau may be located. Members are to pay annual fees in proportion to the size of their orchards, and to pay certain commission for the distribution of their fruit.

The last clause of the plan proposes to organize the bureau as "a part of the Delaware Fruit Exchange, but the bureau's accounts and funds shall be kept separate from the general exchange fund."

### An Acre of Fruit and Vegetable Garden.

*[Synopsis of a Paper by Geo. J. Kellogg, read at the Farmers' Convention, Milton Junction, Wis.]*

That acre should be long, and all rows run the entire length of the ground so that the horse can be used in cultivating. The site, if it can run over a knoll so as to give southern and northern slope, will prolong the fruiting season about ten days. It ought to be fenced with woven wire and lath, to keep chickens out.

Plow deep, and after plowing put on from twenty to forty loads of well rotted manure and harrow it in. Do not plow manure in, as you lose nearly one-half its value.

If the garden lays sixteen by ten rods north and south, take the east side, four feet from the fence, for a row of Asparagus. Where this stands if a dead furrow can be made deep and filled with good manure and six inches of earth plowed on before the plants are set, it is best, and the only case where I recommend burying manure. Asparagus will last a lifetime, therefore put it on one side of the garden.

On the west side, six feet from the fence, plant a row of Grapes eight feet apart. Set Moore's Early, Worden, Concord, Brighton, Delaware, Pocklington, Niagara, Empire State. These can be had at ten to fifty cents each.

Second row, eight feet from the Grapes, Currants, and Gooseberries three feet apart, Red Dutch, White Grape and Fay's Prolific for Currants, and Smith's and Downing for Gooseberries. These will cost from five to twenty cents each.

Third row, Blackberries, eight feet by three feet, Lucretia Dewberry, Snyder, Stone's Hardy and Ancient Briton. These cost two cents each in quantity, except Lucretia, which are two dollars per dozen. This is the most productive trailing Blackberry known, and as easily covered as Strawberry. The others can be covered by lessening the earth beside the plant and with a fork on the bush and the foot at the base bend and cover with dirt.

Fourth row, eight feet by three feet, Red Raspberries. If you will keep down the suckers plant Turner, Marlboro and Cuthbert; if not, plant Purple Cane, Philadelphia and Shaffer's Colossal. This row of 82 plants will cost from \$1 to \$2.50, according to kinds.

Fifth row, Black Raspberries, Tyler, Souhegan and Gregg. Cost of plants two cents.

Sixth row, Strawberries eight feet from the last and two feet in the row. In this row put only per-

fect blooming kinds. I will give a list embracing early and late, of excellent quality and productive, 25 May King, 25 Willson, 25 Miner's Great Prolific, 25 Parry, 25 Mt. Vernon.

Seventh row, four feet from the last and two feet apart, 25 Crescent, 25 Windsor Chief, 25 Manchester, 25 Jewell and 25 Cornelia. The last row are all pistillate varieties and must be planted near some variety with plenty of pollen. You may ask, Why plant any pistillates? They are, when properly pollenized, our best bearers. You want to plant a new bed each year, and after two crops of Strawberries plow under the old bed. The other rows may continue on the same land for ten to twenty years.

Two rows of Strawberries, 250 plants, will cost you one cent each, unless you want all Jewell, but the prices given are when the kinds and quantities are taken. The Strawberries well cared for will yield, the following year, about 500 quarts of choice fruit, worth more than the whole investment for plants, and after the second season all the rows, except the Strawberries, will increase in value and production until you will have to sit up nights to eat fruit, or let your wife or daughter have the surplus to sell. You, Brother Farmer, furnish the plants and let your wife and daughter furnish your table with all the fruit you want three times a day, on condition that they can have the surplus, and I will risk your having to buy sandy berries.

Good land, well fenced, long rows, good plants true to name from some reliable nursery, not a traveling man, well tended, properly mulched in November, and you will be happy, have less doctor's bills and eat less pork.

Now a word about the vegetable garden. Plant Potatoes or Peas next to the Strawberries, so the ground will be in good condition for your next two rows of Strawberries, plant all rows through the whole length of the garden and wide enough so you can cultivate with a horse. Put in plenty of seed, tend well, thin out properly and then what room you have left plant to Sweet Corn or Potatoes, and this acre of ground well cared for will be the most profitable acre on the farm.

### Apple Talk In Maine.

[From proceedings of State Pomological Society.]

Phineas Whittier stated that Apples were of little value as stock food, because it was hardly worth the cost of handling when done by hired help. Some three or four years he had no other way to dispose of cheap Apples and so fed 300 or 400 bushels per year, but had not found any profit in feeding to sheep or cattle. For swine had found that his swine in spring were as large as when they started in the fall. In answer to the question, Have sheep any effect on the Codling Moth? he said that a portion of his orchards are pastured, and there the fruit is not as wormy as in the other orchards. To have sheep fertilize an orchard, you want a large pasture adjoining and have the sheep huddle in the orchard.

Mr. Briggs said he had an idea of feeding his sheep in the orchard. He has noticed that where sheep run there is less wormy fruit.

Mr. Howe cut large quantities of mulching of various kinds and put a high value upon it. Does not know how to grow up orchard trees without it. Uses it also for large trees. Would not place the mulch close to the trunk of the tree. There are only two things he would not use—green sawdust and Apple pomace. Ashes are good for orchard trees and cause fine fruit, that is, fruit perfect in growth and finish, and free from insects.

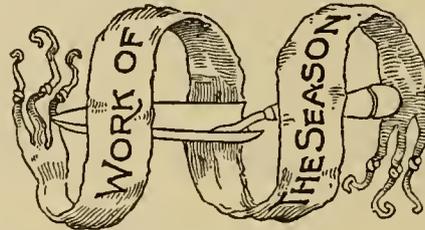
As to kinds of Apples. Has not in recent years grafted any but Baldwins. In a succession of years these prove the best. The Northern Spy some years proves excellent, while this year it was small and inferior. In keeping Apples the Russeta must be kept from the air to prevent wilting. They must be kept tight. Has lined up cribs with paper. Greenings should be kept in boxes or in bins 2-12 feet deep if the cellar is wet. If there is anything he feels proud of, it is in taking a tract of cheap, rough land and making a success out of it, and getting a living from it at the same time.

T. M. Merrill finds the best preserved Apples when kept in large bins, and the deeper the better, only they should not rise to the ceiling. The best kept Apples are found in the bottom of the cribs. He has found this the case in handling some 7,000 barrels the present season.

W. P. Atherton, in his twenty years experience has learned that the King of Tompkins refuses to

give liberal returns. He knows no reason why this is so, only that it won't bear. Has learned the folly of an orchard mixed with different varieties of fruit. The Northern Spy, though slow to come into bearing, yet when old enough gives good crops. The Golden Russet, Poughkeepsie Russet, Haas, Rambo, New York Greening, Tetofsky, Duchess and all other summer varieties have been grafted over, except the Red Astrachan, and those have got to take it next spring. Has learned that fixed rules cannot be rigidly laid down for application in all cases in training and pruning trees. Some trees naturally extend upwards, while the Rhode Island Greening, for instance, is drooping in its habits. As the branches grow and load with fruit they lie upon the ground, and the fruit will not ripen as well as that which is exposed to the sun and air. If sheep are to be kept in the orchard the trees must be trained higher, so has come to the conclusion that there is danger of training too low. In keeping Apples the temperature should be as low as can be without freezing, and it should be even as possible.

Mr. Merrill, New Gloucester, said the matter of storage was an important one, and certainly a matter that affects the value of the fruit. Can hardly agree that fruit keeps better stored in barrels. His opinion in buying fruit was that Apples stored in bulk kept the best and came out in best shape.



### HOUSE PLANTS.

**Balsams.** These may be grown along as pot-plants in light, rich soil for decorative purposes.

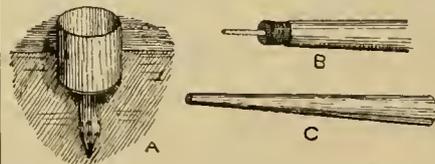
**Cactuses.** The easiest course for summer treatment is to plant them in the border, which may be done after the blooming period.

**Calceolarias,** and the like class of plants, for winter flowering, to be sown during the month for earliest bloom. After potting off the seedlings plunge in a frame, giving considerable water and shading with a lath screen (described last month). This seed is extremely fine, and in its sowing much care must be taken. Our method has been to invert a small pot in the bottom of a large sized one, filling up with rich sandy soil to within one inch of the top. Then press the soil somewhat firm and smooth, and thoroughly water it by absorption, setting the pot in some shallow water, in order that the surface be not disturbed. The seed should now be sown, covering it slightly and that with very finely sifted soil. Over the top of the pot tie a cover of strong white paper, upon which pour water to form a depression, and this then should be kept constantly filled with water until the seeds are well up. Thus sufficient moisture is provided and the light is not obstructed.

**Cinerarias.** Read the directions for Calceolarias.

**Cobæas, Fuchsias** and such like rapid growers should have supports as needed.

**Hanging Baskets.** The great point in their care is to keep well-watered to the very center of the earth from the start. Unlike with pot-plants, which



A. Metal Cup with perforated pipe outlet for Fuses, etc. B. Spout of can with cork and quill inserted to cause a fine stream. C. Reduced Pipe for can spout, for securing a light flame.

### SIMPLE AIDS IN WATERING.

have the benefit of the pot rim for retaining water until it can soak in, hanging baskets are not apt to get much of the water poured over them, and often as a result the earth becomes extremely dry, even with daily watering. For thorough treatment, soak once a day in a tub of water, or apply the water to the middle by a very small stream, (See B and C in the accompanying engraving), or make use of device A in the engraving.

**Hibiscus** should be set in the garden for summer keeping. Good cuttings that can be spared to be struck for next season's stock.

**Oxalis** now out of bloom, and from which flowers are wanted next winter, should be gradually dried

off. In September the several parts called pips to be taken from the old soil, separated and repotted in light, rich earth. Then until growth commences give but little water, increasing the supply later.

**Pomegranates.** Some weak manure water, as they come into bloom, will help to a strong growth.

**Pot-plants** not to be allowed to root into the soil on which they stand; turning them will prevent this.

**Primulas.** Directions for Calceolarias will apply.

**Veranda Boxes.** In these many plants grow in a small bulk of earth, and they should receive water accordingly. With each application it must be seen that the mass of soil is saturated throughout. Often such boxes suffer and grow shabby from nothing in the world but superficial watering.

### LAWN AND FLOWER GARDEN.

**Bulbs of Tulips,** etc., occupying beds that are to be planted with summer flowers, should be taken up and healed in some shady place to ripen, afterwards storing in a dry place until fall planting.

**Pegging down** of Verbenas, Petunias, Achyranthes and other plants, which it is desirable to have cover a good deal of ground, should early secure attention. Wire pins, like hair-pins, bent twigs, or curved pegs, will answer.

**Perennials.** The beds or specimens of Aquilegia, Delphinium, Campanula, Pæony, Geums, etc., should be cared for in the way of any extra supports, removing dead leaves, and where culture is undesirable a light mulch. Any open spaces can be filled from either the annual or biennial class, using Dianthus, Asters, Stocks, Zinnias, Dahlias, Sunflowers, Hollyhocks, and the like.

**Pinks** should be supported by neat stakes to keep the blooms from being spoiled by rain and wind.

**Pinching.** Nearly all plants will be benefited by having the blossoms that appear immediately after planting picked off, and shape given at the same time to any straggling plants. Stevias, Chrysanthemums, Carnations, and such fall and winter bloomers to be pinched in for securing strong stocky plants for the winter growth.

**Planting of tender stuff,** as Coleus, Achyranthes, Alternantheras, Ricinus, Heliotropes, Petunias, Ageratum, Cobæa scandens, Begonias, Caladiuma variegated Stevia, and Fuchsias, must now be pushed to completion where not yet done.

**Roses.** Such insects as the Rose slugs and beetles appear soon after the first of June, and must be taken in hand promptly. See remedies prescribed on page 129, May issue. For mildew, dust on Sulphur when the foliage is wet. Cut off and trim any rust affected parts.

**Shrubs.** The kinds which flower on the old wood to be pruned immediately after the bloom is over. Shortening back the branches, cutting entirely away those that seem to be crowded or that are unnecessary. Such a cutting, which in February would have destroyed nearly all the blossoms, will, if now done, cause a free growth of wood during the summer and for next year's bloom.

**Sprouts.** A close look-out during the growing season for sprouts from the roots of Lilacs, Oleasters, and all other growths that throw up shoots freely, or from the stocks of budded Roses, Kilmarnock and other Willows, Poplars and the like classes. These as soon as started should be rubbed or cut off. The same course is to be followed in regard to such parts of any variegated, cut or curled-leaved trees and shrubs as incline to return to the original type. The variegated Kerria and also the Waxberry are greatly inclined that way.

### PLANT CULTURE UNDER GLASS.

**Achimenes** need help from liquid manure to promote the beauty of foliage and flowers.

**Amaryllis.** After blooming comparatively small pots are best, but root cramping cannot be carried too far without injuring the vigor of the bulbs. Where shifting is required use good loam, with a little sand. Pack hard in the pots, water and syringe well, exposing to nearly full sunlight.

**Azaleas,** as they finish their growth, to be put out to harden. They should have a sheltered shady position, standing the plants on bricks or stones, to prevent the worms getting in.

**Crotons** can be plunged outside for summer adornment after warm weather is established. For treatment in the house they should receive rich soil, moderate light, high heat and frequent cleansing.

**Euphorbia jacquiniiflora.** For these a free growth must be insured in order to secure flowers of good size and to have a second crop. They require an abundance of both light and heat, but during the hottest part of the day need some shade.

**Hard-wooded Plants.** During active growth or bloom, all such must have water enough at their roots to keep the growth unflagging. Watering by dribblers is not a good plan; when the earth needs water see that it becomes thoroughly soaked.

**Ixias,** after blooming, to be ripened off, by gradually withholding water till dry, then remove the soil and keep in paper bags till wanted for starting.

**Oranges,** if allowed to fruit, do not produce flowers as freely as otherwise. During the growing season, manure water, to which soot is added, frequently applied will be of benefit. Scale or Mealy Bug soon render plants unsightly if not attended to.

**Poinsettias.** Good propagating wood of these should now be present on plants that were started a short time ago for propagation. Take cuttings with a heel of the old wood attached. By keeping such close, moist and warm they will quickly root.

**Stephanotis** now will stand strong heat. Anything like an excess of moisture in the air is detrimental to best bloom. Mealy Bug and Scale to be prevented by sponging with soap suds.

**Stove plants** in bloom to be kept in cool, shaded places for extending flowering as much as possible.

### FRUIT GARDEN AND ORCHARD.

**Blackberries.** As the new growth reaches a height of three feet the tips should be nipped out to induce a thickening of the canes, as well as side branches and new leaders. When the latter reach a length of two feet or more they should have the ends similarly pinched out.

**Cherry Trees.** Moderate shallow culture for young trees until they are well established with a good mulch, will keep them in growing condition. Should any gunny discolored spots appear on the trunk or branches a poultice of live parts fresh cow manure and one part flowers of sulphur, bandaged on the affected parts, is an approved remedy.

**Currants** should be grown to the bush form with little trimming, beyond the cutting out of dead or weak wood. They require rich land, and do better for having a mulch throughout the summer. For worms see last month's paper, page 129.

**Gooseberries.** Directions for Currants to apply.

**Grafts.** All other shoots in close conjunction with grafts to be removed. Overhanging branches in large trees that crowd or interfere in any way with the free growth of these must be cut out.

**Grapes.** See article on bagging elsewhere in this issue. Prune away all superfluous shoots. Vines bearing for the first time should have but a single cluster to a shoot. Over-fruiting of young or layered vines is weakening and tends to mildew.

**Peach grubs** should be sought at this season by the use of knife or wire probe. Their presence may be known by gum exudations and excrement. Hilling up the trees a foot high with coal ashes or soil is useful for keeping down the grub.

**Pruning.** Some orchardists prefer this month for general pruning, as the wounds heal very readily. Summer pruning may judiciously be applied to superfluous growth before it has advanced far.

**Raspberries.** About the middle of the month the new growth should be pinched back one-fourth to prevent a spindling form, and to induce side branches to push out freely. Constant cultivation between the rows is important in growing this fruit.

**Strawberries** on poor or dry soils will be greatly benefited by good waterings when the fruit is swelling, but if commenced it must be thoroughly done. Watch the pickers; under-ripe or over-ripe berries soon affect quality. Where the plants are cultivated in hills clipping the runners may need attention before the month is out. Pot plants wanted for forcing or other purposes should be secured by striking in pots from early runners.

**Thinning Fruit.** This seemingly wasteful process is really a most judicious one for securing an abundance of fine, large fruit. Where the tree is in good soil, is thrifty and well set with fruit to remove one-half or more of it as soon as it can be handled will leave enough for best results. In thinning aim to do so evenly over the whole tree.

### VEGETABLE GARDEN.

**Asparagus** should not be cut after this month, as the value of future crops depends largely upon the amount of top growth made during the summer.

**Carrots** often receive great injury from a few days' neglect in weeding, at this season.

**Celery** needs a rich moist soil, and where it is grown after early Peas, Spinach, Radishes, etc., as a second crop, planting is done during July. During June, when the seedlings are getting in planting condition, keep the seed beds free from

weeds, and if the plants from rapid growth, or other cause, become at all drawn, are spindling and weak, shear the tops down to within several inches of the root. This ensures stocky plants.

**Corn.** Plant for succession each week or so.

**Cucumbers.** Sow for pickles about the middle of the month. To do so in well enriched drills 6 feet apart, and to have the plants at a foot apart when up, is a good course.

**Egg plants** require very rich soil and constant cultivation. Plant two feet by 15 inches. Potato Bugs devour them and must be kept off.

**Lima Beans** should have a sandy spot with plenty of fine strong manure in the hills, and these three or four feet apart. A stake is needed at each hill some eight feet high, or else instead a wire for each row may be stretched from the top of stakes 16 or 20 feet apart, with strings running up from the hills. June first is usually early enough to plant these.

**Melons.** Directions for Squashes will apply.

**Parsley** to be grown in rich soil, with good culture. It takes several weeks for seed to come up.

**Peppers.** For culture see Egg-plants.

**Planting Cabbage,** etc., with a dibble is a job that must be carefully performed, so that the soil is firmly pressed to every fibre of the root. Then one should also tread close against the plant with the foot to further firm the soil. The careless use of the dibble may close the soil about the neck of the plant, but leaving the roots hanging free in a space below, and soon to die out.

**Striped Beetles.** Judge Miller recommends pulling some plants of Melon, Squash, Cucumber, etc., and placing several such at each hill, the beetles gathering on the wilting leaves, and can then be gathered and destroyed. Bottomless boxes a foot square with a covering of netting kept over the plants till they are hardened, will protect them.

**Sweet Potatoes.** In the North, setting the plants may begin this month.

**Squashes** should now be planted in manured hills, with for the running varieties are to be six to eight feet apart, while for the bushy ones three to four feet is sufficient distance. In each hill plant about eight seeds, and after getting their rough leaves thin to three or four of the strongest. Light soil with several shovelfuls of good manure added to each hill are among their requirements.

**Weeds.** Constant cultivation of the soil and the destroying of weeds is important work at this growing time. Both the fertility and moisture needed by the crops are taken by weeds, and if allowed a start they greatly injure the quality and size of everything useful among them.

### FRUIT AND VEGETABLES UNDER GLASS.

**Figs.** With much bright weather a night temperature of 60° to 65° may be given, but should the weather be dark a lower degree will be better. Figs, though delighting in heat and moisture, do not get along well without corresponding air or light. Top dressing the soil with fresh horse manure is beneficial, because of the ammonia thus secured. Do not allow the fruit to be too thickly placed. For young stock put in cuttings in sandy, well drained soil, in a sharp bottom heat. With good treatment fruit may be had in two years.

**Grapery.** Ripened fruit on early vines having been removed, the vines must have water gradually withheld in order to give them their required period of rest, day and night, airing freely, and exposing fully to the sun. Ripening crops will need high heat. Flowering vines in cold house, a midday temperature of 86° to 90° may be given, watering being largely discontinued. Thinning may be done when the berries are of the size of Peas, but one bunch of fruit being allowed to each cane, this being pinched three leaves beyond the fruit.

**Melons.** Remove all surplus fruit from the earliest and support that which remains. Top-dress with strong loam and rotten manure, freely watering with warm guano or manure water. Syringe abundantly daily after closing. Preserve all the old leaves on vine. Fertilize female flowers as they open. In Melon culture cleanliness counts.

**Pines** after blooming will be benefited by light syringing daily. Once a week water all those actually needing it. If well rooted, guano water used alternately will stimulate to good growth. To promote atmospheric moisture dampen the walls and every available space, and keep evaporating pans filled. The temperature to range from 70° at night to 85° during the day. Increase the air as the temperature ascends. From ripe fruit withhold water, keeping it cool.

## INQUIRY COLUMN

*This being the People's Paper, it is open to all their inquiries bearing on gardening. Correspondents are urged to anticipate the season in presenting questions. To ask, for instance, on April 15 or 20 what Peas had best be sown, could bring no answer in the May issue, and none before June, when the answer would be unseasonable. Questions received before the 15th of any month stand a good chance of being answered in the next paper. Not more than three questions should be sent at one time. Replies to Inquiries are earnestly requested from our readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.*

316. **Tuberous Tropæolum Treatment.** Is it necessary to take up the tubers in fall and store in cellar, or will tubers live in ground during winter? How close to be planted and how deep? J. KUMER.

317. **Raspberries Ailing.** Many of my plants are dead at the root. Last year at fruiting time some of the black caps seemed to be sun-scalded and the fruit had a bad taste, but otherwise the plants seemed in good condition. The winter was unusually mild. If diseased I want to take them out. CONSTANT READER, *Eureka Springs, Ark.*

318. **Pruning Raspberries.** Should they be pruned as soon as through bearing? OHIO GROWER.

319. **List of Shrubs and Hardy Roses.** Will you give me lists of these, the latter of the ever-blooming section, the former of kinds five or six feet high, specifying the sizes respectively.

320. **Hardy Palms.** Are there any such which will live through the Northern winters with little or no protection.

321. **Hardy Cactuses.** Are there any hardy sorts that are spineless. E. S. L., *Clippert, Iowa.*

322. **Flower Bed Designs.** I take the liberty to ask for some good points in laying out flower beds. I mean the different shapes. Are patterns made out of boards used? Is there any cheap work giving designs construction, etc.? T. J. TALLEY.

323. **Gladioluses in Pots.** Will some one with experience, tell a town resident, with very limited facilities for gardening, how to grow these. ELIHU.

324. **Wire Worms in Grapery.** My grapery reveals numerous wire worms in the soil, and I need a remedy. C. E. L., *Cleveland, Ohio.*

325. **Camellias with Yellow Foliage.** I have a number of Camellias, the foliage of which has a yellowish look that concerns me, and I very much would like light on their condition, and if it can be remedied. Mrs. P. P. L., *Wheeling, West Va.*

326. **Bearing Wood of the Dewberry.** Does the fruit grow on last year's wood like in the Grape, or on the present year's, as in the case of the Raspberry? READER.

327. **Locality for Fruit Raising and Marketing.** There is no local market for such products here to speak of, and any suggestions you could give as to a more profitable locality would be appreciated. Would you advise Florida, or El Paso, Texas? T. A. B., *Almena, Kas.*

328. **Peas for Seed.** Can you tell how these should be raised to be free from the weevil or hugh?

329. **Cabbage Seed South.** How should this vegetable, and also Cauliflower, be managed to produce seed here in this climate, where the heads do not seem to keep over beyond the maturing. W. L. R., *Douglas, Ga.*

330. **Fall-blooming Hybrid Perpetual Roses.** I should esteem it a great favor if you would give me a list of some of the best late summer and autumn varieties. A. K. S., *Mohunk Lake, N. Y.*

331. **Cyclamen Dying.** After blooming in the winter my plant died off. Was this proper? What treatment is the best?

332. **Wallflower that does not Flower.** I raised it from seed a year last summer and to date it has not bloomed. Does the plant need a large pot?

333. **About Ixias.** I would be glad for information concerning these plants, hardiness, time of bloom, treatment, etc. Mrs. R. E. T., *Butler Co., O.*

334. **Celery Queries.** How late can seed be sown for plants for winter use? Can Celery be kept in winter in any other way than in the cellar? E. W. N., *Sidell, Ill.*

335. **Treating a Neglected Fruit Farm.** I bought such a place, with 400 Apple and 100 Peach trees, 1500 Grape-vines, Peas, Cherries, etc., all in a terrible state of neglect. Being a novice I desire to know how best to treat them; also, what manure to apply. I have access to leaf mold, but no other manure. J. J. L., *Prince William Co., Va.*

336. **Carnations for Winter Bloom.** Plants that have been cut back and repotted this spring, will they need repotting again in the fall?

337. **Repotting Winter-blooming Plants.** Which is the best time for such kinds as Abutilon, Begonia, Heliotrope, Veronicas, etc., spring or fall?

338. **Ruellia Macrantha Culture.** I have had no luck in managing this plant in three times trying;

it would die. Will some one please tell how to manage it? Mrs. F. C. L., *Auglaize, Co., Ohio.*

339. **Strawberry Query.** Does the Sucker State resemble the Sharpless in foliage, blossom and fruit; also, if the Daniel Boone is nearly identical with the Windsor Chief? GEO. E. HANCRET, *Monroe Co., Wis.*

340. **Hyacinths for a Second Forcing.** Will the bulbs that have bloomed in the house one winter bloom again if forced? T. B., *Kansas City, Mo.*

341. **Peaches under Glass.** Will Peaches ripen well in a cold graper?y?

342. **Grapes Shrivelling in Winter.** I keep Grapes in a good basement through every winter, and until April and even May, but they shrivel like Raisins. Can this be prevented? R., *Toronto, Ont.*

343. **Fertilizers for Fruit Garden.** (a.) How much wood ashes would you advise to put around three year old Apple trees? (b.) Would it be a benefit to mix salt with the ashes? (c.) Would not such a mixture suit Grapes? (d.) Having no bone mill, would you think well of breaking up bones and mixing them with dirt about the roots of such?

344. **Apples on Wild Crab.** Is it worth while to bud the former on the latter?

345. **Plum and Apricot Stocks.** Are trees raised from the pits of these fruits from budded trees short lived and less hardy like the Peach? J. L. H., *Sparta, Pa.*

346. **Hydrangea Culture.** I have not been successful in growing Hydrangeas, owing to inexperience no doubt. Will some one kindly inform me as to best methods of culture. IGNORANT, *Bangor, Me.*

### REPLIES TO INQUIRIES.

295. **A Selection of Annuals.** For a continuous display, as well as to furnish a supply of cut flowers during the summer season, I would advise the use of the following: Asters in variety, Candytuft in variety, Dianthus Chinensis in variety, Calliopsis in variety, Celosias in variety, Petunias in variety, Pansy in variety, Scabiosa in variety, Stock—German ten-week—in variety, Verbenas in variety, Nasturtium—Tom Thumb—in variety, and if additional varieties are desired add Balsam in variety, Marigolds in variety, Zinnias in variety, Gomphrenas in variety. If a few climbers are desired, procure Morning Glories in variety, Tropæolum Lobbianum in variety, Thunbergias in variety, Maudandia in variety. Sweet Peas are quite indispensable where cut flowers are in demand, although they are hardly adapted for cultivation in the flower garden. Still, if properly grown and cared for, they will form an excellent low hedge or screen which will be found useful in many situations. CHAS. E. PARNELL.

296. **Snails Devouring Lettuce.** Hollow out pieces of Turnips and place them among the plants or else place short pieces of boards on the ground between the plants. These should be carefully examined every morning and all the snails destroyed. Or, as snails feed at night, they can be captured while feeding by carefully examining the plants by the aid of a lantern during the evening. CHAS. E. PARNELL, *Queens, L. I.*

283. **Soot Water for Plants.** Yes, this can be used as a fertilizer, but I prefer guano, or Young & Elliotts' Compressed Sheep Manure, to anything else. CHAS. E. PARNELL, *Queens, L. I.*

274, 279. **Oxalis not Blooming.** In order to have the Oxalis flower to perfection during the winter months they should be so placed so as to be fully exposed to the sun as much as possible. They will grow well enough in any light situation, but if flowers are wanted they must be exposed to the sun. CHAS. E. PARNELL, *Queens, L. I.*

275. **Swanley White Violets.** I think that you had better throw your plants away and procure others. CHAS. E. PARNELL, *Queens, L. I.*

276. **Chinese Lily.** I do not know of any plant by this name. If you will describe it I may be able to give you some information concerning it. CHAS. E. PARNELL, *Queens, L. I.*

307. **Weeding Lawn.** All such weeds as Dandelions, Plantains, Buttercups, etc., can be readily removed from lawns by cutting them off about half an inch below the surface with a stout knife; one that is used for cutting Asparagus will answer very well. CHAS. E. PARNELL, *Queens, L. I.*

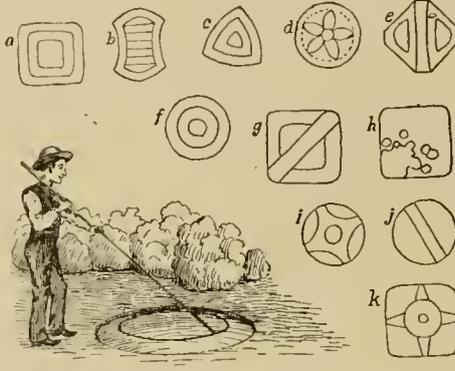
306. **Worms in Lawn.** A good dressing of soot, wood-ashes, or Henderson's Lawn Fertilizer, applied just before rain, will in a great measure banish the worms. Any or all of the above, if liberally applied, will prove to be excellent fertilizers. CHAS. E. PARNELL, *Queens, L. I.*

301. **Loose Bark on Trees.** Yes, I am of the opinion that it is best to remove all loose bark. CHAS. E. PARNELL, *Queens, L. I.*

265. **Soap Suds and House Slops.** During the summer I find a good use for house slops and wash water by using them to water plants. Use tin cans (old fruit cans will answer), punch a very small hole in the bottom, set near the Tomato, Cucumber and Melon vines, or any other variety of plants that need plenty of moisture, and keep them supplied with water; this furnishes the moisture and at the same time adds good fertilizing material. N. J. SHEPHERD, *Eldon, Mo.*

269. **Bees and Grapes.** I think I can truthfully say that the bees do injure them. Last fall as I was gathering Grapes I noticed that a great many of them were cut, and that bees were there sipping juice. I decided to investigate, not daring to disturb them lest they quit work. I did not get to see any of the bees in the act of cutting the skin, but I noticed that the holes got larger as they worked on. Finally I caught one of the bees to see if it could cut one of the Grapes, and after its temper was aroused enough I applied its mouth to a Grape and it cut it like a knife with apparent ease. After repeating this experiment many times I came to the conclusion that bees do injure Grapes. C. E. PLEAS, *Henry Co., Indiana.*

176. **Honey Dew.** It has been shown that this substance is excreted by some plants independent of all insect agency. It is not confined to excretory glands nor to any set of special organs but is produced over the entire surface of the leaves or twigs, and may, in some cases at least, be regarded as a veritable disease. The Linden, Poplar, Elm, Willow, Olive, Orange, Walnut, Fir, and several species of Maple are subject to this malady, but to what extent it is really injurious is not well known.



Some Simple Flower Bed Designs and laying them out. See answer to 322.

Sometimes the affected plants do not suffer, but there are cases again where the leaves become discolored on account of the destruction of the chlorophyll. No further injury has been noted, yet from the fact that the honey dew is likely to attract injurious insects as well as various parasitic fungi, it may indirectly occasion serious damage. Very little is known as to the cause of this malady. Some think it may be due to peculiarities in the soil, others that it arises from a constitutional affection, for among a lot of diseased plants a few may be found in perfect health; while others again attribute it to some alteration in or wounds of the roots. It appears most frequently in hot dry weather, more particularly upon plants exposed to the direct rays of the sun, but beyond the theories above mentioned we know nothing of the cause nor can we suggest a remedy. F. LAMSON SCRIBNER, *Washington, D. C.*

322. **Flower-Bed Designs.** For the average cultivator we think designs of rather a simple character and requiring but a few kinds of plants in their arrangement are the most suitable, being easily laid out, while it is a question whether such are not handsomer than more elaborate ones. Some of the more desirable forms for beds in this line are shown in the engraving on this page. These hardly require to be explained beyond saying that the various lines indicate the outlines of different kinds of plants to be used. Any one of these designs applied to beds from five to ten feet across, and planted with such reliable kinds as Coleus, Geraniums, Alternantheras, etc., should prove satisfactory with due attention to ordinary points of culture. In laying out patterns no more difficult than these the simple course shown in the engraving is perhaps the best. This consists simply of making with a light stick—a rake handle will answer—the lines on the surface of the bed after this has been properly shaped up to receive the plants, scribing, erasing and scribing until the lines are sufficiently true and pleasing. Fig. h may need a word of explanation. The idea here is to plant the main part with one color, say Coleus Verschaffelti, and then run in an irregular group with a few scattering plants, as if broken off, of some other kind darker or lighter than the main sort, about as indicated by the lines in the engraving. The only work of our acquaintance devoted to designs in flower beds is that of Geo. A. Solly & Son, referred to on page 94, March issue.

329. **Cabbage Seed South.** With careful management Cabbage seed may be grown at the South. The seed heads should be kept over winter by heeling them in a dry situation up to their lower leaves on the north side of a building or close fence, and covering slightly with straw or evergreen boughs to prevent alternate freezing and thawing during the winter. It is the sun's influence more than frost that must be guarded against. In the following spring set out some of the best heads wintered over, being sure to keep them a good distance from Turnips and all other members of the

Brassica family to avoid intermixing. Support the stems as they rise by stakes, and gather the seed before it scatters. Cauliflower is preserved and seeded with greater difficulty, almost all seed supplies of it being yet drawn from Europe.

339. **Strawberry Query.** The Sucker State resembles the Sharpless somewhat in foliage, but not in flower or fruit. The latter has so few stamens that some have called it pistillate; and its blossoms are so tender that a light frost will not only kill every one that is out, but will destroy the buds some days before they are ready to unfold. The Sucker State has many stamens, and its blossoms are as hardy as those of other varieties. The greatest difference is in the fruit. The Sharpless often misshapen; ripens unevenly and is of quite dark color, while the Sucker State is as uniform as the Cumberland, light glossy scarlet, and colors all over at once. The Windsor Chief and Daniel Boone are not at all alike, except that they are both pistillate. The former is late and the fruit is nearly round, quite dark, very glossy, and sour, while the Daniel Boone is of larger size, lighter color, and often triangular or slightly wedge-shaped.—M. CRAWFORD, *Cuyahoga Falls, O.*

327. **Locality for Fruit Raising and Marketing.** After considerable experience in fruit, vegetable and flower growing for market at a point within eleven miles of Buffalo, and from general observation we must conclude that the man who understands his business in either one or all of these branches, could find no better place in which to engage in the business than in the neighborhood of any thrifty town, and this applying east or west. Our choice of location would be such a distance from the town that good land could be bought at ordinary farm-land prices, but not so far as to be deprived of the important advantage of bringing the produce direct and fresh to the consumer, to always secure his best price. Such a distance from town should also enable one to procure manure advantageously. The matter of present competition under such circumstances hardly enters into consideration, for in horticulture, for a near market, one has the advantage that established reputation is of comparatively small consequence side of the ability to grow a superior quality of fruit, vegetables or flowers. You offer the best for sale, and buyers are not going to ask whether you are one or ten years established, they want your produce and will pay the best price for the best quality. For our part therefore we would prefer to locate near some well populated town,—certain ones in Kansas would well suit us,—rather than push to more distant parts like Florida or Texas although here also some fine opportunities for money making exist at points such as we have designated.

282. **Currant Worm Remedy.** I have saved my Currant crop for two years by a plentiful dusting on the vine (when the dew is on) with Hammond's Slug Shot. THOS. H. BRINTON, *Delaware Co., Pa.*

335. **Treating a Neglected Fruit Farm.** The main thing trees in the condition you report need is thorough ploughing and cultivation. Salt applied at the rate of two barrels to the acre scattered mainly under the trees would be found an excellent fertilizer in such a case. The leaf mold is a good article to apply to the land; you could hardly use too much of it. Wood ashes are a most excellent fertilizer for fruit trees. Neither Grapes nor Peach trees should have too much manure or fertilizers, but free cultivation. We would advise the white-washing of the bodies of all trees with a good coat of lime wash. A. M. P.

326. **Bearing Wood of the Dewberry.** The growth of one year serves to fruit the next year, the same as the Raspberry. There are different plans for growing them. Some drive down two stakes, say 10 to 12 inches apart near the root, after they have been planted a year. The bearing canes are fastened up to one stake, and the new canes for next year trained upon the other stake; though we prefer having but one stake and letting new growth run along row on the ground, and leaving it there over winter and train it up to stake the next spring.

325. **Camellias with Yellow Foliage.** They are probably in a bad state at the roots. Examine the drainage therefore, and if defective rectify it. At the same time examine the soil, and if not well occupied with healthy roots it would be advisable to remove it from amongst them and supply fresh. We use fresh turf loam of a light nature, cut about two inches thick and turned up roughly. In this we pot rather firmly. Good drainage is necessary as the plants should not be more frequently disturbed than every third or fourth year. Failing the loam, Camellias thrive well in fibrous peat, small plants doing admirably in leaf soil alone with a free mixture of sand. With the roots in a healthy state the new growths will produce better foliage. If the roots are in good condition offer soot water, which will improve the growth and color. A. H. E.

343. **Fertilizers for Fruit Garden.** (a.) A quart of unleached wood ashes should answer for each three year old Apple tree, placing it near the body. (b.) Salt added to the ashes in the proportion of one part of the former to eight of the latter would be excellent. (c.) Such a mixture would suit Grapes well. (d.) Bones broken finely are a valuable addition to the soil in which Grape roots are planted. A. M. PURDY.

345. **Plum and Apricot Stocks.** In the case of Plum no stocks are of use save those of species or varieties that come true after their own sort from seed. Among such kinds are the free-growing Horse Plum, the Canada or Wild Plum, so abundant in Ohio, Michigan and other Western States, the Sloe and Chickasaw Plums where dwarf stock is wanted. To take seed from cultivated sorts as they run and not one in a hundred of the seedlings would be fit for budding, a thing that has been tried times without end. Apricots are only worked to advantage on natural Peach or Plum stocks.

#### Nurserymen, Florists and Seedsmen to Meet in Chicago, June 15-17.

The coming meeting of this Association promises to be one of great interest and large attendance. It is the plan of the executive committee to give more attention to the exhibition of fruits, flowers, plants, accessories, and sale and exchange of stock, and matters affecting the pecuniary interests of members, than heretofore. To this end no evening session will be held; the evenings will be given to the forming of new acquaintances, social converse, etc.

Papers are on the program as follows: American Forestry, by Robt. Douglas; Objects and Working of Seed Central Stations, by Dr. B. E. Fernow; Landscape Art, by Samuel B. Parsons; Acclimatization of Vegetable Life, by Josiah Hoopes, and a number of others from men of high standing in the art horticultural.

The Western State Passenger Association, through their chairman, Mr. John N. Abbott, offers a rate of one and one-third fare to members attending this meeting. The association embraces twenty-two railroads, or all of the leading lines of the West and Southwest. The Inter-State Law has been a great hindrance to the making of arrangements with the railroads, but it is hoped to cover all the roads before the meeting. The meeting will be held in the Exposition Building. Hotel headquarters at the Sherman House.

The Nurserymen's Protective Association will hold its annual business meeting on Wednesday evening in Club Room of Sherman House.

#### The American Pomological Society's Next Meeting at Boston, Mass.

On the invitation of the Massachusetts Horticultural Society the American Pomological Society's next meeting will be held in Boston, Mass., commencing September 14 next, and continuing three days. The session will be held in conjunction with the Annual Exhibition of the Massachusetts Horticultural Society.

All horticultural, pomological, agricultural and other kindred associations in the United States and British Provinces are invited to send delegates, and all persons interested in the cultivation of fruits are cordially invited to attend.

The society will not have the hoped-for pleasure of meeting its beloved president, who was stricken down by death, full of years and honors, just as he had commenced to prepare for this meeting; but it is hoped and expected that in honor of his memory there will be an unusually large attendance of members and delegates from all parts of the country, and that the session will be one of the most interesting and useful ever held by the society.

The Massachusetts Horticultural Society has, with its accustomed liberality, appropriated the sum of *five hundred dollars*, to be offered in special prizes for fruits to be exhibited at the meeting of the American Pomological Society in connection with its own exhibition.

Full particulars concerning the meeting may be had by addressing the Secretary, Charles W. Garfield, Grand Rapids, Mich.

#### The United Tree Dealers' Association.

An association of this name was recently organized at Painesville, Ohio. Its object is to advance the interests of members; to secure fair treatment in buying, and to prevent or expose (as far as lays in its power) frauds in selling and delivering stock. The buying or contracting for stock for the association is to be done by the secretary, subject to the approval of each individual member. It is hoped that in time the business may be so regulated as to do away with many of the recognized evils associated with the sale of nursery stock, and to result in a lasting benefit to the nurserymen, dealer and purchaser. The following officers were elected for the coming year: W. H. H. Gorham, of Greenwich, O., president; A. L. Daniels, of North East, Pa., secretary; M. L. Weaver, of Kossuth, Pa.,

assistant secretary; and William Carichel, of Sandy Lake, treasurer. Any further information desired can be obtained from the association's officers.

#### Received at this Office.

CATALOGUES, ETC.—FIGURES INDICATE PAGES.

Joseph Plenty, New York City, Greenhouses; 48.  
E. Y. Teas, Dunreith, Ind., Nursery; 40.  
Joseph D. Fitts, Providence, R. I., Small Fruits; 8.  
J. M. Ogle, Puyalup, Washington Ter., Small Fruits; 34.

Pomona Hill Nurseries, Pomona, N. C., Small Fruits; 32.

M. C. Henley, Richmond, Ind., Fence Machines; 56.  
"The Propagation of Plants," giving the principles which govern the growth of plants, their botanical affinities, etc. By A. S. Fuller, 348 pages, O. Judd Co., New York.

"First Annual Report of the Ohio State Forestry Bureau." Adolph Leue, Secretary. 314 pages.

"Transactions of the American Horticultural Society for 1886." W. H. Ragan, Greencastle, Indiana, Secretary. 236 pages.

"Our Shade Trees and their Insect Defoliators." By C. V. Riley. 69 pages. Being Bulletin No. 10, Division of Entomology, Department of Agriculture.

"Fourth Report of the United States Entomological Commission.—Cotton Worm and Boll Worm." Riley. 547 pages and 63 plates; Department of Agriculture, Washington, D. C.

"Report of the Commission of Agriculture 1885." 624 pages.

"Report of the Botanists of the New York Agricultural Experiment Station." J. C. Arthur, Geneva, N. Y.

"Maple Sugar and the Sugar Bush." By A. J. Cook; published by A. I. Root, Medina, Ohio.

"Transactions of the American Association of Nurserymen, Florists, and Seedsmen for 1886." D. Wilmot Scott, Secretary, Galena, Ill. 132 pages.

## The Household

A touch of oil for squeaking hinges.

Poor rubbers are the cause of much canned fruit spoiling.

Light furniture shows dust the least; the best color for the kitchen.

Sponging off Morocco with the white of an egg will restore its lustre.

A common mistake. Using acid for cleaning brass. Use fine scouring powder instead.

The Waste of fuel by not arranging the dampers when heat is not needed is beyond compute.

Now the drain pipes should be cleaned of slime and greasy deposits. We know of nothing else so good as copperas dissolved and left to gradually cut its way along the course.

A teaspoonful of baking powder in a fruit jar, filling it nearly full of hot water and shaking it well, usually has the effect of cleaning the glass perfectly. In bad cases this may need repeating.

An Economical Preserve. Peel and cut into inch strips some nice sound Rhubarb, and to every pint allow three sweet, juicy Oranges, and a pound of loaf sugar. Spread the Rhubarb on a large dish and sprinkle the sugar over; leave it for twelve hours, then put it into the preserving pan with the grated rinds of the Orange and the pulp cut into thin slices. Every bit of white skin and all the pips must be thrown away, or bitter jam will be the result. Boil slowly for about an hour, or until the jam sets when poured on a plate. Cover closely, and store in a dry closet. As many people have a large stock of Rhubarb they will doubtless be glad to give the above a trial. It may not be generally known that Rhubarb readily absorbs the flavor of any other fruit boiled with it; for instance, a pound of Raspberries to every two or three pounds of Rhubarb makes excellent jam.—English Farm Jour.

The Carpet or Buffalo Beetle. All housekeepers should be on their guard against this handsome little foreigner that is so rapidly extending throughout our country, and which is so destructive to carpets and all woolen fabrics, and it should be known at sight. Cases are reported where the insects have taken complete possession of houses in the year or two's absence of the owner, and destroyed or injured everything in the nature of wool, even down to picture cords. First as to the beetle which lays the eggs that yield the mischief-doing larvæ. These somewhat resemble Lady Beetles, but they are enough larger that there should be no mistake. The main color is black, with a red line along the back and bordering each wing case internally, besides several projected on each wing cover. There are also three whitish spots on each wing case. These beetles are to be found in concealed places from October until the following spring; and every effort should be made to destroy them wherever present. A good way is to fold together some pieces of flannel and lay them on the closet floors. These the bugs will find, and then they may be

shaken into the fire once or twice a week, returning the flannel again. The larva develops most numerously from June until August, and since carpets are the articles it first attacks these should be the seat of operations against it. Entering at the edge, it may be repelled by laying strips of tarred paper underneath all around the room. But this will not kill the pest; to do so let the cracks beneath the baseboard and elsewhere be puttied up and a line of corrosive sublimate—bed-bug poison—be applied with a brush along the corner. Professor A. J. Cook recommends, as the 'best remedy, to place two or three thicknesses of common toweling over the borders of carpets, wrung out of water just so as not to drip, and then to iron with flat irons so hot as to send a full head of steam through the carpet, and thus kill the larval beetle. If clothing should become infested put it in a close box and drench with gasoline. As soon as the insects are killed the clothing can be aired, when the odorous liquid will quickly escape.

## Poultry.

Drinking troughs must be out of the sun.

Keep the hens from the poisoned Potato patch.

Lice and tobacco never get on well together in the laying nests. The hens don't object to the tobacco.

For Diarrhœa in chicks give some boiled milk in which is stirred while cooking some chalk and a little bone dust.

Soft food unless it is fed in slatted boxes has this disadvantage, the hens will track over it more or less, adding filth, and filth is always unhealthy.

Pea fowls I find to be a very interesting class; they are handsome and subsist with the least care of any kind of fowls. They know their friends, but are rather shy of strangers. They are prolific layers, the best protection against hawks, and a sure exterminator of insects. They hide their nests in June and raise their young with little help. J. W.

The Egg Gourd, so easily grown, is in most respects the best substitute for natural nest eggs to be had. It very much resembles the genuine, an agreement that may be enhanced by painting, while with being light there is not the danger of breakage to the laid eggs that arises with the use of porcelain ones. Stale eggs are wholly unfit for nest eggs. They contaminate.

Losing Their Feathers. In this month of June fowls sometimes are thus troubled. In our opinion this is nearly always the result of neglect. Treatment:—Look after your fowl house to begin with. Clean it thoroughly, and whitewash on a fine day. Empty the dust-bath, and make a new one of sandy rubble, sand and peat earth plentifully mixed with sulphur, which is cheap and effectual. Do not let the food be too stimulating; mix it, and give plenty of change, and plenty of green food; a teaspoonful or two of chlorate of potash may be put in the drinking-water, which must be fresh every day. Some fowls will refuse to drink this. Then a few grains in water, with the same quantity of bicarbonate of potash, should be poured into the throats of the ailing ones twice a day, and the bad parts of the skin anointed with equal parts of petroleum ointment and vaseline.

A profitable flock of hens is thus referred to by a writer to the Rural New Yorker. "It consists of 100 hens. I find that thoroughbred hens lay more eggs than cross-breeds, though they will not grow any faster. I always feed my grain dry. In January I fed 100 pounds of wheat, \$1.75; eight bushels of corn, \$5.12; two bushels potatoes, 60 cents, and 50 pounds of waste bones, 25 cents. These I got at a market and pounded them up with 25 cents' worth of shells. Total cost of feed \$9.97. I got 30¼ dozen eggs which I sold at 36 cents per dozen, or \$10.98 in all. I call the manure good pay for my time, so that there was a clear profit of \$3.01 for that month. In February I fed 200 pounds of wheat, \$3.50; four bushels of corn, \$2.06; bones, 30 cents; shells, 40 cents; two bushels of potatoes, 60 cents, and one bushel buckwheat, 80 cents. Yield, 72 dozen eggs at 28 cents per dozen—\$20.16, leaving a clear profit of \$12 for that short month. The March feed was one bushels of oats, 45 cents; 100 of cracked corn, \$1.15; 200 pounds of wheat, \$3.50; one bushel of buckwheat, 80 cents; two bushels of corn, \$1.28; 60 pounds of bones, 30 cents; shells, 40 cents. Yield 86¼ dozen of eggs at 22 cents per dozen—\$18.03, leaving a net profit of \$11.55. Thus in the first three months of the year, during which many flocks are eating their heads off, my 100 hens made a net profit of \$26.16."

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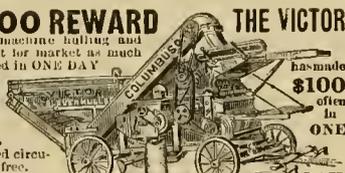
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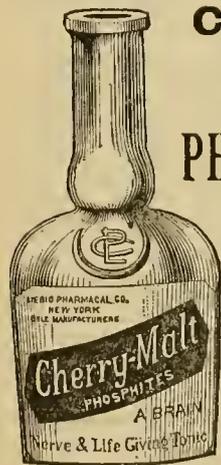
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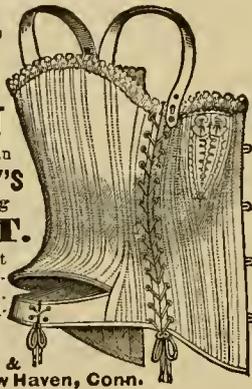
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351 Main St. BUFFALO, N. Y.

# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

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### Sunrise.

Ring welcome, birds in bushes dew-impearled,  
And rouse the sluggards with thy gay alarms;  
The landlord Sun comes up to see his farms,  
His favorite fields, this fair and fruitful world.  
Let him not see his tenants idle stand;  
Seed-time and harvest fail not, nor should fail,  
The patient will, the strong and skillful hand,  
Whose help may make the Sun's warm heart avail  
To flush with Roses cheeks now pinched and pale,  
And fill with plenty all the peaceful land.

—Country Gentleman.

IF LONG, STRAGGLING shoots start up in flowering shrubs, they should be pinched back while young, thus giving others a better chance, and tending to a more shapely bush.

SUCH FREE-BLOOMING plants as Verbenas, Petunias, Mignonette and many others are apt to show signs of exhaustion from profuse blooming after the first free-cropping of the season is past. By treating these liberally with liquid manure a number of times, pruning the ends of flowering shoots back somewhat also, the plants will take a new hold and amply repay this care by increased bloom later.

PROF. J. W. SANBORN has reported a series of interesting experiments on the relation of dew to soil moisture, made by driving iron tubes a given length into the ground, and thus securing a portion of the soil enclosed for examination, capillary attraction being shut off from the cylinders of earth by means of an inserted bottom, placed by digging down one side. Some of the leading results were, that the soil loses moisture by night, both when there is dew and when there is not; that shallow-tilled soil loses less by night than deep tilled; that deep tillage is followed by less evaporation in drought than shallow tillage; and that a good deal of study needs yet be given to the subject.

THE SHIPPING of fruit in refrigerator cars is opposed by some prominent fruit dealers, who claim decided advantages for ventilation. Here are the directions which a leading Philadelphia firm gives to shippers: "The fruit and packages should be perfectly dry and cool when shipped; the shade temperature of the place will do; never use ice; ventilation is better than refrigeration. We have demonstrated that ventilation of natural air is more preserving to delicate fruits and berries than the artificially low temperature of the confined and damp air of any existing ice box or refrigerator system. Pick and pack the fruit as above directed, in ventilated packages, and ship via. all fast mail express only; and the extra expense and smaller quantity will more than be recompensed for in the better condition of the fruit on arrival and its higher sale."

IT IS WITH REGRET that we see an eastern contemporary pitch into the Norway Spruce as a tree not to be recommended for ornamental planting. Such an attitude must come from a lack of appreciation concerning the real wants of planters at large. Admitting, as POPULAR GARDENING does, that there are other valuable evergreens, and even some like the Hemlock Spruce, the Colorado Blue Spruce, the Nordmann's Fir, that may retain the freshness of youth somewhat longer than the Norway, the fact yet remains, that as an ornamen-

tal evergreen for the million the latter has a long lead on all of its class. It is hardy, it is low priced, it is adapted to a wide range of soils and climates, it is easily transplanted, it is of free growth, it is a beautiful tree when young, it is a beautiful tree at a score of years and beyond, especially if its branches have occasionally been shortened: it is among the best of trees for ornamental hedges, and for screens and windbreaks few equal, while none greatly excel it. That such a tree should, in this day when perhaps a million home grounds in America are devoid of any evergreen or shrub beauty, be condemned by the friends of horticulture is much to be deplored. It is emphatically the evergreen for the masses.

CANNING FRUIT in salicylic acid, and especially for exhibition purposes, was recently referred to in these columns by A. T. Grant, Worcester County, Mass. In reply to an inquiry for detailed information as to the process, our correspondent kindly forwarded the following statement: "Use no heat. The fruit should be put in the glass cans fresh and just as picked, and for looks be shaken down as solid as possible, but not to bruise the fruit, as berries shrink some but not nearly as much as when done the old way by cooking. Then prepare a solution of salicylic acid 35 grains, sugar 8 oz., with 1 quart of water, and when dissolved pour over the fruit. After about one hour a little more of the solution may be added, seeing that the cans are full, then seal as usual. Of course the cans cannot be tight the same as when sealed hot, because the shrinkage while cooling causes a suction—so don't fear if the cans leak, as they certainly will a little. Nothing can be finer than fruit thus put up 'for the fair' and similar uses. For the table we have decided to use pint cans so as to eat the entire contents of a can when first opened. Then one can count on putting up Strawberries, Raspberries and Blackberries and find them good, but Blueberries are not as good as shavings. Corn, Beans and Peas are put up a little different, but as we did not succeed with them, cannot advise trying them."

### The Value of Beauty In Selling Products.

N. Y. L., ADAMS CO., ILL.

To the man who has fruit and other products for sale mere beauty as such has a value that can be measured by hard silver dimes and hard gold dollars.

Go along the street of some town early in the morning, when the corner fruit stand proprietors are getting ready for the day's work. Notice how they polish the Apples with a cloth until they are rosy and glistening. This work, which adds to the beauty of their wares, is profitable, for it makes quicker sales and better prices. Wait an hour until sales begin. You will see that of every ten purchasers nine select the handsomest apple or orange, no matter what its quality may be. Likely they know nothing of the variety, or could not distinguish varieties if they knew their qualities. However, this may be, it is the handsomest fruits that sell first and at the best prices.

Go now to the vegetable market and you will have further evidence that beauty has a

value. About vegetables in general there is not much beauty, yet it is possible so to arrange them on the tables that what beauty they have is enhanced and made so prominent that it cannot fail to impress the intending purchaser. Nearly every stall keeper understands this; but some are more particular than others and have a better eye and taste; such have the best arranged displays and sell out earliest and at best prices. Berries and other fruits also may be made to look fresher by grouping contrasting colors.

Every city fruit dealer also well understands how well a little colored netting over a basket or crate of berries tempts the passer-by to purchase. He buys not because the netting is nice, but because the fruit beneath it looks bright, handsome, tempting.

It is strange that the growers do not properly appreciate the value of beauty and how to enhance and preserve it as these things have been learned by the city dealers. It will not do for us to say that this is because it is their business to sell, for it is also our business to sell. The fruit grower or market gardener may not sell to the consumer; in fact, very few of the former do; nevertheless both fruit grower and gardener must sell to some one. To sell judiciously is as important as rightly to cultivate or seasonably to harvest. If we handle our produce properly from the beginning we can have more beauty to sell than the dealer who displays well fruit that the producer has improperly handled; and the dealer will buy this beauty as readily and pay as good price for it as the consumer does.

I know from sad experience that if the berry grower would preserve well the beauty of his berries he must keep a sharp watch on his pickers. I know also that dirt on the box or crate detracts from the berry. I rarely have the boxes returned to me from the near-by market; it does not pay.

I make my own boxes, and if the stuff is not bright I have it scrubbed off, using strong soft soap. This can be done very rapidly, and adds wonderfully to appearances. No one cares to eat more dirt than he must. If boxes and crates are dingy or dirty people are apt to think the berries are. Berries in dirty looking boxes do not, at least, tempt the appetite; hence there is another and good reason why clean boxes sell fruit more readily and at better prices.

I find always that money spent for netting is well expended; but netting must be used judiciously. Most people prefer their Strawberries not dead ripe; hence the netting of these must be of a shade to make them brighter, but no darker colored in appearance. On the other hand Blackcap Raspberries, and especially Blackberries, sell best when they show a deep, pronounced color, especially in our northern markets. Now let the netting be pure white and the purchaser draws it aside to examine the berries, they look dark and bright, and the purchaser is sure they are nicely ripened and fresh.

**Practical Hints on Budding.**

Budding is one branch of the gardener's and fruit grower's art which all who are interested in these matters should become familiar with. Whether in changing the tops of fruit trees or in propagating in nursery rows, by converting wild or undesirable stocks of fruit and ornamental trees into improved sorts, budding has some advantage over grafting. It is usually a simpler and easier task, and one in every way as agreeable to be performed by a lady amateur as by the experienced nurseryman.

The equipments for the work are suitable

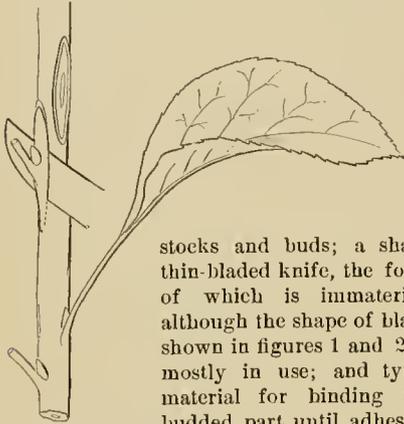


Fig. 1. The budding stick. Cutting a bud preparatory to its insertion.

stocks and buds; a sharp thin-bladed knife, the form of which is immaterial, although the shape of blade shown in figures 1 and 2 is mostly in use; and tying material for binding the budded part until adhesion between bud and stock has been effected.

The stock, which usually should be a young vigorous seedling or shoot of the previous year's growth (Figures 3-6), must at the time of the operation be growing thriftily and be full of sap, so that the bark will readily lift from the wood. Generally the time when it is found in its best state for successful work, is as the season's growth is approaching termination. If the budding be done too early there is danger, first, that the stock may over-grow and smother the bud; second, that the bud may push into growth the same season without having the time to properly ripen its wood before winter. It is better that there be no growth from the inserted bud the first year. By removing the tie as soon as the bud is united to the stock, usually in about two weeks, there is less liability to this than otherwise.

The order of budding different kinds of fruit trees in Western New York is about as follows: Common Plums and Pears (on

The buds used should if possible be so far matured as to be quite hard and well developed. Sometimes, however, as in the case of Pears that are threatened with blight, it is necessary to begin budding while the buds are yet in a rather immature state, with us about the middle of July.

The operation of ordinary budding is illustrated in figures 1 to 6. Figure 1 represents a section of the bud stick with several buds and one leaf remaining, one bud removed and one being cut. It should be said that as soon as a stick of buds is taken from the tree all leaves should be trimmed off. These sticks may be kept for some time by wrapping them in a dampened cloth. After a bud is cut and before inserting it into the stock, many favor removing the bit of adhering wood, as in figure 2. This secures not only a neater fit of the bud, but the adhesion, as claimed by some, is more perfect. Still perhaps a majority of Americans never remove the wood.

Figure 3 shows the stock with the necessary T shaped cut made preparatory to its receiving the bud. In making this cut let the knife just pass through the bark to the wood. Then the corners of the bark should be slightly raised with the knife to admit of the bud's insertion underneath. Figure 4 shows the bud nearly slipped into place, and figure 5 the same fully so and ready for tying. The tying is illustrated as completed in figure 6, it being performed by starting a little below the cut and working upwards, ending by a slip loop at the top.

What is called annular or ring budding (or it might be termed grafting), is shown by figure 7. This is usually employed in the case of trees and shrubs having comparatively thick bark, such as the Magnolia, Hickory, Chestnut, etc., and is generally done in the spring just after growth has commenced. The essential points in this method are the removing of a ring of bark, passing nearly or quite around the stock as at A, and replacing it by a similar ring from the cion and containing a bud (B, C). The operation is completed by carefully winding the parts somewhat as in ordinary budding, the ligature to remain until a union is effected.

**About Evaporating Fruits.**

S. B. MANN, LENAWEE JUNCTION, MICH.

The evaporation of fruits and vegetables for the double purpose of preservation and cheap transportation became years ago a subject of great importance to the fruit growing States of Michigan and New York. The inventive skill of Mr. Alden of the latter State was among the first to successfully accomplish the end sought. His method, while successful as to principles, was attended with too much expense for practical purposes. To Mr. Alden the public owes the discovery of the possibility that water can be extracted by the proper application of heat in a way to retain all the other natural elements, and that by restoring the water at any time thereafter restore the fruit again to its normal condition.

Many thousands of dollars were spent in erecting expensive factories with large capacity. The product was really marvelous, and for a time brought a high price on the markets. But for a long time the demand for such goods was not sufficient to make it a paying business. Like with all other important inventions when the want has been established and the object to be attained made possible, the simplifying of machinery has quickly followed and the conse-

quent cheapening of the product. There are many inventions to-day, or rather improvements upon the theory of Mr. Alden, that make it possible to now preserve the surplus fruits of the fruit-growing States so cheaply as to bring them within the reach of the masses. The successful methods, however, must embrace that one essential so important in Mr. Alden's invention, viz., the extracting of the pure water only and at the same time preserve the little fruit cells perfectly, so that when water is again applied the fruit will readily take it up like a sponge. If it is allowed to ferment or is over heated it will to the same extent be injured. Hence the importance of careful handling and no delay after the fruit has been cut.

The bleaching process so generally adopted of late has prevented coloring, or rather had the effect of whitening all specimens, making the fruit fine to look at. But the excessive use of brimstone for that purpose has beyond a doubt injured the quality of it. Although chemists have been plenty who for pay were ready to certify that the effect of the fumes of brimstone are harmless when used as food, I am firm in my convictions that it does no good, and for my use rather have the pure fruit though it may be a little darker colored. My advice to all who are interesting themselves in this business is to go carefully at it. If good ripe fruit is properly handled, carefully put up and kept in clean storage it must be wholesome. It can be cheaply transported, and will in all time be a profitable article to put on the market.

Too much cannot be said in behalf of the enterprise, and it should receive the encouragement of all who have the welfare of humanity at heart. I have no pet method to recommend and cannot give any advice as to whose evaporator is the best. The point to be sought is to dry the fruit in a moist atmosphere; the fruit gets the farther it should be removed from the heat. Any process that will do the work rapidly and cheaply is a good one.

Some strictures have been offered in reference to so much play and so little work done, and that hurriedly, at the Philadelphia meeting last year. I was present at that meeting, and also at the Cincinnati one the year before, and have some observations to present.

At Cincinnati I noticed that there was a large proportion of young florists, and the work of running the convention devolved almost entirely upon the officers. A good many who were present seemed to be there with the idea that by hail insurance or otherwise the Society of American Florists was going to boom business in a way to put money in their pockets. Such were disappointed and failed to give that careful attention to the proceedings that was to have been expected.

**Florists' Conventions.**

L. B. PIERCE, SUMMIT CO., OHIO.

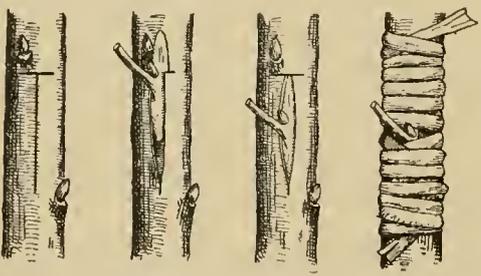


Fig. 3. The T shaped cut. Fig. 4. The bud entered. Fig. 5. The bud in place. Fig. 6. The bud tied.

**INSERTING AND TYING THE BUD.**

Pear stocks), in July to beginning of August; Cherries or Mazzard stocks and Apples from the first to the middle of August; Pears on Quince, Cherries on Mabaleb, and Peaches about the first to middle of September. Peaches are budded the same season that the seeds are planted. Where Apple grafts have missed it is usual to make amends by inserting buds on the leading shoot of each stock at the proper time the next summer.

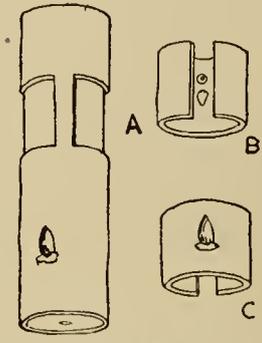


Fig. 7. Annular or Ring Budding. A stock ready to receive the bud ring B C Bud ring, front and back views.

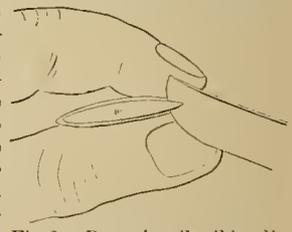


Fig. 2. Removing the thin slice of wood that was taken with the bud.

At this meeting there was one pleasure trip, that to the Dayton Soldier's Home, a trip that I am sure did more to introduce members to each other and to educate them in various matters pertaining to their calling than any other day of the convention. Here they broke up into little groups and wandered through the grounds discussing what they saw, and gaining much practical knowledge.

The same was true of the trip to Mr. Childs' place, and to Wm. F. Dreers', in Philadelphia, last year. The trip to Atlantic City, while full of novelty and pleasure to many, was not of so much practical utility as the others.

Much dissatisfaction has been expressed in reference to essays and general discussions at the Philadelphia meeting, but it seems to me that when we consider all the circumstances: that florists, as a class, have grown up to the business, and that many of them are only slightly educated in the ways of writing or speaking, it is a matter of congratulation that the report is as good as it is. The last day brought a multitude of resolutions and gave an appearance of a vast quantity of unfinished business, but when sifted much of it was really of trifling importance.

One thing I was disappointed in at Philadelphia, namely, the exhibition. Leaving out the florist's supplies exhibit and the show of Cacti, and there was scarcely anything left. If every one of the 600 visiting florists had only brought a single specimen plant it would have made a beautiful collection, and added greatly to the value of the meeting, and I would suggest that such an exhibit be made a special feature at the Chicago meeting. At the Philadelphia meeting of the American Pomological Society five years ago there was a magnificent display of pot and cut flowers and quite a collection of floral designs, some being of mammoth proportions, and it struck me as strange that a society exclusively of florists should be so far outdone by one that never discusses flowers.

#### Hollyhocks and Their Culture.

Among border flowers there is no other class which has such a noble appearance as the Hollyhock when its nature is suited by fair soil and good culture. Neither can a finer or more stately summer flower be named for cutting than this, when it happens to be grown in such abundance that entire shoots may be taken and arranged either by themselves or by intermixing loosely with other flowers and foliage. Such an effect arising from a stalk of fine Hollyhocks being placed singly in an ornamental vase is shown by our engraving. But even this beautiful picture fails to do justice to the real article from which this was taken.

In the Hollyhock we find also one of those valuable types of plants that are adapted to the needs of all amateurs who have gardens of suitable soil. Its culture is of the most simple kind. Seed of a good strain, such as may be purchased of all first-class seedsmen, may be sown in the open ground at any time from May to July to provide plants for flowering the next year. The plants are hardy. The seeds germinate readily if sown in light deep soil that is well enriched, shading the beds with straw or boughs until they come through. When the seedlings have made half a dozen leaves they should be set out where they are to bloom.

The soil best suited to this plant is one that is deep, rich and underdrained. During the season of growth it should be kept well cultivated. In wet land the plants are sure to suffer from winter killing. In such cases disaster may be averted by growing the seedlings in pots and not planting them out to flower

until the next spring. Potted plants of the Hollyhock can be usually bought of florists in the spring, a thing very convenient if one has on any account neglected to get up stock.

From some sections reports are heard of a

fashion: When the flowering season is about over in August cut down the stalks to near the ground; then divide the roots carefully by the aid of a sharp knife, and plant the parts into light, rich soil. Such plants will soon start and will flower the next season.

Hollyhocks may also be propagated by making cutting of the young stalks in early summer, cutting them to lengths of half a foot, and inserting these to half their length in sandy soil in a sash-covered frame. The glass of the frame should be shaded lightly, and air be admitted to the cuttings daily. They should be frequently sprinkled from the start. After such are well rooted treat as directed for seedlings.

#### Rotation in Farm Gardening.

D. N. LONG, ERIE COUNTY, N. Y.

Where land is not too limited a rotation of the farm and garden crops has many advantages. By the well-tried system I shall here outline I succeed in getting one heavy crop of Wheat, one of Cabbage, Cauliflower or Onions, and one each of early or late Potatoes, and one of Rutabagas or Turnips, and Wheat again, all within three years, and with one dressing of manure.

Commencing with a Wheat crop well seeded to Clover, our practice has been to spread manure directly from the stables on the stubble and Clover during the following winter, inducing a heavy growth of the Clover to be turned under when about 2 ft. high, and planting the land to late Cabbage or Cauliflower. One-half or less of the usual large amount of manure needed for this crop along with the clover gives as good results as the heavier coat of manure would do. Part of this plot is again manured with fine manure after the Cabbage harvest and to be occupied by Onions the next season. The remainder goes to early crops of Beets, Cabbage, Cauliflower, Potatoes or any crop that matures by September 1st. Then the ground is thoroughly cultivated and again sown to Wheat.

When the land is devoted to Potatoes these are planted in furrows made by setting very wide and about 2 1-2 to 3 feet apart, thus causing deep furrows and ridges. To have the plow go up on one side of plot and down on the other till all is ridged makes the best work with not much surface for weeds to start from. The Potatoes are covered but lightly with a hoe, and by the time they begin to come up all weeds that have started are killed by thoroughly harrowing the ground to level the soil. The Potatoes are duly hilled and as soon afterwards as weeds again start the soil is well tilled, setting the cultivator very narrow, and Rutabagas and Turnips sown between the Potatoes. By Potato digging time the roots are large enough to be cultivated, the weeds being mostly covered from the Potato ridges. The ground is kept well cultivated and is sown to Wheat while the roots are standing, as is also that cleared from Onions, early Cabbage, etc. The Wheat crop is again seeded to Clover and the rotation already outlined is again repeated.

A great advantage of such a system is, that the manuring for vegetables fits the soil for Wheat, while the Clover added makes an excellent condition for the vegetables. Weeds that ordinarily interfere with the farm crops are killed by the clean culture of the vegetables and those which are the worst in the garden are killed by growing the farm crops. The clover sod not being plowed before June 1st allows seeds in the manure and soil to start before plowing, hence are killed by horse power.

It should be said that I have never found the harvesting of the roots any material injury to the Wheat. We have had no Purslane in our Onions to speak of since adopting this method.



A STALK OF HANDSOME HOLLYHOCKS.

disease of fungoid nature, which blasts the plants of the Hollyhock. With us this disease is unknown, but observations have convinced us that it is always worst in crowded beds. Our own opinion is that if the plants have a deep, well-worked and well-manured soil that is drained, and they are planted at such a distance apart that the air can circulate among them it will rarely be met.

The individual plants of Hollyhocks after flowering for two seasons die. But the stock of such may be perpetuated not only by gathering and sowing the seed, but by division after this

## Notes from a Rochester Fruit Farm.

CHARLES A. GREEN, ROCHESTER, N. Y.

**VARIABLE WEATHER.** It is difficult to suit people on the question of weather. It is too hot or too cold, too wet or too dry, but we must learn to make the most of such as we get. Excessively wet seasons are not so favorable to plant growth as moderately dry seasons, where proper cultivation has been given. An objection to wet seasons is the delays it causes. As the hoes and cultivators and the storms cannot prevail at the same time, the weeds get a start and maintain it unless a hard fight ensues.

"How horribly dry; everything is suffering," is a complaint we often hear. Of course things will suffer unless you fight the drought. The soil is not so fearfully dry as you suppose. Dig into frequently stirred soil and see how moist. But the uncultivated is parched. Keep the cultivators running at least twice a week, or every other day if necessity requires. We have layered Gooseberries, cuttings and young stocks of various kinds, that would perish if left uncared for while waiting for rain. We work the soil freely between the rows, then shovel plow, throwing a mulch of fine earth about the plants. Then we cultivate again several times in the path of the shovel plow. The result is firm soil about the roots and several inches of loose soil over them on all sides.

Fruit blossoms are more perfectly fertilized in dry weather than wet. Drenching rains coming at the date of blossoming often ruin our crops of Pears, and injure the Apple crop and many other fruits. Then the bees cannot work, often for four or five days, at the critical period; hence, this method of scattering pollen, and the effect of the pollen carried by the dry winds are less in wet weather.

**PUDDLING TREES.** We have never so fully realized the benefits of this as the present season. We had thousands of trees and vines to transplant that had begun to leaf out. We dug a deep hole and made a thick mixture therein of clay and water, thick as cream. The roots of trees, etc., were dipped therein without a moment's exposure and planted immediately. The fine earth clung to the muddy roots, and though the soil was rather dry when planted, and no rain for two weeks since, the leaves are fresh, and the planting a success. Without this puddling it would have been a failure.

Grape-vines bear transplanting thus after the leaves appear with remarkable success, continuing growth as though undisturbed. At such a time young roots have formed often two inches long. These would perish with the slightest exposure, but when puddled and planted with care not one in 1000 should die.

I have seen large trees transplanted after appearing in full leaf, by cutting back the tops to a point where the buds have not started. On nearly all trees there are numerous buds on the branches near their base that do not start growth unless the branches are cut back, or some accident happens. Buds also push out often where none could be discovered.

**DO NOT HOE DEEP.** Daily we go out among the men hoeing newly planted Strawberries and Raspberries, and order them not to hoe deep, and yet they continue from habit to hoe as though working among Corn and Potatoes, which root much deeper, and which also are hoed so deep as to injure them. But the roots of newly planted tip Raspberries and Strawberries are often buried but two or three inches, and an ordinary deep hoeing does them more injury than good. Then in removing blossoms from newly set Strawberries the men will pull them off in place of cutting with the thumb nail, and in this way the young plants are often uprooted. It is difficult to get men to hoe properly. If they obey in not hoeing too deep they do not hoe deep enough, and let the weeds get a start.

**PERILS OF TRANSPLANTING.** Some one has said that not half the plants and trees sold live to bear fruit, owing to careless planting. Con-

siderable experience is required, especially with Strawberries and tip Raspberries. If planted too deep they perish; if too shallow they perish. If exposed to the sun and wind five minutes they perish. If the soil is not well plowed or if very dry and not made fine at planting, or not well cultivated and hoed immediately after, they perish. Then if they live the White Grub often eats the tender plants. The great source of loss is in getting such plants late. They cannot be shipped safely after warm weather comes, nor planted safely then as a rule. Complaints are mostly from late shipped plants, while those sent early had cool weather in transit and moist soil at planting.

**THE AMERICAN POMOLOGICAL SOCIETY.** This grand old society holds its next annual meeting at Boston, with Patrick Barry and Chas. W. Garfield at the helm, as good men as our country can produce. This society has done more for pomology than millions of dollars could have done if voted by Congress. It is an honor to become a member, and a privilege that no one can afford to ignore. Does it pay to drop work and attend such meetings? Yes. I have never taken a trip of this kind without making money—not directly, but in such a way that in future years I found it profitable. Men should enlist in movements of interest to their specialties. If they do not it indicates a lack of appreciation, and of interest that marks the individual as sleepy and half alive.

"Yes," you say, "but men go there to puff their specialties or to make money one way or another." Will you go there with that object and try it? If you make yourself conspicuous as a puffer you will soon get frozen out. As far as money making is concerned that is laudable. If you are making money anywhere it is presumptive evidence that you are of some practical use to your fellows. It is no slur to say that your neighbor is going somewhere to make money. We are all money makers, and if by showing our fruits and telling our experience and listening to the experience of others we can make more money, and we all can, this should induce us the more to go. But these excursions benefit us in many ways. We get breadth of views, increased knowledge, a little of polish of manner, and the rough corners of our conceit get rubbed off.

#### A Practical Talk on Evaporating Fruit.

JEWETT BENEDICT, DUNDEE, N. Y.

The business of evaporating fruit has come to stay. When, therefore, one is about to embark in it he should do so intelligently. A first thing is to find among the many evaporators one you will be pleased with; don't take any man's word as to this. You have got to run it.

Some talk of erecting a valuable building for the business, others wait none at all; both are wrong. Without a building, accommodations for preparing, handling and packing the fruit are lacking. With a valuable building in case of a fire your loss will be heavy, as no insurance company will take risks on an evaporator. So I say from experience, get up a handy building, put in an evaporator that will do good work, enough of it, and that will be economical both in fuel and help.

Avoid any fruit evaporator with return flue. Such do not act in accordance with the laws of pneumatics, and need close attention or the fruit will be spoiled. I have found the upright shaft more economical and convenient. It should be remembered that fruit, while fresh, will endure a high degree of heat without scalding or discoloration.

Two things are necessary in an evaporator: heat and ventilation. An evaporator that is poorly ventilated will dry the fruit slow; with less heat and more cold air the product will be better and a greater quantity in a given time.

Never allow fruit to remain in the drier until it rattles on the trays, better throw it off quite moist and allow it to finish up on the

curing floor. In berries, especially, if you wish a fine product empty off while quite moist, and the shape and size will be retained. Such will hardly show they have been dried.

In fitting for market, the practical man has learned he must put it out in the best possible condition for obtaining the best price. See that your fruit is clean, the berries bright, the Apples, etc., even in color. No man will attempt to put upon the market berries that have grown upon young or low bushes without first fanning and dipping them; this will remove the sand and improve the color.

Some wonder at the range of prices quoted by commission men. Difference in quality accounts for this. If the evaporating were rightly done but few grades would be quoted in the market. The evaporating business is fast becoming a science; any man who embarks in it thinking he knows it all at the start had better not attempt to compete with those long in the business. I have found that there are A B C's to be learned in the business; they can be summed up in a few words: be careful, be clean, be honest, and with experience you will succeed. As for packages, a bright, shapely package is best for any goods.

#### Troubles of the Hudson River Growers.—Some Remedies In View.

A. J. CAYWOOD, MARLBORO, N. Y.

Between twenty five and thirty years ago, when a small quantity of fruit was marketed from this valley, it was carried to New York on reasonable terms, but during the last ten years while the carrying of fruit has become the chief business of many of the heavy and small steamers on the Hudson, and while fruit is one-half lower in price the freight charges have been increased. In addition to this the commission men, unlike formerly, now charge cartage from the boats to their houses.

To compel the people to accept their terms the transportation companies have leased or bought the wharfs in front of all the fruit sections. In certain cases docks were bought by the growers, when the companies quickly made terms with such at lower rates. Fifteen miles nearer New York where the companies held the docks they charged from \$1 to \$3 per ton more for Grapes; other fruits in proportion.

There being no proper arrangement on these boats for the safe storing of fruit, Peach baskets are turned up, set down on each other 7 or 8 feet high, Grape and berry crates dropped from 4 to 6 inches from the hands of the carriers and thrown above their heads on the piles.

At the other end of the route, in New York, they fare but little better. The cartmen whom the commission men employ hire the worst class of boys on the street to carry the packages from the boats to their carts at one cent each, and they are frequently thrown on end from their shoulders. The strife for each to carry the greatest number makes the scene a pandemonium, frequently not an officer being in sight, the boat being literally surrendered during the unloading to these parties. They often run over a lot of baskets filled with Peaches to obtain the mark they seek. The fruit having thus arrived at the stores in a more or less damaged state, and no change having been made in these proceedings after many years of complaint, the growers are now making an effort to correct some of these abuses.

A meeting of the leading fruit growers met in the early part of April, and after deliberation appointed a committee to see the transportation companies, and also the commission men of New York City and other markets. They were cordially met by the boat companies, and promises were made that the charges and the rough handling of fruit would be taken into consideration and equitably arranged.

The growers have asked the commission men to pay cartage on gift packages from the boats to their houses, inasmuch as they have now for the first time refused to return any of them,

including Peach and other baskets. Some of the commission men convened and the committee met them and were rather coolly received, the former declaring peremptorily that they would not return Peach or any other baskets, nor pay the cartage on gift packages.

It is now thought that the bulk of the fruit from this section will be sent to other markets, as nothing of much importance has been accomplished by the present efforts of producers.

### Influence of Stock, Cion, Etc. on Future Growth.

ANDREW S. FULLER, RIDGWOOD, N. J.

In selecting cuttings, cions and buds, it is well to keep in mind the fact that they have more or less influence in determining the future value of the plants raised therefrom. Whatever faults or merits are possessed by the parent plant are likely to be transmitted to the offspring, and either, under certain conditions, may be increased or decreased many fold.

If we desire early fruiting, we should select wood for propagation from mature or bearing plants, instead of from the young and immature. But we may readily carry this kind of selection too far, for very early and premature fruiting is not always desirable. Continuous propagation from old, mature and productive specimen trees may increase the tendency to a premature old age and decay.

Almost any peculiar form of growth or other characteristic of a variety or species may be transmitted to the offspring through the part employed in its propagation. We may not in every instance be able to perpetuate abnormal characteristics at first, but by repeated selections of parts showing a variation from the normal type, we can usually fix and perpetuate almost any peculiar habit or form of plant.

In herbaceous plants, we may increase the floriferous habit by continuous propagating from the flowering stems and branches, until the plant perishes from what may be termed over-exhaustion.

**INFLUENCE OF STOCK ON CION.**—That the stock upon which a cion or bud is set has influence upon its future growth is well known. If it were not so, then the art of propagating plants by budding and grafting would be less valuable than now. It is thus we change the giant into a dwarf, the slow growing plant into a rapid one, and many other variations from the natural habits of plants, simply through the influence of the stock on the cion or graft.

The common mode of producing dwarf Pears is one of the most familiar instances of the influence of the stock on the graft. It mainly affects the form and habit of growth, but is not necessarily debilitating, for size and rapid growth are not always trustworthy signs of great longevity. The influence of the stock upon the graft may be briefly stated as follows:

*First*, The stock gathers the crude materials for the support of the graft from the soil, and in doing so it may supply it in such quantities as to produce rapid growth, or the reverse.

*Second*, The tendency of the stock is to impart its own habit of growth to the graft.

*Third*, One species of stock will extract from the soil the peculiar components which are necessary to support the graft, while another will not; consequently, a variety of species may fail upon one stock and succeed upon another in the same soil and locality.

*Fourth*, The hardiness of a tree is but slightly changed or affected by the stock, except as its growth is influenced to mature early or late in the season.

*Fifth*, The quality and size of a fruit is occasionally influenced by the stock, but the true cause of this is not as yet sufficiently understood to allow of any rules being given by which it may be avoided. I have known two Bartlett Pear trees of the same age, standing side by side, and apparently of equal vigor, still, for ten years, one has produced very large fruit and the other small. The number of

specimens upon each tree being reduced equally the difference in size remained the same.

*Sixth*, The stock will not only impart vigor to the graft, but also transmit diseases. It is therefore just as important to avoid the one as to endeavor to secure the other.

**INFLUENCE OF THE CION ON THE STOCK.**—Downing says: "The influence of the graft on the stock seems scarcely to extend beyond the power of communicating disease." But if we have discovered this much it proves that there is an influence, and if it is sufficiently potent to "communicate disease," then it is probably sufficient to impart other properties as well.

The same seedling Cherry stocks, grafted with sorts of different degrees of vigor, soon vary in amount and size of the fibrous roots. Trees of the Imperial Gage and Jefferson Plums, a few feet in height, when budded on the Wild Plum, were found to have only half the amount of roots possessed by the unbudded stock of the same age.

Every nurseryman must have observed that some varieties of the Pear, as well as of the Plum and Cherry, have a far greater number of fibrous roots than others. These various forms of roots cannot be satisfactorily accounted for in any other way but to ascribe the cause to the influence of the graft. If we take a seedling Apple tree one or two years old, and divide the root into two parts, upon one of which we splice a cion of Monmouth Pippin, and on the other one of the Northern Spy, and plant both in exactly the same soil, side by side, and cultivate them alike, after three or four years the roots will have a very different appearance both in color and form.

Still, with all the influence the cion has had upon the roots in changing their form and color, if cuttings are taken from these roots and forced to produce shoots, the plants thus raised will be of the original type, showing that the influence of the cion is not perpetual.

A few instances have been recorded where the cions with variegated leaves have so influenced the stock as to cause it to produce shoots below the point of union, bearing leaves like those on the cion. But whether this change is due to some disease inherited in the cion, or the intermingling of the cellular matter, has never been fully determined.—From "The Propagation of Plants."

### A Word for a Good Garden.

JO HATTON, WORCESTER CO., MASS.

Everyone who owns a square rod of land should have a garden, and make it worthy of the name. But in the words of a writer make not the "rich parterre unprofitably gay while you hunger for the luscious fruits." Plant for ornament of course, but aside from this let the fruits receive leading attention. For the amateur there is perhaps no fruit more desirable to plant than the Grape. It is inexpensive to get a start with, it bears early, it is productive and easily managed, and as food it is delicious and wholesome over a long season.

As to kinds, each one must be governed in a measure by the soil and situation in which the plants. Those that are of slow growth are best adapted to rich and heavy soil and the reverse for those of rampant growth. We must advise as the result of experience to plant but few new sorts at a time. The writer was induced by the originator of the Iona some years ago to plant one hundred vines of that sort at quite a cost, and this proved love's labor lost; after nursing them for years they were torn out and burned, proving a failure. This taught us a lesson; we still plant of the newer kinds to test them, but only very sparingly. With Strawberries we are governed by the same rule, but here the second year usually affords a fair test.

One way of planting Grape-vines is to secure the stock in the fall and heel in where water will not stand. Then plant them as early in the spring as the ground can be worked to crumble up finely for filling in about the roots.

The rows are run north and south, to be ten feet apart, with the vines six to eight feet in the row, according to the richness of the soil and the tendency of the soil to make wood.

In setting out, the holes are dug two feet or more across and fifteen to twenty inches deep, then half filled with good surface soil and leaf mold, with a liberal sprinkling of ground bone and wood ashes, the soil is thrown in so as to leave it in the shape of a cone, the vine is set on the top with the roots sloping down the sides to prevent the frost from throwing them out. We prefer one-year old vines to those older.

### Fruit Notes by a Fruit Grower.

JACOB FAITH, VERNON CO., MISSOURI.

The berry crop brings welcome money to the children who pick the fruit, and adds health and comfort to the consumer. It must be admitted that fruit is more wholesome than pork and much cheaper raised. I prefer to provide two meals of the latter to one of the former.

It is upwards of 50 years ago since Strawberries were brought into notice for cultivation, previous to which time there were none to speak of. I feel safe to say that to-day one hundred acres of these and other small fruits are in cultivation for each one of even 30 years ago. The day is not far off when every family must appreciate their value both for health and as food. Our best physicians advise their free use, while as L. A. Goodman says, "Nothing like fruit to bring roses to the cheeks."

Complaints are sometimes heard from consumers that berry boxes are not full. I suppose they think the raised bottom in some baskets are designed to cheat the customer, when if they would stop and think they would see that this was to keep the basket from meshing the berries below by settling on them, and to provide air over the berries. Berries as they come from the patch, it must be remembered, are considerably heaped. And yet I will admit that there are dishonest growers who would deal out their berries in baskets that are short measure, and also dishonest pickers who work in bad berries to fill up, but the good should not be judged by the bad. I have found it the hardest kind of work to have my pickers pick as uniformly well as I require.

Surely it is better to have plenty of fruit on our tables than not when one considers the matter of health. Fresh fruit is pleasant to the taste, cooling to the system, nourishing and laxative. It is far superior in many cases to the doses of salts and oil administered in the case of fevers and other diseases. Raw fruit is acknowledged to be better for constipation than liver pills, and who will say not easier taken?

### Flowers for the Bay Window.

The rock that the amateur flower lover dashes her hopes upon the soonest is, to take some choice hot-house plant in lovely bloom when bought, and try to make it grow in an ordinary sitting room, and with the small knowledge she may have of its nature and treatment.

Make one rule and stick to it. Never buy a plant in bloom. If your heart yearns to possess some lovely greenhouse darling, get a small slip and stick to the florist till he tells you exactly what to do with it. But stay your desires to grow wonderful plants and see what you can do with common things.

I have succeeded this winter with Geraniums in bloom since Christmas. Petunias that just "bloom," Callas that delight the eyes of passers by. But my success was a Nasturtium. Planted in a small willow basket on a bracket close to the window glass, its scarlet sweet scented blossoms have been a daily delight since February. Pink Oxalis in a row of small pots make an upper shelf a blaze of color. These, too, only succeed close to the glass.

An Ivy Geranium on a bracket is another success. Also, Kenilworth Ivy, and a lovely Musk plant. Try these, my amateur popular gardeners, next fall. SISTER GRACIOUS.

### Concerning the Marianna Plum.

T. V. MUNSON, DENISON, TEX.

In 1884 Mr. Chas. N. Eley, of Chambers Co., Tex., the introducer of this variety sent me fruit and trees of it for my opinion, and requesting that I try it if I thought well of it.

The trees had been grown from cuttings, were finely rooted, smooth and very thrifty. The fruit was uniform, about the size of a well grown Wild Goose Plum, but rounder, rich crimson, firm. The basketful, sent by express 350 miles, being in excellent condition the meat more solid, inclined to be more free from the pit and of better quality, with stone smaller. A branch about eleven inches long had still hanging to it some 20 plums of fine size and ripe, showing the fruit to be more persistent than Wild Goose. There were no insect marks or other defects on the fruit. Mr. Eley stated that the fruit ripened considerably earlier than Wild Goose.

The trees were sent at the proper planting season, and were planted in places in an orchard where other Chickasaw Plums had been dug out, a hard place to start young trees. Yet these grew well and have borne some fruit of about same character as that received from Mr. Eley.

I have propagated this Plum by budding on Peach to some extent, and find it takes as a bud better on the Peach than any other Plum I ever tried, including many of nearly every class. But I have mainly grown trees from cuttings, and with excellent success, where the Le Conte Pear would not grow from cuttings at all with repeated trials. The trees thus grown become 4 to 6 feet tall in one season here, beautifully rooted and branched.

The tree has the faculty of growing all the season through, so that it can be budded equally as well and during as long a season as the Peach. I have trees four years old which have repeatedly had the roots cut in plowing around and never yet have I anywhere seen a sprout come from a root, while the Chickasaw varieties sprout so badly from the root that an orchard of them on their own roots soon becomes a thicket.

The terribly severe drought through which we passed last season never seemed to have any effect on the Marianna cuttings, which made as fine trees as usual. Reports from trees sent to Iowa and Illinois show them to have endured from 20 to 30 degrees below zero without injury, and hence I conclude it is equally hardy with the Wild Goose Plum.

After carefully noting its bloom, growth, leaf and fruit, I am led to the belief that it is an offspring of the Decaradeuc Plum, crossed with the Wild Goose, or else Wild Goose crossed with pollen of Decaradeuc. The last named is a supposed hybrid of Chickasaw with

the European, or *Prunus domestica*, of which species it shows characteristics. I have grown some seedlings from the Marianna. Some of these closely resemble the pure Chickasaw, others more like Decaradeuc, and some like parent, or still more like Wild Goose. They have not borne yet.

The various remarkable qualities of the Mari-

anna enumerated seem to me to render this the coming stock for Peach and Plum, to say nothing of its great probability of superceding the Wild Goose as a direct producer, wherever that variety has been successful.

### Notes of Travel by one of the Editors.

A desire to meet with the nurserymen of America at their annual convention in Chicago June 15 to 18, and to make observations at intervening points, lead the writer to embark on a night train west from Buffalo on the evening of June 14, bound for Chicago by way of Detroit. A night's ride brought us some 200 miles west of Buffalo, in Southwestern Ontario (Canada), and by breakfast time we were in the City of Detroit.

#### DETROIT.

In this beautiful City of the Straits a stop of some hours was improved by a visit to various points of interest. A market place is to us, in a strange city, always an attractive place for observation and study, and especially of fruits and vegetables here offered for sale. So we early set out for the central market, which was found a lively business place, indeed, in this respect typical of the city itself.

Here the Strawberry season was still evidently at its height, with a good looking home

grown product retailing abundantly at from 8 to 10 cents a quart. Some of the better

#### SHARPLESS WERE HELD AT A SHILLING

at stands patronized by the wealthier class of customers. It was easy to see that the Sharpless occupies a leading position with the fruit growers of this region, as it does in so many other regions. It usually commanded from 1 to 3 cents per quart more than the Wilson. We think it safe to say that ten quarts of the Sharpless were here offered as against two of any other variety.

At this market Strawberries are handled almost wholly in drawers. The farmers bring them in on wagons, arranged in crates of four, the drawers holding from 12 to 16 quarts apiece. These drawers were being sold from the wagons at 80 cents and \$1.00 each, realizing for the growers from 6 to 7 cents per quart by the crate.

The florists' wagons loaded with plants still contributed their part towards making a lively market scene. But at the prices at which

#### LARGE PLANTS FOUND BUYERS

from these we should hope that the stock offered represented the very tailings of the season, offered at any figure to close them out. We saw large 5-inch pot Fuchsias and Geraniums offered at the low rate of 10 cents per pot, and other plants in proportion.

Leaving the market we drove through some of the residence portions of the town.

#### WOODWARD AVENUE

is the main residence street, its upper end being also a leading business street. For miles along this delightful tree-shaded avenue the wealthier class of citizens reside, and here are to be seen some of the finest specimens of home grounds and gardens to be met anywhere. Fine stretches of well kept velvety lawn, ornamental shrubs, trees, climbers and flowers abound at every side, all going to show how exquisitely lovely home surroundings may be rendered if but the art of gardening be judiciously employed. Than

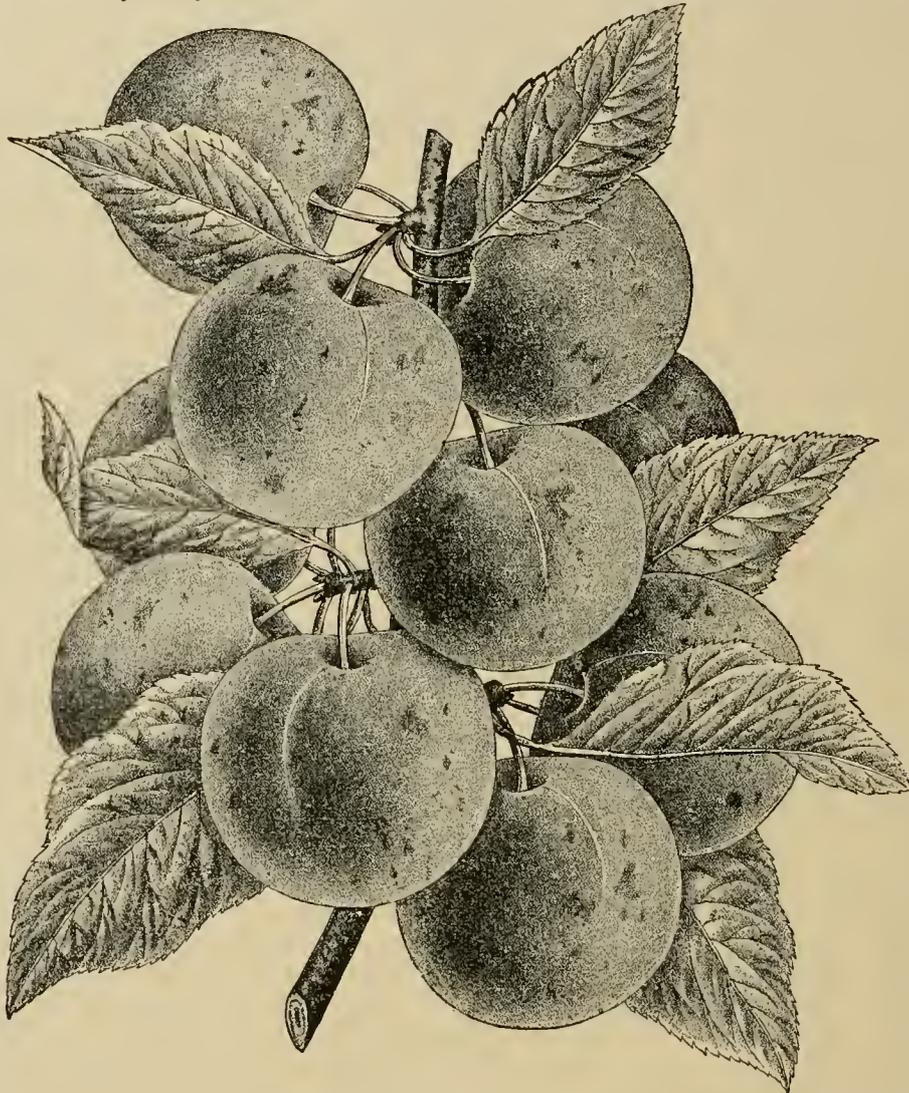
#### THE TREE ROSES

of the Detroit lawns, we think, we have never seen handsomer or more flourishing ones of the class anywhere in America. There may be something in the close proximity of the city to large bodies of water that has a favorable effect on the atmosphere for these plants. It certainly is true that if Tree Roses did as well everywhere as they here do there would be less heard from growers of failure with them.

On this beautiful avenue and adjacent highways the same fault of

#### OVER CROWDED STREET TREES

that is apparent in so many of our tree-shaded towns is met. Here are Elms of large size at



THE MARIANNA PLUM.

from 15 to 20 feet apart, and Maples and Horse-chestnuts at from 10 to 15 feet apart, when in each case they should be fully twice these distances for developing that grandeur of growth which is always to be sought in ornamental trees. There may be excuse for allowing trees to stand close when young, but after some size is reached it is a grievous mistake to not reduce their number in good time for assuring a majestic development natural to the kinds usually employed in these places. One large and noble Elm or Maple that has had ample room in which to spread is worth, in every way, a dozen smaller and poorly shaped trees showing a cramped style of growth.

The people of this stirring city are at present enthusiastic over the prospects of a grand

#### PARK AND BOULEVARD SYSTEM

now approaching its early stages of completion. The main park comprises the ample and attractive territory known as Belle Isle, situated in Detroit River, opposite the northern part of the city. The writer was not able to visit the place, but from all reports the work of improvement is being rapidly pushed and is already giving a finished and park-like appearance to many parts of the island. At present this new park is accessible only by one or more lines of boats, but the system of public improvements embraces a plan for connecting the island with the mainland by a bridge. This will be constructed at a point where the system of parkways that skirt the city terminates at the river's edge. From this it may be inferred that Michigan's first city will soon be in line with the foremost in matters of public horticultural improvements.

From Detroit the writer proceeded, by a few hours' ride, to Lansing, the capital of the State. Our object was a visit to the famous

#### MICHIGAN AGRICULTURAL COLLEGE

at this place. Arriving at the grounds, which, to the extent of about 700 acres, occupy a picturesque locality some three miles east of Lansing, we were cordially received by Prof. L. H. Baily, Jr., the able horticulturist, landscape gardener, and author, who has done so much to earn for this institution the fame which it justly enjoys. Besides being professor in the College department of horticulture and landscape art, Mr. Baily is Superintendent of the extensive horticultural operations and experiments of the place, a position for which his practical knowledge well qualifies him.

It was a treat to pass, in charge of Professor Baily, throughout the extensive gardens, orchards, and ornamental grounds, and note the work in progress. Here is an

#### APPLE ORCHARD OF NINE ACRES,

embracing, besides 350 trees in its older part, some two acres of Russian Apples that were planted this year. This orchard is but a beginning in the direction of growing and testing Apples at the State farm, and heavy plantings will follow year after year.

We noted also a trial orchard of Chickasaw Plums embracing some 50 varieties. Here, two years from planting, the Marianna Plum was growing a perfect picture of health and vigor. Although a native of Texas, Mr. Baily has no doubt whatever of its entire hardiness. The vineyard of the farm at present consists of one acre, on which are growing some 50 varieties, with additions annually being made.

To show the practical character of this institution as a school for young nurserymen it may be remarked that some

#### 5,000 ROOT GRAFTS WERE MADE

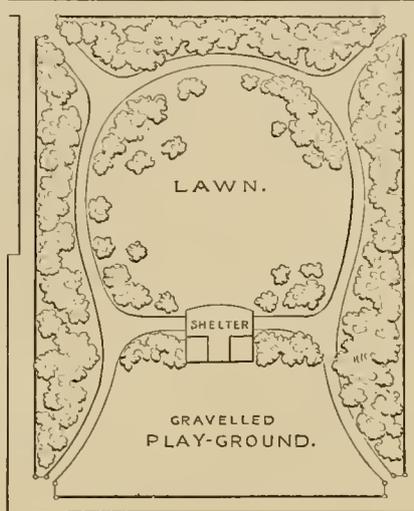
by different modes during the past season, all of which are now occupying nursery rows. All work in this department is performed by the students.

A considerable extent of area is devoted to the small fruits, not only in the way of testing all promising sorts, but also in raising fruit for market. In Strawberries the favorite varieties are Sharpless, Miner, Black Defiance and a new Michigan seedling known as the Lower,

raised at Mount Pleasant. It has not been grown elsewhere than on this farm and by the originator, but Mr. Baily is of the opinion that for use in his region it is the best variety in cultivation. The College people object to the Jewell on account of bearing its fruit very low, and because of its lack in quality and color.

#### IN THE VEGETABLE GARDEN

the operations are on a no less striking scale. Aside from growing a general assortment of culinary vegetables, by student labor, for the use of the College, as well as for market, elaborate experiments are made from year to year



A SMALL TOWN SQUARE.

with particular kinds. For example, 160 so-called varieties of Tomatoes are being grown at the present time, and this will be repeated for a period of 10 years, with a view to determining absolutely the comparative quality of different varieties. In Onions 54 true varieties and species, besides Leeks, Garlicks, Chives, etc., are similarly on trial.

Passing to

#### THE ORNAMENTAL GROUNDS

of the farm an area of near 100 acres is met. This is diversified by a somewhat rolling surface, river scenery and a large assortment of woody growths, native and planted, that together afford a wide scope for the landscape gardener's art. Throughout this department are situated the College buildings, including the homes of the professors. There is also found within its limits the Botanic Garden, and the Arboretum proper, under charge of Dr. W. J. Beal, professor of the Department of Botany and Forestry. The Arboretum covers some two acres, and includes about 300 species.

Among the more striking growths of an ornamental character met on the grounds may be noted the following: A clump of the Gray Pine, also known as Banks' Pine (*Pinus Banksiana*). This is of dwarf and somewhat straggling, picturesque growth, the long flexible branches reminding one of the more irregular forms of the European Larch. It possesses, without doubt, value for ornamental planting where evergreens of moderate size and very hardy character are desired. Some specimens of the Red Pine (*P. resinus*) seen here are also very satisfactory as ornamental trees. A Yellow Wood or Cladastris (*Cladastris tinctoria*), some ten or twelve years old is as fine a specimen of this desirable flowering tree as one is likely, for its size, to meet. The Venetian Sumach or Smoke Tree (*Rhus cotinus*) is one of the most ornamental shrubs in the grounds, and hard to find looking as well elsewhere. A favorite among the Spiraeas is *S. lobata*. Along Red Cedar River, which in part forms the boundary of the grounds, we saw some magnificent specimens of native Beeches. In the

#### BOTANICAL DEPARTMENT

Dr. Beal pointed out with special interest two native ornamental plants which are deserving

of dissemination. These were *Saxifraga peltata*, a strong growing Rocky Mountain plant some three feet high, covered with a great profusion of rose-colored flowers, and *Panicum virgatum*, a grass that here assumes a beautiful bold, rounded form of growth, as effective as it is uncommon among ornamental grasses.

In the line of

#### PRACTICAL LANDSCAPE GARDENING

some work is most of the time had in hand by the students. At the present time a new driveway and rustic bridge are in course of construction in the picturesque parts which lie adjacent to the river's edge. It is to be hoped that the work of improvement in the future will embrace some alterations in the rather faulty original arrangement of drives in the ornamental grounds, as well as in improving the tree grouping system here. As to drives, the easily effected change in certain ones from the prevailing tameness of course, with angular intersections, to that of increased boldness, variety and gracefulness in the curves with rounded intersections, would aid immeasurably in imparting a park-like air to the grounds, and at a trifling cost. If in addition some attempt was made to relieve the peculiar sameness which appears in the size, character and location of many of the older tree groups, by enlarging some to several times their present size, or by introducing a few new and bold ones, and then by lessening, and in some instances entirely removing, certain others, the effect would be greatly enhanced. Under the present management of Professor Baily no doubt these and similar desirable changes will in due season receive the attention they need. With some such improvements accomplished, the State of Michigan might soon be congratulated on having in her farm grounds one of the handsomest ornamental parks in America.

#### A Town Square—Bennett Park of Buffalo.

Let a prosperous, growing town but once enter boldly and judiciously upon the work of establishing public parks, squares and boulevards, and the reflex benefits derived in time from these will be such as to quite certainly furnish the impetus for providing any further desirable extensions in the same line.

Such has been the history of the park system in Buffalo. Inaugurated some 17 years ago by the purchase and laying out of some 600 acres of land to public uses (not without a great deal of opposition to the so-called "extravagance" it is true), to-day finds our citizens more willing than ever to invest in new areas for park purposes at points here and there about the city some distance away from the older parks. Projects are now on foot or have recently been commenced for the making of at least three new parks and squares, besides greatly enlarging one of the older ones. The boulevard system is also to be extended.

The accompanying engraving we have had made to show the plan of one of our new squares, namely, Bennett Park. This is located somewhat centrally, being seven squares to the east of Main street, between Eagle and Clinton, and itself occupies less than one full square. It has a frontage of 290 feet on the first named street and 363 feet on the latter. Located as it is in the midst of a densely settled district, this square is destined to become one of the best appreciated park areas in the city. This plan, simple and pleasing in design, is also one suitable to be adopted in other towns where similar squares are in the way of being improved.

The land for this new park cost the city about \$105,000, a sum which is looked upon by our taxpayers as well spent. To this must be added the cost of improvements, concerning which we have heard of no estimate made, as the work is in the hands of the Park Improvement Board, and will be executed along with the other improvements constantly going on throughout our enlarging park system.

### Fruit Jottings and Talks by A. M. Purdy, Palmyra, N. Y.

The Gregg Raspberry needs renewing as often as every three years. The Ohio and Seneca will stand as long again.

Cucumbers, Melons, etc., grown in small baskets in our greenhouse, transplanted outdoors the past week, are doing nicely.

Onion seed may be sown this month and when winter sets in covered with mulch; this taken off in the spring, early and fine lunch Onions can be had.

We are now running through all of our Raspberry plantations with a one-horse plow, throwing the earth up to the bushes and plowing shallow between the rows.

**Killing Weeds.** We have been killing Dock in our door-yard by cutting it off at crown and putting a few drops of kerosene on the crown. The same will destroy Dandelions.

We have an orchard of about 4,000 young Peach trees—3,000 of which are full of fruit, and what is strange is, that trees that look healthy and in the most protected places have the least fruit.

**Blackberry Rust.** We know of no remedy but the grub hoe. Dig them out at once before it spreads to other bushes. The same with the Black Raspberry. It is more common in old than in young plantations.

To have a good crop of Strawberries next year there must be a good growth of plants this fall, and to have this, work out beds immediately after hearing and work into soil a good supply of well-rotted manure or commercial fertilizers.

**The Earliest.** On May 31 we picked the first dish of Strawberries from our own vines of the Crescent and Downer's Prolific. They were growing in a very early spot, protected, and on a south-side hill, and from an old plantation.

From eight to ten thousand Fay's Currants started in our greenhouse in midwinter from two-eye cuttings and planted out last month are growing nicely. We shade a few days after setting with old hay—that is, if weather comes off hot and dry.

It may seem rather early to start in to nip off the top end of new growth of Raspberries and Blackberries, but we find that if put off a little too long they get "top heavy" and break off easily. We don't allow the new growth to get more than two feet high if we can help it before nipping. It's better to nip too low than too high.

**Summer Transplanting.** We have had good success transplanting Red Raspberries and Blackberries in every month from March to November. As for Black Raspberries the plants that came from layers last fall can be successfully transplanted up to August if cut back at least two-thirds. We have also set out Grape-vines in midsummer with good success by cutting back well.

**Care of Strawberry Plantations.** They should be thoroughly worked and cleaned out immediately after fruiting. The longer it is put off the poorer the plantation another year and the lighter the crop. As soon as cleaned out give a liberal supply of well-rotted compost or commercial fertilizers. We usually plow down all rows to eight or nine inches in width, and then throw back the furrow and clean out well between the rows. If an old bed has run out a new bed may be prepared by digging holes and taking up sods of plants from old plant and putting in these holes; or what is better, transplant new plants from July to September.

**Seedling Strawberries.** Our bed of these is full, and what is remarkable there is hardly a plant but is yielding fine fruit. Two years ago we sowed seed of the best specimens of fruit we could pick from all the sorts on our place and obtained a thousand or more seedlings; these we have in fruit this season, and it's interesting to pass through the bed and see the scores and hundreds of different shades, sizes, shapes and flavors. We can pick out over one hundred seedlings from this bed, not one of which is inferior to most of the seedlings placed before the public through printers' ink. We have staked a few of the best and shall dig out the rest, and may have an interesting report next year.

**Potted Strawberries.** Now is the time to begin operations in this line. Cultivate and clean out the vines well, then fill pots or small boxes with rich earth and sink them in to the brim near the old plants, and as the runners set plants place one of these over each pot or box and throw a little earth or lay a small stone on the young plant, and it will soon take root and in two or three weeks fill the pot with its roots. The pots can then be lifted and the runner cut off, and after soaking earth well in pot of water, knock them out and plant out, earth and all. A bed of these plants will yield a full crop next season. However, we do not recommend

ordering potted plants from a distance by express, as charges are too high. A very good plan where plenty are ordered is to set them thickly in a well prepared bed not over 6 inches apart each way.

#### THE BASKET QUESTION IN MARKETING SMALL FRUITS.

"Shall baskets be given away or not?"—that's the question. We have noticed the discussion of fruit growers in convention, and the meetings and resolutions of commission men, saying in substance, "You must return the baskets," and the other saying, "We can't do it."

With small fruits, bringing many growers from only 3 to 5 cents per quart, the giving away of baskets is simply ruinous, but if 6 to 8 cents or more can be obtained it can be done, at prices baskets are now bought for, providing sellers will return the crates.

We have suggested a plan that we believe if universally adopted would do away with the basket plan, and that is the old Cincinnati stand with its four drawers, and having in these drawers "pigeon hole" apartments (See engraving page 57), such as is used for packing eggs. These holding in each division a quart of berries and leaving no bottom and loose in the drawers, so that when crates are received by sellers the apartments can be lifted out and the sellers, using a ladle, scoop out berries and measure up to customers.

This question of returning baskets will regulate itself for all of the resolutions of fruit growers or sellers' conventious.

Last season we found but little regulation about it, losing over half of our baskets. On the other hand, may not the berries sell for enough better prices in new, clean baskets than in old dirty or stained baskets to pay for cost of baskets. We can buy the material for baskets at \$2.50 per 1,000, and in the winter time, when there is but little to do, make them up, and then making up a cheap slat case to hold, say 16 quarts, let them go; sending only our best berries and making jam of the balance.

#### "WHAT KIND SHALL WE PLANT?"

We are in constant receipt of inquiries like the above. Now a man can learn with his eyes and ears as well or better than by letter.

We remember when we moved from New York State to Indiana, in 1856, we thought we knew all about fruit growing, and we were going to teach those Hoosiers a thing or two, and so we ordered a grand assortment of Apples, Peaches, Cherries and tender Raspberries, and planted out largely.

The first year or two they grew nicely and the winters were light. Then in '66-'67, alas for our air castle, the first hard winter that followed cut off and thinned out our orchards, one-half to two-thirds, and two or three winters that followed about finished up those orchards. Had we gone out among the farmers and asked what varieties of fruit succeeded, and planted of such, we might have been saved great disappointment, and besides hundreds of dollars laid out for trees and labor; and so we say to all those who are asking us the above question: Look around you; ask questions, and as you learn what sort succeeds best in your locality, plant of such largely.

#### VARIOUS PRACTICES IN GRAFTING.

In the Grange Bulletin, the veteran fruit grower, N. Ohmer, in commenting upon the question of grafting on culled stock, or pieces of root, says that from his long and extensive experience in the growing of fruits he is of the opinion that to make a healthy and fruitful tree more depends upon the scion than in the manner the grafting is done, always granting the union to be perfect.

Mr. Ohmer says he has thousands of Apple trees, mostly planted from fifteen to thirty years, which trees were probably all grafted on pieces of roots. All made good growth; have borne plenty of nice fruit in fruitful years, and have been a source of profit to him.

Some trees, of course, of the more tender varieties, have died, though a very small proportion to the number planted.

He would advocate and encourage the planting of new orchards when old ones are on the decline. This important fact seems to be overlooked by many intelligent, though he fears near-sighted, farmers, particularly in the central and southern portions of Ohio. Travel which way you will, old orchards that have supplied fruit for a generation or two are seriously on the decline, and but few new or young orchards are visible. In a few years there will be no orchards, and farmers will have to go to town to buy their fruit as they do their groceries.

Certainly the above statements answer well the many theoretical statements that Apples grafted on pieces of root will not succeed.

The great orchard section of Western New York, with its numerous crops of Apples grown on trees grown from root-grafted trees, answers this. We believe, however, it is best to graft with cions from fruit-bearing trees, and as Mr. Ohmer says, the fault is more with the cion than the root. Grafting year after year from non-bearing nursery trees is not well.

#### APPLE POMACE AS ENSILAGE.

Mr. L. R. Bryant, of Princeton, Ill., suggested a short time ago the use of pomace for ensilage. He related the following incident, which turned his thoughts in this direction:

After cider making one fall, he dumped the pomace in a heap in the orchard. He thought no more of it, merely having put it there to get rid of more than he could feed during the fall. A year from the next spring, being in the orchard, he noticed the hind quarters of a sheep protruding from the heap, and on examination found that the sheep had burrowed inside, and not only that, but another was clear inside.

It was at a season of the year when green food was unobtainable, but the sheep had found that this pomace furnished something almost equal to it. Mr. B. says that the outside of the heap had hardened and contracted so that it was impervious to air and water. Digging in a way, however, he found that the pomace, though a little sour and decayed, was by no means obnoxious to the taste. At his suggestion we wrote to Mr. Boomer, of New York, who replies as follows:

Apple pomace has been preserved in silos in this State and Massachusetts for several years past, and by many of our farmers. For that purpose it should be pressed quickly after the apples are ground, and put into the silo immediately. If allowed to stand it quickly deteriorates, and soon becomes unfit for ensilage. It should be pressed very dry; and if a little cut straw is mixed with the pomace when put into the silo, it is no detriment, though most of the farmers use it without. Would advise filling silos in cool weather in preference to hot.

The above item we clip from the Prairie Farmer, and can say that a little experiment a few years ago satisfied us that it is correct. Our horses and cows would get to the old pomace whenever they could and eat it quickly.

#### Fruit Preserving for Profit.

SUSAN POWER, NORFOLK CO., MASS.

Mr. Purdy's note on jellies in the May number is interesting to preserve-makers and eaters. I have bought jellies in the city from confectioners that tasted so rank of aniline or coal tar flavorings they could not be eaten. Other manufactured preserves by standard makers were a thick syrup, rather rasping, with a taste of mysterious acid, but with no flavor of the berries. Still we must look at the fruit-preserving interests from all sides. The only way to compete with manufactured goods is to adopt the close calculation and management of commercial agents.

Two years since, in a printed article, happening to say I would be happy to bring buyers

and sellers of preserves into communication, meaning if any one wished to buy home-made preserves I would be glad to let them know of women all over the country who made them to sell, every woman who had a dozen extra jars at present or in prospect rushed to the conclusion that I had a string of purchasers anxious to buy fruit in fabulous quantities, and besought for customers. I turned canvassing agent, went into confectionaries, groceries, restaurants, etc., inquiring for the chances of selling home-made preserves, and how they could be made to sell. I made out to learn that the price of home-made preserves was the main thing in the way, and that they must be put up attractively to sell at any price.

Well, there is something to be said for price. Very few people can afford to pay 15 cents a glass for jelly, except a stray tumbler for sickness. It is distinctly a luxury, more so than confectionery. Most families in town can't afford the high priced "home-made," they will not eat the glucose trash of the factories, but they can go without either and not feel the loss. To tell the truth, jelly is not needed in any rank of life, even jelly cake is better made with jam.

"Jam for the millions," says Mr. Williams, the scientific writer on food, and there is nothing better or more profitable. The whole fruit is used in making, greatly to the grower's profit, from one half to two-thirds less sugar is needed, and the man of moderate means, or the house-keeper who will study economy, can buy for 15 cents at least enough pure fruit jam to give her family a good helping apiece for one meal. I bought Crosse & Blackwell's Orange Marmalade in large fruit bottles, neat enough for the tea table for 15 cents this spring, and the jams, Plum, Gooseberry and Currant are 17 cents in the same size. They looked beautiful, the most exacting taste could detect no flavor amiss, they relished, they were healthy.

Jellies cannot be made to pay, but jams and fruit syrups can. If 3 cents worth of fruit, with 5 cents worth of sugar and package does not sell profitably at 15 cents, then I fear fruit never can be said to pay in any shape. Apple butter, made the old way with spice in, sold in wooden packages, will sell and afford profit at 8 cents a pound; some farmers say much less.

Wine jam, or jam of all fruits boiled in the newly pressed juice of Grapes without sugar, the favorite German way, will sell by the car load, for the uses of jelly to eat with roast meat, or to use with cake. You can make three times as much jam of the same quantity of berries as jelly; and when you can take a tempting, relishing preserve, ready made for the table, in the good old fashioned way right to people's doors, as farmers used to bring their Apple butter to town, people will buy it and ask for it, and engage it the fall beforehand.

I bought something called cider apple sauce carried at my Boston grocer's lately. The name appealed to my taste and memory, but it left a taste all day as if the mouth had been lined with tin foil, and symptoms that were not good generally. Had it been in a five pound wooden box, like the Canada Raspberry jam, it would have had value among family supplies.

Any well made preserve will keep as well in a tight box as in tin or breakable ware. The box is as easily sealed as any package, and I hope to see good sweet maple boxes of Apple and Plum preserve taking the place of the rows of tins on grocery shelves. Tin will do for vegetables, barring Tomatoes. There is a growing demand for Tomatoes not put up in metal cans, and there is profit for the men who earliest meet the want. A paper can of clean straw or wood pulp treated properly would be much better than tin, because not corrosive, or thin glass, because unbreakable.

Make your jam and fruit butter, put up in sweet butter firkins that have been used, and about the first of December load on to the sleigh and take them to the nearest town of any size. Call from house to house with samples, go to the hotels and eating saloons, and

talk your ware into people. That is the way new soap and cerealine, and ink and books are introduced, indeed, goods of every kind. People do not know enough to buy what they need, or what is to their benefit till it is talked into them. Get your price right and then sing to them of your preserves till they buy to their own good.

#### Gleanings from the Rural Press.

**Save the Squash and Cucumber Vines.** To outwit the Squash bugs, and the striped fellows that eat up your Cucumber vines when small, use fresh cow dung diluted to about the consistency of thick cream. Apply this freely on the vines and foliage. This is offensive enough to the insects to keep them off, while at the same time it is a source of joy to the plants. The substance is not very nice to handle, or to look at, but it is at once a good fertilizer and a protection. Insect enemies are multiplying, and new methods even if they are not nice must be adopted to head them off. It is certain that the liquid cow dung will protect the Cucumber vines.—Stockman and Farmer.

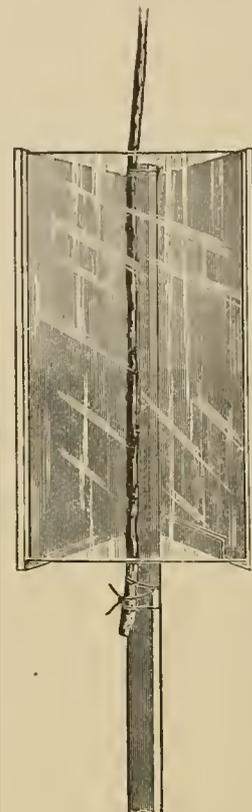
**How Soil was Made.** Professor Agassiz says that all the materials on which agriculture depends are decomposed rocks, not so much rocks that underlie the soil, but those on the surface and brought from considerable distances, and ground to powder by the rasp of glaciers. The penetration of water into the rocks, frost, running water and baking suns have done something, but ice vastly more. In a former age the whole of the United States was covered with ice several thousand feet thick, and this ice moving from north to south by the attraction of tropical warmth, or pressing weight of ice and snow behind, ground the rocks over which it passed into the paste we call the soil. These masses of ice can be tracked as surely as the game is tracked by the hunter. Among the Alps, glaciers are still in progress. The stones and rocks ground and polished by the glaciers, can easily be distinguished from those scratched by running water. The angular boulders found in the meadows and terraces of our rivers not reached by water can be accounted for in this way.—Popular Science News.

**Gladiolus for Exhibition: Shading the Flowers.** The plants should be growing in the richest soil available, and be well supplied with liquid manure in the growing season. Keep at all times well protected from the wind by a stout stake, and when the plant commences to flower get two boards (See engraving) fully 2 feet long and 7 or 8 inches wide; nail these securely at right angles on the top of the stake, nail a thin shred of wood along the bottom inside and also along the inside of the boards lengthwise so as to form a rough groove and a stop at the bottom for a pane of glass. Then get a pane of glass to slide down and fit in the groove, let the stake be securely fixed in the ground, tie the spike so that it will lie steady between the boards to face the sun, and slide in the glass. The advantage of this is, the action of the sun through the glass elongates the spike and shields it from the wind. As the flowers open whitewash the portion of glass immediately opposite the expanding flowers. This will prevent the sun destroying their bright colors and cause them to be longer in opening. If this is followed daily with care, long spikes of flowers will be obtained before the lower blooms begin decaying, a point of the greatest importance on the exhibition stand.—London Journal of Horticulture.

**Cultivation and Pear Blight.** Probably forcing the trees to a very rapid growth is the cause, more than anything else, of Pear blight. The Pear tree is a slow grower, and does not bear until it is a fair sized tree, but growers have compelled the improved varieties to assume conditions not suitable for health and vigor, which render the tree subject to the blight and other diseases incidental to Pears. Two fruit-growers at Newfield, N. J., procured the same varieties of Pears from the same nursery, and put the trees in the ground at the same time. They were cultivated differently. One grower yearly put his orchard to garden crops, with occasionally corn, applying liberal dressings of manure, under which treatment the trees grew rapidly, bore early, and gave large yields. His neighbor used his orchard for growing grass, which was occasionally plowed and seeded to grass again. This orchard has to-day trees only half the size of those in the orchard that had hoed crops. It has never borne as well as the other. The blight, however, has nearly destroyed the orchard that looked the most promising, while the slow-growing trees are as sound as when first set out. The orchard that gave its owner such heavy yields is nearly destroyed, but in the other not a tree is affected with blight. These orchards were alike in every

ordinary respect, soil included, but were differently treated.—Practical Farmer.

**Horizontal Training of Grapes.** Each added year's experience convinces us further of the superiority of horizontal training for vines; and we are gradually substituting flat trellis for erect ones, and prefer them of good height—seven feet or over. The thrip has become a pest here and as



A Shade for Gladiolus Flowers.

the flies shelter on the under side of the leaves we can readily drench them to death by using a syringe or force pump. Water alone is serviceable, but the addition of some kerosene emulsion makes it very effective. The grapes hanging free under the screen of foliage attain full perfection, and are more readily bagged, if their best quality and preservation are especially desired, or if left unbagged they are less liable to injury by birds than on erect trellis. The canes should be well separated and tied down close to the rods, which should be far enough apart to allow of head and shoulders rising through for convenience of pruning, etc., if the bower be wide. But for a single long row of vineyard vines a trellis need not be over three feet wide. One of the most useful positions for such a bower is as an awning or screen for lower windows and back doors, to shade the lower story of a house on the sunny side. There is always abundant fertility and moisture for the vines to gather up, and they ripen more perfectly under the reflection of heat from the walls; and, as their leaves are continually inhaling moisture copiously, one always feels an agreeable coolness under a wide luxuriant grape arbor, even on the hottest days. It can be made quite a handsome extension of the lower portion of a house.—Cor. N. Y. Tribune.

**Flowers as Educators.** The lessons of early childhood are those we remember longest, hence, the schoolhouse, outside as well as in, should become a source of instruction. Neatness is the first principle to be inculcated. Without this all gardening operations are devoid of charm. Simplicity in arrangement is of the utmost importance. The best effect we can produce with the least amount of labor will prove most desirable. It is a great mistake to plant anything, even a single tree, in the portion allotted to play. Space should be provided close around the building and skirting the boundaries of the grounds. Shade is essential, but it must not interfere with outdoor games. A few trees set reasonably near the building is in order, and an occasional specimen or small clump at intervals planted close to the outer edge of the grounds will have a pleasing effect. On the northern boundary of the place should be planted a belt of evergreens to serve as a wind-break. Along the southern limits, as well as at the sides, may extend a border with easy flowing outlines for hardy shrubs and flowers. Perennial plants are the best for the purpose, as they require little care. Interpersed among these a few bulbs of Gladiolus, Tuberoses, Tiger flowers, etc., will assist in making a fine show of flowers and accustom the children to the various classes of plants; real object lessons, at once attractive and useful. In front of the school building (and every such edifice should front the south) may be placed one or more flower beds for either a few annuals or the tender Coleus and Geraniums. Over the walls should cling the pretty little Japan Ampelopsis, and the doorway must be festooned with a selection from the long list of available ornamental vines. All these plants will be teaching their silent lessons every day, and with judicious hints from the teacher instruction will be given that will prove a source of life-long pleasure and profit.—JOSIAN HOOPES, in Philadelphia Press.

THE COMPLETE GARDEN.\*

VII.

BY A WELL-KNOWN HORTICULTURIST.

(Continued from page 153.)

9. WALKS AND DRIVES. In locating these let it be the aim to introduce no more than shall actually be needed, and bringing such where they shall be most needed. Good walks and drives in pleasure grounds are more costly to make and to maintain than the same area devoted to sward,—a strong argument against their excessive introduction. Let us remember also, that at all times in the dry season of the year, excepting when the grass may be wet from dew or rain, a smooth lawn affords more pleasant footing than either gravel, concrete or stone. Still, it is at precisely the time when grass, foliage and flowers are suffused with moisture that a visit to the garden is highly enjoyable, hence it is well to provide at least some walks of a material at all times comfortable under foot for rendering the main parts of the garden accessible.

As to course, the points set forth under head of Curves are in the main applicable to ornamental walks and drives. One thing always to be sought is to have an apparent reason for the existence of a walk or drive. If there be not a clearly obvious reason present, then one should be created by the introducing of some special point or object, as a flower bed, seat, or arbor, for as has well been said, a walk leading nowhere and ending in nothing can never be satisfactory. Some persons have a fondness for laying out certain plats, usually in the rear yards, to elaborate arrangements of gravel walks and flower beds combined, and these we have rarely seen satisfactory. There can be no doubt that in nine cases out of ten of this kind, if the same beds were laid out as one continuous marginal border, and instead of gravel walks there was to be a grass plat extending to the border, the effect would be far more agreeable, with much time saved in keeping up.

In the fruit and vegetable department straight walks and drives are the only style that commend themselves. Such are naturally adapted to the straight

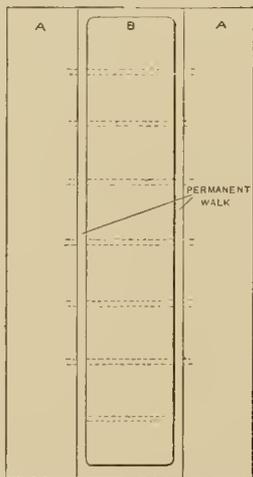


Fig. 22. Another Arrangement of Walks for Fruit and Vegetable Garden. (Explanation of Letters under Fig. 21.)

Cross or lateral walks of a more temporary character could then intersect the main walks at right angles for dividing the area into different plats, and to render all parts easily accessible. The idea of these last named temporary walks would be, to re-make them after each annual plowing, paying little attention to them in subsequent tillage with horse implements. In figures 21 and 22 are shown two arrangements of garden walks after this style, the full lines representing permanent walks and beds, the dotted ones temporary boundaries.

In width, ordinary walks may properly be from two feet upwards, across, the narrower ones being usually in the rear parts and in the vegetable garden. For approach walks and general curved walks a width of from three to six feet is considered the most desirable. As a rule, long, straight walks or drives should, for good effect, be wider than curved ones. For drives a width of from eight to fourteen feet is employed, the former width not permitting of teams passing each other.

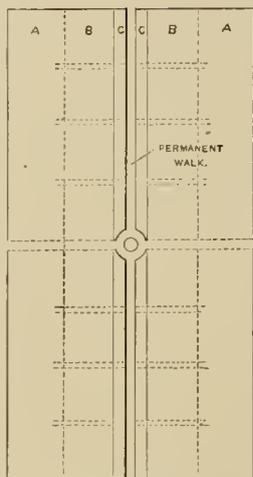


Fig. 21. Straight Walks in Fruit and Vegetable Garden: full lines permanent walks, dotted lines temporary ones. AA Fruit plats, BB Vegetable plats, with temporary cross walks, CC Borders.

the grounds or of the vicinity. An extremely flat garden in a region abounding in hills and mountains would be equalled in inappropriateness only by a garden full of made inequalities of surface in a locality that is generally level. Where natural undulations exist they afford great advantages for producing a spirited effect in the plantings, permitting of more variety and beauty than would be possible in a strictly flat area of the same size. I have found that the introduction into comparatively level gardens of gentle rises of ground wherever leading groups of shrubs or trees are to be planted, and especially next to the boundaries, tend to a pleasing and varied effect. My own course more than once has been to make a slightly raised border of good soil in such places for the main plantings. Then I keep the surface tilled until the growths obtain a good start, after which grass is sown and a sward produced. By such a course the trees and shrubs assume an effective size much sooner than if the planting was done in sod, and this with most planters is a point worth attaining. Another advantage of such slightly raised group settings is the thorough drainage afforded to the growths, a matter of great importance when one attempts to grow the more delicate evergreens and many shrubs and plants on land not naturally dry or not readily drained.

As finished the surface of the lawn should be rendered sufficiently smooth to permit of the mower doing effective work, and all parts should have at least eight inches in depth of good soil overlaying the entire surface.

11. SIMPLICITY AND ORDER. A garden, however elaborate in detail, should be simple and methodical in its general design. One may often meet places that are laid out with a perfect confusion of walks, drives, arbors, rockeries, trees, grass, etc., these being brought in either without order or else after some fanciful, yet objectionable, design. No one thing can better aid in giving the garden a simple character in the main than to keep prominently in mind the location of one or more open areas, referred to under heading 6. Around these then, more or less remote, may be clustered the general collection of growths to be included.

The bringing together in separate groups of the various classes of growths, instead of scattering the same unduly, is another step in the direction of desirable simplicity and order, with no curtailment of variety. For example, if one has 10 Weigelias in varieties and the same of Spiræas, Lilacs, Phloxes, Pæonies, Lilies, Pansies, etc., to set the plants of each genus

somewhat by themselves, instead of scattering and intermingling all sorts promiscuously, the gain will be great for simplicity and beauty. Indeed each kind will, by such a course, gain in strength of character, to the rendering of that kind much more interesting as a feature of the garden in general.

12. FITNESS OF SELECTION. Many blunders are made in gardening through lack of a suitable plan for the place and the unfitness of the trees, shrubs and flowers selected. Let me say first of all therefore, that those who have small taste or interest in ornamental gardening should undertake but little, and that mainly in the direction of having a good grass plat and some of the more robust trees, shrubs, and plants. This advice may to some seem unnecessary, just as if those who are lacking in taste and knowledge in gardening matters would be, of all people, the last ones to enter upon elaborate plans of work. But the truth is that many persons are ready to enter upon improvements in this line with great enthusiasm and in a way to early involve large outlays for planting stock only to learn, perhaps before a year is around, of their utter incapacity to properly carry out the work undertaken. Then a failure more or less marked must result, and always with deplorable effect, for just such failures as these prove serious stumbling blocks to others who might desire, by a reasonable course, to engage in home gardening. If, therefore, the inexperienced were to start with a simple piece of good lawn, one or a few walks and a small number of the easily grown shrubs and trees, they would do well. As experience and taste would then develop, additions to the assortments could be made from time to time, until finally a large and varied selection would be reached. By this means a schooling in practical gardening would be gradually acquired, and in the end a complete garden well managed, with no risky proceedings at any stage.

(To be continued.)

Cactuses in the Window—A Miniature Cactus Rockery.

The very conditions of heat and air-dryness existing in living rooms, and which are so trying to most plants, singularly enough suit the Cactus order almost perfectly. Hence it is that this family stands unequalled for window culture, and any suggestions that can lead to their better management in large assortment should be widely welcomed.

The few kinds of this interesting class which have long been cultivated have usually been treated as ordinary pot plants, each to occupy a pot or box of its own. This is well enough so far as accommodating certain ones, like the flat-leaved Opuntias, Cereus, Melon Cactuses,

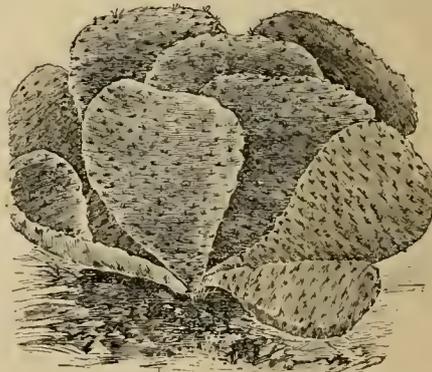


Fig. 3. Plant of Opuntia Basilaris.

etc., may be concerned. But when it is desirable to embark somewhat largely in the pleasures of Cactus culture in the house, it soon is seen that to grow each to a single pot would in many cases preclude the culture of anything like a large assortment. A thing in the way is that many handsome kinds are so armed with hooks, prickles or spines, that to have each by itself with its entire armed circumference

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exposed would be to render their presence in goodly numbers anything but desirable.

Now in order to enjoy the greatest possible share of pleasure with the least possible inconvenience in growing a fair collection of Cac-



Fig. 1. Cactus Rockery for the Window.

tuses, the writer has adopted for house use a method which he before now has seen employed in Cactus houses. It is to plant a dozen or more plants in a mass in one large pot or other receptacle for earth, the surface of which is treated as a miniature rockery, and with the center considerably higher than the edge.

Recently in thus disposing of a fine collection received from Messrs. A. Blanc & Co., the Cactus specialists of Philadelphia, an ordinary fernery base bought at a local seed store was used for holding the earth. This was planted as shown in the engraving, and up to the present time it has developed into the most handsome and unique parlor ornament we think we have ever seen. It is the admiration of all our friends, not only because of the charming effect created by the various forms and colors of the plants themselves, but because in one or another of these it is rarely without a flower.

The addition of the rockery feature affords advantages in several ways. First by the selection of pleasing colors of stone as marble and granite, red and gray, and other kinds as they may be had in fragments from the stone cutter's yard, and then of a few sea shore pebbles, shells, etc., a handsome contrast in color with the Cactuses is produced. The stones also enable one to build up the soil (this we prefer to have consist of one-half sand) mound-like, in a way that is conducive to providing the dryness of soil which all Cactuses enjoy.

But the main advantage is that but a small part of the armed outlines of the plants are exposed outwardly to come into contact with the hands, clothes, etc. Indeed our present rockery with its twenty plants, no two alike, and affording a great variety of beauty, offers far less inconvenience to those about it than does one large-sized Man's Hand *Opuntia* occupying a single pot, or even as would a fair-sized Rose or *Camellia*. The care of such a rockery amounts to almost nothing. Having more Cactuses than we could accommodate in the fernery base referred to, the remaining ones were planted in a similar rock-mound, but with a seven inch pot used for a base.

Among the various genera of this interesting order growing in our rockery, none are more prized than the different species of *Echinocactus*. Of these a handsome and free-blooming sort is *E. Orcuttii* shown in another column. Another pretty sort, shown enlarged in figure

3, is *Opuntia Basilaris*. It is so beautiful that it might well be grown in a glass case.

The thanks of all lovers of fine plants are due to Messrs. Blanc & Co., of Philadelphia, for the enterprise they have shown in placing so large an assortment of this desirable class before the public. In their catalogue they describe and in part illustrate hundreds of different sorts, and these are offered at prices which place them within the reach of all growers.

#### What do we Get in Lawn Grass Seed?

L. H. RAILY, JR., AGRICULTURAL COLLEGE, MICH.

Ox-eye Daisy, two species of Cheat (*Bromus asper* and *B. Mollis*) in abundance, Spurry (*Spergularia arvensis*), Mayweed (*Anthemis Cotula*), Awmed Plantain (*Plantago Patagonica* var. *aristata*), *Hypochaeris radicata* (a fall Dandelion-like plant), Velvet grass (*Holcus lanatus*), Sweet Vernal Grass and Perennial Ryegrass. These are what the writer got on a lawn sowed with one of the wonderful lawn mixtures. The seed was surely a "mixture," so that the writer was not humbugged out of his \$5.00 per bushel for the stuff. Let it be said, moreover, that he got some grass. The seed was probably more thoroughly mixed than the above list indicates, for although the ground was supposed to be clean, he had a most extraordinary growth of all imaginable weeds; but as these weeds grow in adjoining fields he gave the mixture the benefit of the doubt and charged them over to his neighbors. Some mixers of mixtures contend that the Rye Grass has value. Its seed certainly fills up fast in the measure. The writer now buys June grass seed for \$1.00 and \$1.25 per bushel and has little trouble.

#### Woman's Mission in Horticulture.

MRS. WADE BURDEN, GREENE CO., MISSOURI.

Has woman a special mission in horticulture? The first woman imagined she had, but came to grief in her earliest experience. The question for to-day is, Can woman do anything in horticulture that man cannot do equally well? There are not many women's names on the roll of horticultural fame, but perhaps if justice were done we should find them there.

Many of the beautiful houses of our lovely city with their well kept grounds, emerald lawns dotted with fruit and shade trees, and brightened and adorned with borders and beds of choice flowers are the result of woman's labor.

One such instituted on East Walnut street, where women have tilled the soil, set out the trees and shrubs, and personally superintended all the work that they did not actually do with their own hands. There are many such instances as you are doubtless aware. In the Rose gardens of France it is just possible that some of the choice varieties produced there and made famous throughout the world, for which monsieur le propriétaire has the credit, may have been the result of the experiments of madame.

But there is a mission for woman in which she can give and receive the greatest pleasure and satisfaction. It is in distributing her fruits and flowers where they will be appreciated, giving of her abundance if she be successful in horticulture to those who are not so highly favored, and especially to the sick and afflicted. In this way she will realize the truth of that

saying, "It is better to give than to receive." The ladies of the Flower Mission in this place have availed themselves of this privilege and have brought joy and gladness to many a sick bed, both in hospital and home.

#### The Pink Lily of the Valley.

Isn't there a mistake about that Pink Lily of the Valley shown in New York being artificially colored? The old books on gardening speak of various colors of this Lily. A flora, London, 1823, says: "There are several varieties of this species; one with red flowers." And I think more than one of the latest English writers on flowers mention the rose-colored sort. While all will perhaps prefer the standard variety sung by the poets from Keats,

"Valley Lilies whiter still than Leda's love," and Leigh Hunt's

"Nice-leaved lesser Lilies,  
Shading like detected light  
Their little green-tip'd lamps of white."

It is possible the same taste could find nothing to detract from the pink blossoms. It were as much as to say all Roses and all Lilies must be one color.

S. D. P.

#### Campanulas (Bell Flowers) in Pots.

These plant, a writer in the Garden remarks, are of very easy culture, very beautiful among other plants, and available when there are not many others in bloom. The earliest to flower is the *Calycanthera* medium varieties, of which there are white, blue, and rose, the first being the most valuable. *Campanula pyramidalis* in two colors, white and blue, is quite distinct from the foregoing, being later, taller, and more profuse flowering. Both well repay good culture. We usually sow the seed early in April, but have been quite as successful in the case of *C. Calycanthera* with plants obtained by sowing early in May. The seed is rather small, but it rarely fails to germinate if sown on the surface of a previously moistened pan of fine sandy soil, and only a little sand on top. A small pocket of seeds makes many

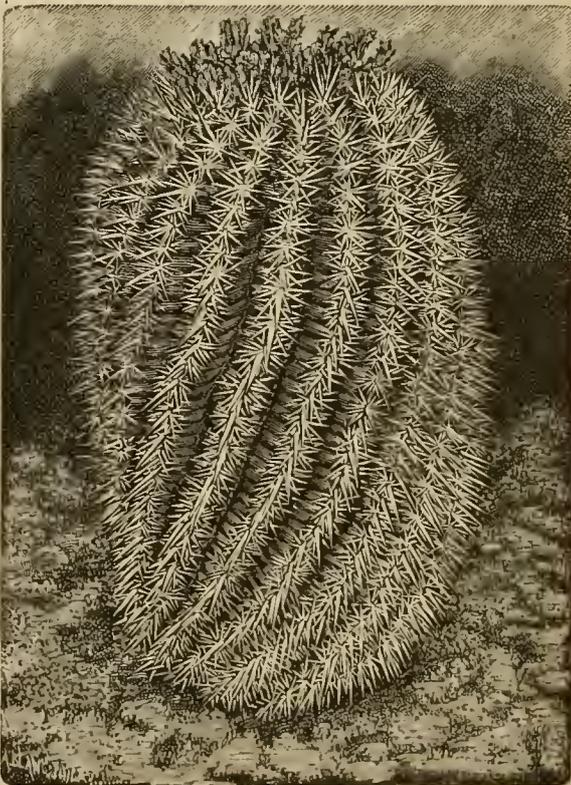


Fig. 2. Orcutt's Cactus—(*Echinocactus Orcuttii*.)

plants. For the summer they are bedded out. Late in September as many as are needed should be lifted and potted, keeping them over winter in a cold pit, to flower the next season,

### The Century Plant.

In my garden grows a plant  
Very stiff and very stately,  
And its curving leaves I grant  
That my eyes admire greatly.  
But though I may watch and wait  
All the years that God shall send me,  
Watch it early, 'tend it late,  
Not a bloom that plant shall lend me.  
So I find my love is more  
For the rose that blossoms yearly,  
Than for all the hidden store  
That this stately plant holds dearly.  
Better is it, child, to show  
Daily love and tender sweetness,  
Than to hide in deeps below  
All that gives your life completeness.  
Yet, if God commands you, wait  
With a splendor in you growing,  
Stand with meekness in your state  
Till the bud is ripe for blowing.

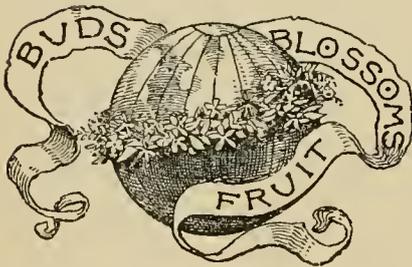
—Wide Awake.

### Big Berries on Top.

The vendor crying out his wares,  
Has many trials, many cares,  
But 'mid them all he'll hourly stop  
To place big berries on the top.  
So through the world we sing our deeds,  
Spread forth the flowers and hide the weeds,  
Our voices to the bottom drop,  
Put fairest berries on the top.  
The hawk knows what he's about,  
He takes us in, and leaves us out,  
With berries that are not first chop,  
With blushing beauties on the top.

### Bruised.

Aromatic plants bestow  
No spicy fragrance while they grow;  
But, crushed or trodden to the ground,  
Diffuse their balmy sweets around.  
—Goldsmith.



Plan to show at the fairs.

Seedy enough—Raspberries.

Mark and save the best for seed.

Subscriptions may begin any month.

Layering of this season's growth is in order.

Sweet Potato soil should be kept well stirred.

We favor some Chinese: the Peach is Chinese.

The Cayuga Gooseberry is reported as mildewing badly.

Tritomas love an abundance of water in the flowering season.

Tomatoes enjoy sun, and this explains the advantage of trellising.

A bed neatly raked is ornamental irrespective of what may be growing on it.

Cucumbers are green, but they get the best of a fellow sometimes.—New Age.

Drop the name Syringia for Mock Orange: it belongs to Lilac as the generic name.

The destructive Elm-leaf Beetle is at work in many places. Apply remedy 29, page 148.

Plant Stealing is a frequent crime in large cities, the same stock being sold again and again.

Yellow Roses of the old double sort do not "wear out" as many suppose. It's starvation usually.

The work of the lawn mower should extend into the highway, at least to that part directly in front of the home.

Sugar Corn for Succession. By planting up to the middle of the month good pickings are assured until the time of frosts.

The close clippings from the lawn would be relished by hens that are yarded. The hens of gardeners should be yarded.

Current Fertilizer. I have found wood ashes better than manure for this fruit: it does not force the wood so much.—A. I. W., Lakefield, Ont.

Not the Worst Fruit Country. The value of American Apples sent to England last year is placed at \$3,500,000, of which Canada furnished \$451,000.

Liquid Manure has this advantage: it can be applied at any season, supplying both nutrient

and moisture. On all classes of plants it has a marvellous effect in promoting vigor.

**Miss-applied Horticulture.** The young lady who made seven hundred words out of "conservatory" last autumn is said to have run away from home. Her mother wanted her to make three loaves of bread out of flour.

**Cypress Sash Bars.** A new industry is being worked up by the Lockland Lumber Co., of Lockland, Ohio, in furnishing Cypress wood from the Southern States for sash bars and other purposes in greenhouse construction. This wood is noted for its great comparative durability when subjected to the moisture of a greenhouse.

**Cabbage Worm Remedy.** I have found the following the best exterminator of the Cabbage worm. A pailful of tepid water, in which a tablespoonful of saltpetre has been dissolved, and give the plants a good sprinkling. Should they again appear renew the dose. It will not in any way injure the plants but promotes their growth.—J. W. Phillips, Butler Co., Pa.

**The Red-flowering Dogwood.** A flower of this charming new Dogwood was recently received from the Kissena Nurseries, Flushing, N. Y. It is of the form and general appearance of the white-flowered species, but is suffused with red in a manner to give to it an entirely distinct character. It should prove a valuable acquisition to our list of small sized flowering trees.

**Gardening is a healthy occupation.** Statistics prove and common sense confirms this. Gardening induces free exercise in the pure air and exhilarating recreation to the mind. To engage in the raising of flowers, fruits and vegetables would, for multitudes of weakly persons, and especially ladies, prove a remedy of great excellence. The more gardeners the fewer doctors.

**Mulching Plants with Stones.** At this time of heat and drought some may be glad to know that stones are simply invaluable for plants to keep the soil cool underneath. Small and delicate plants, and those not yet established, may be kept cool and moist by placing stones over their roots. It is only by this means I am enabled to keep many of my choicest plants.—E. A. II.

**Bagging Grapes Early.** Where rose hogs are a pest to Grape bloom it is better to sack before blooming. I was cautious lest the fruit would not set for lack of pollen, but finding the bugs would ruin it anyhow, I marked such sacks as were used on buds not yet bloomed and they did well. I did not try varieties with reflex stamens.—J. W. Hollingsworth, Orange Co., Ind.

**Pastures the Orchard.** My experience is favorable to pasturing hogs in the Apple orchard. One part of orchard has been enclosed for hogs for several years, and here the trees are the most thrifty and the fruit the finest I have. Some trees I have lost but none in the hog pasture. One orchard I know of that was thus pastured for over 20 years never lost a tree.—A. W., Berrien Co., Mich.

**Its time to head off** had weeds from going to seed. About many homes Burdocks, Thistles, Yellow Docks, Plantains, and others are rapidly going on to maturity and to the making of much future trouble. Many seeds from such plants are blown or otherwise carried to the manure or compost heaps only to find their way finally to the land. In the destroying of such weeds a stitch in time may save thousands.

**Spiders and Plant Lice.** We do not dispute that spiders may be of some use in ridding plants and trees of insects, but we cannot go as far as Dr. Keller, of Zurich, in saying that they are of greater service than birds. If they would but keep away from our dwellings, greenhouses, etc.; here they are an intolerable nuisance. Lady birds we cherish as helpers in the garden, in destroying plant lice; the spiders could be well spared.

**Clematis on Trellise.** One of the prettiest specimens of the Clematis Jackmanii that I have ever seen was grown over a low sort of trellis, made something like a series of barrel half hoops spread out so as to be about six feet across and about twelve feet long. The vines covered this and when in bloom it was a beautiful sight. If protection was thought necessary, it would be an easy matter to protect them on this form of trellis.—Prof. Lazenby.

**Onions from Spring to Fall.** My aim is to have this wholesome and always salable vegetable fresh for use and market from early spring until fall. The Multiplier is planted about September first for providing the earliest crop. This is followed by the Potato Onion, which is planted also a month later, setting it like the last at ten inches apart. Then comes the early sets and the seed grown ones to complete the succession.—Reader, Fairfield Co., O.

**Tent Caterpillars** are a thing of the past in some parts of Long Island according to a recent communication to the Rural New-Yorker. The writer of it ascribes their absence in the first place to a severe three-day storm at the time when the caterpillar had reached its full growth and was seeking a suitable place to change its state. The next season there were but few nests, not more than seemed to be required by the cuckoo. Last year he saw but two nests and this year the same, and these he destroyed.

**Rooting Moss Rose Slips.** Being away from home last year in August, I obtained two cuttings of a choice Moss Rose, but had very little hope of rooting them. It was three days before I reached home and could set them. I put them on the north side of a large plant for shade, set deep, and pressed firmly, of course watered thoroughly at first, carefully afterwards, and mulched with small evergreen twigs. Both of the cuttings grew and are now flourishing plants.—Mrs. Fanny C. Briggs, Clarke Co., Washington Territory.

**Garden Parties.** Among the fashionable but informal parties of the season there have been Rose parties given by those having gardens in which there is an abundance of the Queen of Flowers. Truly a good idea, and one that as carried out with regard to other flowers and fruits is capable of being adopted with desirable results in almost every community. The horticulturists in many places have had their social Strawberry meetings during the past month with results both pleasant and decidedly profitable. Let there be an increase of horticultural parties.

**Hint on Setting Cabbage Plants.** Such as have been shipped should be unpacked as soon as possible after receiving them. Dip the roots only in water and lay the plants in a cool, light place until ready to set. If roots are kept wet the sun will not hurt them. To keep them several days, heel in, spreading them out somewhat, and pour water along the roots once or twice a day. New rootlets will start and the plants will get in better condition for setting than when first received. When the weather is dry such treatment pays, for then every plant will start at once when set.—Tillinghast.

**Dandelions in Great Excess.** Some parts of Buffalo Park are so possessed by this insinuating weed as to present a most unpleasant sight, lifting as they do their countless cottony seed heads above the ground. Indeed many beautiful banks



A SPECIMEN OF THE SWISS STONE PINE.

and plats are ruined so far as beauty is concerned, and the seeding and the extending of the weedy area goes on from year to year. Were the plats thus infested to be kept more closely mown than at present, with a view to destroying flower heads before seeds develop, a great check to the further spreading of the weed by seeding would result.

**Trees as Companions.** We find our most soothing companionship in the trees among which we have lived, some of which we may ourselves have planted. We lean against them, and they never betray our trust; they shield us from the sun and from the rain; their spring welcome is a new birth,

which never loses its freshness; they lay their beautiful robes at our feet in autumn; in winter they "stand and wait," emblems of patience and of truth, for they hide nothing, not even the little leaf-buds which hint to us of hope, the last element in their triple of symbolism.—*Dr. O. W. Holmes* in *Atlantic Monthly*.

**White Leaved Shrubs.** One of the most charming bits of shrubbery on the writer's grounds consists of the Variegated-leaved Cornelian Cherry, the new Variegated-leaved Siberian Dogwood, the Variegated-leaved Elder, and the Silver-leaved Corchorus placed in a group. These shrubs are all of easy growth, and, with the exception of the Elder, which requires frequent cutting back, are of fine compact form. The two first-named are unexcelled among growths of their class for the whiteness displayed in their leaves, while the Corchorus is an abundant bloomer. The contrast in color presented between these and the surrounding grass and shrubs is of a mild but remarkably pleasing form.

**Ben; Perley Poore.** In the death of this eminent writer for the press, on May 29, Agriculture and kindred pursuits lost a warm friend. Besides being a terse and vigorous writer he was an active cultivator of the soil, engaging in many works that shall leave their impress on the future. Major Poore's pet grove of forest trees, which he seemed to love as if they were human beings, gained from the Massachusetts Society for the Promotion of Agriculture a premium of \$1,000, which had been offered for the best growth of forest trees within ten years from the time of planting. It consisted of twenty acres of Oak, Chestnut, Hickory, Walnut, Locust, Fir and Pine, every tree of which the major planted with his own hands. At the time of his death Mr. Poore was in his 68th year.

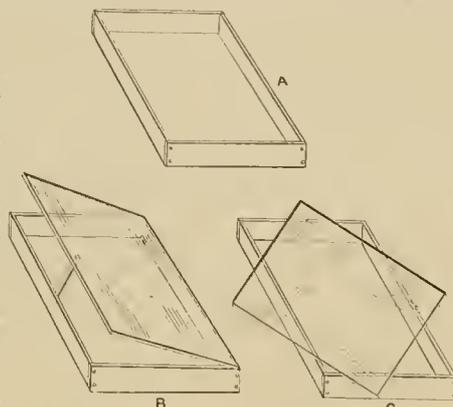
**The Swiss Stone Pine.** Pine trees would be more common on lawns were it not that those which are the best known, the Austrian or Black, the White, the Scotch, etc., are strong growers, requiring more space than can well be spared for them. In the Swiss Stone Pine (*Pinus cembra*), of which a life-like engraving is herewith presented, we have a well-tested species, which while it ranks among the hardest of the Pines, is of slow growth and small stature. On this account it is admirably suited for planting where the larger kinds would be inappropriate. It is a most beautiful tree of silvery-green foliage and pyramidal form, and which we are sure needs but a fair introduction to become a great favorite. It may now be had of a number of our leading nurserymen at about the average price of young Pines. For the use of the faithful engraving given we are indebted to Mr. Thomas Meehan, Germantown, Pa.

**Making Straight Rows.** I like them in the garden. I use a marker I made myself, and although rough it answers admirably. I took a pine strip six inches wide and three feet ten inches long. On one side of this, crosswise, I oiled hardwood pieces three inches wide, four long and one and a half thick, at the top, shaped like a sled runner in front and like a wedge underneath. Four of these runners were nailed on one side at one foot apart, three on the other 18 inches apart. I made a straight tongue of an old broom handle, putting a good brace on either side so as to hold securely. With this affair I can have the rows one foot apart, or by skipping one mark two feet; by using the other side 18 inches, or three feet. The runners make furrows deep enough for all kinds of garden seed but Peas. I find it very convenient.—*N. J. Shepherd, Miller Co., Mo.*

**Raising Fine Fruit.** Mr. Virgil Bogue, of the famous Orleans County fruit region, in this State, in a letter to us puts it that he would go about raising fine fruit very much as he would raise fine Corn for market. He says: "The demand is for large fine Apples and other fruit. They can best be produced by a frequent and thorough stirring of the soil just as one would do to produce good Corn. The tree is in fact as much benefited by good cultivation as is the Corn plant. If we in this large fruit belt were to market our Corn in the ear and give it no more cultivation than we do our trees, there would soon be as much said about the need of sorting as there is now of fruit. The blossoms now promise a large crop of fruit; let us do our part in developing it by plowing under any crop that is in the orchard, then harrowing well every ten days till September. The result will be a moist blanket over their roots to prevent the bad effects of drought and giving vigor and regular growth."

**A Seed-Starting Device.** For the following welcome article with accompanying drawings we are indebted to a subscriber at Cincinnati, O., who modestly signs himself "An Amateur." "It works well. After preparing the seed bed by thorough

spading and a top dressing about two inches thick of good loam, sharp sand and leaf mold in equal parts, I give it a soaking and place upon it small frames like Fig. A, made of common lath, without top or bottom and to fit any regular glass panes to be used for covers. An 8 x 10 size will start more flower seed than most persons want. I use a frame to one or several kinds of seed, separating them when more than one with strips of pasteboard. In sowing I cover very lightly, giving to fine kinds like Petunias scarcely more than a dusting of earth. The glass is shaded with whitewash or a little soil dusted on when it is wet. Giving each kind of seed a separate frame is a great advantage, as some start much sooner than others. When the



Simple devices made of Lath, Nails and Glass, for starting Flower Seeds.

seedlings are through the soil, air is admitted by sliding around the glass as shown at C. In case of rain the glass is tilted up as at B, placing a prop underneath."

**What is It?** Mr. Wm. Jackson, of Godfrey, Illinois, sends us a card upon which is shown Dr. Diehl's enlarged drawing of the minute insect that is believed to cause rust and blight on the Strawberry. While little is claimed to be positively known of this insect, even Dr. Diehl saying that its classification at present is impossible, our correspondent concludes from observations that it is not this or any insect that leads to the blight, but certain other causes. Says Mr. Jackson: "One thing is particularly noticeable, viz., that those who removed their mulching from their Strawberries very early on account of the unseasonable spring-like weather, or did not mulch at all, suffered severely, in fact, will have comparatively no crop at all. On the contrary I did not remove the mulching from my plants till the 2d of April. Many of my neighbors were surprised at my tardiness, but results show that my course was the best for I had a good crop of Strawberries. I suspected that the fine weather was premature, and I cannot but conclude that the failure here is due to mismanagement aided by violent weather changes."

**The Cut-leaved Weeping Birch.** Concerning the history of this favorite ornamental tree, the well-known Rochester nurserymen, Messrs. Ellwanger & Barry, furnish to a foreign exchange the following brief sketch: "In the summer of 1848 the late Mr. Henry W. Sargent, of Fishkill-on-the-Hudson, was traveling in Europe, and wrote to the late Mr. A. J. Downing about this tree. In the famous Booth Nurseries of Hamburg he wrote: 'Among other trees and shrubs rare to me I noticed a Weeping Birch peculiar to Germany. It had descending shoots 32 feet long; the branches hang perpendicularly downward.' Upon reading this we at once sent an order for some of the trees, and received them the following spring. These were the first imported into this country. It proved to be one of the most popular trees ever introduced here, and its popularity continues to this day. As an erect-growing graceful tree, with pendulous branches, it really has no equal. The first tree we planted out, some thirty-four years ago, was cut down a few years since, to clear the ground. Another, planted some twenty-five years ago, is now 50 feet in height. The trunk is 5 feet 3 inches in circumference near the ground, and branches from 4 feet above the ground."

#### New York Floral Notes.

This is what Londoners call the "silly season" as far as florists are concerned. There are no great receptions or public functions, and the number of weddings is on the wane. Flowers are painfully cheap; the market is flooded. The street vendors of flowers increase and multiply, and every other

woman wears a great bunch of outdoor blossoms. The florists are racking their brains to contrive novelties for next season. The greatest number of designs are now made as parting gifts to people going abroad. These steamer souvenirs do something towards bridging over the chasm between the spring and winter trade.

Decoration Day was observed with more floral tributes than was expected. A great many plants were used on this occasion. Experience everywhere this year shows a greater demand for loose flowers than for designs. This was the general rule at Eastertide and Memorial Day. It is rather an improvement, too. Last year a great many designs at the grave of a great soldier were in immortelles, in such pleasing tints as aniline crimson, chrome yellow, arsenical green and vivid purple, and the combinations were calculated to put an artist into a cold perspiration. Some very charming effects are produced by the use of Cape Flowers and Immortelles in their natural colors, but as a rule dyed everlasting are a mistake, if one cares for artistic fitness.

Very elaborate designs, especially funeral pieces, are often comparatively meaningless. The writer remembers a case in point, in a western city. A prominent citizen of the genus "tough" met with an untimely end, the cause of his taking-off being a beer-glass thrown in a saloon fight. His sorrowing friends wished to offer some mark of their respect in the form of a floral design. The emblem chosen was a white lamb, with the word Rest on one side, and Peace on the other. It was slightly incongruous.

Florist's flowers are hard pressed just now by all sorts of field blossoms. The Marsh Buttercups, so-called, which were sold by the bushel during April and May, have now given place to the real Buttercups of the meadow, and the Ox-eye Daisy. These two flowers together make an exquisite harmony of white and gold. They are not only sold by the street vendors, but find their way in leading flower-stores. Outdoor Lilacs are over in this section, but some fortunate florists get them down East, where they are at their best.

When any large piece of decorating is done the florist depends chiefly upon outdoor stuff. Great masses of Weigelia and Syringia are most effective, and Mountain Laurel, with its clusters of rosy blossoms, finds a place by its sisters of the garden.

Some people have been trying to re-introduce the use of taller table decorations, but the sensible fashion of low plateaus still holds good. It is a regular nuisance to be obliged to dodge a lot of tall plants, in order to catch sight of one's vis-a-vis.

The prettiest table decorations are low banks of Ferns, with a few selected flowers lightly placed among them. This is the most advantageous way of showing off Orchids; Cattleyas or Laelias are exquisite in such a position. It is a great mistake to mix these flowers with a lot of other stuff; they are not nearly so striking. Gloxinias are charming, used in the same way; they show off beautifully banked in any position, and they come in such exquisite lamplight shades of pink and porcelain blue. Their use in floral decorations is comparatively recent.

The prettiest wreaths now made are certainly those made in the form of a crescent, with the ends tied together with ribbon. They are exquisite when made only of Ivy leaves, with a knot of flowers, or, in the case of an aged person, a bunch of wheat on one side. The Ivy leaves are well washed, and then slightly oiled, giving them a brilliant gloss.

Apparently everyone does not regard cloth bears with shoe-button eyes as out of place in a floral design, for we are told that the basket with this menagerie thrown in, described in the last issue of POPULAR GARDENING, has met with great favor among the patrons of the ingenious florist who originated it.

Bouquets show no new departures so far; they are still big pyramidal nosebags. We are told that corsage bunches will not be so large, but it still appears the custom for each lovely creature to wear as big a bunch as she can obtain. By the way, there is a new patent fastening for corsage bouquets which is very convenient. It is built on the same plan as a safety pin, but instead of a straight bar it fastens into a spiral spring, strong enough to hold the flowers in place, yet yielding to accommodate a large bunch. Very convenient.

Apparently the favorite boutonniere is still a round bunch of Violets, as displayed by the youth with a big stick and a baggy suit of clothes.

It is a wonder that the modest English Primrose has not appeared this spring for the corsage or button hole; apart from its own beauty it would suggest a familiarity with the Primrose League, highly attractive to the admirers of our English cousins.

EMILY LOUISE TAPLIN.



### GLEAMS.

Give high culture to Gooseberries.—*E. A. Bronson.*

A swing on the Plum tree saved one Michigan man's fruit from curculio.

The Marianna Plum. Mr. D. B. Wier thinks it will be the stock for Cherries.

The sale of poor seeds affects the future crops as well as the present.—*W. J. Beal.*

Tightening the tree by firming the soil is the most essential part of the work of planting.—*Robert Douglass.*

The White Spruce would have a better reputation were it not that many of the inferior Black Spruce are palmed off for the White.—*D. Hill.*

Ill-shaped Sharpless Berries. Mr. G. W. Grant, of Indiana, attributes the monstrously irregular form sometimes seen to imperfect fertilization. Side of Wilson and Downing the fruit comes perfect.

Grape Rot—Sulphate of Copper Cure. Mr. G. W. Campbell reports to the Dayton Society the successful experiments of G. M. High, of Middle Bass Island, in using sulphate of copper for this grievous ailment in the Grape. Sixty vines that were affected by mildew and rot on the 9th of August had a mixture consisting of 1 1-2 pounds of sulphate of copper in three gallons of water, and 4 1-2 pounds of fresh lime in two gallons of water, put together and then applied. Where this mixture was used the foliage was preserved and not a berry rotted or mildewed up to October 1. He was of the opinion that two applications, one late in June and the other a month later, is all that will be required. This remedy, remarked Mr. Campbell, has been successful in France and will doubtless prove fully as effective in this country.

Sweet Pea Culture, Etc. Joseph H. Woodford said that for Sweet Peas he digs a trench two spades deep and fills in with manure and mixes it with the soil, so as to be two or three inches below the surface. On this he sows the seed, covering it an inch, and when the plants are up drawing more soil on, so that the ground is level when he sticks them. He puts in heavy sticks, as he must to support them. The flowers must be picked every day, or you will not have any late ones. The object of all annual plants is to grow, bloom and perfect their seed, and when they are allowed to do the last, they die and you get no more flowers. The first flowers of the Aster are from the center of the shoots and are very fine, and if you pick these you will get flowers from the side shoots. Pansies are fond of moisture and cool soil, and will bear the highest manuring if the manure is somewhat decomposed. He manures them highly in a trench with the coolest manure he can get. If very dry he would water with pretty strong liquid manure—not immediately around the plants, but would make holes between them and pour the manure in. He picks them because he wants them, but never lets them mature seed. Mr. Faxon said it is very necessary to pick the flowers as fast as they bloom. If they make a few seed-pods it is too late to stop them. He recommended the Meteor and Prince of Orange Calendulas.—*Massachusetts Report.*

Export of Apples—Some Interesting Figures. According to the recent circular of A. C. Lombard's Sons, Boston, the total exports of Apples from the United States and Canada in the years 1886-87 were 811,410 barrels. In the year 1885-86 the exports were 893,375 barrels, and the year previous the aggregate was 787,785 barrels. The largest exports within eight years were in the year 1880-81, 1,328,806 barrels, while during the year 1883-84 the exports fell to 81,532 barrels. During the past year,

# LIGHT FROM THE SOCIETIES:

BEING MATTER THAT DESERVES TO BE WIDELY KNOWN.

1886-87, Boston shipped 306,692 barrels of Apples, New York 175,771, Montreal 106,703, Portland 102,764, Halifax 97,474 and Annapolis 23,005. The largest weekly shipments made during the year 1886-87 made from Boston to all points was on Nov. 6, 1886, aggregating 34,353. The largest shipment from New York to all ports was made Oct. 23, 1886 and aggregated 16,637 barrels. The largest shipment from Portland, Me., to all ports occurred Nov. 27, 1886, showing a total of 10,032 barrels. The largest shipments to Liverpool during any one week from all ports was on the week ending Nov. 20, 1886, when 36,527 barrels were received. To Glasgow from all ports the largest weekly receipts occurred on the week ending Nov. 6, aggregating 21,930 barrels, and to London from all ports the largest receipts occurred on the week ending Dec. 4, 1886, aggregating 28,997 barrels. The season of export for 1886-87 opened Aug. 14 and comprised thirty-six weeks. The season for 1885-86 opened Aug. 29 and comprised thirty-six weeks, and the season of 1884-85 opened Aug. 16 and comprised thirty-nine weeks.

### Culture of House Plants.

[By Ellen B. Freeman, before the Illinois State Horticultural Society.]

I know of windows where the beauty and profusion of flowers is the wonder and admiration of every person—where Geraniums, Begonias, Fuchsias, Primroses, Heliotropes, Bouvardias, each seem striving to outdo the others. Where lies the secret of success? It is neither magic nor moonshine, only judgment, experience and faithful care.

First of all, do not expect plants that have bloomed all summer to keep right on blooming all winter; resist all temptations to lift plants full of flowers from the ground just before frost comes. They are a delusion and a snare in the light of ordinary window culture.

Do not go to a greenhouse and buy large plants in full bloom. Buy small plants, seedlings or cuttings just well rooted—or, if you wish to get the full enjoyment out of plants, root your own cuttings. It is an easy matter to do this, especially if the slips are only partly severed from the stalk and left to callous over before cutting off completely; then place in a box of mixed earth and sand, kept moist until roots are formed; then set into small pots.

This should be done in early summer that they may become well established plants before autumn. As they grow, pinch off all blossom buds that appear until nearly time to house for winter. When that time arrives, some way must be contrived to moisten the air—a vessel of water on the stove or tank in the furnace chamber—and, of course, there must not be too great variation of temperature. A weekly shower bath, will guard against choking the pores with dust and keep them clean and healthy. I have found that a spray from an atomizer, or even sprinkling with a little whisk-broom, dipped in water, at night, answers every purpose. Nature moistens her plants with dew at night-fall, not when the sun is shining.

I have also found this nightly sprinkling one of the best preventives of insects. Insect powder gives the easiest solution that I know of to this question; it may be blown upon the plants with bellows or an atomizer.

For the watering of house plants no rules can be given, except that they must be watered when they need it, and not oftener. One soon learns by lifting the pots if the earth is dry or not. Always use warm water; it may be quite hot in fact.

Plants should be repotted whenever the rootlets that reach the pot turn dry and brown, though this may be delayed a long time by the use of liquid stimulants, such as ammonia, coppers, barn-yard fertilizers dissolved in water. A top-dressing of soot often acts like a charm; powdered charcoal mixed with the earth snits some plants, and lime-water has a tendency to destroy earth worms that have found their way among the roots.

If obliged to confine myself to one class of plants for window culture I would select the flowering Begonias. They bear dry heat, and occasional neg-

lect, as well as any, and are not liable to the attacks of insects, while the number and variety of species is large. Next to Begonias I would place Geraniums. Everyone knows how endless is the variety of shades and forms of these beautiful flowers. Then the scented, the silver-leaved, the bronze, the ivy-leaved, the tri-color—a charming array. One can have a gay window without any flowers at all. The list of desirable plants is almost endless. It comprises in addition to the commonly-called green-house plants many bulbs, and not a few annuals.

I should never recommend any one to attempt Roses in a sitting-room, and yet I know ladies who keep them in constant bloom. A sunny kitchen window is just the place for them, the steam from cooking furnishing the requisite moisture without too great heat. Roses, Carnations, Camellias, Daphnes and many other greenhouse plants are apt to be not successful.

If one has only a north window, train an English Ivy up each side and across the top; set a Sword Fern in a hanging basket and on a shelf below set Chinese Primroses. They are beautiful plants, with flowers single, double or fringed, white or of shades ranging from palest pink to deepest crimson, with a faint, woody fragrance, reminding one of shady ravines, brooks and moss-covered stones. If not content with this, try a Wardian case with Rex Begonia, in winter surrounded by delicate ferns—gathered in some forest ramble—and running up the sides some fine-leaved Lycopodiums.

### The American Nurserymen's Convention at Chicago, June 15-18.

The annual meeting of the nurserymen brought together nearly 300 members from all parts of the Union. They came for business, and the meeting, notwithstanding the extreme heat, was a great success as a business gathering. An excellent programme was carried out, and close interest was shown in the proceedings throughout. The exhibit in the line of horticultural wares was larger than usual and did much to round out the success of the meeting.

Following are the officers for next year:

President, C. L. Watrous, Des Moines, Ia.  
Vice-President, L. G. Bagg, Kalamazoo, Mich.  
Secretary, D. W. Scott, Galena, Ills.  
Treasurer, A. R. Whitney, Franklin Grove, Ills.  
Executive Committee, S. D. Willard, Geneva, N. Y.; Leo. Weltz, Wilmington, O., and W. C. Emery, Lake City, Minn.

The next meeting will be held at Detroit, Mich., in June, 1888.

### ABSTRACT OF PRESIDENT WATROUS' ADDRESS.

President Watrous began by saying that it was extremely gratifying to see so many familiar faces together. He thought that no outlay of the year gave better returns in dollars and cents than the money and time invested in such gatherings.

Business transacted face to face is much more likely to be so understood as to save future disputes than when done by correspondence. This friendship-producing feature of our meetings has already shown itself to have a value beyond estimation in business relations.

On these journeys to the annual meetings, also, if in no other way, will members realize the vast extent of our territory, with its infinite diversities of soil and climate, and by observation gather some idea of the importance of that great truth that different soils and climates must needs have different plants and trees.

He referred to the fact that a new plant is fruited a thousand miles away and we cannot rest without an investment in the wonder, though in nine cases out of ten it may be unprofitable in the new situations. They of the West have spent money and labor in testing trees from the frozen steppes of Russia, where none but the hardiest trees and plants may survive. But under different skies and in a different soil these strangers have frequently proven a most woeful disappointment.

"It seems to me," said Mr. Watrous, "that the most important work of nurserymen to-day is the systematic production of new varieties of fruits and plants by seedling propagation. Our forefathers, contenting themselves in the main with seedlings, had the aid of nature in keeping a healthy race of trees and plants. The sickly ones never got as far as the orchard, only the able ones being allowed a chance to propagate their kind. If our

fraternity would engage in the breeding of a new race in each region of our great empire the possible good results must be beyond estimate. Instead of hoping much from strangers let each man dig the soil and plant in his own field the most perfect seeds of the finest fruits of the trees most healthy and vigorous in his own special region. Out of many failures must issue success.

"In the Government Experiment Stations to be established we have much to hope for. It is the duty of nurserymen to do their utmost toward influencing public sentiment, so that a reasonable part of the congressional allowance shall be devoted, under honest and competent direction, to the originating, testing, and disseminating of new varieties of fruits and plants, by seedling production on the spot. Nurserymen must be leaders of public opinion in solving the question of what to plant. He must refrain from selling himself, or by his agent, to the ignorant purchaser, articles unfit for the region where they are to be planted.

"The duty of the educated nurseryman also calls him to an extra effort toward re-clothing our denuded hillsides with forests, by urging the sale and planting of timber trees. The forest area of nearly all the States is far below the healthful limit for civilized fruits and civilized men. Burning droughts in summer, devastating floods in spring, unobstructed gales in winter, with lessened snowfall and greatly increased depth of soil-freezing, striking at the life of fruit trees and plants, are a few of the consequences following a generation of forest destruction. Spain, Italy and Southeastern France are examples ever before our eyes of the terrible consequences following forest destruction.

"In that art of ordering and planting the grounds immediately about the dwelling, the nurserymen must in large measure be the teachers of the people. Some Frenchman has said: 'The useful will get itself done; it is the beautiful that requires labor.' Every nurseryman knows how men, when able, may build costly edifices, and even buy and plant trees for the food they bring, while refusing to make adequate provision for gratifying the love of the beautiful in the souls of wife and children by a proper outlay for ornamental trees and plants.

"The profound moral influence of pure and beautiful surroundings, entering into the daily life and habit of the young, cannot be overestimated, and every nurseryman who earnestly labors towards beautifying the homes of his generation will, I doubt not, find some of his sins blotted out through compassion because he has blessed his fellowmen."

SOME GENERAL NOTES OF INTEREST.

The motion for biennial meetings didn't take. President Watrous' re-election was good enough. Warfield's No. 2 was shown as "the coming Strawberry."

The name was changed to American Nurserymen's Association.

The Prairie Farmer showed enterprise in printing an association special.

The Jessie was well shown in clusters as it grows. A great cropper no doubt.

The Weeping Mulberry attracted much attention as a novelty. More about this later.

Grafting by machinery is about the latest. Two machines were at work in Exhibition Hall, one of which—the Speer—did very slick work.

Nurserymen and fruit growers on such occasions get a taste of stale city berries at the hotel tables, that is, if they eat them. More than one grower could be seen sorting down his dish of Strawberries before he could be lead to partake.

Reduced Postage. Last year's committee appointed to work a change in the postage rates could not report much progress. A new committee was appointed to co-operate with the Seedsmen's Association to secure the reduction from the coming Congress.

Evergreens for the Northwest. Mr. David Hill, of Dundee, Ill., who made a fine exhibit of nursery stock, recommends the following evergreens as especially adapted to cold regions: Pines—Montana, Hemlock—when it has got good roots,—Northern Red Cedar, Scotch Pine for great hardiness, Austrian Pine, White Spruce, Norway Spruce, American Arbor Vitæ.

The members' green badges everywhere drew the eyes of Ireland's sympathizers some as a red shirt attracts a turkey gobbler. More than once a "God save Ireland" was heard as badge wearers passed along the streets. Be careful, gentlemen of the executive committee, in the selection of these colors, or some day in these stirring times you may get us into trouble.

The Freight Classification on trees having been rated both unjust and oppressive, a committee of five was appointed by the chair to report on the matter, with the result of presenting the following resolutions, which were unanimously passed:

WHEREAS, The Nursery interests of the United States are large and varied, and nurserymen are the disseminators of

about as evenly as they could be placed with the hand. The three persons will plant at least 4,500 trees in a ten-hour day.

Tomatoes.—Varieties, and Culture In the Matter of Staking.

[E. B. Engle, before the Pennsylvania State Horticultural Society.]

I have not much to say as to varieties. On the whole, I have found but little, if any, improvement for years. As a rule, I find those of medium size to be best for general purposes, and most profitable for the market gardener.

During the past few years we have grown chiefly Acme, Paragon, and Livingston's Perfection. I usually raise my own seed, by selecting the best and most perfect specimens, as well as the earliest to ripen. In our opinion, Acme is the most delicious of the varieties yet tested, very desirable for family use, but too delicate and tender for shipment.

In growing Tomatoes for market we aim to have them as early as possible. In the height of the season they are usually so plenty as to afford little or no profit. For early planting we sow seeds in January or February in shallow boxes, and force in the green house. We plant out soon as the ground is dry and warm, usually in May, setting the plants two feet apart, in rows four feet apart.

Each plant is trained to a stake four to five feet high. We find this the most satisfactory manner of training them. It does not pay us to grow them without staking. We trim closely at first, leaving only a few branches for early fruiting.

Later we do not trim, but simply tie the vines to the stakes until the top is reached, when they are allowed to hang over, and fruit until killed by frost. We believe as many can be grown thus as by any method.

In training we make about three tyings to a stake, leaving only the main vine to grow. As the shoots or laterals grow, we cut them back to one leaf, and if these grow too much, we cut them back again. I am convinced that leaving sufficient foliage to protect the fruit from the direct rays of the sun, and at the same time not so dense as to exclude light and air too much, will produce the finest fruit. The sketch herewith will show our method.

Fruit Evaporating in Western New York.

[From Report of B. J. Case, before Western New York Society.]

A stranger traveling through the northern part of Wayne County will be surprised with the number of evaporators that he will see. Five years ago nearly every farmer had his little "dry house," with a drying capacity of three to fifteen bushels per day. Now about every other farmer has an evaporator, with a drying capacity of from 40 to 300 bushels per day.

In order to operate these evaporators this last season we have been obliged to import Apples from other counties and other States. We had shipped in from Yates County about 10,000 bushels, and from Michigan about 50,000 bushels, so that the aggregated shipment of evaporated Apples from Sodus station up to the present time is about 2,000,000 pounds.

The other stations on the Rome and Watertown road together have shipped about as many more, making in all about 4,000,000 pounds of evaporated Apples, or 200 car loads. The rise in price of evaporated Apples this fall and winter was a surprise to everyone. Reports told us that Michigan, Ohio, Indiana, Southern Illinois and Missouri had the largest crop of Apples ever known, and that all of the Eastern States, Pennsylvania, and southern and central New York had a fair crop. But when the Apples came to be barreled and evaporated so that an estimate could be put on them, it proved to us, as fruit men, a problem of great importance and that is this: When the four counties bordering on Lake Ontario, viz.: Niagara, Orleans, Monroe and



STAKING TOMATOES, AS DONE BY MR. ENGLE.

fruit trees, and plants from which fruits are grown, producing millions of pounds of freight for the railroads, and

WHEREAS, Fruit trees and plants are now classified in freight schedules as first-class, and frequently one and one-half and even twice first-class rates, therefore

Resolved, That we earnestly protest against such classification as unjust, and injurious to all concerned, and ask as being to the best interests of the railroads themselves that all nursery products be classified as third-class freight.

Resolved, That a committee of three be appointed by this association to memorialize the several railroad joint freight associations, and urge upon them the justice and wisdom of the change in classification as above indicated.

It was also moved and carried that the committee be allowed to draw not to exceed \$300 for properly presenting this matter to the railroads.

Forest Tree Planting. Robert Douglass, of Waukegan, Ill., in his excellent paper on this subject, said that after experimenting in different ways in the matter of planting the following was adopted: Break the soil in June, or at the time the grass is in the most thrifty state of growth. Break quite shallow, not deeper than two, or at most, three inches, as the greater the amount of succulent growth and the shallower the breaking, the more surely will the sod be killed in the summer. Late in August, and during September of the same year, we then turn the sod over lengthwise of the furrow, and deep enough to bury the sod and leave two or three inches of earth over the entire surface. If it is not designed to plant in the autumn, we leave the ground in this condition until the following spring, when the harrow and roller will put the land in excellent condition for planting. Before the planting is commenced the harrow and roller are run over the land, and after that the marker, marking off the ground four feet each way, the same as for corn. The workmen are then divided off into companies of three each, or two men and one boy, the two men with spades, the boy with a bundle of trees. The two men with spades plant on adjoining rows, the tree holder standing between them. The planter strikes his spade vertically in the ground on the running line, close up to the cross mark, then raises a spadeful of earth, the boy inserts the tree, the earth is replaced, the planter places his foot close up to the stem of the tree—bearing on his full weight—and passes on to the next mark. The boy is kept quite busy attending two planters. After a little experience the boy will learn to bring each tree out of his bundle with a circular upward motion that will spread out the roots when placed in the ground

Wayne, have a full crop of Apples, it means low prices, and when they are short it means high prices.

As regards Raspberries. We have the advantage with this crop over the Strawberries, that when they are cheap we can evaporate them. Last spring every one expected to see the largest crop of Raspberries ever known in this country, and consequently very low prices. This was true as regards the prices during the season of gathering the fruit, and although the crop was a large one, it was not near as large as was anticipated; and those who held their evaporated Raspberries till winter realized a paying price for them.

The reasons (in the opinion of your committee) for the crop not being as large as expected, were: First, the plantations of berries were in most cases entirely neglected; no trimming, cultivating or manuring being done. Nearly every one seemed to have lost his confidence in evaporating Raspberries. Second, the dry weather just before and during the first pickings hurt them. And thirdly, the cost of picking them was so near the entire value of the berries, that where the crop was poor, it did not pay to pick them. The prevailing price paid for them at the evaporators was three and a half cents for twenty ounces, and the price for picking was from one and one-half to two cents per quart. Thus leaving the grower from one and one-half to two cents per quart for growing them.

This may seem an unprofitable price, but we have men who have made it pay even at that price, as 4,000 quarts per acre at two cents per quart is \$80.00 per acre. Our biggest expense has been the picking. Your committee last fall saw three tons of evaporated Raspberries that Mr. Benedict had picked with his picker, at a cost of about one quarter of a cent per quart. Although the berries had some stems in them, we understood they were sold within one-half cent per pound of market price, and I understand that now he has an improvement to take out the stems.

There were shipped from our county over the Rome and Watertown Road something like 200,000 quarts of Raspberries fresh, and we evaporated about 200 tons of the same fruit.

### Plum Culture.

[Report of Committee of the Kansas State Horticultural Society.]

The trees of the foreign class are not so hardy, productive or long-lived as our natives, and while the fruit is vastly superior, their planting cannot be advised for extensive orchards.

There are some of the native class which are quite successful, and of which it is quite safe to plant. The trees are hardy, and produce good fruit, little injured by the curculio.

**Site.**—The best is one located where fowls frequent the most, as they are a great help in the work of destroying insects, and especially the curculio, which passes from the fallen fruit into the ground.

**Elevation.**—This is not an important point in the culture of the Plum, only as it often furnishes the most desirable soil, which is more generally found on high prairie land.

**Slope.**—No material advantage is found in different slopes.

**Soil.**—The foreign class requires a rich, moist, soil, underlain with a stiff clay, which is found more generally on our uplands. The native class thrives best on a sandy surface and subsoil, most largely found on bottom lands, and such locations generally produce abundant crops.

**Drainage.**—Good drainage of the surface and subsoil is desirable, and may produce a success on our uplands equal to that of the bottoms.

**Time for Planting.**—Spring is undoubtedly the best time, and those planters who live within a reasonable distance of a reliable nursery had better obtain trees in the spring, as there is too much loss in most cases in "heeling in" autumn dug trees.

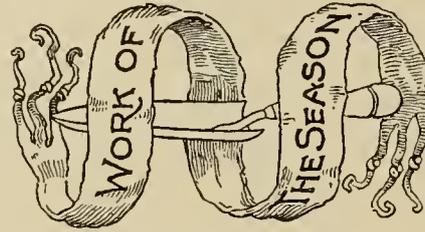
**Distance to Plant.**—The Plum tree does best where closely planted—12 to 15 feet is recommended. It is claimed by some, and evidently sustained by observation, that different varieties should be planted in nearness to each other, as those naturally weak in the fertilizing element will be benefited by the stronger ones.

**Preparation and Laying off of the Ground.**—This should be the same as recommended for the Apple, Peach, Pear and Cherry.

**Selecting Trees.**—In all cases the Plum thrives best when worked on the Plum root. The native sorts may be used when worked on the Peach root, but should be set deep, to secure rooting from the Plum. But it is safer to use them worked on Plum.

**Planting.**—The recommendations given for other orchard trees are safe to follow with Plum trees, excepting in "puddling" the roots, which should never be dipped in a clay mud, but simply in water.

**Mulching.**—This is generally to be recommended, using any old hay or straw.



PREPARED FROM DIARY NOTES BY CHAS. E. FARNELL, QUEENS, N. Y.

### HOUSE PLANTS.

**Azalea Indica** plants finishing their growth require very careful watering, and free syringing to prevent injury from red spider.

**Begonias** for winter blooming to be repotted if necessary. The section with ornamental foliage will now be growing rapidly; for large specimens shift up, being careful not to injure their foliage.

**Chrysanthemums.** For fine specimens special attention is now required. Use every available means to secure a robust, healthy growth. In the event of dry weather form a shallow basin around the plants bedded out, and fill it with coarse manure. Then water copiously two or three times a week and use liquid manure freely. Pinch back the leading shoots occasionally in order to obtain nice compact specimens; such as require it to be staked.

**Ferns.** To keep them growing rapidly, place in a warm, moist situation and keep well watered. If properly drained there is but little danger of their ever becoming too wet. Guard their fronds against slugs or woodlice.

**Fuchsias.** *Speciosa* and *Lord Beaconsfield* which have been used for late blooming should be removed from their pots, and planted out in a deep border in a partially shaded situation.

**Geraniums** for winter blooming growing in plunged pots, to have their leading shoots pinched back as needed for causing bushiness. Continue to remove all flower buds the instant they are noticed.

**Jerusalem Cherries,** when well grown, rank among the prettiest of widow garden plants. During this month treat precisely as advised for Chrysanthemums, except to pinch back their shoots, as they look far prettier when they are permitted to assume their natural manner of growth.

**Pittosporums** should be freely syringed to prevent the red spider from injuring their foliage.

**Vallota purpurea.** Water freely with liquid manure as the flower spikes appear.

**Winter plants** plunged in pots require special care in watering. Keep perfectly free from all insect pests, support such as require it by means of neat stakes, while others that are grown in a bush like form should be pinched back occasionally to induce compactness.

### LAWN AND FLOWER GARDEN.

**Caladium esculentum** will develop itself to great perfection if treated as advised for *Cannas*.

**Coleus** and other plants growing in ribbon lines and masses, where great compactness is desired, to be nipped or pinched back at least twice a week.

**Cannas** should now be growing rapidly. To aid strong development, form basins around the plants and give frequent copious applications of liquid manure, or else fill with coarse stable manure.

**Climbing Vines** should be examined occasionally and their young shoots so trained as to cover the desired space.

**Cobaea scandens variegata.** This beautiful climber is now growing rapidly, and as young, strong shoots are formed they should be layered, and by this means the plant can easily be increased.

**Geraniums** will now be blooming freely. Remove all decayed leaves and flowers at least once a week, and in the event of dry weather, loosen up the surface of the bed and give an abundance of water.

**Gladiolus.** As these come into bloom support the flower spike by a neat stake.

**Heliotropes** for winter can still be propagated.

**Hibiscus rosa sinensis**, and varieties, will now root readily from cuttings of the half ripened wood.

**Justicia carnea** should be pinched back occasionally if nice specimens are desired. This plant will flower all summer if it is grown in a deep, well-

enriched border, and watered liberally. Cuttings of the half-ripened wood will root readily now.

**Lawns** should be mown as often as a little growth of grass has been made. Keep the edgings clipped, and remove all perennial weeds the instant they are noticed, by cutting them out with a stout knife. Roll thoroughly after every heavy rain.

**Tillage.** All beds and borders to be passed over with a light hoe or rake, about once a week, or after each rain, to keep the surface open, to destroy weeds, and not the least, to promote an appearance of neatness. This work is so light and pleasant, affording a study of the plants at the same time, that once one gets in the way of it there is little trouble in keeping it up.

**Violets** should be well cared for during hot, dry weather. Keep them well cultivated and free from weeds; water if necessary.

**Walks** should be frequently raked and rolled. Keep the grass edgings clipped. Indeed it is best to trim the edges and clean the walks thoroughly every time the lawn is mowed.

**Watering** should be done thoroughly whenever it is necessary to do so. For single specimens, vines, newly planted trees, shrubs, the best manner is to form a basin about the plants, and then give a thorough soaking. As soon as this has settled away the earth can be replaced, or the basin filled with coarse littery manure. Where flower beds are to be watered, the surface should be thoroughly loosened and a copious supply of water given towards evening. The next day stir up the surface thoroughly with a rake or hoe. The custom adopted by amateur cultivators of giving a little water daily usually results in injuring the plants.

### PLANT CULTURE UNDER GLASS.

**Agapanthus umbellatus** should be given copious supplies of liquid manure from the time the flower spikes make their appearance.

**Caladiums** will now be growing rapidly. If fine specimens are desired shift them gradually into larger pots. Keep them in a warm, moist situation and as close to the glass as possible. Of course the glass should be heavily shaded on the outside.

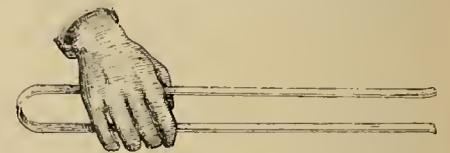
**Calceolarias.** Treat as advised for *Cinerarias*.

**Camellias** must be carefully watered and well syringed every other evening.

**Cinerarias.** Newly started seedlings to be gradually shifted into larger pots. Water thoroughly as needed. Give them an abundance of room in which to properly develop themselves, and never permit the leaves of one plant to touch those of another. Scatter tobacco stems freely among them in order to prevent the ravages of the Green-fly.

**Gloxinias** should be placed in a warm, moist situation. Water thoroughly when necessary, but avoid wetting the foliage. If the plants are permitted to suffer for want of water once or twice their beauty is destroyed for the season.

**Gymnogrammas,** popularly known as Gold and Silver Ferns, should be given a warm and moist situation. Keep them well supplied with water at the roots, but avoid syringing them overhead, as it not only removes the beautiful powdery substance



Hand Tweezers used on Popular Gardening's Experimental Grounds, for gathering Tomato Worms, Squash Bugs, and similar insects. Of ordinary light band iron and home-made.

that covers the underside of the fronds, but frequently destroys the plants.

**Hardenbergias** should be copiously syringed in order to prevent them from becoming infested with the red spider.

**Marantas** are now growing rapidly and will be much benefited by an occasional application of liquid manure. If large specimens are desired, gradually shift into larger pots. Be careful to drain their pots or pans thoroughly.

**Nepenthes** must not be permitted to become dry at their roots.

**Orange and Lemon** trees should be watered occasionally with liquid manure and freely syringed overhead. The leaves should be sponged at times.

**Pelargoniums.** As soon as these have ceased blooming allow them to become rather dry, trim back into shape and remove to a half shady place. Do not water them until the wounds are healed and the plants start into growth.

**Primulas** in the cold frame should be sparingly watered and kept as cool as possible.

**Strelitzias** require an abundant supply of water. If their pots or tubs are well filled with roots give liquid manure at least twice a week.

**Tradescantias** can still be propagated.

**Watering** should be done thoroughly whenever necessary. During the heat of the present month it should not be neglected for a single day. Syringe the plants freely (towards evening) every bright sunny day. Fumigate the houses frequently. Clean them up after removing all dead and decaying leaves. Take advantage of rainy weather to wash the woodwork, pots, etc., for no matter what time or season of the year it is, the greenhouse should always present a neat and attractive appearance.

#### FRUIT GARDEN AND ORCHARD.

**Currants.** As soon as the fruit has been gathered all weak and superfluous branches should be removed, a good dressing of well decayed manure given and well worked in around the plants. After this keep well cultivated and free from insects.

**Gooseberries.** Treat as directed for Currants.

**Mulching.** Where cultivation for young trees cannot be constant, a mulch of some material, such as bog hay, coarse manure or any other litter available, is of benefit in times of drought.

**Peach trees** in bearing should be examined, and if the fruit has set too thickly it should be severely thinned. Not only will the size and quality of that left be improved, but the trees will be benefited.

**Pears.** If large fine specimens are desired for show or exhibition purposes the fruit should be severely thinned. If the opportunity offers, carefully examine all dwarf Pears and thin out the fruit well. Pinch back all rank growing shoots in order to equalize the growth.

**Shoots.** Remove superfluous shoots on Peach, Pear and Apple trees. Pinch back all rank growing shoots for forming a neat symmetrical appearance.

**Strawberries.** New beds this spring will require constant attention to keep them clean, well cultivated and free from weeds. Remove all runners as soon as they are formed. New beds can yet be formed if the plants are layered in pots. The sooner they are planted now the larger will be the crop. Plants intended for fruiting in pots should be obtained by layering as early as possible. The straw should be removed from the fruiting beds as soon as picking ceases, a good dressing of well decayed manure given and forked under thoroughly. If the bed has produced two crops, however, it is best to destroy it, and to occupy the land otherwise.

#### VEGETABLE GARDEN.

**Beans.** Sow Bush or Dwarf at intervals for a succession. Thin out and hoe frequently the earlier ones, but avoid disturbing them when wet with dew.

**Beets.** For a succession of young and tender roots, sowings may be made up to tenth of month.

**Cabbage.** For the late or winter crop, the plants should be set out about the middle of the month.

**Carrots.** If there is any danger that the demand for Carrots will exceed the supply, a sowing or two of the Extra Early Forcing can be made at any time during the month. Keep those that were sown earlier well cultivated and free from weeds.

**Celery** can be set at any time before the middle of the month. The plants can be set six or eight inches apart in the row. For garden culture it is best to place the plants in single rows in shallow trenches about four feet apart. In planting firm the soil well around the roots of the plants.

**Corn** may be planted at intervals of once a week up to the middle of the month. Moore's Early Concord is the most suitable variety for the purpose.

**Cucumbers.** If the ground is in good condition a sowing for pickles can be made during the first week. Keep the earlier sowings free from weeds, and remove all over-grown fruit the instant it is noticed. In gathering cut from the vine with a sharp knife, or scissors, to avoid injuring the vine.

**Egg plants** should be well cultivated and guarded from being injured by Potato bugs.

**Endive.** Where this is in demand, two or three successional sowings should be made during the month. Sow in a nicely prepared bed, and as soon as the plants are strong enough to handle place in rows eight inches apart. When the leaves are six or eight inches in length they can be blanched.

**Leeks.** Keep them well cultivated, and draw earth up to them as they grow.

**Lettuce.** Sow once a week in order to ensure a succession. Sow in a nicely prepared bed, and as

soon as the young plants are large enough to handle transplant into rows six inches apart.

**Melons.** As soon as the fruit shows indications of approaching maturity, carefully remove all small and ill-shaped specimens. In doing this, however, be careful not to injure the vines.

**Parsnips.** Hoe and cultivate the crop often.

**Spinach.** Sow every week for a succession, and in order to ensure a quick germination of the seed see that the ground is well firmed.

**Tools.** The file and grindstone are friends to all good soil tillers. Sharp edges are twice as effective for good work as are dull ones.

**Turnips.** The Ruta Baga varieties can be sown about the middle of the month. The other kinds for winter not until the end of the month.

#### FRUIT AND VEGETABLES UNDER GLASS.

**Figs.** Fig trees in pots or tubs should be thoroughly watered. Use liquid manure twice a week.

**Grapes.** In the earliest houses Grapes will now be fully ripe. Keep cool and dry and the fruit will remain for a long time in perfection. In the succession house the fruit will soon begin to color. Keep the house dampened until the dark varieties are nearly colored, when moisture should be mostly withheld. Vines in the late houses will now require considerable attention. Dampen the houses every morning; finish thinning and shouldering the bunches, and keep all shoots tied to the trellis. Avoid cold draughts of air through the building, as it is likely to cause mildew.

**Peaches and Nectarines** in cold houses should be freely syringed until they commence to color.

**Peaches and Plums** grown in pots or tubs in cold houses should be syringed frequently, and given liquid manure water at least twice a week.

**Parley** for winter use may yet be sown in drills six inches apart in a cold frame, the sash of which will require to be given a moderate shading.

**Sashes** used in forwarding vegetables should now be placed under cover, and repaired and painted at the earliest opportunity.

## INQUIRY COLUMN

*This being the People's Paper, it is open to all their Inquiries bearing on gardening. Correspondents are urged to anticipate the season in presenting questions. To ask, for instance, on April 15 or 20 what Peas had best be sown, could bring no answer in the May issue, and none before June, when the answer would be unseasonable. Questions received before the 10th of any month stand a good chance of being answered in the next paper. Not more than three questions should be sent at one time.*

*Replies to Inquiries are earnestly requested from our readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.*

347. **Pruning Currants.** Last fall I cut back our bushes all over the head as recommended, and this season have hardly any fruit. Bushes very healthy, but too much wood. What had I better do? A. J. W., Lakefield, Ont

348. **Clematis Failing.** My Clematis Jackmanii has done remarkably well for the past four or five years, but now seems in bad shape and struggling for an existence. How old do the plants get and what is the best soil, situation and winter treatment?

349. **Asparagus Cutting.** I have a ten year old bed which is showing some gaps; have I cut it too close? Should a bed be cut clean as fast as it grows, including young shoots?

350. **Improving Honey Locust Hedges.** A seven year old hedge of mine which has been cut back annually is getting thin at the bottom and has many dead branches. I cut it back about one foot this spring and it looks pretty thin. Would you recommend cutting it back severely, say to two feet? P. P.

351. **Mildew on Plum.** I have a tree thus affected, and growing worse. What can be done? N. A., Ypsilanti, Mich.

352. **Planting by the Moon.** Does planting in any particular phase of the moon have any special effect on growth? Moonshine, Wheeling, W. Va.

353. **Fuchsia Culture.** Will you please give me full instructions regarding Fuchsia culture, not omitting the matters of soil, watering, drainage, light, temperature, etc.

354. **Fuchsia Storm King; Frau Emma.** Do these names apply to one or two varieties?

355. **Books on Flowers, and Seed Growing.** Can you give me the names and where to be procured, of good and concise works on these subjects? Mus. G. J. L., Big Horn, Wyoming.

356. **Asparagus Query.** My three year old Asparagus bed has not been cut this season. It has green berries on; should I cut the plants to the ground now or wait later? A Sunscaine.

357. **No Persimmons.** Why does a Persimmon tree fail to produce fruit, although blossoming freely?

358. **Pruning Young Apple.** How shall I manage one year old trees to keep them from branching too low? How and when should they be pruned?

359. **Grape Tendrils.** What is the cause or causes of Grape-vines producing tendrils instead of fruit clusters, and how remedied? G. C. L., Fredericktown, Ohio.

360. **Pansy Distinctions.** Can you describe the distinctive markings of German, English, French, and American Pansies. J. J. R., Paterson, N. J.

361. **Fruit Trees from Cuttings.** Will Cherry or other trees of good stock thus rooted make as good stock as the parent tree? If not, why?

362. **The Fragrant Olive.** What cultivation is needed for this plant? I have an *Olea fragrans* which has made little growth in two years. F. H., Onekama, Mich.

363. **Yield of Grapes.** What yield and price per acre may be counted on for Grapes?

364. **Bee Balm or Monarda.** Does this beautiful old plant grow readily from seed, and if so, where can seed be obtained? F. E. B., La Centre, W. Va.

365. **Violet Seed.** Where can I get seed of the Swanley White and English Blue Violet? Mas. H. C. C., Sarnia, Ontario.

366. **Autumn Blooming Crocus.** Where can these of sorts suitable for this climate be procured. W. K. N., Toronto, Ont.

367. **Young Canaries.** Some of mine at six or more weeks old get sick, bloat, their feathers stick up, they hide their heads under their wing, have an appetite, but die at last. How shall they be treated? C. J., Buffalo, N. Y.

368. **Peony Flowers Blasting.** The plant is of good size, buds well in the spring, but the buds soon dry off. What is the trouble? READER, Buffalo, N. Y.

369. **Blackberry Rust.** My Blackberries are showing some diseased leaves like the enclosed. Is it rust? How to be treated? P. WAYNE, Tioga, Co., Pa.

370. **Pale Marechal Niel Roses.** My Marechal Niel Rose is of a pale and inferior color, quite unlike others I have seen. Is this because there are different forms of the rose and mine a poor one? I give the plants liquid manure water. J. L. Avon, N. Y.

371. **Young Asparagus Bed.** My bed was planted in spring of 1886, ought I to let the seed ripen or cut it while green? T. R. K., Goshen, Md.

372. **Silk worms.** Can these be had in this country and will they thrive in Maryland? I would be glad for information and for the names of books on the subject. A. H. H., Baltimore, Md.

373. **Roses from Seed.** What is the time required for flowers to appear after seed is sown? L. W.

#### REPLIES TO INQUIRIES.

282. **Currant Worm Remedy.** Dust the bushes when the dew is on with white hellebore, and the Currant pest will not trouble you. J. W. PHILIPS, Butler Co., Pa.

289. **Bees and Grapes.** Wasps cut Grapes and then bees devour them. Kill the wasps and remove the injured fruit, and the bees give it up at once. I am surprised that this has not been more generally observed. I have seen a large light-brown wasp cut half a dozen Grapes in as many minutes; then the bees dispute possession with him and annoy him till he leaves the bunch to repeat elsewhere. Six or eight wasps killed check all trouble. J. W. HOLLINGSWORTH, Orange Co., Ind.

298. **Ground or Root Aphis.** This is a difficult insect to get rid of. One of the most practical remedies is to mulch the ground in the autumn. Then the insects will ascend into the mulch, which, in the spring, should be scraped away from around the trees or vines, and a plentiful application of hot water be made to each. Bisulphide of carbon applied by making a hole into the soil to reach below the roots, and into which is poured a tablespoonful of this substance, is the remedy largely employed by the French government for ridding vineyards of that destructive root louse the phylloxera. But at best this is a rather costly remedy; the drug also is explosive if brought near to a flame.

305. **Trellising Grapes.** An approved plan is to place posts 24 feet apart along the rows, and string two wires on them, one five foot from the ground, the other half as high. One set of branches are trained to the upper and one to the lower wires, and the branches as they grow simply hang over. It is found that the laterals make less growth when the vines hang down than when they are trained uprightly, saving much on pinching and stopping them. This system of trellising answers well, and makes a very material saving over that in which the posts are closer and more wires are used. On these the renewal method of pruning is practiced, by which the present year's wood is provided for next year's fruiting. Everyone, we presume, understands that Grapes are much finer and more abundant on last year's wood than on that older.

307. **Weeding Lawns.** My experience shows that all broad-leaved weeds, such as Dandelions, Plantains, and Buttercups, may be completely

killed out by sprinkling guano on them during dry hot weather. The result will be a brown patch in every place where a weed has been so treated; but the first good rain will bring grass and clover where the coarse weed was killed, and if this practice is persevered in a lawn, however foul to begin with, will be improved rapidly, and in a few years may be rendered perfect. Simple mowing of the lawn usually has a good effect, for the presence of weeds may be taken as one proof that the grass needs manuring, for really these can only take possession when the grass is perishing through the lack of food. G. T. W., Orleans Co., N. Y.

**330. Fall-blooming Hybrid Perpetual Roses.** For a list of twenty sorts, we have found the following not only the best fall-blooming hardy roses, but they are also, with hardly an exception, among the most vigorous of growers, and all of great value for flowers in June: Abel Grand, Alfred Colomb, Anna de Diesbach, Auguste Mie, Baron de Bonstetten, Baroness Rothschild, Baronne Prevost, Caroline de Sansel, Countess of Serenye, Francis Michelin, General Jacqueminot, La Reine, Mabel Morrison, Madame Victor Verdier, Marguerite de St. Amande, M. P. Wilder, Paul Neyron, Pride of Waltham, Rev. J. B. Camm, Princess C. de Rohan.

**328. Peas for Seed.** The raising of Peas free from bugs can only be effected in sections where the insect does not prevail. A place of this character is found in Canada chiefly to the north and northwest of Toronto, and from here the main supplies of seed Peas sold by all American seedsmen is drawn. Peas imported from Europe have the reputation of being similarly exempt. As a matter of fact many such imported Peas are of Canadian growth, reaching us by way of Europe. Peas for seed but that have been stung may be rendered bugless by placing them as soon as gathered in jars or other tight vessels adding as much as a teaspoonful of turpentine to each fruit jar. This will kill the immature bugs very soon. For treating Peas on a large scale it is usual to submit them to the heavy fumes of bisulphide of carbon, an abominable smelling but destructive drug.

**330. Bed for Bog Plants.** For several years we have had such a one, in which has been set plants from time to time, until it has become a veritable swamp, containing many of our aquatic plants, and blooming as freely as in their marshy home. To make a similar one procure a rough wooden box, say six feet long, one and a half wide and two feet deep. Dig a place sufficiently long and deep to sink this, then along the sides and ends place a few stones making a sort of rockery as a border. Place sufficient soil in it to cover the roots of any plants used. The water evaporates and is taken up by the plants rapidly, but with the hose from a force pump is easily kept filled, though the trouble required to fill it with a pail is well paid for. Care should be taken to keep the roots, at least, well covered with water. This tank should be made water tight by cementing; the pitch used for boats does very well. I imagine a mason could soon make a tank which would last for years. Anyway, whatever trouble is taken to prepare one of these is amply repaid by the rapid growth of these water plants, any of which can be safely transplanted when in bloom. In ours we have Nuphar advena, the Yellow Lily or Spatter-dock so common in all our muddy slow streams and marshy borders; Iris versicolor, the well-known Sweet-Flag; Sagittaria, so many kinds of which brighten up the margin of mill-ponds, and so on, with their pure white blossoms and arrow-shaped leaves; a few *Caltha palustris*, the Marsh Marigold—generally our first spring bloomer; one plant of *Peltandra virginica*, in this section a rare bog plant; All of these bloom freely, especially the Iris. But towering above all were several stalks of the common Cattail Flag, *Typha latifolia*. Several grasses have found their way in, making the box one mass of aquatic vegetation.—*Corr. of Practical Farmer.*

**347. Pruning Currants.** You pruned too far back, with the effect of causing the buds on the lower parts to make the strong wood you speak of instead of fruit spurs. The annual pruning should never amount to more than one-third of the wood, in many cases to remove but one-fourth would be better.

**351. Mildew on Plum.** Sulphur in some form is the standard specific against mildew of all kinds. Applied in its dry powdery state, known as flowers of sulphur, on a warm, still day and it is as effective as in any way. This can best be done with a sulphur hollows, but on a small scale it can also be managed very well by hand, taking a pinch in two fingers and the thumb at a time, distributing it with a quick jerk as it leaves the hold. A liquid preparation is made by boiling 3 lbs. each of the flowers of sulphur and lime in six gallons of water until reduced to two gallons. When this has settled the clear part may be poured off, to be used either at once or else be bottled for future use. One pint of the clear article in 12 gallons of water is the strength recommended for use. This may be applied with a force pump, hose and spraying nozzle.

**352. Planting by the Moon.** As late as the 18th century the belief that seeds should be sown, cions and slips be set, and crops should be gathered "by the moon" was still very commonly entertained, but since that time carefully conducted experiments by scientific men and the wider common experience of enlightened cultivators has almost entirely dispelled the fallacy of this belief. It is enough to say

that to-day none of our more successful gardeners, florists or nurserymen give a moment's credence to the pseudo superstition. For a period of forty years the most elaborate comparisons of meteorological records made in France and in England (where the Greenwich observations were carefully collated with the moon's phases during that period) have failed to show any connection whatever between the moon's influence and organic growth.

**363. Yield of Grapes.** Concords, Wordens, Moore's Early, Roger's 15, and that class of strong growing free fruiting sorts, set at 8 by 8 feet afford about 800 vines to the acre. In three years they will average three pounds to the vine, giving 2,400 pounds to the acre, which at even 3 cents per pound would be \$70 per acre. When in full bearing they will yield 8 to 10 pounds to the vine and profits accordingly. We consider this a fair average yield and price. A. M. P.

**364. Bee Balm or Monarda.** This plant, also known as Oswego Tea, may be raised from seed, an article we do not find quoted in any American seed catalogue. The plants propagate with sufficient readiness to afford them at a price per root scarcely above what a paper of seed should cost. Ellwanger & Barry, of Rochester, N. Y., quote them.

**360. Pansy Distinctions.** The best English Pansies are large, of good form, and mostly of the three spotted or "face" class. The flowers have scarcely the substance or firmness of petal of the German strains, but the plants are hardy and free bloomers. English and Scotch growers often select particular plants, and naming them, as is common with Roses and Dahlias, increase them from cuttings and division. The French Pansies are usually of very large size, with rich and delicate markings, of the three and five spotted class, but the form is often poor, as is seen in Trimardeau and some of the more common varieties. Odier and Cassier are also well known French varieties. They do not bear hardship so well as other kinds, nor are they so free or long continuous bloomers. German Pansies run mostly to solid colors, very rich shades, with flowers of good form and free blooming qualities. They are reasonably hardy and the most satisfactory of any one class. We can scarcely yet claim to have a distinct American class, although the tendency of selection indicates peculiar shades, as of some browns and reds and the fancy bordered varieties. Our climate is conducive to rich coloring, and adaptability to our climatic changes is being reached in American grown seeds. As we have the best products of the rest of the world for a foundation, it is probable that a wide range of the best varieties will be characteristic of American Pansies, and the distinctions will not be so much of a national character as depending on the selections of different growers. Wm. Toole, N. Freedom, Wis.

**350. Improving Honey Locust Hedge.** The only way to make a hedge very thick at the bottom is to keep it trimmed low, say at two feet, for a few years, so that the bottom gets the start of the top, as the shoots will always be strongest and thickest at top of plants unless prevented by trimming. Trimming in July or August, when the growth is nearly completed, has a tendency to check the rank growth at the top of hedge and throw the growth more to the bottom, and if persisted in might help your hedge. Cutting back to two feet should be done in the fall or spring, and if you do not need the hedge for a fence for a few years would likely give best results eventually.—D. N. Lono.

**324. Wire Worms in Grapery.** Cut Turnips Carrots or Parsnips in half and place them on the floor of the grapery. Examine these every morning and destroy the worms. Continue until all are destroyed. Watering the floor well with lime water will tend to banish them, and so also of dressings of bone dust or wood ashes. C. E. P.

**325. Camellias With Yellow Foliage.** It is evident that something is the matter with the roots. I think the best course would be to plant them out in a deep moderately enriched soil in a partially shaded situation. Water and syringe freely, and in September lift and pot, draining the pots well. Perhaps it is red spider; if so the foliage will be brown or reddish. Sponging with whale oil soap occasionally is an effectual remedy. C. E. P.

**318. Pruning Raspberries.** Remove all canes as soon as they have borne fruit, and pinch back when they reach a height of four or five feet.

**319. List of Shrubs and Hardy Roses.** The best twelve Hybrid Perpetual Roses are Francois Michelin, Marguerite de St. Amande, Alfred Colomb, Marie Baumann, Countess of Serenye, Horace Vernet, Abel Grand, Mlle. Theresa Levet, Pierre Notting, Baroness Rothschild, Louis Van Houtte, La Reine. Twelve good shrubs growing about five and six feet in height would be *Deutzia crenata* fl. pl. alba, *Forsythia Fortunei*, *Hibiscus Syriacus*, *Buist's variegated*, *Hydrangea paniculata grandiflora*, *Philadelphus coronarius*, *Spiraea opulifolia aurea*, *S. prunifolia* fl. pl., *S. Thunbergii*, *S. Reevesiana*, *Weigelia rosea*, *W. rosea nana variegata* and *Viburnum opulis sterilis*. C. E. P.

**322. Wallflower that does not Flower.** Plant out in a well prepared sunny border, and take up about the middle of September, using a pot proportionate to the size of the plant and moderately rich soil. During winter keep it cool and rather dry at the roots. As growth starts in the spring give liquid manure occasionally. I think you erred in giving

your plant too rich and too much soil, or by keeping it growing all winter. C. E. P.

**321. Hardy Cactuses.** No.

**336. Carnations for Winter Bloom.** Old plants do not produce very satisfactory results. Carnations for winter blooming are usually rooted in February, and grown on in small pots or shallow boxes until May, when they are planted out in rows a foot and a half apart each way. During the summer they should be well cultivated and pinched back occasionally to prevent flowering, and induce compact forms. Pinching should be discontinued about the middle of August, and the plants taken up and potted in September. C. E. P.

**341. Peaches Under Glass.** They can be grown and ripened well in a cold grapery, provided they are placed apart from the vines, but in order to obtain a satisfactory result some skill and experience are necessary. C. E. P.

**349. Asparagus Cutting.** You may have injured and killed the roots by improper cutting (See page 139). As soon as the shoots show signs of weakness, cutting should be discontinued. C. E. P.

**359. Grape Tendrils.** These are thread like coiling appendages furnished to the vines as a means to support them to a certain place and have nothing to do with the production of fruit. I think that the wood of your vines is not strong enough to produce fruit, and advise the use of means to secure a more favorable growth. C. E. P.

**340. Hyacinths for a Second Forcing.** The bulbs that have bloomed once are useless for forcing a second time. C. E. P.

**320. Hardy Palms.** There are none that will stand our northern winters, no matter how well protected. C. E. P.

**331. Cyclamen Dying.** After blooming, the Cyclamen gradually passes into a state of rest, and in cultivation we try to assist nature by gradually reducing the supply of water; and if the leaves of your plant gradually turned yellow and decayed it was no more than proper. You can easily tell whether the corm or bulb is rotten or not by a careful examination, and in the event of its being fleshy and solid your best course will be to turn it out of the pot and plant it out in a nicely prepared border in a partially shaded situation. Keep the corm or tuber two inches beneath the surface, and take up and repot early in September. C. E. P.

**337. Repotting Winter Blooming Plants.** If for house culture they should be repotted as early in September as possible. If for the greenhouse a week or two later will do as well. C. E. P.

**338. Ruellia macrantha Culture.** This a plant that can be easily grown. During the summer it should be planted out in a deep, well enriched border and well watered whenever necessary. Early in September it should be taken up and potted. Give it a well-drained pot proportionate to the size of the plant, a compost composed of one-third well-rotted manure, and two-thirds turfy loam. Keep the plant well supplied with water, and when the flower buds appear use liquid manure occasionally. In the winter give an average temperature of 55 degrees, and a light sunny situation. C. E. P.

**346. Hydrangea Culture.** Young plants should be planted out in a deep well enriched border in a sunny situation. As soon as hot, dry weather sets in they should be heavily mulched and watered whenever necessary. On the approach of cold weather they should be taken up, potted, and wintered in a cool dry cellar. The next season they can be planted out and similarly treated. After this they will flower freely every season. They can be grown in tubs or pots, or else planted out where it is intended they should bloom. When grown in pots or tubs they require to be repotted every season, and as soon as the flower buds are noticed copious supplies of liquid manure are beneficial. In winter keep them as cool as possible. C. E. P.

**328. Peas for Seed.** They can be kept free from the Weevil by the following process. When thoroughly dried put them away in small paste-board boxes, placing a small rag wet with carbolic acid in each box, setting them in a cool, dry place, and they will not be troubled. H. C. T.

**346. Hydrangea Culture.** In the following manner I have grand success: Winter in a cellar; bring them to light and heat in March or the latter part of April. I then place them on posts in the yard purposely for them, and the most important part is, they are always shaded by house and trees so they do not receive the sun more than two hours daily, and that not at midday; when blooming, water abundantly. H. C. T.

**334. Celery Queries.** For good plants the seed should be sown in the open ground in April. Plants set out in July will make splendid winter Celery with proper care in handling. The best way to preserve over winter is to dig a trench of the required length in some dry spot, 10 inches wide and as deep as the Celery is in length; take up your plants with all the dirt on the roots possible and set them so close in the trench that the tops make a solid mass. Then as the ground begins to freeze put on a cover of leaves or straw, and then some boards to turn water, which is a most essential part. When wanted for use it is easily gotten out from the end, and in this shape it will keep in good condition until spring. H. C. T.

332. **Wallflowers.** These plants need good sized pots, say 6 inch; they are tender perennials, blooming the second year. Plants raised last year will bloom this, but perhaps not until late in the season. Mine usually blooms in winter. H. C. T.

## FRUIT CROP PROSPECTS.

### Western New York Fruit Belt.

WAYNE Co. *Apples*, one-half crop; *Pears*, good crop; *Plums*, poor; *Peaches*, good where there are trees left; *Black Raspberries*, good crop, not quite up to last year; *Reds*, good crop, not as large area as last season; *Strawberries*, good crop. B. J. CASE.

WAYNE Co. *Apples*, one-half crop; *Peaches*, good on existing trees; *Small fruits*, full crop. A. J. RICE.

ORLEANS Co. *Apples*, Baldwins constitute three-fourths of our orchards, and as these did not blossom well we cannot count on over one-third of a crop; *Pears*, some varieties have dropped their fruit badly. VIRGIL BOOBE.

ORLEANS Co. *Apples*, most varieties give promise of an average crop, but Baldwins are almost a total failure, they failed to bloom; *Pears*, Bartletts good, Duchess number one in health, foliage and crop; *Plums*, light; *Quinces*, look well; *Peaches*, trees generally looking well. The yellows having been pretty thoroughly medicated, the crop promises to be good; *Berries*, abundant. In general trees look well, with less insects praying on the foliage than I have ever seen at this season. S. C. DAVIS.

GENESSEE Co. After visiting a number of orchards in this county I must report as follows: *Apples*, fair crop, as the proportion of Baldwins is not as large as in Orleans Co.; *Pears*, a light crop of Duchess considering the extent of the orchards; *Other fruits* promise well. There are less depredations from insects than for many years. V. BOOBE.

MONROE Co. *Apples*, *Pears* and *Plums* not above the average in promise, but there is enough fruit set to make good crops; *Grapes*, the prospect is good; *Small fruits*, good. No serious insect depredations have begun. CHAS. A. GREEN.

SENECA Co. *Apples*, an average crop; *Pears*, full average; *Plums*, the same; *Peaches*, small yield; *Grapes*, prospects good; *Cherries*, fair; *Small fruits*, good. Some evaporating. E. C. PIERSON.

CAYUGA Co. *Apples*, this is an "off" year, and there will be not more than one-half crop; *Pears*, *Grapes* and *Raspberries*, an average crop; *Plums*, below average. H. S. ANDERSON.

ERIE Co. Prospects in general excellent. *Pears*, so full that if not thinned out they must come small. The Pear curculio is at work helping to thin them; *Cherries*, not a full crop. G. ZIMMERMAN.

CHAUTAUGA Co. *Grapes*, not so well set as usual but enough for a good crop. T. S. HUNNARD.

CHAUTAUGA. Prospects for a large fruit crop were never better than now in this locality. GEO. S. JOSSELYN.

NIAGARA Co. *Apples*, information from different parts of the county indicates that there will be a very moderate crop, particularly of Baldwins, the principle winter variety in cultivation. Many of the trees exhibited the heretofore unknown peculiarity of not blossoming; *Pears*, promise better than last year; *Plums*, a good crop if the curculio does not go too far; *Cherries*, fair; *Quinces*, very promising; *Grapes*, as promising as usual, and proving to be one of the most reliable of fruits. C. L. HOAG.

NIAGARA Co. General prospects good. *Apples* of most varieties except Baldwin will set with smooth fruit, but one-half the trees in the county are Baldwins; *Pears* are medium; Duchess promises a fair crop; *Quinces*, very uniformly set; *Plums*, very full; *Peaches*, have twice as many set as they can mature; *Grapes*, look well; *Cherries*, light. No aphids thus far. To the effects of this insect last year is attributed the lack of blossoms on Baldwins this year, but as the growth is now stronger than it has been for years it is perhaps reasonable to look for a large crop next year. HENRY LUTINS.

ONTARIO Co. *Apples*, especially Greenings, will yield heavily, Baldwins light; *Pears*, *Plums*, *Quinces* will yield heavily; *Peaches* promise an enormous crop; *Grapes*, heavy; *Cherries*, fair; *Raspberries* and *Blackberries*, fair yield; *Strawberries*, not as good as last year. M. H. BECKWITH.

### Michigan.

MONROE Co. *Apples* and *Standard Pears*, an average crop; *Peaches* and *Plums*, fair; *Grapes*, promise large; *Cherries*, are short. S. B. LEWIS.

VAN BUREN Co. *Apples*, are setting unusually well, and contrary to earlier prospects promise at least a moderate crop; *Peaches*, with reasonably favorable weather from two-thirds to three-fourths of an average crop may be expected. T. T. LYON.

GRAND TRAVERSE Co. *Apples*, should estimate at least a full average crop; *Pears*, full crop; *Plums*, full crop; *Peaches*, there are but few trees here and they promise a good crop. Insect enemies seem more numerous than usual. E. O. LADD.

BERNICE Co. *Apples*, from present appearances in the southern townships will be 100 per cent; the lake shore region about 80 per cent; *Peaches* and *Pears* will be 100 per cent, *Raspberries* and *Blackberries* 50 per cent. THOMAS MARS.

KALAMAZOO Co. *Apples*, owing to the severe drought promise not more than 75 per cent of an average crop; *Peaches*, wintered unusually well and promise a fair crop. H. DALE.

MASON Co. *Apples*, June prospects most excellent, would place the average per cent 115; *Peaches*, 75 per cent; *Cherries* and *Pears*, each 100 per cent; *Plums*, 85 per cent; *Berries* of all kinds, an average yield. J. E. CAMPBELL.

MUSKEGON Co. *Apples*, *Pears*, *Plums* and *Grapes*, 100 per cent of average crop; *Cherries*, *Raspberries* and *Currants*, 75 per cent; *Peaches* not one per cent.

### Ohio.

LAKE Co. *Apples*, *Pears*, *Plums*, *Grapes* and *small fruits*, a full average crop; *Peaches*, above average. No evaporating to speak of. F. D. GREEN.

CLARK Co. *Apples* promise but a small crop, badly stung by curculio; *Pears* and *Grapes*, good average crop; *Cherries*, light; *Peaches*, near average; *Small fruits*, abundant. W. H. SMITH & SON.

CLARK Co. (Springfield) *Apples*, very scarce, caused probably by cold, wet weather at blooming time; *Pears*, not one-tenth of a crop; *Peaches*, poor; *Small fruits*, abundant. J. H. FRANTZ.

MIAMI Co. *Apples*, very light; *Pears*, in orchard of 400 trees do not expect one-eighth of a crop; *Peaches*, promise no better; *Grapes*, very heavily set. ISAAC FREEMAN.

MIAMI Co. *Apples* and *Pears*, not one-fifth of a crop; *Peaches*, scarce; *Cherries*, a failure. D. BROWN.

### Missouri.

MISSOURI, VERNON Co. *Apples*, generally not over one-fourth crop. Ben Davis, which is the leading market variety, may come up to one-half crop. *Pears*, including Keiffer not over one-eighth of a crop; *Plums*, one-fourth of a crop. A. AMBROSE.

FIFTY COUNTIES. From an elaborate report gathered by the State Horticultural Society, L. A. Goodman, Secretary, from 50 correspondents we compile the following crop prospects, giving percentage of full crop: *Apples*, fifty counties reported show an average of 50 per cent. *Pears*, forty-three counties reported show an average of 50 per cent. *Peaches*, forty-seven counties reported show an average of 47 per cent. *Plums*, forty-eight counties reported show an average of 31 per cent. *Grapes*, forty-eight counties reported show an average of 78 per cent. *Raspberries*, forty-seven counties reported show an average of 54 per cent. *Blackberries*, forty-two counties reported show an average of 55 per cent.

### Other States.

INDIANA, PULASKI Co. *Apples* and *Pears* offer poor prospects owing to late frost; *Cherries*, an entire failure; *Peaches*, none. G. W. GRANT.

INDIANA, HENRY Co. *Apples* and *Pears*, not above one-sixth of an average crop, owing perhaps to cloudy weather when in bloom; *Peaches*, none; *Grapes*, fair; *Small fruits*, good. E. Y. TEAS.

WINCONSIN, WAUSAHU Co. *Apples*, the hardier sorts promise a good crop. E. W. DANIELS.

VIRGINIA, HENRICO Co. *Apples*, none to report. *Pears*, less than one-fourth of average; *Grapes*, above average; *Small fruits*, failed. W. T. HOOD.

KENTUCKY, TENNESSEE, GEORGIA, ALABAMA, MISSISSIPPI and INDIANA. Special reports to the Louisville Courier-Journal from over one hundred counties in these states, indicate that the frost in April injured fruit to such an extent that there will be only about half a crop of Apples and few Peaches.

## The Household

Avoid eating when very tired.

Washing copper in sour milk saves scouring.

The bath occupies first place as a means of keeping cool.

To touch the point of a nail in lard will make it drive easy, even in hard wood.

Charcoal suspended in cistern or other water that becomes tainted will improve it.

A paper bag which contained sugar or other groceries from the store is a good thing to slip over the hand for protection when blacking the stove.

Painting the kitchen walls enables one to wash them off, and in general tends to a neat appearance. The paint should be good oil paint, applied as for out-door work, first sizing the surface to be coated with a solution of one-half pound of glue to a gallon of water.

Home-made Fly-paper. Take equal parts of melted resin and castor oil. Into the melted resin stir the oil thoroughly. While still warm spread thinly and evenly with a broad-bladed knife upon any paper that is not porous, as writing-paper, catalogue covers, etc. Lay the paper wherever flies come most, and you will soon find it covered with them. There is no odor to attract, no dead flies dropping around, for when the paper is full it should be burned.

Raspberry Drink. Take of Raspberry juice, say three pints, filter it, and make a syrup of a pound and a half of loaf sugar, to which add three ounces of tartaric acid. Bottle all, and keep tightly corked. For a tumblerful of water add two teaspoonfuls of the above syrup, and a scruple of carbonate of soda. This forms a most wholesome drink for summer, and it may be varied by substituting Strawberries, Currants, etc., instead and proceeding according to the directions given. PRACTICE.

Pillow cases get old and thin before they are broken, and are then fit for storing away woollens in during the summer. Do up the articles in a flat, square package, corresponding in size to one-half the depth of the pillow case. Wrap the bundle in brown or other paper, being careful to have no ends uncovered, and tie with cord; then slip the parcel into the pillow case, fold the remaining end

over twice and pin down smoothly on the upper surface of the budget. Pin on a piece of paper with the name of contents, and lay the parcel away for the summer, giving yourself no uneasiness about moths, for if none were in, they will come out all right. "ELDER'S WIFE."

Sorrel as a Vegetable. The common and other species of Sorrel are much used by the French in cooking, and there is no reason why the same should not find use with us. In preparing it the larger leaves are freed from the stalks and are thoroughly washed in several waters. They are then set on the fire in a saucepan filled with cold water; as soon as they reach boiling point they should be turned into a colander and have cold water poured over them. Drain well and press the leaves hard with a spoon. Melt some butter and mix with it a little flour, adding milk or cream, seasoning with salt and nutmeg, then add the Sorrel and simmer until done. The sauce must not be watery. Cover the dish in which the sorrel is served with strips of bread fried in butter.

## Poultry.

Dig over the runs when they become sodden.

Green scum in the water dish is detrimental to health.

Pullets lay more eggs and smaller than old hens. An argument in favor of pullets so long as eggs sell by count.

Fresh sods thrown to the hens daily afford both needed green food and exercise, for they will scratch the sods to pieces.

The frequent occurrence of gapes is a disgrace to any poultry yard. The disease is an attendant on bad water, exposure and starvation. WRIGHT.

Dust for the poultry house is a most useful article to now get together, but don't purloin it from the highway; it's needed there. Prepare it on a smooth, firm drying plat.

Clover cut when in the young bloom and after wilting in the sun, curing it under shade, makes a food that poultry will eagerly devour next winter, stimulating egg production.

A Hint to Poultrymen. If consumers of eggs were sure their grocers would send them strictly pure eggs they would use twice the number they otherwise do. The point we would make is work up a direct trade with the consumer as far as possible. Carry your eggs to them twice a week and have the benefit of the increased use. The full retail price that can always be counted on will pay for some extra trouble.

Before young chicks have reached the age of three months lice kill a large share of all that die, although the trouble is frequently assigned to other causes. Such loss may be prevented by touching a dab of lard to which a little crude petroleum has been added on the top of each chick's head, and under the hen's wings. Then watch for the dead lice about the greased parts and you may be astonished at their large numbers.

Does Cock Crowing Annoy You? It is admitted, says a writer in the London Gardeners' Magazine, that in the act of crowing a bird stands up and then stretches his neck to its fullest extent. A small lath loosely suspended about eighteen inches above the perch will obviate this. It in no way interferes with the bird's roosting, but the moment chancier contemplates a nuisance, the swinging lath comes gently into contact with his comb and effectually steps him. I have a dozen birds and none of them presume to crow till the hour I let them out.

Care of Poultry Manure. In a discussion of the subject by the Pennsylvania State Board of Agriculture it was recommended: First, To allow the droppings to remain in or near the poultry house, and at regular intervals sprinkle plaster or dry soil over them in order to prevent loss by evaporation. Sufficient dry soil should be added to keep the pile moist and prevent it drying up so as to render the application to the crop difficult. Second, To gather up the droppings at intervals and place them in tight barrels, being careful to cover each layer with plaster, dry soil or road dust. When ready for application, when dry, it may be mixed with a varying amount of soil and allowed to lie until the whole is moist enough to crumble readily, when, by shoveling over a few times, the mixture can be easily and readily applied to the crop. Either of these plans will prevent loss by evaporation and attain the same end. No plan was proposed where poultry is not kept under shelter, but it was decided that the increased value of the droppings would soon pay for a roof.

# The Exchange

Amateurs often have an excess of certain seeds, plants, etc., while in want of others. This department is designed to bring about free exchanges in such cases.

In The Exchange may be named what can be spared, what is wanted and the address. No price figures admitted. Any offer that may appear objectionable to the publishers not admitted. No responsibility will be assumed for any results connected with The Exchange. Those using the column should correspond before sending articles.

198. Mrs. J. H. Burdin, Forks of Elkhorn, Ky., has Marie Louise Violet, Variegated Follage plant, Calla, Lilies, Tradescantia, multicolor, Pink Hyacinths to exchange for choice Canna roots and Lilies, Caladium and Hyacinth, Acalyphas, Achyrantes, Coleus or Alternantheras.

199. Chas. E. Parnell, Queens, N. Y., offers Acropera Loddgesii, Maxillaria dicta, Imantophyllum, Agapanthus, Pittosporum, Lemon Trees, and many other choice plants in exchange for scientific or historical works, or other reading matter.

200. Mrs. Jennie Lynch, Humholdt, Neb., will exchange Hybrid Roses, Pink Almonds, Celastrus, Violets, Pink Betta, for choice Lilies, Paeonies, etc.

201. Mrs. W. S. Hammand, Carthage, N. Y., has a greenhouse full of choice plants to exchange for good sized sea shells and marine curiosities.

202. Mrs. Rebecca Pennington, La Rose, Ill., has Lily-of-the-Valley and small, double white Chrysanthemums to exchange for other plants.

203. Miss E. L. Locke, Clipper, Iowa, has Dicentra cucullaria, Compass plant, Phlox, Viola pedata, Asters, Golden Rod and flower seeds, for Nos. 1, 2 and 4 of Vol. 1 of POPULAR GARDENING or other good works, or hardy Orchids, etc.

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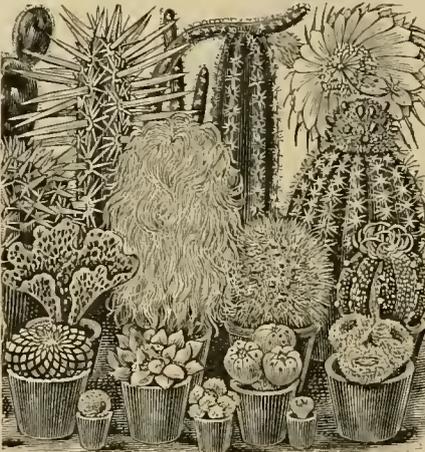
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Is a Preparation to Kill the Destructive Mildew that Strikes the Grape-vine, Affecting LEAVES, FRUIT and STEMS in unfavorable seasons, and some varieties more than others. Also for like use upon any other plant or trees affected with MOLD, MILDEW or RUST MITES, and for any use where a FUMIGATOR or ANTISEPTIC is required, either in Greenhouses or the open air. Its diffusibility is great, one part of "GRAPE DUST" will spread itself over a greater surface than Sulphur.

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Is made by dusting the diseased portions. To be thoroughly effectual, it must be applied frequently, as atoms of fungi are always spreading or floating. Apply the "GRAPE DUST" at the first appearance of trouble, so that some portion of this powder shall reach each minute spore. Dust on a warm dry day if practicable.

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Fish-Kill-on-the-Hudson, N. Y.

# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

Vol. II.

AUGUST, 1887.

No. II.

### August.

Under the spreading Apple trees  
Hish—swish! the grass is falling;  
Overhead the birds are calling,  
Rocking in the breeze,  
And still the glittering scythe is swinging,  
Right, left, at each stroke bringing  
Low the Daisies, low the Grasses,  
Falling swift in swathes and masses  
All the August day.

—John Preston True, in *Companion*.

ABOUT NOW Carnations and similar plants preparing for winter should be pinched back all over for the last time.

RASPBERRIES and other bush fruits, if treated to a shovelful of good manure soon after fruiting, will in due time show their appreciation of the favor.

WHAT WILL the sparrow do now? The Legislature of New York at its last session passed an act which considers it a misdemeanor to give food or shelter to English sparrows.

IF NO GERANIUMS for winter bloom have been provided matters may be helped by lifting and potting shapely plants now, and then keeping all buds and flowers closely pinched out for the next two months.

IT IS STATED by Prof. Fernald of the Massachusetts Agricultural College, that to cut down all the seed stems of Asparagus as soon as the regular season is over, and to repeat the process once or twice afterwards, has been found effectual in keeping the Asparagus beetle, now so widely prevalent, in check. A case is cited in which the earliest, longest and best Asparagus of a neighborhood was grown by this method of treatment, and that it had been continued for five successive years. Mr. A. S. Fuller states in the American Entomologist that for 16 years he used freshly slaked lime, dusting it over the plants in the morning when the dew was on; and this application was so effectual in keeping the beetle in check that about one application every alternate season was sufficient.

A NEW principle for keeping plants through the winter without artificial heat was recently shown at the Regent's Park, London, with the plants grown in them last winter. The essence of the invention is, that all light and heat shall previously pass through a shallow layer of water. The water is found to exercise great control over temperature, protecting plants entirely from frost in winter, and from excessive direct heat in summer. The application involves no difficulty. In the case of a garden frame a sliding "water-light," about 3 inches deep, is made to fit over the frame containing the plants. The only difference from a glass light being that it holds water, and is always placed in a flat position. On a larger scale a succession of these water-lights between rafters form the roof of greenhouses, etc. The depth of water generally kept in the tank is about 2 inches in winter and summer, and half the depth in spring and autumn. The water is not usually encased in glass, but remains in the cistern open to the weather. In winter the tank is constantly frozen over, but as long as a layer of

liquid water remains under the ice the plants cannot possibly be injured by frost. It may be taken as a rule that they will be exposed to no lower a temperature than 35°. At that temperature a vast range of plants can be safely wintered. The water, moreover, absorbs and retains the heat-rays of the sun instead of transmitting them, as in the case of glass, directly to the plant. In summer, plants, however delicate, may thus be exposed to full sunshine, and shading becomes unnecessary. Ventilation and watering are also less urgently required, and the height of the structure may be greatly reduced. Experience has shown that the moist and regular temperature inside is well adapted to striking cuttings and raising seeds, particularly difficult kinds.

### Transplanting Large Trees.

SAMUEL C. MOON, MORRISVILLE, PA.

There are circumstances where it may be profitable to move trees of much larger size than ordinary nursery trees possess, as for instance about new homes. Good thrifty trees of Silver Maple, Balsam, Carolina or Silver Leaf Poplar, Catalpa, Willow, or other kinds with great tenacity of life that have been transplanted or not pruned within five or six years, can be safely handled of from 3 to 6 inches diameter of trunk. These varieties will recuperate quickly and give effectual shade very soon. Other species, like Beech, Chestnut, Cherry, Tulip, and many besides that are sensitive about transplanting at all times, it is seldom worth while to attempt to remove when more than 3-inch diameter without preparation by judicious pruning of the top and roots for one or two years previous to the removal.

The chief difficulty in transplanting large trees is that the roots have extended so far that it is hard to retain enough of the fibrous feeding rootlets. Then the difficulty of handling without breaking or injuring the large roots more or less in the operation presents itself. The best security against these dangers is to previously dig a deep ditch around the tree and cut the roots off at a distance of from 4 to 6 feet, without disturbing the earth or roots nearer to the tree. Fill the ditch again with rich soil packed firmly, manure the surface liberally and water abundantly for the next two summers. This will induce the growth of a great mass of fibrous roots close to the tree, which can be dug out and removed with a large ball of earth remaining among them. The top of the tree should be pruned severely when the roots are cut, reducing most of the branches at least one-half their length.

Almost any kind of tree if served in this way and then allowed to make two seasons' growth after treatment can be moved successfully either in spring or autumn. The best time for performing the pruning is in early spring, or autumn will answer. The size of a tree that can be moved when treated in this way will depend mainly upon the power of the mechanical appliances that can be brought into requisition in handling.

### Practical Hints on Plant Management.

SUSAN POWER, NORFOLK CO., MASS.

Train Ivy-leaved Geraniums over pyramid frames of wire for specimen plants. Use a pan or box deep enough to allow good drainage, fasten a wire round the rim, put a neat stake in the centre and bring wires or strings from the top of this and tie to the wire. Tie the shoots over this frame-work, remove all flowers and buds to throw the strength into growing shoots, and water weekly with fertilizer dissolved in the water. Air freely but shade from the sun, turn daily to have all sides grow alike. To have *L. Elegante* develop its beautiful metallic tinges, water sparingly as it gains its growth, but give plenty of air. The Golden Ivy-leaved, the Duke of Edinburgh, with frosted leaves and silvery white margin, with *Willsii rosea*, make the most beautiful ornaments for pyramids or vases, grown either separately or together.

If black rot appears on the Pelargoniums or Tri-color Geraniums cut it out with a sharp knife, and dust the part with quicklime. Weakly plants should have very little water, but that should be given to the roots when the sun shines. The leaves and stems are to be sprinkled night and morning. Sheep droppings mixed with fibry loam are a good addition to the compost for potting. Seedlings make the finest, strongest plants, but cuttings flower sooner, and can in the nature of things be kept true to name.

Give Scented Geraniums and Lemon Verbenas the richest, light, warm soil, old manure with garden loam, half sand or coal ashes, and they will surprise by their growth. As the object in growing them is leaves, pinch off flower buds and throw the strength of the plant into growth. If designed for house plants grow these and Heliotrope in large pots or wooden tubs, with holes for drainage, as large specimens are liable to suffer greatly by injudicious potting if indeed they will not be killed by it.

Grow Sweet Alyssum for a basket plant in mellow soil, giving liquid fertilizer every week if you want something delightful for next winter. One plant will fill a basket to overflowing and droop in the most beautiful manner. Try it with a small-leaved Ivy in the center to run up the cords. The relief of light and dark green with white flowers is exquisite.

"Amateur" is all right about the Japanese Chrysanthemums, except that instead of advising the giving of liquid stimulant "occasionally" till the buds show color, I would give it three times a week until the buds are ready to open, then withhold water until the ground gets rather dry. Overhead sprinkling for the leaves, however, should not be omitted. I would take cuttings, thinning the sprouts and rooting every one, grow plenty of flowers and plants to give away where people can't afford to buy. It doubles the pleasure of a garden.

### A Valuable Evergreen.—Nordmann's Silver Fir.

Among the not very large number of Evergreens that may be said to give entire satisfaction in the Buffalo parks, the one named in our heading and illustrated here-with must be included. We have watched the deportment of a number of these trees from the time they were planted, some fourteen years ago, until now, and can freely declare that here they are among the finest and most trustworthy of Evergreens.

But if this beautiful tree has failed to give satisfaction elsewhere it is to us unknown. Most of the reports concerning it which come from points somewhat further south than our line of latitude speak in the warmest terms of its beauty, but usually there would appear to be some doubt as to its hardiness in the more northern states. Our experience with it here should help to settle that point. In good soil it succeeds to perfection, showing no signs of tenderness in a collection where the hardiest *Retinosporas* suffer much. We should class it with the Austrian and Weymouth Pines, the Norway and White Spruces for reliability.

In habit this Fir is one of the most symmetrical of Evergreens, being at the same time just sufficiently open without pruning, to give its fine outlines beautiful relief with gracefulness. It is also readily pruned to adapt it to small places. The foliage is more massive than that of the common Spruces, which it somewhat resembles, of the most charming dark green, and silvery underneath. The contrast of the new growth in its exterior parts, and of the older and darker that is farther back, is one of its greatest attractions. Whether for planting on the lawn or mixing with other trees, it can hardly fail to produce the most pleasing effect.

While eventually this species reaches a large size, its growth for a number of years is rather slow, rendering it the more valuable in small grounds. It should for rapidity of growth be classed rather below the Norway Spruce, and like that variety submits readily to cutting back, by which means it can be the longer of use in places of limited extent. It is unlike the Norway in the respect that it retains its beauty and youthful freshness for a much longer time than does that estimable tree. In its native place on the Crimean Mountains (from which it was brought in 1845) it grows from 80 to 100 feet high, with a straight stem.

The tree, like its allied species, prefers a strong deep loam not liable to dry up in

summer or to retain too much moisture in winter. To plant in soils not meeting these requirements they should first be fitted by deep culture, and if need be the introduction of other and more suitable soil, first making an excavation to accommodate it.

Most of the leading nurseries of our country which make a speciality of ornamental evergreen and other trees now keep this desirable tree in stock. It is sold at about one dollar and a half for a single tree.



A VALUABLE EVERGREEN, NORDMANN'S SILVER FIR, (*Abies Nordmanniana*).

### Pollen Affecting the Present Season's Fruit

The theory that the pollen sometimes influences the character of the fruit finds support in Dr. Halstead's experiments at the Iowa Agricultural College, as the following report shows: "A fair per cent of the attempts, including those on Plums, Cherries and Apples, were successful, considering the very unfavorable season. Some of these results show that the pollen has a decided immediate controlling action upon the fruit. For example, the pollen of the Roman Stem Apple when used upon the Longfield produced fruit combining the characteristics of these two widely separated varieties. The contour of the fruit was nearly that of the Roman Stem, while the surface appearance resembles the Longfield. The same fact of direct influence was as marked in some other cases. Crosses were effected between common varieties of Apples and the Souldard Crab, and also between the former and the native Wild Crab. This work of cross-

fertilization is to be continued through a series of years, and high hopes along this line of improvements in our fruits are entertained."

### Treatment of the Potato and Tomato for the Blight and Rot.

The following powder remedies for the treatment of the Potato and Tomato for "Blight" and "Rot" are given by the Chief of the Section of Vegetable Pathology of the Department of Agriculture.

*Sulphotine*, (the Esteve process).—Mix 2 pounds of anhydrous sulphate of copper with 20 pounds of flowers of sulphur and ten pounds of air-slaked lime.

*Blight Powder*.—Mix 3 pounds of anhydrous sulphate of copper with 97 pounds of flowers of sulphur.

This amount will be sufficient for one application to five acres of Potato plants.

Powders possess the advantage over liquid remedies of requiring less labor in transportation and of being more easy of application, consequently they will be preferred to the liquids should they prove equally efficacious.

For applying the powders, which ought to be done when there is no wind and when the leaves are wet with dew or rain, the primitive arrangement, made of tin and constructed like a large pepper-box, or rather like an inverted funnel, with fine wire gauze fastened over the lower end, and which when filled with the powder, is held over the plants and shaken, is efficient and at the same time simple and inexpensive. Only enough of the powders, especially of the sulphatine, should be applied to be simply visible upon the leaves, as heavy doses may burn them. The applications ought to cover both sides; this can best be accomplished by the use of a bellows with an extension nozzle, enabling the operator to direct the blast.

The degree of success attending the use of these compounds will depend more or less, (1) upon their careful preparation, (2) the time of application, (3) the more or less intelligent

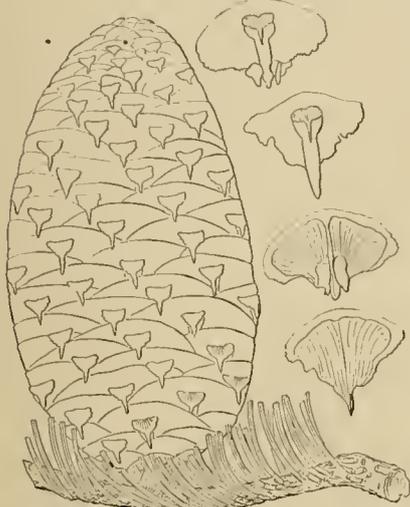
manner in which they are applied, (4) the atmospheric condition existing at the time or which may follow the applications, (5) the number of treatments made, and (6) the purity of the lime and sulphate of copper used.

The experiments should be conducted in such a manner that the vines or plants treated and those left untreated (to serve as control experiments) may be comparable; they ought to be of the same variety, cultivated at the same time, and in all respects alike.

Much may be accomplished in the prevention of potato rot by renewal of seed, selection of varieties and especially by planting only in light and well drained soils; also, perhaps, by following certain systems of cultivation, but the evidences we have of the serious losses occasioned by this disease throughout the Potato growing regions of the United States render it imperative on the part of the Government to exercise all possible efforts for its prevention.

The use of the liquid remedies known as the blue water (Audouinaud process) and the copper

mixture of Gironde (printed on page 186 of the present issue) is also well recommended by the present authorities. The first application should be made when the plants are in bloom, the second a week or ten days later, and, if the weather be such as will favor the development of "rot," a third and perhaps a fourth application should follow within about the same intervals. Where one has a considerable area to



Cone of Nordmann's Silver Fir and Cone Scales,  
½ Natural Diameter.

cover it would be economy to procure a spraying pump; the essential features of a good machine are ease and rapidity of application with economy of material.

#### Heliotrope Flowers In Winter.

The Heliotrope with fair management is one of the most profuse and steady flowering plants for either the window or conservatory. It may be had in bloom every month. Its flowers, which are often described as smelling "like ice cream" (in point of fact the fragrance resembles vanilla, and ice cream is usually flavored with vanilla), are always prized for bouquets or vases. While some would charge them with quickly wasting, this is only true when they are closely crowded in bunches; arrange the stems loosely in vases of water and the flowers will keep handsome for days.

To have a supply of winter and spring bloom the plants should have been started from slips in June. They should soon after have been given 3 inch pots and a place in full air until the approach of frost. During the summer interval they require frequent stopping, for inducing the usually preferred low bushy form, with an abundance of flowering shoots. An occasional shift should also be resorted to, remembering, however, that rather close root quarters is a gain.

If large plants are wanted in the greenhouse they may be somewhat oftener shifted than for window culture, and attention to training the plants as pyramids, bushes, or fan-shaped to a trellis may be thought more desirable. In the latter form they are especially useful, inasmuch as they can be placed in such positions, as against the ends of houses, where otherwise the space would not be of much consequence. Here they will not only look well but flower well. During the flowering stage the plants should have from 50° to 60° of heat, and about once a week, or when in full bloom twice a week, they may with benefit receive liquid manure at the roots. The plants, like the flowers themselves after cutting, do better for not being crowded together or with others.

In dealing with that common pest of such plants the Green-fly, care must be taken that the foliage be not injured with the usual remedy, tobacco smoke. This remedy may with safety be applied in moderately strong volume if the simple precaution of syringing or otherwise completely wetting the foliage

just previous to starting the fumigation is observed, otherwise the plants would be liable to become badly burnt.

The Heliotrope delights in a compost consisting of three parts of fresh loam or decayed turf to one part of rotted manure, with a good sprinkling of sharp sand added. In greenhouse culture the plants are in many instances bedded out in soil spread some six or eight inches deep over the stages. The new growth of the plants should here be kept well tied up, having a central stake each, in order that the light and air may circulate not only between them to the ground but also through the heads.

#### Rejuvenating Old Peach Trees.

E. S. GOFF, GENEVA, N. Y.

A few years since I came to occupy a place upon which was a small Peach orchard that bore many evidences of neglect. The trees gave no indications that they had ever been pruned. The limbs had grown out, forming long crooked poles, which were nearly destitute of branches. One specimen of these is shown in Figure 1, taken from a photograph.

Peach trees of such a character are not in condition to yield a crop. The branches produce little new wood and hence there is room for but few blossoms. Even if they were capable of producing a good crop, the long limbs would be very apt to break down from the weight of the fruit.

As an experiment, I determined to prune these trees back severely, cutting off all of the main branches a short distance above the top of the trunk. I commenced in the spring of 1885 cutting back three trees, and the result proved so satisfactory that the following spring I extended the experiment to all the others except the one shown in the illustration.

From the pruned trees many new buds promptly appeared upon the bare stubs of branches, and before the summer had passed almost all of the trees had formed fine dense tops, making them appear like young trees. Figure 2 shows one of these trees cut back the first season, spring of 1885. This last will bear a full crop this season, but those cut back last spring, with a few exceptions, are bearing but little. Next season, however, if the winter is not too severe, I shall look for a full crop upon all. The trees cut back did not suffer so much from the leaf curl last season as did the single one left unpruned.

#### Experiments In Curling Prunes.

A committee of fruit growers in California to whom was submitted some samples showing

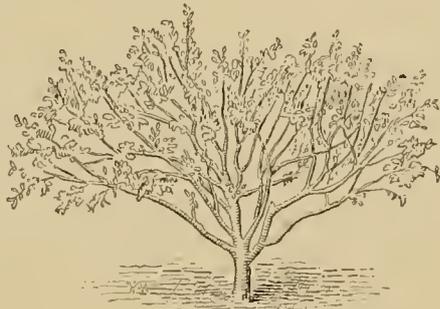


Fig. 1. An Unpruned Old Tree.



Fig. 2. An Old Tree Rejuvenated.

#### REJUVENATING OLD PEACH TREES.

the results of experiments in different methods of curing prunes reported as follows:

First. *Dipped in hot salt water and dried.* This fruit dried very slowly, has a dark look inside, and seems to have lost flavor.

Second. *Same as above, but after dipped in syrup.* An improvement in appearance, but not in taste.

Third. *Dipped in simple hot water; dried and syruped.* A decided loss of flavor, fair appearance outside, but dark inside, and having a sort of a cooked taste.

Fourth. *Dipped in lye, rinsed, dried and syruped.* These dried rapidly, have a good appearance and flavor, a very tender skin, light colored and fresh looking inside. This is the ordinary method of preparing prunes.

Fifth. *Simply dried in the sun.* These were longer in drying than those dipped in lye; the flavor is good, the skin a little tough, appearance not uniform in the different specimens, some retaining the natural bloom and being beautiful, others nearly destitute of bloom. This lack of uniformity detracts greatly from the general appearance.

Sixth. *Same as last, but after dipped in syrup.* These were uniform in appearance, and softer and apparently in better condition every way. In appearance and taste they more nearly resembled a well cured raisin than any fruit we have ever seen; there was a more delicate and perfect flavor than we have ever seen in any other method. The only objection that can be raised is that the skin is tougher than when treated with lye, and this point might go a long way in the general market.

#### Doings In the Washington Seed Shop.

Some of the odious methods of the Government Seed Shop at Washington have, according to the New England Homestead, recently been given away by one who styles himself "the only practical seedsman in the department." This clerk, it seems, has been writing confidential letters to a seedsman, whose name is for the present suppressed, desiring to interest him in selling "anything that is new and of promising merit." This is to be accomplished through some practical worker among his political friends. "I could," says this writer in confidence, "talk and do things with you personally that I would not dare to write. If this is managed properly it will give you an annual sale of from \$30,000 to \$50,000 at from 20 to 100 per cent more than your regular wholesale list. This I know. At least for this time it will be necessary for you to use a middleman to get a good slice of Uncle Sam." Of this infamous business Commissioner Coleman may be ignorant, for we believe him to be above suspicion as to official honesty. The trouble may, as in the case of Loring, lie with his subordinates. But a system that can be open to such palpable frauds upon the people ought promptly to be abolished. Better yet: let this entire seed business in its present form be done away with.

DEWBERRY MANAGEMENT. Many who have planted this comparatively new class among cultivated small fruits are at a loss to know just how they should be managed. So we give these direc-

tions in a nutshell, which should meet about all cases: Set the plants in fall or spring eight feet by six feet. When the vines have reached a length of 30 inches the ends should be nipped out. Late in autumn or early in winter the vines are covered lightly with corn-fodder or straw. This is easily and cheaply done as the vines lie on the ground. The following spring all the vines are cut back to three feet, and thinned to four or five canes to the hill. The straw and fodder are now put under the vines for a mulch, and keep the berries clean. Treated in this way the improved sorts will bear every year large crops of splendid fruit.

## Notes From a Rochester Fruit Farm.

BY CHARLES A. GREEN.

**SUMMER PRUNING OF VINES.**—I am asked when to summer prune Grape-vines, when to cut back bearing canes to within three leaves of the last cluster, and when to nip off laterals. In reply I will say that there are more fallacious notions extant about Grape culture and Grape pruning than about most other industries. Almost every vine grower has his pet theories, about which he is exceedingly dogmatic.

The truth is that all summer pruning and pinching may be dispensed with without serious (perhaps noticeable) loss. If you are so inclined, and time hangs heavy on your hands, nip and pinch back at any time the canes and laterals that are growing too rampant or where not needed, but if you neglect such work you will be equally well off. Indeed you can grow plenty of Grapes without pruning of any kind, but winter pruning is sensible and profitable, for without it the vines would be laden with a superabundance of small imperfect clusters and the new growth would be feeble and far too numerous. No one should be deterred from having plenty of Grape-vines for fear that they have not the necessary knowledge. While vigorous Grapes can be grown without any pruning or any culture after being a few years planted, the planter can easily learn how to make them far more profitable and satisfactory by a little thoughtful attention. Many people have been frightened out of Grape growing by the strict, learned and entangling advice of fancy writers.

**PLANT LICE REMEDIES.**—Mr. E. S. Carnian says he has found the remedies for plant lice (aphis, etc., on Apple and Cherry) more destructive in application than the insects. This corresponds with my experience. If not strong the remedy does not kill the insects, and if strong enough to kill the insects it is liable to injure the foliage more than the insects will.

Last year was the worst I ever knew as regards injury done the young Cherry and Apple trees by Aphis, but I have not seen many trees or blocks that were preserved by insecticides. The work of repeatedly applying kerosene emulsions and tobacco and whale oil soap is expensive and on the whole discouraging, yet we should not give up in despair. We have found no difficulty in destroying the Canker Worm in the Apple orchards, by spraying the trees with a weak solution of Paris Green and water the moment the insects are discovered, and the same operation appears to destroy the Codling Moth if done soon after the trees have blossomed. We use simply a heaping spoonful of Paris Green to a barrel of water, but many use four times as much. If too strong the foliage will be injured. Remember that insects are guided to the plants they feed on by the sense of smell, which is so well developed that they can often scent the plants or trees long distances. Otherwise how would they discover new fields so quickly. This leads the grower to mislead them by placing stronger smelling objects near the plants or vines. Thus cobs dipped in kerosene oil or coal tar placed about the Squash-vines or Cucumbers prevents depredations. Orchards planted near railroads, where frequent passing engines deposit smoke and cinders are often exempt from insects for this reason. Any strong scented material will do, but use it in a way so as not to impregnate the soil or injure the foliage. Plum trees are often smudged with leather, tar, or other burning rubbish, with good effect.

**THE BUDDING SEASON.**—The season of budding begins about July 5th and continues through August and September. Pears are budded first, then Plums, Cherries, Apples, and last Peaches. An important point is to have the stocks in vigorous growing condition, and to this end the most careful and thorough cultivation is given, and none but the best stocks are planted. It is folly to bud stocks that are growing so slowly that the bark will not open freely, for no buds will grow therein. Some-

times the stocks, more particularly the Cherry, are growing too fast, and are so full of sap as to drown the bud. In such cases nurserymen used to defer budding until the sap thickened, but now they have learned to bud without delay, simply retarding growth by severe pruning of the branches or tops of the stocks. More trees are produced now by budding than root grafting, as straighter trees are thus obtained. It is such a simple affair to change the character of a tree by inserting a few buds at this season no one has any excuse for growing poor fruit. Those living far from nurseries should plant seeds or stocks and bud them with kinds suitable to their locality. Budding is an interesting operation. One feels well satisfied with the time thus spent. How easy to secure the Wealthy or Swaar, the Bartlet or Bosc on miserable scrubs that bear specimens too pucker for the pigs. Within sight as I write are Pear trees 18 feet high, bearing many kinds of choice fruit each, budded by my own hand eight years ago. There are also two trees that bore cider Apples, now laden with Red Astrachan and Blenheim Pippins. Who can doubt that I enjoy the fruit from these trees more from the fact that I am the author of their improved condition. Surely he has not lived in vain who has planted orchards or used with success the grafting or budding knife.

**NOTES AS THEY TRANSPIRE.**—Every day I walk over the farm, note book in hand, noting down important work to be done. Here are the few scattering weeds left at the last hoeing of the Strawberries, growing so close to the plant and so rampant they cannot be removed without disturbing the Strawberry. The boys must go through and cut them out with a knife. How fast the weeds grow after showers these warm days, but it is a good sign, for where weeds will grow fast useful plants will do likewise if given a chance.

Here are Pear trees top budded last August, the Comet, Winter Nelis, Bosc, and other slow growers that need a vigorous stock like the Buffum or Kieffer. The buds have grown into good sized heads, yet the dormant buds of the Kieffer stock have pushed out freely and need removing. Here are shoots of Dwarf Pears outgrowing their neighbors so far as to make the tree ill-shaped unless nipped back.

Here are Grape-vines that need tying up, for they grow twice as fast when supported. John must place another wire on the trellis.

Here is an old Strawberry bed. Shall we plough it under? It has borne three crops, all good crops, the last a surprise to us all, for the grass and weeds had become numerous. If left another season there will be produced many bushels of fine Strawberries, earlier and cleaner than on new beds, but many weeds will go to seed, and our friends who happen this way may think we are poor cultivators, so under it goes, as deeply as three horses can plow. The disk harrow will soon follow, then the Acme harrow frequently, and the gang plow, and when winter comes the field will be well subdued, and a dressing of phosphate or compost will prepare it for Raspberries, Currants, or Grapes. Nothing leaves the soil so loose and rich as an old Strawberry bed, hence I cannot think Strawberries an exhaustive crop.

Here is a field of Blackberries that has borne well for five years. It is yet vigorous, but grass and weeds have gained foot-hold. What shall we do with it? We can mow it with the grain reaper, burn the brush, cultivate both ways, hoe, manure, and thus renew its life and usefulness. Raspberries will bear twenty years if properly cared for, but will it pay? No, I think it will be better to plant a new patch, so John must start the machine here as soon as the berries are gathered.

I see the garden has been forgotten, as usual, during the hurry of getting in hay. Weeds pulled from the Onions and Carrots have taken root between the rows; my wife's flowers need thinning and weeding; the Cucumbers, Melons, and Squashes need attention. John must

throw the soil on the Squash vines at intervals so they will take root. Then if the borer attacks the original vine the runners will not perish. The Lima Beans do not all reach the poles. A string must be attached horizontally. What shall we do with the Cabbages? Paris Green cannot be applied, as it will poison the family, but we can sift unleached wood ashes on with effect or pick off the worms in the cool of the day.

Here is the cultivator just as John left it, the teeth rusting in the soil. I have told him always to clean the teeth and turn the cultivator bottom side up. Hello there! John, get those wagons in out of the sun or you will have to get the tires set right away. More tools are worn out by exposure than by actual service.

To-morrow we must pot a lot of Strawberries. Do not take the pots to the field. Clip off the runners that have begun to make roots, drop them into a pail having a little water in the bottom, press the plants into small two-inch pots, plunge these into loose soil in a cold frame, water and shade for ten days, and you will find them nicely rooted, and about ready to plant. It will pay to treat the new kinds this way, for it relieves the parent plant of a burden, and increases plants wonderfully fast. Such plants set in August give the finest and largest fruit of all next season. The Jessie, Buback and Mt. Vernon have done so well we must plant all we can of them. Buback is a remarkable large, handsome berry, and it has a constitution of iron. Mt. Vernon is worthy of more attention than it has received.

John, do not be satisfied with simply hoeing, hilling and shovel ploughing those Potatoes. After that is done run the cultivator between the rows quite narrow, to loosen the soil still deeper. Do not be afraid of cultivating the Potatoes after the Potatoes have set. Those we cultivated nearly up to digging time last year were the most productive.

**Remedies for Mildew and Grape Rot.**

The results of the varied experiments made by the Department of Agriculture in 1886 have fully demonstrated the value of sulphate of copper, "blue stone," over all other remedies in combating the mildew. Many chemical analyses of the fruit and parts of vines treated with the copper compounds have clearly shown that there is no danger to health attending their application.

The only precaution advised is not to apply them within fifteen days of the vintage. It must be kept in mind that their action is only preventive, therefore their application should be made as early in the season as possible. Subsequent applications act only in so far as they serve to check the spread of the disease. The amount of the fluid compound required to treat an acre of vines may vary from 20 to 35 gallons, according to pump, etc., used and the extent of the growth. Of various forms in which to prepare the remedy for applying it as fine spray the following are the best:

**Simple Solution of Sulphate of Copper.**—Dissolve one pound of pure sulphate of copper in 25 gallons of water. Spray the vines with a convenient force pump having a nozzle of fine aperture. Less lasting in its effect than the next, as it is easily washed off by rains.

**Blue Water (the "Audoynaud Process").**—Dissolve one pound of sulphate of copper in three or four gallons of warm water; when completely dissolved and the water has cooled, add one pint of commercial ammonia; then dilute to 24 gallons. The concentrated liquid should be kept in a keg or some wooden vessel, and diluted when required for use. Apply the same as the simple solution. The effects obtained by this have been equal to those resulting from the use of the Copper Mixture of Gironde, and are said to be even more lasting.

**Copper Mixture of Gironde (Bordeaux Mixture.)**—Dissolve 16 pounds of sulphate of copper in 22 gallons of water; in another vessel slake 30 pounds of lime in six gallons of water. When the latter mixture has cooled, it is slowly poured into the copper solution, care being taken to mix the fluids thoroughly by constant stirring. It is well to have this compound prepared some days before it is required for use. It should be well stirred before applying. Some have reduced the ingredients to two pounds of sulphate of copper, and two pounds of lime to 22 gallons of water, obtaining good results.

Well-made pumps with specially constructed nozzles are required for the application of this

compound, unless we resort to the tedious and wasteful method of using brooms or whisks of slender twigs, which are dipped into the compound and then switched right and left so as to spray the foliage as directed in our circular of last season. The Vermorel apparatus, including reservoir, pump, and spraying nozzle, is well adapted for vineyard use, and is specially constructed for applying the various liquid preparations containing sulphate of copper.—Compiled from Department Report.

#### About Huckleberries.

WM. H. YEOMANS, COLUMBIA, CONN.

Recently it was stated in POPULAR GARDENING that "Huckleberries are not a success upon uplands." New England farmers will hardly admit the correctness of such a proposition.

This depends very much whether the soil is natural to the growth of this fruit. Here in Connecticut, where it is a native and found in all pastures, it is especially tenacious of life, and its best habitat is upon upland. We refer to the low kind as distinguished from the high Huckleberry or Blueberry, which rather prefers, wet ground. The latter are prolific and easily gathered, but are considered much less desirable in the market than the low kind of berries that come a little later.

In many parts of New England where pastures are left to themselves, the growth of this fruit is astonishingly great, and the picking of it for the markets makes business for women and children. In the writer's own town many bushels are picked every day during the season and sold to local dealers for shipment. In the height of the season fifty or more bushels are shipped per day. Sometimes the fruit grows quite large, and when carefully picked and handled is very desirable in the cities.

It is also becoming desirable for canning purposes, which will enlarge the market, or rather give the opportunity for securing a larger proportion of the crop. So far as we have ever learned the attempt to cultivate the low Huckleberry has never proved a success. While in its native condition among the rocks and bogs of a New England pasture its tenacity of life will prove to be very great; when transplanted to other conditions its hold upon life seems to be destroyed. In the New England soil it will grow and fruit to perfection.

#### Rhubarb.—A Test of Varieties.

E. S. GOFF, GENEVA, N. Y.

Our catalogue contains the names of quite a large number of claimed varieties of the Rhubarb or Pieplant. In order to see how much difference there may be in these, I set out in the spring of 1884 sample plants bearing eleven different names, procured from one of our leading nurserymen. Their names are Early Crimson, Early Scarlet, General Taylor, Giant, Magnum Bonum, Marshall's Royal, Myatt's Linnaeus, Prince Albert, Scarlet Nonpareil, Tobolsk and Victoria. Of this list several are not clearly distinct. The last two named and the Early Crimson, General Taylor and Prince Albert all resemble each other so closely as to appear identical. Giant and Magnum Bonum, though somewhat different from the above, seem to be the same. Myatt's Linnaeus and Scarlet Nonpareil also resemble each other, but I am not sure that they are identical, as the latter is rather the more vigorous, and is indeed the most vigorous of all. I have no hesitation in pronouncing this the most productive variety on trial. The leaf stalks are very numerous, the longer ones being fourteen to fifteen inches long and fully one inch and one-fourth wide. The whole plant is nearly five feet in diameter, while the leaves exclusive of the flower stalks are about two feet in height.

Myatt's Linnaeus is second in vigor and productiveness. Marshall's Royal, Tobolsk and Victoria have done poorest. The plants have been given an abundance of manure and have had good cultivation.

#### Notes on Insecticides.

CLARENCE M. WELD, CHAMPAIGN, ILL.

Rose Slugs are doing much injury this season in Illinois, and though so easily destroyed, most people, either through ignorance or neglect, let them live on unmolested. A neighbor of mine cleared his bushes completely by applying pyrethrum in water with a force-pump and spray nozzle. Hellebore, whale oil soap, kerosene emulsion and slug shot are also effectual remedies, but pyrethrum is generally to be preferred on account of its non-poisonous qualities, and the ease of its application.

That first cousin to the Rose Slug, the Pear or Cherry-tree Slug, is also seriously injurious, and there are many trees in this vicinity that have their foliage badly sered by it. This pest also is very easily subdued by any of the remedies above mentioned, and it should never be allowed to live unmolested. Trees may be very readily sprayed with a hand force-pump and spray nozzle. And by the way, I believe it will pay every ruralist who can at all afford it to have one of these hand force pumps about the premises. They can be used for a dozen purposes, and for applying nearly all kinds of insecticides are unsurpassed. There are several patterns in the market, most of which do very satisfactory work. One of these pumps is handy in washing the buggy, the vegetables for market, the outside of the windows of the house, and is useful in many other ways. They can be bought for seven or eight dollars. It is best to put on rather a long hose, as it is often necessary to elevate the nozzle into large trees.

The fall Web-worm is beginning to make his unsightly webs on various fruit and shade trees. With this insect a stitch in time saves several dozen nines. Remove and burn the infested twig as soon as noticed; or spray the tree with the arsenites (Paris Green or London Purple) in water.

I recently had an experience illustrating the manner in which many insecticides come into disrepute among a certain class of horticulturists. I was going over the grounds of one of the most successful nurserymen of the State with the proprietor and his foreman, Mr. F. Coming to some young Cherry trees badly infested with plant lice, in answer to an inquiry, I said that the kerosene emulsion would kill the lice. "But," said Mr. F., "it will also kill the trees, at least that is my experience." I asked how he had made his emulsion, and learned that he had simply attempted to mix the kerosene with water. Of course it killed the foliage. He might as well have done like the man I saw the other day in Southern Illinois killing Chinch Bugs on Corn by applying the pure kerosene. It was sure death to the bugs—and also to the Corn.

It seems strange that so many people find it difficult to make this kerosene emulsion successfully. I have tried both the Cook and Riley formulae and if the directions are followed a stable emulsion can easily be made. A couple of gallons of the undiluted emulsion will keep a long while, and can be diluted as needed for application. It is very effectual against plant lice, and many similar insects, and can be made in quantity for about a cent a gallon.

We see occasional notices of killing Green-fly in hot-houses by Tobacco stems, but from the experience of a neighboring market gardener I am inclined to doubt the value of the method. Having a large house full of Lettuce badly infested by the lice, he saturated the atmosphere thoroughly with the vapor of tobacco water, but without success. Has any one had a different experience?

#### Points About Wine: Natural Temperance Wine.

D. S. MARVIN, WATERTOWN, N. Y.

There are few subjects to which there adhere so many wrong impressions, crude and untenable ideas, as to the wine question. Let the average agitator of temperance principles be told about temperance wine, and they have

never heard of it, and perhaps will not believe there is such a thing, when in reality all genuine unfortified wine is a natural temperance drink, but especially the natural unfermented juice of the Grape just as nature gives it forth.

The latter is a little more difficult to keep fresh than is the fermented juice, but modern science and the resources of the culinary department of every well ordered kitchen are ample for the purpose. All that is needed is the processes applied in fruit canning, and this same natural temperance wine, the best of all beverages ever used by man, comes out pure and fresh, just as you open a can of Peaches or Tomatoes.

In canning the natural juice of the Grape may be directly used or it may be boiled down by a low degree of heat, and then diluted when opened. For sick people, for children, for aged people, for all sorts and conditions, it is a delicious, nourishing drink, acceptable indeed to the strictest sect of temperance people. California sees the point and is furnishing this natural juice of the Grape by the barrel and tierce.

The old way of preserving Grape juice that has come down from barbarian ages, namely, as fermented wine, if made from the natural juice, alone is no more harmful than lager beer, while it is a thousand times more delicate and medicinal in its nature. In this form it possesses, but a small per cent of alcohol and the alcohol is *o-nanthic* ether, not the dangerous amylic alcohol or fusel oil. The trouble in the case of the wine of commerce is that liquor fabricators fortify their wines with this amylic alcohol to increase its keeping qualities, a substance that should never be employed.

Temperance people should do all in their power to introduce the natural unfermented wine, especially for use by invalids, for sacramental purposes, for a harvest drink, etc., instead of ice water, and even as a drink in public houses. Every garden in the land should have its row of vines, and when the fruit ripens a small wine press should be procured, and this natural wine pressed and used as long as the Grapes can be kept. Then instead of intemperance and degradation there will come higher health and purer morals.

Some time ago I wrote to Dr. Nichols, of the Journal of Chemistry, one of our oldest chemists, about the differences of the alcohols pertaining to wines, and I am glad to be able to present his answer here:

BOSTON, Mass., May 1, 1887.

Mr. D. S. Marvin:

DEAR SIR:—The "disease of drunkenness" is due to the "ethylic" or common alcohol in the wine or liquor. The amylic alcohol or fusel oil is a very dangerous substance, and renders liquors containing it much more harmful. The *o-nanthic* ether—not alcohol—is a natural product in wines, and in the usual quantities is probably harmless, giving an agreeable flavor and taste, but I should not recommend any artificial addition of it to wines. Its only effect is to give a better taste to inferior grades, and if added in large quantities would probably render it unwholesome. The artificial *o-nanthic* ether is probably different from the natural product of the grape or other fruit.

Yours truly,

A. P. NICHOLS.

CRYSTALLIZING FLOWERS. A writer in Popular Science News remarks that this process is simple, and can be accomplished by any lady of taste. Arrange some basket-forms of any fancied pattern, with pliable copper wire and wrap them with gauze. Into these tie to the bottom Violets, Ferns, Geranium leaves—in fact, any flowers except full-blown Roses—and sink them in a solution of alum, of one pound to a gallon of water, after the solution has cooled. The colors will then be preserved in their original beauty, and the crystallized alum will hold them faster than when from a hot solution. When you have a light covering of crystals that completely envelopes the articles, remove the basket carefully and allow it to drip for twelve hours. These baskets make a beautiful parlor ornament and long preserve their freshness.

## THE COMPLETE GARDEN.\*

VIII.

BY A WELL-KNOWN HORTICULTURIST.

(Continued from page 172.)

## UNDERDRAINING.

The complete home or other garden must be located on a well-drained plat of land; if the land be not so naturally, then a suitable system of under drains must be introduced. Draining has for its object the speedy drawing away of any excessive moisture in the soil, for few plants can succeed with their roots in water-logged ground.

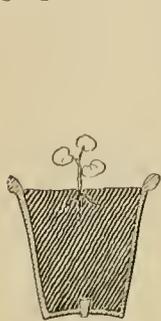


Fig. 23. An undrained flower pot the soil wet and sour, the plant dying.

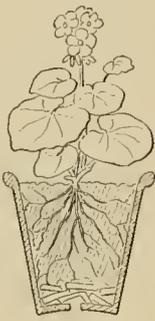


Fig. 24. The same well drained, the soil in good order the plant thrifty.

## FAMILIAR ILLUSTRATION OF LAND DRAINING.

The condition of land that calls for underdraining and of that properly drained may be illustrated by two pots of soil as shown in the accompanying cuts. Here Fig. 23 is a pot, the drain hole of which has been closed with a cork to prevent any water escaping. In Fig. 24 this hole is open with some pot-sherds over it permitting unneeded moisture freely to pass out. The first pot allows water to escape very imperfectly only by evaporation and slightly through the sides. Thus even ordinary watering at the top will cause the soil to become soggy and injurious to plants through shutting off air from the roots and otherwise. So with land not having good drainage. Any excessive moisture, and especially in the spring time, with escaping only by evaporation or imperfectly through a lower outlet, must, by the addition of rains, be long in a wet, cold and otherwise uninviting condition for tillage. Besides this, soils in such a condition ordinarily are sure to lead to the trouble of plants in them heaving during freezing and thawing weather, and it is unsatisfactory in many other ways. With soil drained as illustrated in Fig. 24 it is quite otherwise. Here the super-abundance of water quickly leaves the soil, rendering it at once porous for the admission of air and heat, and thus in a normal condition for growing roots. The puny plant with feeble roots in the first pot of our picture, and the vigorous, healthy one with roots turned back by the pot in the other, show but the natural consequence of these respective conditions and should convey their lessons to all land tillers.

While it is true that nearly all soils are benefited by artificial draining, occasionally it is otherwise. Land of a light nature and overlaying a gravelly or sandy subsoil will generally be sufficiently porous underneath to draw away any excess of wetness. Here underdraining would be a waste of outlay. The same is true of soil that is somewhat shallow and overlaying a sub-strata of shaley rock, or a rock bed intersected by many seams through which the water can escape. A general test as to what land requires draining might be thus stated: Any soil where water would be found in holes two feet deep one day after the close of a soaking rain, or any that in the spring would be unfit to spade or plow two days after frost had completely escaped.

The usual drains employed are of porous earthen-ware. The best style is the round with collars, although others are suitable. For gen-

eral use a size of bore of from one and one-half to two inches in diameter should be employed, with cross mains fully double the diameter of the laterals. A quality should be chosen that are so hard burned as to give a clear ring when struck, but not over-burned.

In laying out drains there should be provided one or more main courses, with laterals to these at from fifteen to forty feet apart, according to the nature of the soil and extending to near the limits of the plat. In Figure 7, page 132, the arrangement of the main and laterals of a four acre garden are shown by heavy lines. The general manner of laying, together with the getting of grade lines, are shown in the accompanying Figure 25.

One of the first points to consider is a means of outlet to the drains, lower of course than any part of the land to be drained. This in Figure 25 is seen at *a*. The next matter is the providing of the necessary fall for the drains throughout, having especial regard to their course being even and with a gradual fall from the extreme points to the outlet. To secure this after a simple fashion a system of stakes should be brought into use, not only for indicating the course, but, what is of greater importance, to secure the means of determining the exact grade of the drains, before even the ditches to receive them are begun. How this may be done is by so driving the stakes along the sides of the proposed ditches that their tops, brought to a line by sighting (See dotted lines in Figure 25), shall represent the exact grade of the drains themselves, but with these lines at a given height (say five feet) above the drains as they are to lay completed. Such lines are called datum lines, for they serve (at the stakes) to measure from in locating the ditch bottoms as well as the tiles themselves.

Let us illustrate the securing of the datum lines throughout a plat by starting at *A* in Figure 25. Here a stake is driven with its top at, say, exactly five feet above where the drain outlet is to come. *A, B* represents the course of the main drain, at the further end of which (*B*) the second stake is to be driven. To provide proper fall the top of this stake must be somewhat higher than that of *A*, the rule being one inch of fall for each rod of drain, although much less may answer if pains are taken to have them very evenly laid. To get the necessary levels and heights, especially where the ground is quite even, a spirit level with sights is required. In most ordinary cases a common carpenter's level might be made to answer. The end stakes in place, intervening ones are readily set, their heads in exact line horizontally with the first two, one man driving the stakes as another sights from end to end along their tops. A stake should come at each point where a lateral is to leave the main

same measure from the tops of all the stakes (in this case five feet), the outcome must be a line of ditch bottoms over the plat as true to line as the datums themselves. This is precisely what is wanted and once secured the ditches are ready for the tile. The preferred depth below the surface for the tiles is from three to four feet, a matter that will vary somewhat with the contour of land and the fall secured.

In laying the drains they should be fitted closely and evenly, as well as firmly settled in place. The main should usually be laid first, or all may go down together. Where trees are to come the joints should be cemented to prevent roots entering the tiles. In such cases the porousness of the tile may be trusted for admitting water. Where tile drains cannot be procured a fair substitute may be had in narrow boards nailed together to form square or triangular box-like drains. Stone and brick drains have also been employed, but at best they are liable to prove unsatisfactory.

## MANURING.

Without a fertile soil, a soil abounding in plant food, it is impossible to have a complete garden. To therefore provide an unstinted supply of good manure, both when beginning a garden, and to cultivated parts annually thereafter, is one of the most essential parts of the gardener's business. It means the reward of vigorous growth in grass, flowers, shrubs, trees, vegetables and fruits. Its absence is as sure to produce a stunted and unsatisfactory condition in these as the absence of enough food for animals must cause unthriftiness and poor development. Manuring is but another term for plant feeding.

Of manures there are three kinds, vegetable, animal, and mineral. Vegetable manure consists of decayed vegetation, either such as grass, leaves, bedding, roots, (as when turf is used in compost or clover is raised) and green crops plowed under. Peat, muck, and leaf mold are also vegetable manures, and especially valuable on sandy or other light land. The efficiency of muck is increased by composting with lime, at the rate of three bushels to a cord of muck, for rendering the nitrogen available as plant food. Ashes—the ash of plants—properly also comes under this head. As manure their value varies with the land, such as is heavy being usually the most benefited.

Animal manures include the excrement of animals, night soil, and the blood, bones and other parts of dead animals. Of these the former, as stable manure and mixed with vegetable bedding (straw, leaves, dried muck, etc.) is the most valuable of all manures for the garden, containing as it does all the elements of plants. The richer the food upon which animals feed, the richer the manure.

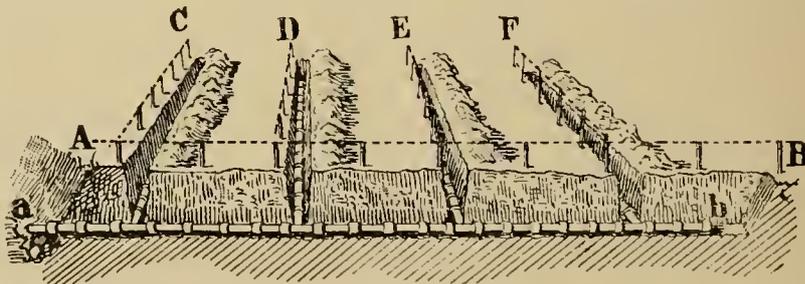


Fig. 25. Underdraining: Main and Lateral Drains in course of Laying. Dotted Lines at stake tops show Datum Lines, from which Depths are Measured.

at least, and if one is brought between, as shown in the engraving, it usually is better. To secure the datum lines of the laterals it is only necessary to proceed with each line from its stake at the main to its further end, as has been described for *A* to *B*. The same course will also be found in general applicable to all systems of drainage.

With the datum lines fixed by stake tops and to the necessary fall, it is clear that by opening ditches along the rows, with their bottoms the

Of the animal manures, that from the horse is, weight for weight, better than cow or hog manure. Still this depends somewhat upon soil, for cow manure on light land tends to promote moisture, hence has an advantage in this respect. Horse manure is preferred for heavy soils. A mixture of different manures is the ofttest used and with satisfaction.

To fit land for gardening at least 75 tons of manure should at the start be applied to each acre of land, or one half ton to each square

rod. This should be promptly followed at times, and in quantities to suit the different crops, for keeping the land well up to the proper standard of fertility. Manure to be in the best shape should lay some months before applying, keeping it in the meantime under a shed to prevent undue rain leaching. The stables and yards ought to be arranged so that the urine may be collected and pumped upon the pile to aid decomposition. Night soil is a very rich manure and needs always to be mixed with twice or three times its bulk of dry earth, and allowed to lay some months before putting on the land.

Bone manures, either in a crushed or powdered state, or dissolved in acid as superphosphate, possess much value. Dried blood is esteemed of about equal value. These fertilizers are used at the rate of from a third of a ton to a ton per acre, or from five to fifteen pounds per square rod, the best results following if they were previously mixed with three times their bulk of fairly dry earth, leaf mold, or muck. Poultry manure is another of the richer manures, requiring to be applied in about the quantity and manner just described. House sewage contains a good deal of manurial value, especially for dry lands.

Of mineral manures the principal ones are lime, nitrate of soda, nitrate of potash, kainit, and sulphate of ammonia. As to the value of these in any given case, so much depends upon the nature and general fertility of the soil that this must in the main be determined by trial. With lime, for instance, where the soil naturally contains enough of this element, it would be a waste of time and money to apply more, but where it is lacking there cannot be a more effective fertilizer than lime, provided it be properly supplemented by animal manures. The same is in the main true of the other mineral manures. They should be tried.

Looking at the purpose of manuring, the providing of food to plant roots, the method and time of applying may have a varied effect on results. Coarse, lumpy manure is less available as food than manure that is finely divided, a point greatly in favor of stable manure that is decomposed so as to go readily to pieces with handling, and of the fine commercial manures, composts, etc. Manure that is deeply plowed under is not so useful to shallow-rooting crops, as the same applied on the surface, and then worked into the soil with the harrow or cultivator. Take such a course of surface manuring as this and let it be followed by plowing, and the soil with its well-incorporated manure will be distributed in the best possible shape for the average of crops.

For all ordinary top-dressing with manure, such as on lawns, meadows, orchards, as well as in applying to ground to be plowed, there is a growing preference for fall applications, say from October to December. This provides for the rich and soluble portions to be well carried down into the soil before spring tillage is begun, and without the help of barrows and cultivators, as previously suggested. To apply manure in the winter when the ground is frozen, while it may have the advantage of increased leisure for the work, and of admitting of travel on the land with loads not to burden it, these gains are greatly offset by the loss of the rich juices when thaws or rains start the flow of water over the frost-locked surface.

(To be continued.)

### The Growing of Mushrooms.

Mushrooms are anything but widely appreciated as food in America. And yet there is no country richer in Mushroom food, growing spontaneously, than is ours. Were the people of Germany, Italy, France, or Russia to see our clearings during the autumn rains they would feast on the rich food which in many places here goes to waste. It is the epicures of America, in fact, who appreciate this food, paying fancy prices for it in the markets.

The economic value of Mushroom diet is placed as second to meat alone. With bread, and Mushrooms properly prepared, a person may neglect the butcher during the season when this growth may be gathered. Mushrooms, as Professor Palmer has stated, make the same use of the air we breathe as is made by animals; when cooked they resemble no other form of vegetable food, and in decay their odor in some cases cannot be distinguished from that of putrid meat. Certain it is that



THE COMMON MUSHROOM (*Agaricus campestris*).

the parasol-like growth used for food, and which springs up in a night, is not a plant in any sense. It is rather analogous to a flower, bearing, as it does, the spores that are analogous to seeds. The true plant which feeds, grows and finally prepares to flower, is the network of whitish threads which form what is commonly known as the "spawn," or botanically the mycelium of the Mushroom.

It is to the garden or indoor culture of the Common Mushroom, *Agaricus campestris*, shown in our engraving, that we desire here to call attention. There is an ease and novelty about this business which should make it attractive, not only to all amateurs for home use, but to commercial gardeners near all large towns. Some of the largest profits the writer has ever made in gardening was by growing Mushrooms under greenhouse benches in winter, and selling them in the Buffalo market, at from 50 cents to \$1 a pound at wholesale.

The conditions necessary to success consist in growing them in very rich soil, the indispensable ingredient of which is horse manure, and in a steady temperature. Any place, such as a cellar, shed, greenhouse pit, space under the benches, etc., where either naturally or by the use of artificial means, a temperature of from 50° to 60° may be had will answer. Good drainage must also be provided, hence, a shelf as in the lower figure, or a series of shelves, may readily be employed to hold beds.

The manure should be dry and freed as much as possible of straw or other litter by shaking out. Manure alone can be used in which to grow them, by repeatedly treading it down and throwing over to get rid of its greatest heat, but usually it is preferred to mix from one fourth its bulk to equal its bulk with good garden soil. It is best to allow something of an accumulation before putting down into beds.

The manure ready, and it may at once be made into beds. The beds may be of most any shape or size desired, but experience proves that to have them from two to four feet wide and about 20 inches deep answers about the best. Where there is a good deal of room it is well to make the beds more or less sloping at the sides. Beds may also be made in old tubs, in casks sawed in two, or in boxes. In this way they could, after the making and for cropping, be carried into cellars or other parts

of dwelling houses where one would not like to bring in the manure in its rough form. We see no reason indeed why the preparing and selling of Mushroom boxes, to be grown in houses, should not in some places become a profitable branch of the gardener's business.

In putting down the manure and soil, it should be firmly packed, layer by layer, with a brick or other weight. A thermometer should at some central point be imbedded into the soil, with its bulb some three inches below the surface. The probability is that the temperature in the bed will rise for a few days, and then begin to lower. When it reaches about 80° the bed is ready to spawn. Spawn may be purchased in bricks of all seedsmen for the start in Mushroom culture; once begun and any of the white spawn-flecked earth of an old bed will answer for planting new beds.

For inserting, the bricks or pieces of spawn are first broken to half the size of a hand lengthwise, or some less. These are placed into the top and other exposed surfaces of the bed, at about ten inches apart, and half as deep, covering up firmly. After some ten days spread over the bed about three inches of fresh loam, and then wait for your crop. This should begin to show a few weeks later, varying somewhat according to temperature.

It is often possible to dispense with watering the beds, this being only necessary when the surface gets quite dry. Then water carefully, using water heated to about 100 degrees.

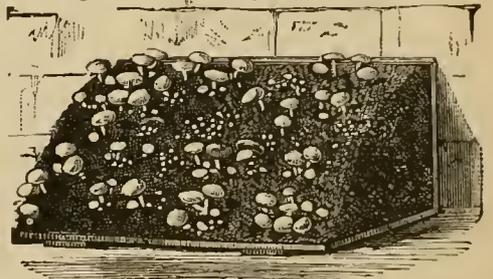
By making up beds at intervals of ten or twelve weeks throughout the year a continuous supply of Mushrooms may be secured. The product is usually salable at all seasons in limited quantities. It is to be hoped that the consumption of this valuable food article will greatly increase in the near future. Let our readers in general inaugurate the growing and using of Mushrooms commonly.

356. **Asparagus Query.** Do not cut the plants down to the ground until the berries turn red and the stalk brown. The end of October will be about the proper time.—C. E. P.

370. **Pale Marechal Niel Rose.** How old is your plant? When the plants are young and vigorous the color is all right, but when the plants are old, or the roots injured, the color is pale and inferior. You may be injuring the plant by giving liquid manure too freely. C. E. P.

390. **Watering Agapanthus.** This plant likes a good supply of water at the roots, but it is not a good plan to place it in pans of water. It flowers finely every year out-of-doors, and do not give more water than other plants receive.—A. H. E.

394. **Training Lima Beans.** The use of very high poles is not economical. The vines on rich soil, as that for Limas should be, grow too much to top, and need to be shortened in to produce the largest and earliest crop. With poles four or five



MUSHROOM BED ON SHELF NEAR THE FLOOR.

feet high, and the beans stopped when they reach the summit, the crop will be better and more easily secured than with the eight foot or more poles often used, which need to be set deeply, and are even then liable to blow off or break off, thus destroying the hill. One way to prevent this, however, is to set the poles in each four adjacent hills inclining towards a common center, draw the tops together and tie; but mind that poles more than five feet high are senseless.—A. H. E.

395. **Lilium Candidum.** The White Lily often fails to flower the year after planting—it dislikes disturbance. If planted in light, rich soil which has been long under cultivation, and is well drained and in good heart, they will be all right next year. They dislike fresh manure, and, as far as I have seen, do best over a gravel sub-soil. A. H. E.

### Fruit Jottings and Talks by A. M. Purdy, Palmyra, N. Y.

Young suckers forming around fruit trees should be taken off as fast as they start.

**Pruning in Summer.** Now is a good time to prune all kinds of fruit trees. We much prefer pruning in July and August than in early spring.

**Two-eye Grape Cuttings.** We have had splendid success growing these. Set thickly in boxes of rich mold in the greenhouse, and when nicely started transplanting in rich beds outdoors, and shading a few days with straw after setting out.

**A good way to start a new Strawberry bed is:** take up old plants that have runners growing from them; set well after rains and when ground is well soaked, and lay the runners along the row, throwing a little earth over them when the young plant is forming. By this plan nice rows can be soon formed that will make a nice crop next year.

**No Strawberry** has paid us better this year than the old Downer's Prolific on old beds. They yield abundantly, have a perfect blossom and hence require no fertilizing sort near them and bear heavy very easily. Their orange-scarlet color, perfect round shape and uniform size give them a fine appearance on the market stands.

**Currants and Gooseberries.** As soon as they drop their leaf trim the bushes and cut trimmings up into cuttings of 6 to 8 inches in length. Set out to top eye, two to three inches apart in the row, and rows two feet apart, and before winter sets in mulch the surface close to them well and in early spring draw this away. By this plan you will have splendid plants next year.

**Strawberry Planting.** Once for all let us say that both in Virginia and Tennessee it does not pay to set Strawberries in the fall for market purposes. They do not yield enough fruit next year to pay for the risk, extra care of setting, increase of work in weeding, etc., and besides the great risk of winter killing or "heaving" that newly set plants are subject to. For small garden beds we advise August or September setting if properly covered with straw or hay through the winter. South of Virginia and Kentucky fall setting even as late as November can be recommended.

**Marketing Strawberries.** This season we have practiced a new plan, namely, to have all ripe Strawberries picked, large and small, and take them to our packing building and there have them assorted over, putting in all fair, ripe fruit and throwing away nubbins and unripe and partly decayed fruit. In this way we have averaged one to two cents per quart more for our fruit. Gives good satisfaction all around and saves ourselves many "curses." It is impossible to get a set of pickers that will pick fruit right, and the grower has to take the blame of their dishonesty. Again, it's better to have all ripe fruit kept clean from the vines, for if the small fruit or nubbins is left on it damages the growth of the fruit that is coming on. It's easy to make jelly out of the small fruit. And, too, sorting out the small berries makes but about a quart or two difference in a bushel, while the price far more than makes up for this. After this our berries will be assorted.

#### THE STRAWBERRY CROP.

First of all came the Crystal City with its two or three extreme early pickings and then it was gone and of no value, but these two or three pickings, where early fruit pays, makes them profitable. Next comes Crescents and Downer's Prolific, both good market sorts; the latter just the sort to fertilize the other.

The Wilson and old Iron Clad follow close after and are both reliable old sorts. The Sucker State comes about the same time with the Wilson and is one of the best market sorts grown, because of its bright color, uniform large size and perfect shape and extreme firmness, one of the best for long shipping, and we believe will prove profitable at the South for northern shipments.

Chas. Downing is fine for home use, but too soft for shipment. Piper, a dark crimson, good size and very productive sort—one of the most delicious on our grounds, and fine for both home use and market.

Mt. Vernon we are highly pleased with—ripening two or three days after Wilson,—of large size, very productive and plant hardy. Sharpless ripens about same time and is magnificent. Its fault is green tips and whitish scarlet, but

it sells quick and for best prices. Bidwell is one of our stand-bys; early and produces heavily on old as well as new plantations.

Green Prolific is one of our iron clads, and where well fertilized with Wilson or Sucker State is productive for years on the same beds. Windsor Chief is unexcelled by any sort on our grounds for productiveness, while its fine round shape, uniform size and rich, dark crimson makes it a quick selling sort. Big Bob is giving us a splendid crop of fine fruit this year. Lord's Seedling (Vineland) is the finest very late sort on our grounds. Similar in shape to the Kentucky, but finer and better than that sort every way. Daniel Boone, where well fertilized, is giving us a large crop of very fine fruit. Manchester is enormously productive, but too soft for long shipment; splendid for home market. It gives us the last picking of any sort.

Jumbo is choice, but not as late as its originator claims. It is very similar to Cumberland Triumph, which variety with us is equal to Sharpless in many respects. Fine for home use and market, but not sufficiently firm for long shipments.

Beacon, the finest sort on our grounds for growing by the stooling plan, as it throws out so few runners. Glendale, late and as firm for shipping as a stone. We recommend this as the best for shipments from the South North.

The above includes the best of scores of old sorts on our grounds. Jewell, Belmont, Ontario, Parry, Hoffman, and other new sorts we have not tested enough to give a fair opinion.

#### HARVESTING RASPBERRIES BY THE NEW METHOD.

All agree to the necessity of doing something to save the crop of fruit at much less cost than by hand picking, and also to save the annoyance and perplexities of that method.

These troubles it is not necessary for me to name, for every fruit grower knows of them. Mr. Benedict, as a large grower, had his share in the shape of strikes, when his pickers would fly at the least thing and keep away from the fields until he was forced to contrive some plan to get out of the power of such a class. In this dilemma he happily hit upon his harvester. He started eight to ten persons working with quickly made harvesters for the occasion, and the result was they did the work that fifty to sixty pickers were required to do.

Perhaps a little conversation between the writer and Mr. Benedict may come in place.

"Yes, sir, I was the first to apply for a patent, which covers all devices for knocking off and catching the fruit."

"How many can a man gather in a day?"

"With plants in good condition, the crop good and the bushes allowed to become black with fruit before beginning, he can gather eight to ten or more bushels per day, or as much as six to eight persons can hand pick. Hereafter I want no pickers in my field."

"With bushes black with ripe fruit will not much of it be too ripe for good evaporating?"

"No, sir; my experience has shown that well and even over ripe fruit makes the best evaporated fruit. It takes less of such to make a pound than if picked as soon as it turns."

"What then is the hurry about gathering the fruit, either by your harvester or by hand?"

"None, while much is gained by it, by either method, as double the amount can be picked in the same time and better."

"I see leaves and sticks, and even some green berries are knocked off by your harvester. How do you manage that, and isn't it waste?"

"No waste to speak of; in fact, no more in proportion than in hand picking the same amount, and too, by our floating process we separate all that green, 2d grade fruit from the best, and it sold for me at 18 cents, while the best brought only 22 cents per pound. As to floating, after we have run our evaporated fruit through a fanning mill, we then put it into water, a peck or so into a long tin pail having a perforated bottom, and near the top

a perforated sliding division, running through the side within 3 to 4 inches of the top. We fill this pail partly full, sink it in a barrel of water down to the top. The green and partly ripe fruit will float, the perforated drawer can be closed and the pail drawn out and drain a moment, when the fruit may be placed on sieve drawers in an airy place, where it soon dries."

"Does not the wetting damage it?"

"No. It makes it plumper and all the finer and the better. Understand, we allow it to remain in the water but a moment, not long enough for the water to work into the fruit, and the coloring of the water also colors the partly ripe fruit, so that it gives a better appearance and sells quick for second price fruit."

"Don't you waste much fruit in gathering?"

"No more than pickers ordinarily do."

"In gathering with a harvester how many times going over the plants for evaporating purposes is needed?"

"Twice will clean them so nearly that it will not pay to go over them again."

Such was a part of the conversation that passed between us. Heretofore we have been anxious to keep our plantations picked as fast as fruit colors in sufficient quantities to pick, but we are now satisfied we have been in error, and that where we have made our mistake, which was discouraging to pickers, was in being in too much haste to gather our fruit, even picking it before it was properly black. By allowing a large quantity to get ripe the pickers do much better, and are better satisfied with their day's work.

We are satisfied the harvesters will not work or pay where the bushes are scattering and fruit a light crop, but if well grown and kept well cut back the harvesters will prove a success and a great saving.

The berries can be gathered to sell fresh, by simply having a canvas bottom inclined trough or frame, and by knocking slightly on the under side the berries will roll down this canvas to the lower end, where they can be ladled out into quart baskets.

#### The Benefits of Mulching.

JNO. M. STAHL, QUINCY, ILL.

I believe in mulching, but it rarely receives credit for one-half of its work—helping the water into the soil. Nature mulches in the fall, because fall and winter are her time for storing moisture in the ground. While precipitations are heaviest in spring and summer, the transpiration of plants and increased evaporation more than make up for this.

Dickinson, using a drain-gauge three feet deep and filled with fine gravelly loam grass grown on the surface, found that in England during a period of eight years 74.5 per cent of the rain and snow from October to March inclusive percolated through the gauge, while from April to September inclusive only 7.1 per cent did so. During the warm months of two years no water whatever percolated; and Pfaff at Erlanger, and Wolrich at Salzburg and Vienna, also found that during some hot months the evaporation exceeded the rain fall.

Clearly under such circumstances the plants subsisted on ground water, taken into the soil during the winter, when nature had spread her mulch; and while we mulch to retard evaporation, we may take hints from nature, and mulch to increase the percentage of the rain-fall finding its way into the ground.

As stated, by mulching we help the water into the ground as well as retain it there. If a smart shower falls, much of the water, without mulching (or cultivation), runs off the ground; but a loose mulch will hold the water until it sinks through the mulch and into the ground. Mulching prevents puddling or baking, things that are hurtful to plants, because keeping out the air; hence its benefit outside of influencing the moisture in the soil.

Then further, much of the rain that does not run off the ground is, without mulching, re-

tained on its surface in little depressions or near to it, and evaporating before it is of any use to plants. Mulching would enable much of this water to get down to the roots of the plants.

Such together being the capabilities of mulching, it is plain that it would be highly beneficial whenever otherwise there would be a lack of moisture in the soil. And I prefer to point out in my imperfect way the action of mulching in general, to telling what benefit it has done my vines and bushes; for I have learned that what may be good for me may not be good for my neighbor five miles away, except as it bears on some general principle.

Some gardeners or fruit growers may not find mulching worth the cost. On ground where the ground water is near the surface, or where the soil is largely composed of clay, mulching will likely not be profitable. Its object being to increase the amount of moisture in the soil; hence it is needed only when otherwise there would be a lack of moisture.

As for the material any convenient loose litter, loose enough to allow the rain to pass readily into it, and yet close and thick enough to shade the ground completely, is all that is needed, and the cheaper it is the better. There is an abundance of vines, small bushes, straw, leaves, etc., just when a mulch is most needed.

Of the part that a mulch plays in keeping down weeds, in nitrification, or in keeping Strawberries clean or Gooseberries free from mildew, I have not room to speak.

#### Condensed Cleanings.

**Gathering Pears Before Maturity.** Pick a few at intervals from a week or two to two or three days before full maturity, marking the dates, and observing their quality when soft, with a few gathered from the tree when fully ripe. The best time may be thus definitely ascertained. The rule among pear growers is to gather the crop when, by lifting the hanging specimens into an upright position, they readily separate or crack off from the tree. Select the largest and ripest first, which will leave the smaller and greener room to grow, increase, and develop into later and larger ones.—Country Gentleman.

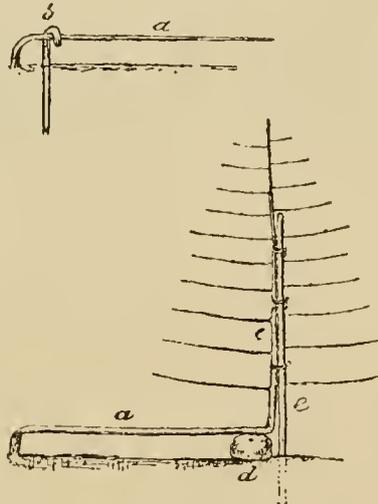
**A Remedy for the Round-Headed Borer.** A farmer got some Apples trees from us this spring. When asked how he managed the borer, said he had no trouble with them; that he placed a good forkful of fresh barnyard manure close around the butt of each tree every spring. My sons at once remarked that must be the reason that so few borers were found last season in a young orchard of over 100 trees, they having placed manure to them in the spring. If this holds good, it is about the simplest remedy I know of, and has the additional benefit of enriching the soil, a matter too often overlooked.—S. MILLEA, in Rural World.

**Clean Celery.** Short, clean Celery is such a very desirable production that all should do their utmost to secure it, and careful, timely attention will, as a rule, accomplish it. The chief matter is to dress the plants with soot, lime, and salt. Soot is dangerous, but it agrees with some things and Celery is one of them. It must not, however, be used very freely, and a slight sprinkling now and then is sufficient. As soon as the plants begin growing place a little in the trench, spreading it over the surface, but not quite over the plants. Repeat this after each earthing, and in nineteen cases out of every score, there will be no worm marks on the Celery. Soot may be used in the same way, but it may be placed more over the plants, and it may be mixed with the soil in the process of earthing. Lime may also be used in the same way. Should earthing go on, and it is not discovered that there are any worm markings until they have taken possession of it, it will be labor in vain to apply any of these preventives. Prevention is the point to consider, and this can only be done by beginning with the growth of the plants, and continuing the application of the antidotes as long as it is necessary.—Journal of Horticulture.

**Growing Bushy Abutilons.** Most of the newer sorts of recent years are much more compact in habit and more floriferous than the old kinds, and it is well for amateurs, who have not large houses, to keep to the dwarfest-growing, freest-flowering varieties. Small plants in the spring will bloom when but a few inches high, and it often happens

that there is a reluctance to sacrifice the flowers by the shoot-stopping that is necessary to induce the production of side-branches sufficient to secure bushy growth, and in this way the plants are run up with a single stem, so as to give them a scraggy, straggling appearance. To avoid this there is no chance but timely pinching the shoots, regardless of the loss of a few flowers. Plants that were struck from cuttings last summer will now be in bloom. To keep them moving freely, they must either have additional root-room or be regularly supplied with manure-water. Unless where very large specimens are wanted to train to a pillar or over a wall it is much the best to sustain the growth by stimulants, to avoid the use of large pots. As a matter of course plants of this description produce much the greatest quantity of flowers, and it is not necessary to give them very large pots if stimulants are used.—London Gardening Illustrated.

**Compost for Roses** The best soil for Roses is what is known by gardeners as a rich hazel loam of a moderately firm texture. Cut it with a spade from three to nine inches thick, according to quality. Where it can be had in the form of old sod, clear of trees, (as decaying leaf mold is absolutely injurious to Roses) it is so much more valuable. In soil as described above, the roots of the grasses will form a dense fiber all through it, sometimes ten to twelve inches deep; then I prefer to take the whole depth, and if a yellow clay below, should add some to the compost. The next thing required is well-decomposed cow manure; this, if possible, should be at least one year old. This on hand, commence your compost heap, to every eight or nine loads of good loam, adding one load of equal size of manure, and so continue until enough is collected for the season's use. Where the soil is inclined to be heavy, add one part to ten of good sharp sand as you go along; let it lie a few days to get settled. If it heats, so much the better. Turn the whole over and beat it up fine with digging forks; if it is not considered rich enough, add a little pure ground bone, as it is mixed to go into the houses, and you have a compost that will grow good Roses if judicious care is taken of the plants.—J. N. May, in American Florist.



Training Trees to Cover in Winter.

**Strawberry Raising for the Girls.** The farmer is so busy and has so many things to attend to that the Strawberries will not be likely to get the care that they need. It is quite a science to raise large crops of fine berries: one must read and study and then attend to them at just the right time all through the season. This pays finely when one makes a business of it. One day my girls were telling me that they wanted to do some work away from home so as to get some pocket money. It struck me this was a laudable ambition, and the Strawberry business occurred to me, and I asked them how they would like it to take charge of the whole matter and pocket the money. Well, the result was I gave them the nicest, richest (mark that—not some poor corner) piece of land on the farm, and have engaged from a grower what plants they will want, leaving the choice of varieties to him. I have bought them books enough to study, so they can learn all that is possible in that way. The men will plow the ground when we do the rest of the lot, and harrow and roll it; and when we are cultivating Potatoes we will run through the berries; but the girls are to take the whole responsibility. I think it will do them good. It will teach them business. It will be healthful work. I thought best to start them with a little over one-fourth of

an acre, not on account of lack of vim, but because I have learned that concentrated farming is best, in the berry patch as well as elsewhere. In a year or two they can spread out a little if desirable. I do not hesitate to advise any farmer or other person to go at it in this way. It will cost only \$5.00 or \$6.00 for plants. About the market: Make one among the people living right around you. There are ten bushels of Strawberries sold in Hudson, where I live, now, where there was a quart when I first came on the farm, and the end is not yet by any means. Plenty of people would buy nice fresh berries at a living price, if they were put right before them who hardly know the taste of the fruit now. Now, I want to stir up the children as well as the old folks a little by telling what has been done on a single quarter of an acre. I have seen the ground, and spent four days with the man who did it—the venerable J. M. Smith, of Green Bay, Wis. It was not convenient to measure all the land and keep track of the crop, so our friend marked off one-fourth of an acre and picked from it 3571 quarts—the largest crop, it is said, on record. Just think if you do not know of hundred-acre farms that do not do much better. At 10 cents a quart this would be \$357. This is enormous, but not greatly above Mr. Smith's average. From 3½ acres last year, although terribly dry, he sold \$2,215.24 worth of berries, besides taking plants to the value of \$300 from the same land in the spring. But this was not enough. After the berries were picked he plowed the patch and put in Cabbage and Celery—\$700 more! Just \$3,215.24 from 3½ acres of land! I took the figures right from his books, where each day's sales were put down. There isn't a question about their exact truth.—T. B. TEARY, in Gleanings in Bee Culture.

**Training Trees to Cover in Winter.** My method of training Peach trees is shown in the figure, where *a* is the horizontal trunk, *d* a support to keep the trunk off the ground, and *e* a stake to which the upright trunk is fastened. To train a tree, procure one not more than a year old, plant it where you wish it to stand, and allow it to grow straight up. Once a week all shoots must be broken off as soon as they can be handled. Break no leaves off the main trunk. Keep this up until a month before frost is expected. The main trunk will ripen its wood sufficiently to endure the winter. About the time of the first hard frost carefully bend the trunk to the ground, and then fasten it there by a hooked stick driven into the earth, as at *b*. When winter has fairly set in, place a few evergreen boughs or straw over the whole length of the tree, with some light sticks on the covering to keep it from being blown off. In the spring, when the frost is out of the ground, remove the covering and the stick that holds the tree down, and allow the latter to resume its upright position. After it has started to grow, cut off the side branches, leaving but one bud to grow, and treat in the same way as during the previous season. By the fall the trunk will be from six to ten feet high, long enough for a first trial; bend it to the ground and cover. In the spring, leave the tree down, and allow only one bud to grow. This will push straight up and send out branches, only a few of which should be allowed to grow, and they should be trained fan-shaped, parallel with the horizontal trunk. Be sure to have a stout stake driven into the ground to fasten the upright trunk to. Other stakes may be driven along the side of the fan to fasten the branches to as needed. In the fall, loosen the head of the tree from all its stakes, and after placing straw or other material on the ground to keep the twigs off the soil, bring the head down sideways to the ground and fasten it there, then put on the covering. The horizontal trunk can, without injury, be twisted sufficiently to allow the head to lie on the ground, and this can be done for a good many years, for this horizontal trunk does not increase in size nearly so fast as the upright trunk does. It must be protected from the direct rays of the sun, else the bark will be killed all the way along the top. I lost some trees this way. I find the neatest way is to swathe the trunk in straw; with a twine string fasten it to the trunk. Be sure that no water can stand around any part of the tree at any time during the winter. Keep the ground perfectly clean from weeds for a good way away from the tree, and mice will not be likely to trouble it. In winter, as experience proves that they do not run far on ground that is clear of grass or weeds. Do not cover too early, and do not put on too much covering. This method may appear to require a good deal of work, but when the trees once get into bearing you will find, as I do, that it is considerably less work to put down and cover a tree than it is to prune and cover a Grape-vine.—J. T. Macomber, in Rural New Yorker.

### To Secure an Attractive Weeping Tree.

Most trees with pendent branches are quite somber in appearance, suggesting appropriateness for grave-yard planting, while among the entire class there is hardly one that is remarkably showy as a flowering tree. We desire, therefore, to invite attention to a means of securing such a tree that is really gay with bloom and otherwise attractive, by an easy course within the reach of all. Reference is had to converting that familiar native climbing plant, the Trumpet Vine (*Tecoma radicans*), into a handsome tree, as herewith shown figured.

Two things peculiar to the habit of this old favorite are favorable to the course we suggest. One, that with age its vigor tends more to the top, so that the trunk is disposed to become bare; the other, that the vine also, if directed uprightly, assumes, with age, strength of trunk so as to become self-sustaining, veritably a tree.

Now with these characteristics present, the course for making a weeping tree of a Trumpet Vine easily occurs. All that is required is to put a strong stake, say five or six feet high, at the side of the plant when set out, and train the shoot to this. When growth reaches the top of the stake, or a few inches beyond, it should be stopped, and attention be paid in the future to forming a fine head of lateral shoots. All side shoots below the top need to come away, though if some of these be allowed to grow a foot before pruning away it will tend to strengthen the trunk. Should an oak stake be used, by the time it has rotted off the tree habit would be so fixed that no further support would be required.

That quality of the Trumpet Vine which leads it to produce its clusters of splendid flowers for a long season in midsummer,—a season when tree and shrub flowers of all kinds are very scarce,—all the more commends the plant for the purpose suggested. Another thing in favor of the plant is its hardiness, for it is a native food from Illinois and Pennsylvania southwards, although succeeding in cultivation much farther north. Young plants of this vine can be bought for 25 or 50 cents each of almost every nurseryman, and of many florists as well.

### Annuals for Cut Flowers.

WILLIAM FALCONER, OLEN COVE, N. Y.

It is only reasonable to expect that every garden shall teem with flowers from April till October. We begin with Snowdrops and Crocuses; Hyacinths, Tulips, and Trilliums cheer our hearts in spring; we enter summer with Bleeding Hearts and Oriental Poppies; gorgeous Kämpfer Irises, Hollyhocks, and Phloxes brighten up our yards in summer's hottest weather; Japanese Anemones, Tricyrtis and autumn Crocuses yield us flowers in fall. Add to these a host of tender auxiliaries in the way of Dahlias, Gladioluses and the like, and our garden should be gay enough. But the greatest auxiliary of all is the crop of annuals. This we can have in quantity from May till November, beginning with Pansies and Collinsias of last fall's sowing, and ending with Pot Marigolds and Sweet Alyssum when snow obliterates them from our sight.

But no matter how bright and pretty flowers may be as they grow, they have a greater value if also fitted for bouquet, vase, or other work for which cut flowers are used. Let us deal, just now, with these alone.

Annuals love a deep, finely pulverized rich soil, and most of them an open exposure. And to grow them well, from the moment they are sown till they have done blooming, they should be grown along unchecked, unstinted, unre-

stricted, and never let a Marigold or Sunflower or other heavy annual be broken down for want of a stick in time to bear it up. As I grow annuals very largely for cut flowers, I'll just tell you my own practice with them:

In August I sow Pansies. In September or October plant them some 3 by 3 inches in a cold frame, where they remain over winter; in April plant them out into other frames, or in sunny places for early, or shady places for late blooms out-of-doors.



TRUMPET CREEPER AS A WEEPING TREE.

In fall I preserve undisturbed self-sown seedlings of Meteor Marigolds, Sweet Alyssum, Cornflower and Larkspur; these bloom in May, June and July. Candytuft, *Collinsia verna* and Forget-me-nots sown in August, pricked out or planted in cold frames over winter, bloom in the frames in April and May; or if kept a little cooler in winter and planted out in April, they bloom in May and June. In July I sow Intermediate Stocks, prick and pot off as usual and winter in a well wrapped cold frame; they bloom well in April and May, and if I bring them into a warm greenhouse in January they will bloom in March.

In February I sow a good many annuals in boxes in a warm greenhouse, prick off the seedlings nearly as soon as they germinate, into other boxes: about the first or middle of April transfer them to a warmly clad cold frame, and plant out about the end of April or in May, according as the sorts are hardy or tender. This batch includes *Gaillardia picta*, G. p. var *Lorenziana*, G. *Amblyodon*, French, African, and Meteor Marigolds, Ten-week Stocks, China Asters, single Dahlias, Chrysanthemums, Mimuluses, Snapdragons, Pansies, Salvias, Petunias, Scabiosas, and the like. By planting-out time they are large stocks, some in bloom and much in bud. At the same time, I sow Vinca, Celosia, Cockscomb, Begonia, and some other more delicate plants, but instead of growing these along in boxes I grow them in pots and in warm quarters till May.

A small succession crop is put in in March and a large one in April. The April sowings are mostly made in slightly heated hot-beds, and consist largely of stocks, Asters, Marigolds of sorts, Zinnias, Balsams, Drummond Phlox

Nasturtiums, Sunflowers, (*Helianthus cucumerifolius* only. It is a small single-flowered sort, very pretty, and much liked and well suited for cut flowers), and the like. This is the main crop, and yields us flowers in June and July; many of them last much longer, and the Asters don't come in till August.

Both in May and June, but this time out-of-doors or in a cold frame, I put in succession crops of stocks, Asters, Marigolds, Zinnias, Coreopsis, Helichrysum, Phlox, and some others, to fill up vacancies that may occur in other crops, and maintain an uninterrupted supply of cut flowers.

I sow Mignonette and Sweet Peas out-of-doors just as soon as the frost is out of the ground and the soil fit to work. This is early in April, sometimes in March. The Mignonette begins to bloom about the end of May, the Sweet Peas about the end of June. I put in two other sowings of Sweet Peas at intervals of some four weeks. This gives me flowers up till August, sometimes longer if the summer is favorable. Mignonette is sown once a fortnight till August. This gives flowers till November. But between June and the end of August it often is a difficult matter to get Mignonette to come up at all, because of the dry weather. Candytuft sown out-of-doors where it is to bloom does better than transplanted stock. Indeed, I make it a point to sow out-of-doors, where at all practicable and convenient, all ready-germinating seeds, as Candytuft, and Drummond Phlox, and large seeds, as Zinnias and Nasturtiums. Double Poppies come in capably about the end of June from broadcast sowings out-of-doors in April.

Mignonette and Sweet Peas are in constant demand, Drummond Phlox is a favorite, China Asters are never omitted when they can be had, brilliant Nasturtiums are wanted with a bunch of their own leaves; the large double Eldorado Marigolds are the preferred ones of their race; bunches of *Gaillardia* are liked and the flowers last well; double Poppies, the bigger the better, are

sought for large vases, cutting before fully expanded; bunches of white, rose or scarlet Verbenas are used for small vase and bouquet work, but the shades of purple are rejected; bunches of Yellow Coreopsis are used alone for small vases and dishes, but no one wants the varieties of *C. tinctoria*; Single Dahlias, particularly clean and bright colored ones, as scarlet, maroon, yellow, and white, are called for, for large and small vases, just as length of stem and quantity of green leaves can be had with them; and Vincas with short stems are used in shallow table dishes.

Now and again by way of variety odd things are called for, as bunches of Mimuluses, Schizanthus, Salpiglossis, Scabiosas, and Indian Pinks. But there is very little demand for mixed flowers. It is a big bunch of Candytuft or a bunch of Phlox, and never a few sprigs of many sorts. While mixed colors in Sweet Peas, Poppies, Phlox, and Dahlias may pass, there is a great aversion to mixed Candytuft, Coreopsis, Marigolds or Nasturtiums.

There is a decided preference for bright colored flowers, as scarlet, blue and yellow, and pure white, also soft colors, as rose; and a great aversion to "washy" colors, magenta and shades of purple. Large flowers are preferred. There must be something very charming about a small flower before it is cared for at all. And hosts of our common annuals, as Godetia, Clarkia, Gilia, Silene and Phacelia are omitted altogether. Then again there are marked prejudices towards some flowers; while some people are very fond of Verbenas, others dislike them, and the same is the case with Stocks and Meteor Marigolds; and I find that Zinnias have more enemies than friends.

### Some Fine Flowers.—How to Raise Them.

L. W. GOODELL, DWIGHT, MASS.

The Japan Irises are now (July 8th) making a grand show with their wealth of immense purple, blue, yellow, and white flowers. This Iris is perfectly hardy here and does well in any good soil, if not too dry, but succeeds best in a rich, deep and rather moist soil. In such a soil the plants grow to a height of 3 to 5 feet, and the flowers 6 to 9 inches in diameter.

The high prices of the plants of the named varieties of this Iris have prevented it from becoming at all common, but it is easily grown from seed, and seedlings are often quite equal to the named sorts. The seed requires 3 to 4 weeks to germinate, and had best be sown in spring in cold frames or boxes in the house, and should be kept quite moist. As soon as the seedlings have made an inch of growth, transplant to a rich bed in the garden and they will bloom the second season.

In the rush for new things many of the old fashioned flowers have been sadly neglected, but it is pleasing to note that a reaction is taking place and the Marigolds, Poppies, Four O'clocks, Sweet Williams, etc., are again coming into favor.

Among the hardy perennials there is nothing more showy than a good bed of Sweet Williams, yet a really choice collection is seldom seen. And then there is the Hollyhock, with flowers as double and perfect as could be desired, of every shade from pure white to darkest crimson; and the Larkspurs and Aquilegias or Columbines of many species and varieties.

In Aquilegias, the finest of all are the newer *A. carulea* from the Rocky Mountains, and *A. chrysantha* from Arizona. The former has flowers about three inches across, of the richest cerulean blue with white petals, and the latter forms a large plant from 3 to 5 feet tall, the flowers are golden yellow with long slender spurs; and while the common Aquilegias remain in bloom but a short time, this species continues in bloom from June to September.

Seeds of the hardy perennials, especially those of slow germination like the Aquilegias, Foxgloves, Campanulas, etc., often fail to germinate, and the seedsman is unjustly blamed when the fault is entirely with the sower in not taking proper care of them. They are usually sown in the open ground, perhaps are watered when sown, perhaps not, and then in a week or so, after the hot sun has dried the earth to powder an inch or two in depth and ruined the sprouting seeds, they are perhaps given a little more water. They might as well have been thrown into the fire to begin with.

Pansy seeds, which are usually sown in August to get nice plants for early spring blooming, are often ruined by the same careless treatment, sometimes by professional florists who ought to know better.

The proper way is to sow in a seed bed, then make the soil over the seeds as firm and hard as possible, water thoroughly and shade entirely from the sun till they germinate, with boards raised an inch or two above the surface. Examine the bed every day or two and water often enough to keep the earth constantly moist, removing the boards as soon as the plants begin to appear.

Pansy seeds are very sensitive to the drying out of the soil, and also often fail from a high temperature; shade answers the double purpose of keeping the soil both moist and cool.

### Tid Bits From a Subscriber.

Raised beds for plants are objectionable unless the ground is insufficiently drained.

None but bog plants will grow in standing water.

Do not grow weeds for the plgs, but clover instead.

It is useless to try to grow two crops together on the same piece of land—the weeds are sure to come out ahead.

A little air-slaked lime sprinkled on the Corn as it makes its appearance is disgusting to the crows and worms.

Elbow-grease, if rightly applied, is an excellent stimulant to plants.

Deep and thorough culture, with plenty of fertilizers, are the assurers of success.

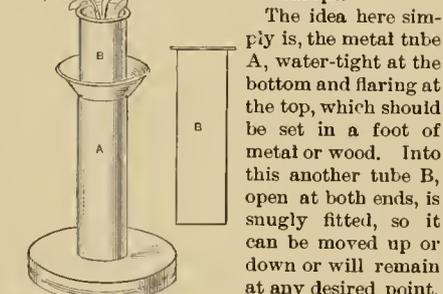
Give all the plants plenty of room for sunshine and air; it will improve their growth.

Thin out the fruit if you wish for fair and handsome specimens. P.

### Holder for Exhibition Flowers.

In arranging cut flowers at the fairs or other shows there is always some difficulty experienced in finding holders adapted to stems of different lengths, which then shall present something like a uniformity of appearance for the entire exhibit. This difficulty may be overcome by the use of holders made in the style shown in our engraving on this page. Something similar to this is now in use in some parts of Europe.

The idea here simply is, the metal tube A, water-tight at the bottom and flaring at the top, which should be set in a foot of metal or wood. Into this another tube B, open at both ends, is snugly fitted, so it can be moved up or down or will remain at any desired point. By moving this inside tube higher or lower it answers



Holder for Exhibition Flowers.

readily for flowers of any length of stem.

To associations desiring to encourage the showing of cut flowers, we would suggest that a number of such holders be made for this use. With proper care they would last a long time.

### Grouping Plants and Flowers.

At flower shows, observes a writer in the Gardening World, the groups are usually limited as to size; and owing to their arrangement along the sides of the show room they are almost certain to take the form of a semi-circle or crescent, so as to be literally one-sided masses of plants. In such an arrangement a large central specimen forms the nucleus, and on each side of this the dominant idea is to have each plant the exact counterpart of the other, and so on for each corresponding nook and corner of the whole group.

Now, novelty of design should be more often encouraged at such exhibitions. Prizes should be offered for novelty in this respect, coupled with graceful curves and free and easy arrangement of large leaved plants, to show off by contrast the airy gracefulness of such things as Ferns, Palms, etc., that could readily be furnished by any collection of moderate extent.

To obtain tasteful novelty of design, everything lumpy or massive in its nature should be discouraged in the assurance that the public taste will appreciate artistic merit unencumbered by formality of design. In public or private gardens, where the arrangements are left to the men in charge, much may be done in the way of grouping plants of a class or group having a family likeness or characters in common. If intelligently conducted, this offers a great improvement on the old-fashioned dot and pudding style of arrangement, or rather indiscriminate medley.

When plants are naturally of a leggy character, or the foliage is of such a nature that it affords insufficient density to screen the background, other kinds must be employed to obtain

the desired end. Nothing is calculated to give better effect to any kind of flowering plant than by exhibiting a group or mass of it, showing its range of variation in the matter of color. Each group may have its component parts arranged so as to harmonize and constitute a separate floral picture in itself.

The arrangement of cut flowers at exhibitions may be calculated to show the effect of masses of any given color or colors, but the clumsy nature of some individual bunches destroys any artistic feature the different kinds may possess. Surely a graceful and less lumpy arrangement of individual bunches would be more natural, more striking and attractive to the public, and at the same time equally convenient to exhibitors.

### REPLIES TO INQUIRIES.

353. **Fuchsia Culture.** I find that with plants which have bloomed continuously all summer there is little hope of their flowering in the winter, unless they are of the *Speciosa* and *Serratifolia* varieties. These will often flower eight months in the year, and are called Winter Flowering in the catalogues. Other species can be packed away in boxes, with a light soil, and kept in a cool, dark cellar, where Potatoes will not sprout. They must remain dormant and should have neither light nor warmth to send forth their tiny leaves. All their leaves will drop, and they must not have any water unless the soil becomes too parched, and if the cellar is damp this will not occur. In February or March, if you desire the plants to bloom early, they can be taken up and potted in rich soil, composed of one third well-decomposed cow manure and two thirds rich garden soil. This can be prepared and put into a box when the plants are placed in the cellar. I always have a large box of compost ready for the potting of flowers in the spring, and also to plant annuals and raise cuttings when the garden soil is frozen stiff or well covered with snow. So prepare a large box of it and a smaller one of sand, and you can start early vegetables as well as flowers in March. D. E. P.

372. **Silkworms.** If you will write to the office of the Women's Silk Culture Association, 1222 and 1226 Arch St., Philadelphia, full instructions in the matter of an outfit for silk culture will be given.

361. **Fruit Trees From Cuttings.** Improvement in the quality of a fruit is, as a rule, made at the expense of vigor. If therefore propagation were thus practicable—as it seldom is—there would be constitutional weakness in the new trees, making them inferior to strong seedlings budded or grafted. In the case of the Le Conte Pear and the Marianna Plum, cuttings root readily, and while such are, in the latter (owing to its wild parentage and characteristics) looked upon with favor as stocks for various stone fruits, it is now being demonstrated that Le Conte Pear stocks similarly propagated are quite worthless.

368. **Pæony Buds Blasting.** I think that your plants are growing in too large clumps. If so, you had better divide and reset them in the fall. Or the soil in which they have been growing may have become exhausted. If so, give a liberal supply of well-decayed manure immediately, and work it in well around the plants. In order to have Pæonies do well they should be grown in a deep, well-enriched soil, and given a good dressing of well-decayed manure annually.—C. E. P.

357. **No Persimmons.** If your plant is growing in the open air, the fruit may be injured or destroyed by some insect pest while very small. Or if in a pot or tub it may be that the roots have become injured by being improperly watered. The Persimmons (Japanese) are not perfectly hardy in this latitude.—C. E. P.

407. **Fall Planting of Fruit.** (a) In general we may say that on drained land one need not hesitate to plant in the fall all kinds but the stoué fruits and Strawberries, unless the latter can be set as early as September. But as our correspondent's State is not named we are at a loss to give special advice to meet his case, and also as regards kinds. (b) For Alexander Apple on Paradise try Ellwanger & Barry or William Little, of Rochester, N. Y., Storrs Harrison Co., Painesville, Ohio, Murdock & Co., Pittsburg, Pa.

348. **Clematis Fattling.** Aside from inferior culture, these plants are known to fall from several causes. One of these is a dreaded insect very similar in its ways of working to the phylloxera that troubles Grape-vines so widely. It causes the roots to become granulated and to die. The only remedy we have heard of is to put a small quantity of fresh Pyrethrum powder around the base of the plant. A borer also sometimes attacks the plants, working in the ground near the surface. When any plant shows signs of failing careful digging should reveal its presence. One of the worst diseases is a fungus, which attacks the plant near the root, quickly killing it by girdling. For this we know of no remedy, but should think the sulphate of copper ones, given on page 186, worthy of trial.

### The Summer Rain.

Drip, drip, drip,  
On the petals of the Rose,  
In the Harebell's tiny cup  
Till its hollow is filled up.  
And its purple rim o'erflows.  
Oh the summer rain!

Drip, drip, drip,  
Till the grass is heavy-bowed,  
Glittering with globes of light;  
And the robin for delight,  
Though wet his feathers, pipes aloud.  
Oh the summer rain!

### The Falling of the Pears.

One by one through the solemn night,  
While the stars ingather the falling light,  
Drop on the shingles and roll to the eaves  
The old, sweet Pears that the gatherer leaves;  
Yellow as gold in the grass they lie,  
For the stranger to find as he passes by.

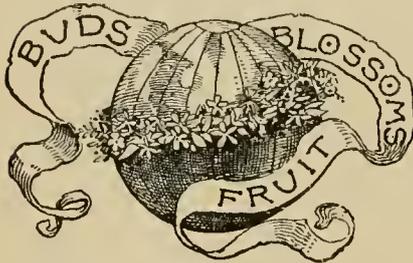
That tree was planted in spring's first glow,  
Over a hundred years ago;  
A hundred drapings of gold and green,  
Of leafage and fruitage, dear eyes have seen;  
And now in its hoary age it bears  
To its topmost branches, the old, sweet Pears.

And ever and ever, as slow they fall,  
Over the edge of the moss-grown wall,  
I listen for joyous voices fled,  
And weep for the silence of the dead;  
For the Pear tree blossoms when spring comes round  
But my fair blossoms stay under ground.

—Mary A. Denison

The Sunflower, thinking 'twas for him foul shame  
To nap by daylight, strove 'excuse the blame;  
It was not sleep that made him nod, he said,  
But too great weight and largeness of the head.

—Abraham Cowley.



The Beet is a rank feeder.

Bouvardias should be lifted first.

In odd hours clear up the roadside.

Subscriptions may begin any month.

August 20 is our date for sowing Pansies.

A bad gardener finds enough things to blame.

Never stop and shift plants at the same time.

To Greenhouse Builders. Light is life to plants.

There should be a good growth in subscription clubs now.

Grass sward could well take the place of many a weed patch.

An average of one quart of Lima Beans to a pole is not rare.

"Grape Dust," the new mildew remedy, comes well recommended.

Paint the glass houses now when the wood may be had perfectly dry.

An article last issue will pay for my subscription as long as I live."—G. E. G., Chester Co., Pa.

What your favorite horticultural journal next needs is a doubled subscription list. You could help as to this.

Many a fine plant or bulb has been crowded out of existence by strong growers being too near. By weeds also, we might add.

With us the Itasca Strawberry does well, being of equal size with Wilson, sweeter, and nearly as firm.—G. W. G., Pulaski, Ind.

The Lucretia Dewberry excels the Snyder Blackberry both in productiveness and hardness.—W. H. S., New Carlisle, Ohio

It is astonishing the quantity of flowers, fruits, and vegetables that can be grown on a small plot of ground with good management.

Don't pinch out the Grape-leaves from bearing canes, so that the sun may shine on the clusters. The leaves are more needed than the light.

Many Would so Agree. Please mention that one of the best Hybrid Perpetual Roses is the Madam Charles Wood; it should be in every collection.—Henry C. Townsend.

Beans. One thing we have demonstrated: By saving only the largest pods of shell varieties for

seed and then planting none but the fruit of these, the size and productiveness may in a few years be much improved.

"Orchids which every lady can grow in the window, as well as in the greenhouse," should be considered very desirable stock to many of our readers. We are glad to see that such are offered by a reliable New York firm.

You, Good Reader! must have some friend or acquaintance who would be the gainer for investing in a year's subscription to this journal. Will you not invite the attention of such to its merits and gently urge their coming into line?

One amateur writes that she fills her Calla jars half full of manure before setting the bulbs after their summer's rest, and then she gets two or more flowers from each plant. Our experience, too, with the Calla has shown that it enjoys a very fat soil.

Do not cut lawns too close in hot weather for heat and drought injure the growth, if not the roots. The beauty of a lawn is not in being shaved like a convict's head till the skull shows through, but in its evenness and deep green color.—Susan Power.

The sight of a healthy boy with a craving, jumping appetite for fruit, but who is not permitted to satisfy his hunger, because there's no fruit for him, is pitiful to behold. Where there is land there should be fruit for all, and especially for the boys.

Visitors to Mount Vernon readily observe that the lawns are badly afflicted with Crab Grass, Garlic, etc. In all such cases we would urge enriching the soil, in order to give the grass a better footing. A strong growth of sod is one of the best aids against weeds.

The death of Mr. George Jackman, Woking, England, after whom that most popular flowering climber of the age, Clematis Jackman, was named, is reported. His name is closely associated with the various wonderful improvements in the Clematis, now so well known.

What the cause of American horticulture needs is that there be from two to ten readers of POPULAR GARDENING AND FRUIT GROWING for every one it now has. This is a matter in which every reader could help along the cause of improved horticulture. We are thinking of clubs.

The White Everlasting Pea is one of our satisfactory plants. A row several yards in length stands six feet high, and is a veritable blooming hedge. It is supported by a few stout stakes and cleats, with some fresh twigs added every spring. It is three years old.—W. R. W., Trenton, N. J.

The "Sun-Dial Bean." Mrs. Emily R. Mershen writes all the way from Monteseano, Washington Territory, to inquire if any member of the family can tell where this plant, the pet of her childhood, grows. She says it resembles a Lupine. Our enquirer would be glad to exchange the Wild Hyacinth of her region for it.

Aphides on Snowball Bushes. Mr. William Falconer writes to us that he has not found the tobacco refuse remedy suggested on page 155 effectual in dealing with this trouble. As only *V. opulus* is affected, he suggests that the game is not worth the candle, and that it would be far better to discard the old Guelder Rose altogether in favor of the Japanese species *V. plicatum*, the leaves of which are never infested with lice.

"Happy Parisians" is what a French journal exclaims, in view of the fact that the French capital is the best tree-shaded city of large size in the world. Sixteen years ago the trees lining the streets and squares numbered 32,000, and these are annually assuming greater importance—a fact which speaks for itself when we are told that at the present day they number fully 87,000. Since 1870 about 150 acres have been added to the promenades.

Salicylic Acid. With reference to the several suggestions that have appeared in your paper concerning salicylic acid for preserving fruit, etc., I beg to draw your attention to a report presented to the French government: "That the continuous taking of salicylic acid, even in small quantities, or its derivatives, is injurious to health, especially in the case of aged persons, and those whose renal and digestive organs are not properly sound."—Henry Urquhart.

Heating a Small Greenhouse. My greenhouse is twelve feet by eight feet, a lean-to. I have had it heated this last season by an oil stove, using the best high test kerosene oil, and have successfully preserved all my plants and cuttings; and moreover, early in spring, I struck a large supply of cuttings in two shallow boxes, placed over a larger box, under which the stove was kept lighted night and day for eight or ten days.—Grace Somers, Clark Co., Ohio.

"Weed Day." Now that we have an Arbor Day in almost every state for promoting tree planting, the Rural New Yorker comes forward with the sensible suggestion of a Weed Day. The idea is for the people of a neighborhood to set apart one day or a portion of a day, to making war upon the weeds in vacant or public places. Such united action would do much to clear out the hated vegetation that robs so much of the soil's substance. Here is a chance for the Grange to organize a new and taking celebration.

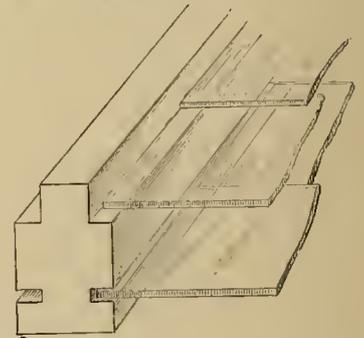
Baldwins. Mr. Henry Lutts, the Niagara Co. nurseryman, reports that while the Baldwin Apple promises little fruit this season, the trees in his vicinity are making more growth than in the last four years taken together. Inasmuch as the failure in fruitage is generally attributed to weakened vitality as a result of the attacks of the Aphis in previous years, this present increased growth and the absence of Aphis gives grounds for a more hopeful outlook of the Apple crop for next year than for some time past.

Pencil and Paper Now. The present is the time to make a note of what to repeat and what to avoid in future ornamental gardening. To trust to one's memory in these matters is to lay one open to repeat that which is not desirable. A thing to now note is the classifying of the strong, medium and small growing hardy plants, with a view to properly separating them at the next transplanting season. It is well to keep an eye to the weeding out of the more worthless species. As a rule, what are kept up only as curious plants could as well be spared.

An ornamental mound, which in its simplicity, we are satisfied would prove handsome, and the material of which is at the command of most all gardens, is thus described by an English exchange: "The center is occupied by blue German Flags, (*Iris*,) intermixed with Striped Ribbon Grass, (*Phalaris arundinacea*), and the rather steep sides of rocks are clothed with irregular clumps of Perennial Candytuft, (*Iberis sempervirens*), flowering freely. The white flowers of the latter, the blue flowers of the flags, and the white-striped leaves of the grass harmonize most pleasingly.

Festoons of Ivy.—To make festoons of Ivy for the window garden, plant five or six nice plants in a box, tie the ends rather loosely together to prevent blowing about, and in a few months they will hang in thick festoons. If wanted for creeping over a low-arched trellis of the window-box, place one or two plants at each end, train and tie over the trellis; by the summer the arch will be a mass of bright green. The trellis can be had at the zinc worker's of all shapes and sizes. The Ivy plants can be bought either in or out of the pots; the latter is the cheaper.—*Gardening Illustrated*.

Poisoning From Plants. Subscriber "P" of Worcester Co., Mass., while commending the re-



Double Glazing. The Sash-bar properly cut.

cent article on this subject, calls attention to the well-known plant of low lands, *Chelone glabra*, also known as Snake Head, Balmony, etc., as a remedy for vegetable poisons. He says the plant should be gathered while in bloom, dried, and preserved in paper bags. It can then be used at any time by steeping in water. He also reports that he has had fowls die from eating the leaves of *Oleander* and *Bocconia cordata* when thrown in their yards. Has never heard of the plants being poisonous by contact.

The Birds' Advertisement. A Swiss newspaper contained, during a severe "cold snap" last spring, the following advertisement:

NOTICE TO THE CHARITABLE.

"On account of the heavy snow fall and the extreme cold, the resident birds and birds of passage in Geneva make this pressing appeal to a generous public. They earnestly request the reader to place in some place not likely to be covered with snow, a plate containing seeds, or a modest provision of

bread-crumbs. In return for this favor, they hereby engage, as soon as the warm weather returns, to wage unrelenting war against destructive insects of every variety."

This pathetic advertisement was very generally answered, and the birds of Geneva fared very well as long as the snow lasted that season.



A FRINGED DOUBLE PETUNIA.

"The Propagation of Plants." No more welcome book for the plant and tree grower has appeared in many years than Mr. Andrew S. Fuller's new work on propagation, recently issued by the O. Judd Co., of New York. Besides treating elaborately of the practical side of the question it also takes up the principles which govern development and growth, the botanical affinities of plants, crossing, hybridizing, etc. A large part of the book is devoted to the subject of suitable stocks on which to work, and the special methods for working hundreds of different hardy and tender plants, bulbs, shrubs, ornamental and fruit trees. It is a book which should prove alike interesting and valuable to the amateur and the nurseryman. It is scientific without being dull to the common reader. It is practical as coming from an eminently practical cultivator. A volume of 349 pages containing 113 engravings, and sold at \$1.50. It may be ordered through this office.

**Petunias in the Window.** These plants are not seen among winter collections as often as their merits for the purpose deserve. They may be grown quickly, and with little care. Seeds that are sown this month make good plants for the coming winter. The plants should be brought along for occupying about six-inch pots by November 1st. As to form of growth, winter Petunias may be trained over a trellis, be given a position on a bracket to droop, or may be kept pinched for inducing a compact, stocky growth. We recall one plant of a single majenta-colored sort, started in the fall and grown over a trellis, that by the next February pretty nearly filled one window, and at a certain counting showed as many as 100 flowers. Only ordinary care was given in the way of keeping the soil moderately moist, and to remove all blossoms as they began to fade. For freedom of bloom the single varieties excel the doubles in the window, but with a fair degree of care even the latter may be relied upon to give excellent satisfaction.

**Double Glazing.** The instances where a fine advantage would be found in double glazing commercial as well as private glass structures are not few. It is especially adapted to all lean-to or other houses facing south, as here, aside from other gains, the effect of the light passing through two thicknesses of glass is an ameliorating one, of advantage to plant life. In the case of houses the roofs of which face east and west, we are less sanguine in recommending this method, for here the deflection of the sun's rays may cause too little light and sun-heat. The advantages of the double glazing in the many instances where applicable, are as follows: A great saving of fuel, amounting to 50 per cent., or upwards; greater uniformity of temperature, with scarcely any risk from sudden changes or extreme cold; easier management; the necessity of mats and other outside shutters obvi-

ated, and lastly, but not least, the almost complete avoidance of frozen moisture on the glass, and of the consequent troublesome roof-drip. The manner of cutting the bars for double glazing is shown in the cut on preceding page, the space between the glass being two inches. The outer surface of glass is laid in the ordinary manner, bedding in putty, the inner is simply slipped loosely into the groove, pane to pane, with no overlapping. The saving of fuel in one winter should almost pay the extra expense for the improvement. Double glazing is of special value also for sash to be used in covering plant pits and winter frames.

**Summer Pinching of Fruit Trees.** The pinching of young growing shoots has well been called anticipated pruning. Not only in this way may heavy cutting be obviated, but by taking the work in hand in good season nutriment and growth may be directed into proper branches instead of into superfluous ones, with a gain over winter pruning both in form and earlier fruitage. One of the most common cases in which summer pinching may well serve is where on leading shoots numerous buds start up below the terminal one, and these, if not pinched, acquire so much vigor as to injure the leaders, producing bad shaped branches. In such cases the side shoots should be pinched as soon as they begin to show a tendency to outgrow the leader. Other instances where pinching is demanded is in case of shoots starting up well back on the branch, and here, if not prevented, taking up sap enough to cause strong growth where not needed at the expense of needed growth elsewhere throughout the branch. All such should be pinched out before much growth has been made. Where the gain for fruitfulness by summer pinching comes in is through concentrating the sap in the remaining part of the shoot or tree, giving greater vigor and strength. The term summer pinching, implies the performance of the act at a time when the growth is yet so soft as to yield to the pressure of thumb and finger. That the place of severing a shoot should, unlike in knife pruning, be somewhat bruised is of no consequence; it thus serves as a greater check if anything. No set time can be laid down in which to pinch the growth; the right way being to be continually on the watch, pinching as its need is apparent, be the season earlier or later. This much may be said: more or less of it is in order at all times of active growth. The principles governing the summer pruning of fruit trees are equally applicable to ornamental trees and shrubs.

**The Use of Summer Flowers About New York.**

Most of our fashionable florists have out-of-town establishments, where they betake themselves at this season, when their chief patrons make their annual hegira to the summer resorts. So, during the warm weather, we must look to these places for our novelties.

Some charming effects are to be seen in Lilies. The ordinary Pond Lily is to be seen everywhere on the street, in stiff little bunches, tied up with hardy Ferns, and in the florist's stores, made up in every eccentrically beautiful style the florist's ingenuity can suggest. All these summer flowers must be put up in artistic disorder; stiffness of arrangement is ruinous to them, and great care must be taken, if the designer is bold enough to mix greenhouse flowers with them.

Pond Lilies are at their best when loosely arranged with light Sedges and Grasses, or other aquatic plants. Fill a flaring basket of bronzy-green Rushes with these simple materials, and you have a gift fit for Undine herself.

Some of the other Nymphaeas are used effectively by those fortunate enough to possess them. The beautiful rose-pink Devonensis and the blue Zanzibar Lily are admirable, and the beautiful Egyptian Lotus (*Nelumbo speciosum*) always attracts by its legendary glamor, as well as its beauty.

At the summer resorts, woodland flowers, put up in odd styles, are popular. During the warm weather the street vendors sell corsage bouquets of Roses all over the city, especially Jacks, so Miss Flora MacFlimsey rather looks down upon them,

Big bundles of Corn Flowers, Sweet Peas, or a combination of Clover and Corn Flowers find favor because of their rusticity. Hand bouquets are still the loose nosegays, such as were carried last winter. The only variation in shape is when they are carried during a drive; for this purpose they are flattened on one side, for the convenience of laying upon the lap.

One very pretty country wedding recently made a charming display of wild flowers. The church was simply decorated, and outside was an arch of wild flowers, under which the bridal party passed. The bride's country home was a perfect bower of wild flowers, and the bride and her maids wore garnitures of Pond Lilies and field flowers.

Our florists are so often called upon to decorate the staterooms of ocean steamers that they are studying effects in these somewhat cramped quarters. The decoration of boudoir cars and Pullmans is another branch that brings grist to the horticultural mill. The dining cars are very prettily decorated now. It is rather a nice idea, followed in some New York cafes, to pass boutonniers to all the guests dining at the table d'hote.

Flower baskets are not specially novel in shape, though novelties in material are constantly introduced. Nor is there anything very new in designs. One beautiful and rather novel design was recently figured in the American Florist; it was a large standing crescent wreath of Roses, with a lyre arranged within its circumference.

Funeral designs are hardly so much in demand as less stiff and formal arrangements. Sometimes the casket is draped and garlanded with flowers, or a single exquisite design is laid against it. Great skill and taste is displayed in the arrangement of the garlands used in this work. Colored flowers are very largely used, except at the funerals of children, where white is preferred. All through the summer months Pansies have been much used for draping children's coffins.

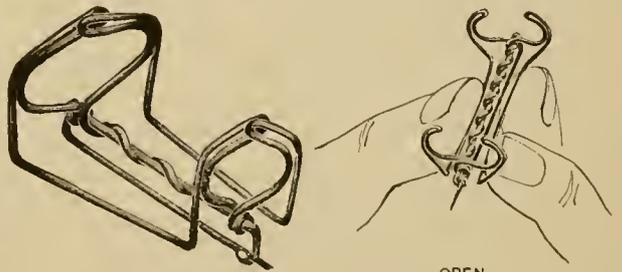
We are told that it is becoming customary to decorate the room in which the coffin is laid previous to interment. It is certainly a very beautiful idea. Instead of merely draping the mirror it is entirely covered with flowers; an æsthetic form of the old custom, still followed in most parts of England, of keeping the mirrors covered so long as there is death in the house.

The sweet girl graduates have been adding to the florist's revenues of late. In addition to bouquets and designs, they have used flowers largely in garnishing their gowns. But natural flowers, though charming, do not keep their freshness long enough to be thoroughly satisfactory in such use.

Let us add that the best way we know of for keeping cut flowers or foliage as long as possible in a fresh state when not in use is to roll them up in damp paper. Even vase flowers in rooms, unless they are very fragile, may thus be wrapped up in paper and their usefulness longer extended.

Some very fine work is displayed in the floral rugs used as wall decoration; frequently an oriental pattern is followed with curious exactitude. For this fine level work flowers that work in smoothly must be used. Pansies are very desirable for such work. Fine shaded effects are produced.

Carnations seem to be regaining something of their old-time popularity. They are used considerably in fine work, and in corsage bunches they are specially desirable when travelling, through



Bouquet Fasteners for the Dress, referred to in our July New York letter.

their keeping qualities. The new ones are, as a rule, very fine; there are many novel shades among them. Our old friend Buttercup is a great favorite; in harmonies of yellow it combines prettily with Perle Roses or Yellow Genista. Prince of Orange is a deeper Carnation, very effective. Of scarlets, perhaps E. G. Hill is one of the best. Next winter we expect to see a wider range of choice in cut flowers, since we are permitted to leave the old rut, wherein little was allowed but Roses and Carnations.

EMILY LOUISE TAPLIN.



## GLEAMS.

**Mealy Bug.** A simple and effective remedy for this is whiskey applied with a brush.

**Painting advertisements on rocks, walls, and fences by the myriad nostrum makers is a nuisance that should be prohibited by law.**—B. G. Northrup.

**Gardening, that is, the love of plants or flowers, whether the space extends to several acres, or is limited to the windows of a room, is, as has often been asserted, the purest and most self-satisfying of pleasurable occupations.**

**Due to all Good Judges.** Rule 6 of the Toronto Horticultural Society reads thus: Any publicly-expressed opinion impugning the decisions of the judges during the show will involve the forfeiture of all prizes of such competitors.

**"Consider the Lily."** If we only observe it we have a grand lesson given us in these three little words. From them we learn a lesson of meekness and purity, and not to despise small things in our aim at the great.—Mattie Stiles.

**In Planting Raspberries** one thing should always be observed—to plant deep. I prefer planting in a furrow, so that I can cultivate in the soil as the plants grow.—W. J. Green, before Columbus (Ohio) Horticultural Society.

**Raspberries; How Long to Stand.** At the May meeting of the Alton Horticultural Society it was the universal testimony that it is not best to attempt to take more than three crops from a plantation of Gregg. Other varieties will do well for one or two years longer.

**Wire Instead of Pins.** Secretary Riehl of the Alton, (Ill.) Society, recommended the use of wire instead of pins in bagging Grapes, being easier and more quickly put on, and holding the bags more firmly; fine wire, such as nurserymen use to put on labels with, is best; would use one-pound bags for Concord and two-pound for Niagara, Empire State and Goethe.

**The Indiana Florists.** An association has recently been formed by the enterprising florists of Indiana, and they propose promptly to show what they can do at getting up an exhibition. This will be held at Indianapolis for three days, beginning with November 7th, next, and judging from the premium list issued, a copy of which has reached us, it should prove a great success. Mr. J. S. Carmody, Evansville, Indiana, is the president.

**Wire Trellis for Peas.** H. S. Thiers, at a meeting of the Michigan Horticultural Society, said that several long rows of early Peas in the college garden were trained for the purpose of determining the relative cost of methods of training. One lot was trained to brush in the ordinary manner. Another lot was trained on wool twine stretched lengthwise the rows; and the third lot was trained to No. 30 wire in the place of wool twine. The wire proved to be the best and cheapest trellis, even counting only the first year, although it will last many years. Its advantages over the brush were especially marked, for it not only cost less to buy and stretch the wire than it did to cut and stick the brush, but it made a neater and more substantial trellis, allowing closer cultivation and less work in picking. The wires were stretched upon pieces of two by fours driven firmly at distances of some twenty feet apart. The first wire was placed about a foot from the ground. Three wires were used. Wool twine was used the same as wire but it sagged and became unmanageable.

# LIGHT FROM THE SOCIETIES:

BEING MATTER THAT DESERVES TO BE WIDELY KNOWN.

**Location and Hardiness.** Robt. Douglas, of Waukegan, commenting on Mr. Hoopes' paper (see other column) said: Trees from seed of *Pinus ponderosa*, brought from the Pacific slope, are not hardy, while the same from seed gathered from the Rocky mountains and thereabouts are as hardy as Red Pine with him. A fungus, however, destroys their beauty, and also attacks the Austrian Pine and the *Pinus resinosa*, though not the Scotch Pine, consequently trees of the *Pinus ponderosa* were dug up on their plantation to get rid of the fungus growth. He has found the same fungus in Illinois and Missouri on the Austrian Pine and some other trees. He cited the well known example of corn seed, which was brought from Southern Illinois, Kansas, etc., a few years since to supply that which has been destroyed by early frost in northern regions. The seed grew and the plants flourished, but the great trouble was they did not know when to stop growing, and the frost came before the ears had matured. The same principle also he said applies to trees. He cited as an illustration planting the acorns of the Burr Oak, which are found in different size from Indiana to the Black Hills. If seeds are taken from both localities and planted in the North, it will be found that the southern seeds grow larger, but less hardy trees.

**Nursery and Horticultural Supplies** were shown at the recent Nurserymen's Convention at Chicago, as follows: *Transplanting Trowel* for Shrubs, etc., F. B. Abbott, Chicago; *Tongue Grafting Machine*, Bardwell & Haviland, Ft. Dodge, Ia.; *Spry's Early Raspberry*, Stone's Blackberry, Coe & Converse, Fort Atkinson, Wis.; *Feigly Tree Digger*, Dayton Star Nurseries, Dayton, O.; *Young Evergreens*, David Hill, Dundee, Ill.; *Trees retarded by Cold Storage*, W. F. Heikes, Huntsville, Ala.; *Young Evergreens*, J. Jenkins, Winona, O.; *Packing Crate for Fruit*, Jenkins, McGuire & Co., Baltimore, Md.; *Disk Pulverizer*, Janesville Machine Co., Janesville, Wis.; *Sphagnum Moss*, Z. K. Jewett, Sparta, Wis.; *New Wheel Hoe*, S. F. Leonard, Chicago; *Strawberry*, Jessie, F. W. Loudon, Janesville, Wis.; *Specimens of Printing*, J. Horace McFarland; *Preserved Fruits*, D. M. McCullough, Troy, O.; *Root Graft Cutter*, Washington Maynard, Assumption, Ill.; *Specimens Fruit Trees*, Nichols & Lorton, Davenport, Ia.; *Specimens Fruit Trees*, Oakland Nursery Co., Forgy, O.; *Tobacco Soap*, Rose Mfg. Co., New York; *Specimens of Lithographs*, Stecher Lithographic Co., Rochester, N. Y.; *Hand-cart and Barrel Carrier*, Wind-mill, Tools, etc., Sandwich Mfg. Co., Sandwich, Ill.; *Tools and Supplies*, J. C. Vaughan, Chicago; *Tree Digger*, N. A. Whitney, Franklin Grove, Ill.; *Strawberry*, Warfield's No. 2, B. C. Warfield, Sandoval, Ill.; *Teas*, Weeping Mulberry and Retarded Trees, Jas. B. Wild & Bros., Sarcoxie, Mo.; *Western Union Strawberry*, Fred C. Withoff, Dayton, Ohio.

## Southern Trees Can Not be Acclimated to the North.

[By Josiah Hoopes, before the American Nurserymen's Association, Chicago.]

The popular theory that vegetation from a warmer climate may be gradually inured to our own, by a system of nursing throughout a series of years, is untenable and unworthy of belief. Plant structure cannot be varied to suit the special degree of temperature wherein it may be placed. Taking advantage, however, of the system by which nature perpetuates trees and plants, we are enabled to produce, in a great measure, a new race with many of the characteristics of its parents; but we are unable to create new laws of our own and adapt them to plant life.

Several years since, in the firm belief that half-hardy vegetation might be acclimated in our Northern climate, the writer experimented with a *Magnolia grandiflora*, which is proverbially unreliable much farther north than Baltimore. Commencing with a seedling plant, it was wintered in a cold frame for three or four years, when a shelter of boards and leaves

was substituted during the winter months. This was successful for several years, although the protection was gradually lessened, to the apparent discomfort of the plant, which succumbed at last to the inevitable when the covering consisted of boards alone. This specimen at the time of its death had reached the height of twelve feet, and had produced flowers for three or four seasons.

A series of tests were likewise instituted with certain varieties of the Peach, the trees having been procured from widely different latitudes, ranging from the Gulf States to the extreme North. These were subsequently planted side by side in the same enclosure, the culture was precisely alike, and of course all the controlling influences were similar; yet in after years there was never the least perceptible distinction in the hardiness of trees, or in ripening and quality of crop.

Observation teaches us that vegetation peculiar to warm climates needs a much longer season than our own, to mature its growth, and perhaps more losses occur with us from injury to the immature tissue thorough the effect of cold northwest winds than from any other cause. Any system looking towards retarding growth in autumn, and a consequent early maturity of the plant, is a great point gained. And for this reason all species that are natives of a milder clime than our own cannot be forced with stimulating manures to the same extent as the indigenous flora, so that in testing the reliability of new and questionable trees and plants it is well to set them in rather poor soil.

The same controlling power which has adjusted the limit or endurance in the woody portion of our ligneous vegetation exerts a similar influence upon the roots of the humbler herbageous plants. The rudiments of a new life above ground are stored away in the roots of these during winter, ready and willing to start into growth the moment their immediate surroundings are congenial. In the case of species adapted by nature to a mild climate the roots are peculiarly sensitive to a low temperature, which destroys the delicate organism, no matter how careful we may protect them. In a word, they never become acclimated. Once tender and delicate they will so remain until the end of time, and no efforts of our puny will can change the immutable edict which ordained and called them into being. Occasionally one finds a solitary member of some tender species, which has apparently become inured to the colder atmosphere of our locality, but should this exceptional specimen be moved to a less favorable position, death will almost inevitably result.

These remarks are not intended to discourage my fellow members from judiciously experimenting with promising subjects, but rather to prevent the young and enthusiastic novice from being misled by the delusive charms of a novelty of which we are not fully advised. Too often have we all allowed our better judgment to be ignored when entering largely into the cultivation of certain trees and plants, resulting in loss and disappointment.

In conclusion, I might be permitted to allude to an opinion recently advanced by an advocate of the acclimating theory, which, however, does not influence in the least the immutability of plant life. The dissimilarity in hardiness, as shown by *Pinus ponderosa* of the Pacific coast, and its variety, *scopulorum*, from the Rocky mountains, is exceedingly marked; but as this character may vary in varieties as well as species, we see at a glance that such a course of reasoning has no bearing on the variation of hardiness in any one tree. This distinction may occasionally be noticed in individuals of the same species, natives of widely different latitudes; but that there has been any change since their creation we have no positive proof. All we know definitely is, that, for instance, certain plants of Red Cedar are entirely hardy quite far north, yet individuals of same species, removed from their southern limit, will not survive in the colder locality.

## The Work of Village Improvement Associations.

[Abstract of paper by B. G. Northrup, L. L. D., before the Indiana State Horticultural Society.]

What has been done in this line. In New Haven, Connecticut, in 1779, the first association of this kind, within my knowledge, was formed, with a secured subscription of \$1,500. "The Green," or public square, was graded, and the now majestic Elms were planted around it and along the streets. It is due to that association that New Haven is known through the land as the "Elm City." The beauty of the

city, of which its magnificent trees are a prominent feature, has drawn there great numbers of wealthy citizens, so that the annual taxes on the property thus attracted greatly exceeds the cost of all these early adornments.

Stockbridge, Mass., has been completely transformed by the Improvement Association, organized there in 1853, by Mary Hopkins. Nothing less than a photograph of the town, taken then, would convince the visitor that the unsightly village of 1853 is really the same town as the beautiful Stockbridge of to-day. Every

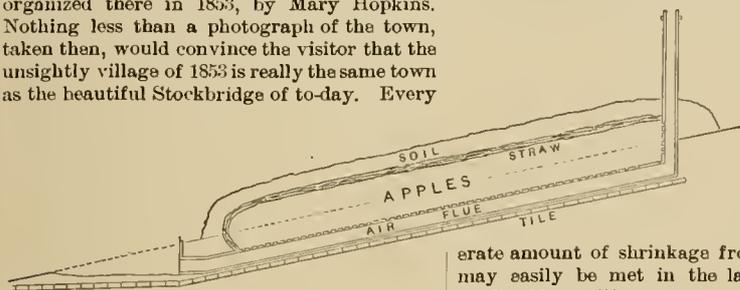


Fig. 2. Apple Storage: The side hill pit seen lengthwise.

acre of land and every home in Stockbridge has appreciated, by reason of the work of this association. Scores of wealthy people have been attracted here from New York, Boston and remoter points for summer residences or permanent homes.

The example of Stockbridge has been followed by many towns in its vicinity, like Lenox, Great Barrington and Williamstown, with kindred results. Sixteen years ago I aided in starting such an association in New Milford, Conn., which has made that formerly rough and neglected place the most beautiful town in the State. It would be easy to fill the hour with a narration of the towns which have been thus transfigured. This good movement has spread across the continent. Over three hundred such associations have already been organized.

**Raising Funds.** How can we raise the needful funds for village improvement work?

*First.* Enlist the ladies. Many efficient associations have been started by them, and nearly all are officered in part by them. This is woman's sphere. I always anticipate success in any town where one or two earnest ladies start this work.

*Second.* Interest the youth of the town, and give them something to do, in improving around their homes and by the roadsides. Let every child—boy and girl—help in planting some vine, flower, shrub or tree, to belong to the planter, or at least, to be known by his or her name. They will find a peculiar pleasure in the parentage of trees. They may be easily induced to bring trees from the forest and plant them without cost to anybody and will derive a lasting benefit from their own active interest in such work.

*Third.* The treasury may be replenished by membership fees, large or small, by fairs, lectures, concerts and other entertainments. The best way to begin this work is with a free lecture, setting forth the importance, aims and results of the movement, and then strike while the iron is hot by adopting a constitution and appointing the proper officers. Example: after such a lecture in Warwick Neck, Rhode Island, an association was formed, a constitution was adopted, the proper officers appointed and over \$300 raised by membership fees, in less than an hour after the close of my lecture. The next week \$2,000 were raised, and since then much more has been subscribed.

*Fourth.* Life memberships of \$25 each (more or less) should be secured. Let it be understood how this work bears on the prosperity of a town, and donations or legacies will come from unexpected sources.

*Fifth.* Invite the co-operation of non-residents of the town. Many whom fortune has favored are glad of such an opportunity. A beautiful village of tasteful, happy homes would be a proud monument for any man. Hundreds, and sometimes many thousands, of dollars have been given in this way for village improvement.

*Sixth.* Prizes are often offered by individuals or associations for the greatest improvement in private grounds, or for tree planting, giving, for example, \$60, \$50, \$40, \$30, \$20 for the longest and best rows of trees by any roadside. Two hundred dollars, offered in this way by a citizen of a town, stimulates a general and extraordinary interest in tree planting.

(To be Continued.)

### Cheap Storage For Apples.

[Mr. J. Jenkins, before the Ohio State Horticultural Society.]

One of the easiest and most rapid profits that a horticulturist and farmer can take advantage of is in the proper storage of the Apple crop. The October and November price of good winter

keepers is seldom more than one-third what the same fruit commands in the latter part of winter and early spring, so that a moderate amount of shrinkage from rotting, etc., may easily be met in the largely increased profit of late selling.

In earlier times quantities of Apples were preserved for the spring market by simply burying them in conical heaps, first placing straw over the heaps, then enough earth to prevent freezing; and even at the present time some of the choicest Apples that reach our late spring market are preserved in this well-known manner. Simply a modification of this old and well tried process is the method that I make the heading of this article.

Down a hillside an excavation (see Fig. 1) is made, which may be several feet deep and 8 or more feet wide at the top, and in the bottom, extending its full length, a trough is placed, made of a board one foot wide for the bottom, and boards 8 inches wide for the sides, with a little drain immediately below. This trough, extending up the full length, and in the bottom of the excavation, is covered with slats 1 or 2 inches wide, nailed across not over 1 inch apart. The sloping sides are then covered with Rye-straw, and Apples by the wagon-load are placed therein and covered with straw and earth from above to prevent frost from reaching them, as is done in the old way of burying fruits.

The trough below gives a circulation of cold air through all the Apples stored above it, and ends in a draught chimney at the upper end. In the very coldest weather the mouth at the lower end of the excavation may be closed, though while the thermometer remains 12° or 15° above zero it has proved an advantage to let the cold air circulate through. But in warm weather it is an advantage to keep the draught closed, thus retaining the cold that is already there. This simple and inexpensive arrangement has preserved Apples until late in the spring with scarcely any loss, and they come out for market bright, crisp and fresh, with no appreciable loss of flavor, and brought often treble the price they would have commanded in the best fall or early winter market.

### Grapes that are Fine but Hard to Grow.

[George W. Campbell, before Michigan State Horticultural Society.]

All admit that the fine Grapes are the most desirable, and the practical inquiry is, Why are they more difficult to grow; and how can these difficulties be overcome? The principal reasons why the finer varieties of Grapes are harder to grow are, want of hardiness in severe winters, and a disposition to mildew of the foliage in summer. Some of the finer varieties have but one of these difficulties to contend with; others have both. In localities where mildew does not prevail to an injurious extent, lack of hardiness in winter is so easily guarded against as to be practically of little consequence, in comparison with the gain of having fine Grapes.

Pruning the vines in autumn, as soon as practicable after the falling of the leaves, and laying the canes upon the ground, affords ample protection to quite tender varieties where there is regular snow-fall, and the vines are covered with snow during the coldest weather. In localities where cold is extreme, and without snow, it is necessary to cover with a little earth, and this I have found sufficient for the finer hybrid and tender varieties.

It is generally true that the finest quality in Grapes is accompanied with a more delicate constitution, and sometimes, but not always, with slender growth. Many of Roger's Hybrid Grapes, which are fine in quality, are very strong and vigorous in

growth; not specially inclined to mildew, and, though not hardy under extraordinary cold, will endure a temperature a little below zero, without much injury. I think they will all bear as much cold unimpaired as our cultivated Peach trees.

Among the most popular of Roger's Hybrids, I will name No. 3, or Massasoit, as the earliest and one of the best. Wilder, Lindley, Barry, Herbert, Salem, and Agawam, are all, when grown under favorable circumstances, finer in quality than the somewhat hardier sorts, Hartford, Champion, Telegraph, Worden, or Concord. By giving a little winter protection all the above named hybrid varieties can be grown with nearly as much certainty as the Concord, and its seedlings.

The Delaware Grape, which is still among the finest, only fails where the foliage is injured by mildew. In favored locations, where the temperature is equitable and the leaves remain healthy, the wood ripens perfectly, and the Delaware endures the severest winters without protection and without injury. It is also singularly exempt from rot, generally escaping from this malady when others are destroyed. Two varieties may also be named which are really fine, and which only require winter protection to be grown as easily, and in most places as certainly, as the Concord. These are Brighton and Jefferson. I have grown these varieties since their first introduction; and with me they are vigorous in growth, healthy in foliage, very productive, bearing large and handsome clusters, and of the best quality.

Wherever there is a market that appreciates and will pay for fine Grapes I believe it will be found much more profitable to grow these fine varieties, with the little additional trouble and expense of giving winter protection.

The other difficulty which renders some of the fine varieties hard to grow, the mildew, is not so easily overcome; but I have found that sulphur and quicklime in equal parts, blown upon the foliage of the Delaware, early in the season, upon the very first indications of mildew, has always arrested and prevented its spreading to any serious extent; and vines so treated have ripened their fruit and wood well, even in unfavorable seasons.

Another difficulty with the Delaware may be mentioned—its tendency to overbear. It will often set double the Grapes it can bring to maturity, and, unless they are promptly thinned out, the present crop will be lost and the vine enfeebled for many years to come.

A few other fine varieties among the hybrids of more recent introduction may be mentioned, which are partially tender in winter, and also subject to mildew in unfavorable seasons; and to grow these successfully not only winter protection, but remedies for mildew of the foliage, would have to be applied. Among these are Croton, Duchess, Senasqua. The Prentiss would probably come under the same class.

### Window Gardening Outside and Inside.

[From a Lecture by Mr. C. J. Murphy, before the Clonmel (Eng.) Industries Exhibition.]

**Arrangements of Plants.** I once stopped in the Rue de Rivoli, Paris, where I saw a lady move a Wardian case from the drawing room through a window to the balcony at the out-

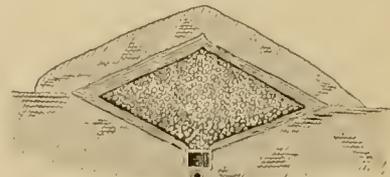


Fig. 1. Apple Storage: Cross Section.

side of the window. The case was on rollers; the window was accurately poised on pulleys; a pressure of the finger sent it up, and a similar pressure sent out the glass case from inside. It was in autumn, and though the days were very sultry, smart frosts frequently supervened at night; hence the advantage of such an arrangement.

This case contained principally Ferns—in the more shaded inside corners were Killarney Ferns, and a fine specimen of *Todea superba*. In it, centrally situated, was a miniature fountain, throwing its spray to the top, and catching it below in a small basin, where some goldfish disported; the same water was used over and over again, acting by its own pressure. The case was partially shaded, except in front.

The window balcony referred to was quite brilliant. Creepers ran up on both sides, such as *Ampelopsis Veitchi*, *Vitis purpurea* and while *Clematises* festooned overhead and drooped over the front, and as for other pot plants to be seen, they consisted of *India-rubber*, *Sweet Verbenas*, *Fuchsias*, *Begonias*, *Coleus*, and the more hardy *Palms*.

So much for a window-garden in one of the finest streets of the most brilliant city in the world. Yet I was told that the whole window arrangements did not cost \$25. This is one of the lessons I would emphasize—bright effects are often owing more to taste than lavish expenditure, and this is characteristic of the French.

I was subsequently shown an elaborate window arrangement in Oxford Street, London, in which were displayed some rare *Orchids*—nothing imposing, except to the initiated—yet one *Cattleya*, I was told, was very costly. I mention this by way of contrast, and as characteristic of wealthy London.

I am not sure if a window-box, noticed in Dublin, the cost of which must have been merely nominal, was not as effective, though it contained no flowering plant, its brilliancy being dependent on foliage. Suited in the box were fine specimens of *Coleus*, of the richest tints, capable of being lifted readily and taken inside if storms threatened to shatter the soft foliage. Alternately with these were small plants of *Berberis*, *Choisya ternata*, variegated *Aucubas*, and variegated *Euonymus*; while at each end, like feathery sentinels, waved two handsome specimens of *Acacia Iopantha*.

This box, together with the window-sill, were draped with variegated *Ivy*, and running up from a lower story, and skirting the window sides, were a *Sweetwater vine*, with brilliant foliage, on the one side, and *Passiflora carulea* on the other. This was not far from a brilliant balcony of flowers.

I have thus given illustrations showing that beautiful window effects are not dependent on great wealth, nor on flowering-plants alone. Indeed, a more lasting result can be obtained by combinations of leaf foliage of different sorts.

**Equipments.** The window-gardener who would succeed in growing to perfection any plant whatever in red pots on the window-sill, in the open air, would deserve a prize. One day's hot sun will roast the roots, if not watered—while a heavy shower will, as a rule, make them water-logged. A box is better, either with soil to put the plants in, or without soil, to drop the pots into. In either case, there should be holes to allow the superfluous water to pass away.

One great advantage in having the plants outside the window of a room, is that light and air are not impeded, and a further advantage is that the evaporation from the box or plants, which might be injurious in a room, passes away. As I have stated, windows intended for plants should either be worked by means of pulleys, to move readily up and down, or at least be capable of opening inwards. Windows only capable of opening outwards cannot be readily utilized when plants are being tended. An indispensable requisite, besides the plant box, is some good, loamy soil, not always easy to be had in towns.

**Suitable Window and Room Plants** Too constant watering is avoided by planting the edges of boxes etc. with *Sedums*, or hardy *Saxifrages*, or *Moss*. What is best to have in boxes is the next question.

I am not sure if I were limited to one annual that I would not grow *Mignonette*, which would scent the air all around it until cut off by the frost in December. Variety might be produced by having *Asters* or *Stocks* growing through the *Mignonette*, or the box might be edged with *Blue Lobelia*, and have *Sweet Peas*, *Canary Creepers*, and *Pelargoniums* of different sorts behind.

When the annuals begin to decline, at once remove them—say in September or October—and plant bulbs of various kinds—*Crocuses*, *Snowdrops*, *Daffodils*, *Hyacinths*, &c., and a succession will be obtained at a trifling cost the whole year round. This shows how one can be agreeably amused, who may have but a window-sill to grow plants on.

Indoor, without any forcing arrangements, plants of various kinds can together be had in bloom the whole year round—say *Chrysanthemums* and late *Fuchsias* during October and November; early *Hyacinths* and *Lily of the Valley* at Christmas; *Daffodils* and *Dielytra*, and the beautiful *Nile Lily*—best of all room-plants—during the spring months; *Pelargoniums*, *Tea* and *Perpetual Roses*, with *Fuchsias* and *Japanese* and *American Lilies*—capital window-plants—during summer; while, for variety, many of the fine-foliaged plants, such as *Yuccas*, *Aloes*, *Aspidistras*, *Grevillea robusta*,

several *Palms*—such as *Phoenix sylvestris* and *P. reclinata*, *Chamarops excelsa*, and *C. Fortunei*—with proper treatment, will last healthy for years. In fact any plant with fleshy or coriaceous foliage will stand well the dry atmosphere of rooms. Generally, small pots are to be preferred.

Some one member of the family should take charge of the plants. Sponging or syringing the foliage is most desirable; and, lastly, water should not remain in saucers, with the one exception—that of the *Musk plant*.

### The Life of an Apple Tree.

[Abstract of paper by Charles Teubner before Missouri State Horticultural Society.]

A prominent horticulturist has said that an Apple tree was of little profit after its twenty-fifth year. But I have seen abundant evidence that such need not be the case, and that we can add years of usefulness to this, our king of fruits.

**Causes of Shortened Life.** 1st. Poor or exhausted soil, or such as does not afford proper drainage.—2d. Overbearing.—3d. Allowing the trees to stand for years in the sod.—4th. Omitting to replace by artificial means, the fertility which crops of fruit draw out.—5th. The want of sufficient moisture during droughts. In short, it is the enfeebled condition into which it is forced that causes the tree to die prematurely.

Some secondary causes of decay are injury by borers, rabbits, mice, cattle and sheep, the plowshare and doubletree, heavy pruning, and the sowing of grain among young trees.

In order to give trees a longer lease of life, we must hold the following points in view:

**A Rich, Deep, Well-Drained Soil.** In 1847-8 my father planted some fifty acres to orchard, mostly of Apple trees. About one third were planted on the flattened ridge of a hill, one-third on the eastern side of it, and the other third at the foot. In from twenty to twenty-five years the trees on the side of the hill gradually died off, those on the ridge soon following; but those on the lower ground stood for years after the others were gone. The reason for this was obvious. While the trees on the hillside and ridge were being deprived of the rich layers of top soil by rains and melting snows, those on the lower level not only retained most of the original soil, but received valuable additions. Some of the same varieties which stood on the lower ground were also distributed on the side and ridge.

It is a serious mistake to plant Apple trees on poor soil. Nor should it be so steep that the best soil is soon washed away.

**For Strong Constitution,** build up from the start. All planters of experience agree that young trees start off quicker than the old ones, become better established, and will live longer. Rich soil and cultivation will not only make the tree thrifty and strong, but it also tends to save it from the injury due to over-bearing.

In thus building up, the tree will require some longer to come into bearing, but to the gain of the future. Trees which naturally come late into bearing, are strong and robust growers (probably because of this), as for instance the *Yellow Bell flower*, *Northern Spy*, *Large Romanite* and others. These outlive by from ten to twenty years such early bearers as the *Winesap*, *Ben Davis*, and the like.

**Over-bearing of Young Trees.** By this many are irreparably injured. Many planters are so afflicted with the early nickel in their eye, that they sacrifice the prospective dollar. Trees just coming into bearing should be carefully watched, and if the crop forming is too large for their strength, evil should be averted by thinning.

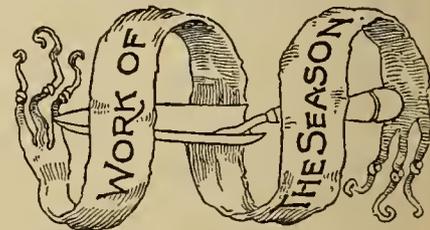
**Nourishment.** When the soil is not sufficiently rich it should be made so by applying fertilizers, or clover plowed under. For strengthening and renovating Apple trees, wood ashes are the true elixir of Apple-tree life. Nothing is so deleterious as grain, while long-continued grass-sod comes in second. These drain the moisture just when trees most need it. After a few years of cultivation clover may be sown to advantage, the first crop be used as mulch, and the second crop plowed under.

**Mulching** is a prime factor in keeping a tree at a vigorous, healthy growth. Enriching the orchard soil with manure is with many an impossibility, but a mulch to a great extent answers the same purpose. It retains moisture, and the tree will flourish, even in a moderate soil. We have proofs

of this in rainy seasons when crops flourish in even ordinary soils. For this purpose, straw, corn stalks, grass, and even weeds, or as mentioned, clover, cut in the orchard, is near and easily supplied.

An example of the value of mulching: In my yard is a *Ben Davis*, twelve years old, from the body of which the bark was gnawed several years ago, by mules, to such an extent that I considered the tree past all redemption. It never bore, and the limbs on the injured side (almost one-third of the tree), were in a dying condition. Last winter I piled our stove-wood all around it, four or five feet high, and to a radius of six or seven feet. The fruit set, and kept on growing on the sound limbs, which showed a considerable improvement in growth, and even the diseased limbs showed signs of life. The improvement continued all summer in spite of drought, and the tree ripened one-and-a-half bushels of fruit. It would have died in a year but for the mulching.

A word of caution to the inexperienced: Never apply mulch close to the tree; under cover of it mice will girdle them, old or young, like a rabbit. Besides, the fibrous roots or feeders are farther from the trunk. To get the best results mulch with a lavish hand, especially on poor soil. It should extend out beyond the extremities of the limbs, leaving an open space around the trunk from two to three feet or more in diameter.



PREPARED FROM DIARY NOTES BY CHAS. E. PARNELL, QUEENS, N. Y.

### HOUSE PLANTS.

**Abutilons.** Turn the pots occasionally to prevent rooting through into the plunging earth.

**Allamandas** flowering freely should be given liquid manure at times. Cuttings of the half-ripened wood will now root readily.

**Begonias.** Flowering ones to be shifted into larger pots, neatly staking as required.

**Callas** can now be started up. They do not want too large pots. Drain well.

**Chrysanthemums.** Give liquid manure now once a week. Stake as required.

**Geraniums.** For winter treat as for *Abutilons*. The fragrant varieties should be kept pinched for nice bushy specimens.

**Ivy Geraniums.** Old plants to be lifted should be cut back; then as growth starts place in rather small pots. Young plants to be shifted up for rapid growth.

**Lemon and Orange trees,** will be greatly benefited if their leaves and stems are occasionally sponged with soapy water. Repeat if necessary.

**Mahernia odorata** should be repotted about the middle of the month. Keep the young plants growing rapidly.

**Palms.** Repot as required. Sponge off the leaves occasionally, seeing that the young ones receive no injury. Keep well watered.

### FLOWER GARDENS AND LAWNS.

**Ageratum** for winter flowers to be cut back.

**Asters.** Tie neatly to stakes and stir the ground between them often.

**Climbing Vines** require training so long as there is space to be covered by them.

**Climbing Roses.** Prune away the superfluous shoots, tying the remaining ones neatly up.

**Coleus** and other like foliage plants to be frequently pinched back for the inducing of compactness and shape. Young plants for wintering over now to be propagated.

**Dahlias.** Keep them tied to stakes. For fine flowers some of the branches should be removed. Allow but one main shoot to a plant.

**Euphorbia jacquinesflora** should be repotted early in this month, and strong shoots be pinched back for inducing bushiness.

**Everlasting Flowers** for winter use should be gathered before fully expanded, tied in small bunches, and these hung, with heads down, in a dry, shady situation.

Generally one should aim for neatness; should stir the soil often between the plants, remove decaying flowers, leaves, etc., provide stakes to all plants needing them, water thoroughly as required, permit no plant to become infested with insects.

**Lilium candidum.** This is the time for bulbs to be taken up, separated, and replanted.

**Ornamental Shrubs** that were pruned earlier should still have any strong-growing shoots tending to unshapeliness pinched back. Many kinds can now be increased by layers.

**Pansy.** For spring flowering the seeds should now be sown in a nicely prepared cold frame, covered with white-washed sash.

**Rhododendrons.** The seed vessels should be removed from these if not already done.

**Vases and Hanging Baskets** will be greatly benefited if given liquid manure twice a week. Remove all dead and decaying foliage and loosen or stir up the soil between the plants with a sharp stick occasionally.

**Verbenas** to be pinched back or pegged down as needed, for covering the desired space.

**Violets.** Keep well tilled and all runners down.

#### PLANT CULTURE UNDER GLASS.

**Achimenes** must never get dry at their roots. This occurring a few times and the beauty of the plants will be gone. They delight in warmth and humidity of atmosphere.

**Cissus discolor** can now be easily slipped, using half-ripened wood. Give the old plants as warm and moist a situation as possible.

**Climbing vines** inside should be freely syringed to keep insect pests in subjugation. Train, and remove all dead twigs, leaves, etc. In lieu of frequent repotting give liquid manure freely.

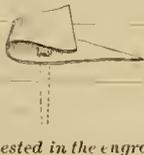
**Ericas, Epacris, Diosma fragrans, Chorozamas,** and similar hard-wooded plants to be repotted if necessary. Pinch back the leading shoots occasionally. Water thoroughly when at all, and sponge off every evening.

**Ferns.** Repot as needed. Keep well supplied with water at their roots, and in a warm, moist atmosphere.

**Gloxinias.** After blooming remove to a cold frame, and reduce on watering very gradually. Place the frame on a coal ash bed, and shade the sashes heavily.

**Repairs.** Any that are required either in the buildings or heating apparatus should be attended to immediately. About now it is well to remove as many of the plants as possible, wash all the wood-work thoroughly, and repaint. All greenhouse structures should be painted both inside and out every other year.

To keep a nail from drawing out of a greenhouse or other roof: drive it through a triangular bit of zinc or tin bending the wide end down close to the nail head somewhat as suggested in the engraving.



**Repotting.** A general job of this may now be done so that the plants may become established before the cold weather sets in. Always use porous and clean pots proportionate to the size of the plant. Drain them well. The plant should stand in the center of the pot.

**Rhynchospermum jasminoides.** When done flowering wash the leaves and branches thoroughly with soapy water to destroy the insect pests which often are had. Repot if necessary. Plants in the border to receive a good dressing of rotten manure.

#### FRUIT GARDEN AND ORCHARD.

**Apple Trees.** Spring-set trees should be kept well mulched. Trees longer set should be carefully examined, all superfluous shoots removed, and all that require it pinched back, for obtaining well-shaped heads. For large specimens of fruit severe thinning should be resorted to.

**Blackberries.** After fruiting cut out all bearing canes. Pinch back new shoots as they reach five feet, and side shoots at about eighteen inches.

**Currants.** If not already done, all weak and superfluous wood to be removed, all suckers well thinned out. Keep the bushes well cultivated, and never permit them to get half smothered with weeds.

**Insects.** Vigilance is still necessary. The fall caterpillar is apt to prove particularly injurious to Apple and Pear trees. Destroy as soon as seen.

**Pear Trees.** Look over early in the month and remove all inferior or wormy fruit.

**Quince Trees** can be layered during the month.

**Raspberries.** Treat as for Blackberries. To increase them do not pinch the leading shoots but secure such to the earth and shortly after they will root and form fine plants.

**Strawberries.** Keep the beds well cultivated. For making new beds the runners may be rooted into small pots, and as these are filled with roots transfer to the permanent bed. This should be done as early in the month as possible for a satisfactory crop next season.

#### VEGETABLE GARDEN.

**Beans** of the bush class can for a succession be sown up to the middle of the month. Thin out, and hoe frequently the earlier sowings.

**Brussels Sprouts and Broccoli.** Cultivate the soil deeply during the season of growth.

**Celery.** For early fall use a supply should be earthed up as soon as it can be handled. In earthing up be careful not to get any soil into the center of the plant. The winter's supply should not be earthed up this month, but it must be freely cultivated in order to keep it clean and free from weeds.

**Chervil.** The tuberous sort can now be sown.

**Corn Salad** may now be sown in drills a foot apart, and say a quarter of an inch in depth. When up, keep well cultivated.

**Cress or Pepper Grass.** Sow in a deep rich soil in shallow drills one foot apart every two weeks.

**Cucumbers.** A sowing should be made early in the month. From the earlier sowings promptly gather all fruit as it reaches the desired size, being careful not to injure the vines.

**Cultivation.** Kill all weeds promptly as soon as they show up. Keep the ground between all growing crops that admit of it well stirred by cultivator, hoe, or rake. As one crop is removed let another take its place if possible.

**Endive.** Sow at intervals for a succession, thinly, in a nicely-prepared border, and as soon as they can be handled transplant the plants into rows eighteen inches apart, and at a foot in the rows. Tie up and bunch as desired for use.

**Leeks.** Draw earth up to them as they grow.

**Lettuce.** Sow every two weeks for a succession.

**Melons.** Promptly remove all small and imperfect specimens, aiming not to injure the vines.

**Onions.** As soon as the tops become yellow and fall down gather and place in thin layers in a dry shed to cure. Later, store in a cool dry situation.

**Peas.** About the middle of the month a sowing of some early variety may be made. If given a deep, moderately-enriched soil a fair crop may be expected if the season should prove favorable.

**Radish.** Sow occasionally in well-enriched, deep soil for a constant succession.

**Spinach** can now be sown for the fall crop. The large, Viroflay is the most suitable for this purpose.

**Sweet Potatoes.** Hoe frequently, and move the vines occasionally to prevent rooting at the joints.

**Turnips.** Sow for winter use in drills about eighteen inches apart, and thus securing easy cultivation. Thin out when large enough to handle. The White Egg, Cow Horn, White Strap Leaf, Flat and Yellow Globe are among the most desirable sorts.

**Walks** in the garden should be kept clean, raking and rolling quite often.

#### FRUIT AND VEGETABLES UNDER GLASS.

**Figs.** During hot weather copious supplies of water at the roots and occasional syringings are needed. Plants in tubs or hoxes if not watered thoroughly are liable to have the fruit drop off. Weekly applications of liquid manure are helpful if the tubs are well filled with roots.

**Grapery.** In the earliest houses air should be freely given, and the vines kept in a state of rest. In the successional houses the fruit will be about ripe. Air freely, and withhold all moisture. Keep the late houses as cool as possible. Dampen them down and syringe freely, and fumigate at least once a week.

**Guavas** in pots or tubs must not be permitted to become dry at the roots or else the fruit will drop off. If the fruit has set freely thin severely.

**Peaches, Plums, and Nectarines** in cool houses should be freely syringed until the fruit shows signs of approaching maturity, when the supply of water should be gradually reduced, and entirely withheld before the fruit ripens.

## INQUIRY COLUMN

This being the People's Paper, it is open to all their inquiries bearing on gardening. Correspondents are urged to anticipate the season in presenting questions. To ask, for instance, on April 15 or 20 what Peas had best be sown, could bring no answer in the May issue, and none before June, when the answer would be unseasonable. Questions received before the 10th of any month stand a good chance of being answered in the next paper. Not more than three questions should be sent at one time.

Replies to inquiries are earnestly requested from our readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.

374. **Encharis Amazonica.** A plant I purchased in May has died down. I put it in charcoal. When should it be started up, and how treated?

375. **Small Fruits South.** I desire to raise a general variety of these. Will some one please tell me as to the best varieties for the warm climate, also where to plant, how soon they will yield, where to get stock, etc.?—Annie E. Terry, DeKalb Co., Ga.

376. **Botany for Beginners.** Will you please name me a course in Botany, not too costly, in which I could learn all about native plants?—Mrs. W. M. B., Huntsville, Texas.

377. **Raspberries Turning Yellow.** What is the cause of Cuthbert leaves turning like sample, being the worst on black muck? If a disease, what is the remedy?—Royal Oak, Mich.

378. **Trimming Evergreens.** Will you kindly advise me through your columns of the best time and manner for trimming evergreens, especially Norway Spruce and Cedar.—W. J. McCune.

379. **What Kills Peaches.** Would some one throw light upon this subject? Can there be fruit if the thermometer indicates ten or twelve degrees below zero?—A Subscriber.

380. **Fuchsia Leaves Crinkled.** In the spring my plants showed this ailment a good deal, although seeming to do well otherwise. What is the cause, and would it be safe to propagate from such plants?—G. C., Hillsdale, Mich.

381. **Insect in Rose Buds.** By opening the buds mailed you will find some lively insects under the outer leaves. For two years I have had almost my entire patch destroyed. Buds escaping open looking dwarfed and diseased. Can you give remedy?—W. S. Wood, Shawano, Wis.

382. **Ornamental Trees for Georgia.** (a) Will some one please name twelve ornamental trees suitable to Middle Georgia? (b) Will the New Japanese Catalpa and the Musa Ensete come up to description in April number?

383. **Norway Spruce South.** Will Norway Spruce thrive in this section, and would you recommend "wind-breaks" for orchards in this latitude?

384. **Books on Rural Art.** Please name some reliable work on cottage building, one on arrangement of grounds, and one on Grape culture and wine making.—No. 422, Forsyth, Georgia.

385. **Summer Pruning of Grapes.** What are the simplest directions you can give for this operation?—J. Muggs, Hudson Co., N. J.

386. **Currants, Etc., as Trees.** Is it difficult to grow them thus, and how?—Novice, Erie Co., Pa.

387. **Curing Evaporated Fruit.** Must Raspberries, etc., necessarily undergo a "sweating" and stirring-up process after evaporating? I have seen nothing in print on this point.—H. M. P.

388. **Black Raspberries.** Will you please give us the outlook for Black Raspberries in Western New York?—E. A. R., Chicago.

389. **Soot for Plants.** In the recommendation recently given for its use, is the black dust found in pipes in which coal is burned referred to? How strong should it be?—M. H. G., York, Pa.

390. **Watering Agapanthus.** Are these the better off with the pots in pans of water.—T. C.

391. **Wintering Tender Plants.** I have no greenhouse. I have one or two cold frames, a splendid dry cellar with plenty of light, also a large garden; and if I have to stock it every year with flowers it will be an expensive job. How can I raise young cuttings of Geraniums, etc.? I mean, how can I keep them through the winter? Is it not possible?—North.

392. **Liquid Manure.** The only liquid manure I can get is of a very simple kind, viz., fresh horse droppings, which stand in water for 24 hours. Is this mixture—a dark brown—suitable for Roses, Chrysanthemums, and Dahlias?—R. Abel.

393. **Earthing up Celery.** I am starting more largely in Celery culture than in the past and would be thankful for explicit directions on earthing it up.—C. Walter, Genesee Co., Mich.

394. **Training Lima Beans.** What height is most desirable for having the poles for these? Some I see recommend as high as eight feet above ground.—Young Amateur.

395. **Lilium Candidum Failing.** I planted a lot a year ago which failed to flower this year and

have now withered down. Bulbs taken up seemed to be rotting. What shall I do with them?—*Mary L., Warren Co., Indiana.*

396. **Dressing for Roses.** What is meant by "a good dressing of guano" for outdoor Roses, and how often should it be given? I mixed a dessert spoonful of guano with five times the quantity of soil and put on the ground round a Charles Lefebvre Rose, which soon died. Could this have killed it?—*Blunder.*

397. **Azaleas and Camellias.** My Azaleas, which I have repotted since blooming, have lost nearly all their leaves and two of the plants have died. They have been outside for the last month. My Camellias also are troubled, but with a queer kind of blight or bug, which makes the leaves turn quite limp and fall off. The insect on the leaf is brown, hard, and can only be removed by pressure. What can I do for my plants?—*Mrs. G. W. S.*

398. **Crown Imperials Not Blooming.** Can some one suggest why my plants of these should not have flowered this year?—*J. G. G.*

399. **Birds and Vineyards.** For several years robins and other birds have come to my vineyard, destroying the crop. No doubt they will be on hand again. What would you do to prevent their serious depredations?—*Grape Grower.*

400. **Planting Evergreens in the Fall.** Some recommend August and September. Is it a good time to plant?—*James Mayfield.*

401. **Auriculas.** (a) Where can I procure Auricula plants? (b) How shall I proceed to raise them from seed? I have often tried, but so far without success.—*Geo. L. Adams.*

402. **Apples for Washington Territory.** Kindly name some sorts of Apples that succeed in Washington Territory. I find the climate of this region approximately more like that of England than of the Eastern States and even Canada. Our summers are too cool to mature your best-known sorts. It is not interesting to get Baldwin's the color of Greenings, and so on.—*"Pomo," London, England.*

403. **Rose for Wisconsin.** What is the most hardy and prolific Rose, and the best time to order and plant two 3 year old roots for immediate blooming. Thermometer goes down to 45° below zero in winter. Roses do well generally.

404. **Plums for North.** What kind of large Plum will be hardy here where season is 2 to 4 weeks shorter than at Buffalo?—*W. S. W., Shevono, Wis.*

405. **Lucretia Dewberry.** Will some correspondent tell us (a) how best to train Lucretia Dewberry on trellise or in hills with stake supports or left to run wild? (b) Is it profitable for market? (c) Should it be planted near some productive Blackberry, the Snyder, for example, to fertilize it? (d) In the cold North do the canes require covering over winter?

406. **Brush in Balsam Flr.** A fine Balsam, say 3 feet high when set out 34 years ago, now 50 feet high, a foot or more in diameter at base, well furnished from the ground, has much dead brush inside along the main limbs. Should this dead brush be taken out or would that let the sun in too much? Manuring and cultivation I think have kept it alive and vigorous.—*F. K. Phoenix.*

407. **Fall Planting of Fruit.** (a) Having some land to plant, I would ask if it is safe to set trees etc. in the fall and what kinds? (b) Where can I get the Alexander Apple on Paradise stock?—*A. M. B.*

## REPLIES TO INQUIRIES.

276. **"Chinese Lily."**—*Pardanthus Chinensis.* Too rich soil, too much moisture, too much shade, will cause luxuriant leaf growth and few flowers. In an old field near here, in open, rolling, poor soil, there is a patch of this Lily several rods wide. It escaped from cultivation and naturalized itself with the freedom of a Day Lily. In this patch it does not grow as luxuriantly as it does in our garden, but it blooms better.—*W. FALCONEA.*

316. **Tuberous Tropæolums.** Such species as *T. tuberosum* T. pentaphyllum and *T. polyphyllum* are not reliably hardy, hence should be lifted and stored in sand, sawdust, or earth, in a box in the cellar over winter. Let the distance apart and depth be governed by the size and soundness of the tubers. Say a foot apart in the row and three inches deep for good sized tubers. They often are very refractory plants and refuse to be comforted at any price. In cool, moist places, and an eastern or southeastern exposure *T. speciosum* (which has thick, cord-like roots), may live, but, really, I haven't seen a decent plant of it in the country. I have given up bothering with it.—*W. F.*

352. **Planting by Moon.** Thus far I have failed to see any advantage gained where I have seen it practiced. For one, I choose to plant in the earth and let others plant in the moon. The best time I ever found was when the soil was in the right state, and the weather favorable. That the gaze of the man in the moon should have a propitious influence upon the vegetating germ is beyond our comprehension. His smiling, face, to be sure, is ever turned towards us, for astronomy demonstrates his inability to give us the cold shoulder, though he shows the shady cheek part of the time. If, as has been asserted, his bright reflections are deleterious to the sleeper, why not to the plant? We well remember the sedative influence they had in our

younger days, "when mellowed to that tender light, which Heaven to gorgeous day denies."—*X.*

354. **Fuchsia Storm King; Frau Emma.** These names refer to the same variety.

366. **Blackberry Rust.** This is a case of the well-known Blackberry rust, the bright orange powder being the spores of the fungus. To dig out the affected plants and burn them is no doubt the best advice that can be given. Professor J. C. Arthur, of the New York Experiment Station, says that we are entirely in the dark regarding several important items concerning the rust. The spores may be able to germinate at once upon the Blackberry and thus spread the disease rapidly, or they may only be able to grow upon some other kind of plant at first, and then return to the Blackberry; in which way, is not known. Does the fungus produce another set of spores to tide it over winter, or does it live inside the Blackberry plant, and for distribution depend upon the orange spores, which from their delicacy are evidently summer spores? We cannot tell. Here is a chance for a valuable but difficult investigation. In the meantime the best practice is to give good cultivation and extirpate all diseased plants.

370. **Pale Marechal Niel Ross.** It is the opinion of some growers that there are two forms of this Rose, and we have seen two plants in the same garden, one of which afforded rather small and pale, and the other large and rich golden blooms, but we do not for a moment suggest that yours is an inferior form. We suspect there is something wanting in the soil in your district that is necessary for imparting richness of color to the blooms, but we have in mind an example of a plant budded from a Rose of deep color producing pale blooms, though the stock may have had some influence on the change. The liquid manure you have given would have a tendency to deepen the color, rather than the reverse. Some authorities are of the opinion that a trace of iron in the soil intensifies the color of flowers, hence iron filings have been employed for changing the color of Hydrangeas. An experiment appears to be worth trying of sprinkling iron filings on the ground over the roots of one of your plants, or giving water impregnated with iron. We have no experience of any such trial, but know that Roses color well in soil containing iron; whether the blooms would be equally rich without it we do not know.

377. **Raspberries Turning Yellow.** Neither Black or Red Raspberries thrive well on low, wet, mucky soil. The white leaves are caused by excessive moisture and lack of the required fertility. Foliage of corn will turn white when the soil is too wet. I see no trace of disease or insects' work. *CHAS. A. GREEN.*

379. **What Kills Peaches.** It is not the extreme cold that kills Peaches. Take it in a dry fall, when the ground freezes, as it usually does, before we get late fall rains, if this is followed by cold weather in December, for successive days, with brisk, cold winds, as was the case two years ago, then the Peaches will suffer. I recall one year when, the day previous to Christmas, we had 200 peach trees which were then all right. We had extremely cold weather two or three days previous but it did not seem to hurt the life of the trees. Then came a cold wind, and it seemed to kill the buds. Formerly when Peaches were a sure crop I think they used to have as cold weather as we do now. *Woon.*

380. **Fuchsia Leaves Crinkled.** The leaves sent are not unusual. It usually arises from the plants being grown in too low a temperature, and in too moist and rich soil which is not favorable to root action. The only remedy we know is to afford the plants a light position in a house with a temperature of 50° to 55° artificially, avoiding a saturated condition of the soil, increasing the supply of water as the plants increase in growth, thus giving evidence of free root action. It also arises from sudden depression of temperature, or from currents of cold and dry air following a dull and moist period. It seldom or never attacks plants grown in the open air. Sometimes the crinkling is a consequence of the attacks of angle worms, probably due to an excess of organic matter in the soil, and is common not only to Fuchsias, but Pelargoniums. It is advisable to cease propagating from such plants.

381. **Books on Rural Art.** On cottage building, "Read's Cottage Houses for Village and Country," price \$1.25; on arranging grounds, "Long's Ornamental Gardening for Americans," price \$2; on grape culture, "Fuller's Grape Culturist," price \$1.50; on wine-making, "Hessman's Grape Growing and Wine-Making," price \$1.50. These can be ordered through this office.

385. **Summer Pruning of Grapes.** We never summer prune Grapes, but simply rub off the new growth from portions of the vine where it is not wanted. *A. M. P.*

See article on page 186 of this number.

386. **Currants, etc., as Trees.** To grow Currants and Gooseberries in tree form simply rub off new growth on lower part of stalk.

387. **Curing Evaporated Fruit.** Yes. It is necessary to throw Raspberries over two or three times after being evaporated to cure properly, and too, screens must be kept in the windows to keep

flies out of the room. Our plan adopted this summer is to put in paper sacks as soon as dried, and when rush is over, run them through evaporator and thus take out sweat and dampness.—*A. M. P.*

388. **Black Raspberry Crop.** As near as we can judge and from information we can gather in this great Black Raspberry section there will not be over two-thirds of the crop of last year, because of being badly winter-killed the past winter. In some localities they are badly damaged, while in others they are but little hurt by the changeable open winter, freezings and thawings.—*A. M. P.*

401. **Auriculas.** The plants may be procured of John Saul, Washington, D. C. A packet or two of seeds procured in the spring will give a good supply of plants for another season's bloom. The seed should be sown in March or April in a well-drained pot or pan, filled with light, loamy, soil. Sow thinly, and cover slightly with fine, sifted soil. Place in a warm, moist situation, as close to the glass as possible. Water should be very carefully given whenever necessary, and as soon as the young plants are strong enough to handle they should be transferred into shallow boxes, and placed in rows an inch and a half apart each way. Auricula seed vegetates slowly, and the young plants are slow in making their appearance.—*CHAS. E. PARNELL, Queen's, L. I.*

317. **Raspberries Ailing.** I think that your best course will be to remove all plants as soon as they show indications of any ailment.—*C. E. P.*

333. **About Ixias.** This is a genus of beautiful Cape bulbs embracing a great many species and varieties, and all of them well worthy of cultivation. They are half hardy, and should be grown in pots for the greenhouse, where they will show their handsome flowers about January. They can be easily grown doing well in a compost composed of two-thirds leafy loam, one part well decayed leaf mould. Drain the pots well. When done flowering gradually dry them off, until September when they should be repotted and started into growth. After the bulbs are potted in September they should be treated precisely as Hyacinths. *CHAS. E. PARNELL.*

351. **Mildew on Plum.** Procure a bottle of Henderson's Mildew Mixture, and apply according to directions. *CHAS. E. PARNELL, Queen's, L. I.*

352. **Planting by the Moon.** Planting or sowing in any particular phase of the moon has not the least effect on growth, productiveness or anything else. *C. E. P.*

354. **Fuchsia Storm King; Frau Emma** are identical. I think that the former name has come to stay. *C. E. P.*

355. **Books on Flowers and Seed Growing.** Brill's Farm Gardening and Seed Growing is the latest work on seed growing. Breck's Book of Flowers, Ellwanger on the Rose, Henderson's Practical Floriculture, Long's Home Florist and Ornamental Gardening, Rand's Garden Flowers, William's Window Garden, and Vick's Floral and Vegetable Garden, will all give you a great deal of useful information. *C. E. P.*

369. **Blackberry Rust.** Cut off and burn all infested branches immediately. If this does not keep it in check you had better destroy the infested plants. *C. E. P.*

371. **Young Asparagus Bed.** Do not cut the tops off until the seed commences to ripen in the fall. *C. E. P.*

373. **Roses From Seed.** They will bloom when from two to four years old. *C. E. P.*

362. **The Fragrant Olive.** This requires but little skill or experience to cultivate. During the summer plant it out in a deep well enriched border in a partially shaded situation, and early in September it should be taken up and potted. Use a porous or soft baked pot and let it be proportionate to the size of the plant, care being taken to drain it well. Give it a compost composed of two-thirds turfy loam, one-third well decayed manure. In the winter give it a light sunny situation and an average temperature of fifty degrees. Water copiously during the summer, less in the winter. *C. E. P.*

365. **Violet Seed.** You cannot procure seed of the Swanley White Violet. You will have to procure plants. Some of our seedsmen would no doubt procure seed of the English Blue Violet (*Viola odorata*) for you. *C. E. P.*

367. **Young Canaries.** I think it is indigestion caused from feeding improper food that ails the canaries. Food for nestlings should be prepared fresh daily, as it will sour if kept longer. C. J. should send 15 cents to Bird Food Co., 247 S. 8th St., Philadelphia, and secure a copy of the Practical Book of Cage Birds, telling how to keep different varieties in health. *G. C. B.*

342. **Grapes Shriveling in Winter.** Over-dryness of the air is what causes shriveling. A cool basement rather dry is perhaps the best place for keeping Grapes, but here they should be in boxes, and these kept tightly covered. Where this fruit is preserved fresh on a large scale, it is done in houses specially prepared for securing a uniform temperature, not excessively dry, by filling the walls with sawdust. The Malaga Grapes that are in such large quantities imported fresh from Spain for the winter trade in America are remarkable

for their fresh and bright appearance, and these are packed in cork chips. Paper laid between the clusters in packing for winter tends to favorably confine the natural moisture of the fruit.

**393. Earthing Up Celery.** This is a simple enough operation, and perhaps, because of its simplicity, it is often very carelessly done. After a heavy rain, or else a good watering artificially, the suckers or side leaves are pulled off; each plant is then held, or better yet, tied up closely with bast matting to keep the soil from getting between the leaves; the soil is then chopped down from the sides with a spade and pressed closely amongst and against the plants with the hands to such a height only so that the young leaves springing from the heart of the plants shall not be in any way crippled by it; the ties used are then cut off and the operation is complete. We have tried Celery collars for the purpose of keeping out the soil from the heart of the plants, and also the plan of letting one man hold the plants whilst another puts in the soil, but tying with matting has proved to me to be the best way, though it takes longer to do. I give preference to successional earthing, rather than that the earthing should be left till the plants are full-grown. The quality of the Celery is much better when the earthing is done at intervals than when done all at once.—W. M. H.

**331. Insect in Rose buds.** The Roses are undoubtedly affected by one of the most destructive pests that Rose growers have to deal with. It is the larva of one of the Gall-Midges of the Genus *Acidomyia*. If your correspondent has full control of his Roses under glass the best remedy is to fumigate for 6 or 8 evenings very strongly with tobacco in the usual way, so as to effectually kill the fly, and cut off all the buds and burn them. Continue this treatment for 3 or 4 weeks. If the Roses should be outside it is more difficult to get rid of this pest. I have found repeated applications of Hammond's Slug Shot a great help, but the crop of flowers that are affected must be cut off and burned, whether outdoor or in. A good plan is to go carefully over every plant and take off every flower and burn them, then fumigate as before stated, or apply Slug Shot. In every case it is a most troublesome pest to get rid of, but by persistent effort it can be done. Last fall I journeyed to Philadelphia to my old friend, W. K. Harris, who had a house badly affected and was treated as described, and I had the pleasure to know that the enemy was completely routed after one or two severe doses. The fly becomes active at night, deposits its eggs on the outer petals of the buds. They are almost indiscernible at first, but soon make their presence known by the imperfect flowers produced on the plants. And the fly must be wonderfully prolific, as they spread at a most alarming pace. The Maggots, as I call them, are not more than 1-16 in. long, and seem to have a strong desire to eat to the center of the bud as quickly as possible. CHAS. ANDERSON, *Flushing, N. Y.*

**The Society of American Florists' Meeting in Chicago.**

This meeting will take place August 16th, continuing three days. In addition to President Craig's address, papers will be read upon a variety of subjects which have been carefully selected to suit all tastes and sections of the country. Ex-President John Thorp's essay on "Hybridization" alone will amply repay those who take a trip to Chicago; C. L. Allen will present a paper on "Fungoid Diseases;" Mr. H. A. Siebrecht, of the firm of Siebrecht & Wadley, New York, will discourse on "Orchids." The subject of "Business Methods" will be opened by Mr. F. R. Pierson. "Summer Propagation of Roses" will be treated upon by E. G. Hill, one of the best authorities on the Rose in this country. "Roses on Stocks" will be handled by our correspondent, Mr. Charles Anderson, of Flushing, N. Y., who will give the result of his observation and practice over many years. Mr. Ernst Asmus will read a paper on the "Forcing of Bulbs and Tubers." "Forcing Hardy Shrubs" by Mr. Jackson Dawson. "Art in Floral Work" will be prepared and read by Mr. J. W. Elliott. Mr. W. R. Smith, curator at Washington, will present a paper, the subject of which has not yet been announced. The subject of "The Retail Flower Business" will be in the hands of Mr. J. M. Jordan. The "Question Box" will also be a feature which must not be overlooked. There will be an exhibition of the new and improved appliances. The subject of "Heating" will be reviewed by an expert.

The railroads generally have offered a rate and a third. That is to say: a full fare must be paid to Chicago, and the reduction is made on the return trip on the presentation of a certificate duly signed. When purchasing tickets for Chicago get the local ticket agent's certificate, with R. R. stamp affixed, certifying that full fare has been paid to Chicago. This is necessary in case the members or delegates for any reason forget or fail to produce regular certificates. Edwin Lonsdale, of Philadelphia, is the secretary of the Association.

To the visiting florists we would say that an abundant stock of personal address cards is a great aid in promoting general acquaintance.

**Time of this Year's State and Provincial Fairs.**

Alabama	Montgomery	Oct. 17-23
Am. Institute	New York	Sept. 28-Dec. 3
Canadian Expos'n.	Toronto, Ont.	Oct. 5-17
California	Sacramento	Sept. 12-24
Connecticut	Meriden	Sept. 13-16
Delaware	Dover	Sept. 26-Oct. 1
Frontenac Prov'e.	Kingston, Ont.	Sept. 27-30
Georgia	Macon	Oct. 24-Nov. 2
Great Central Fair	Hamilton, Ont.	Sept. 26-30
Illinois	Olney	Sept. 24-30
Indiana	Indianapolis	Sept. 19-21
Iowa	Des Moines	Sept. 25-9
Kansas	Topeka	Sept. 19-21
Kentucky	Lexington	Aug. 30-Sept. 3
Natl. Ag'l. Exp'n.	Kansas City	Sept. 15-Nov. 1
No. Ind. & S. Mich.	Oshkosh, Ind.	Sept. 13-16
North'n Wisconsin	Lewistown	Sept. 6-9
Maryland	Easton	Sept. 19-23
Michigan	Jackson	Sept. 19-23
Minnesota	St. Paul	Sept. 9-17
Missouri	St. Louis	Oct. 3-8
Montana	Helena	Aug. 22-27
Mississippi	Meridian	Oct. 17-22
Nebraska	Lincoln	Sept. 9-16
New Jersey	Waverly	Sept. 19-23
New York	Rochester	Sept. 8-14
New York, Western	Rochester	Aug. 30-Sept. 2
North Carolina	Raleigh	Oct. 19-21
Ohio	Columbus	Aug. 29-Sept. 2
Ohio North West'n	Fostoria	Aug. 30-Sept. 2
Omaha Expos'n.	Omaha, Neb.	Sept. 5-10
Ontario	Ottawa	Sept. 19-24
Pennsylvania	Philadelphia	Sept. 5-17
Piedmont Exposition	including Va., N. C. and S. C. Ga., Ala., and Tenn.	held at Atlanta, Ga., Oct. 10-22
Rhode Island	Providence	Sept. 19-23
South Carolina	Columbia	Nov. 8-11
Tennessee	Nashville	Sept. 26-Oct. 1
Texas	Dallas	Oct. 20-Nov. 5
Tri-State Fair	Toledo, O.	Sept. 5-10
Vermont	Burlington	Sept. 12-16
Virginia	Richmond	Oct. 26-28
West'n Michigan	Grand Rapids	Sept. 19-23
West'n Nat. Fair	A. Lawrence Ks.	Sept. 5-11
West Virginia	Wheeling	Sept. 5-9
Wisconsin	Milwaukee	Sept. 12-17

**Received at this Office.**

- "Fruit Pastes, Syrups and Preserves for Housekeepers and Fruit Growers." By Shirley Dare; 90 pp. Cupples & Hurd, Boston, Mass.
- "Weeds of Southwestern Wisconsin and Minnesota." By L. H. Pammel, St. Louis, Mo.; 20 pp.
- "Grasses of the South." By Dr. George Vasey; 63 pp. Illustrated. Being Bulletin No. 3 of the Botanical Division of the Department of Agriculture.
- "Reports of Observations and Experiments in the Practical Work of the Divisions of Entomology, U. S. Department of Agriculture;" 73 pp. Ill.
- "Report of the New Jersey State Agricultural Experiment Station for 1886;" 215 pp. Geo. H. Cook, Director of Station, New Brunswick, N. J.
- "Plant Lice and the Codling Moth." A. J. Cook. Being bulletin No. 26 of the Dep. of Zoology and Entomology of the Agricultural College, Michigan.
- "Fifth Annual Report of the Ohio Agricultural Experimental Station for 1886." William R. Lazenby, Secretary, Columbus, Ohio. This report is sent free upon application to cultivators who reside in Ohio; to others on receipt of postage, 10 cents.
- Catalogue of the Ohio State School of Agriculture, Columbus, Ohio. W. R. Lazenby, Secretary.
- "Annual Report of the Minnesota State Horticultural Society for 1887." S. D. Hillman, Secretary, Minneapolis, Minn.; 490 pp.
- Premium List of the Indiana State Horticultural Society. W. G. Bertermann, Sec'y, Indianapolis.
- New Method of Grafting. D. W. Cozad, La Cygne, Kansas.
- Seventeenth Annual Report of the Entomological Society of Ontario. E. Baynes Reed, Secretary, London, Ontario.
- Journal of the Columbus Horticultural Society for May. W. S. Devoil, Columbus, O.
- Bulletin No. 24 Massachusetts State Agricultural Station. C. A. Goessman, Director, Amherst, Mass.

**CATALOGUES, ETC.—FIGURES INDICATE PAGES.**

- Jewett Nurseries, White Salmon, Wash. Territory.
- Bannockburn Greenhouses, Rochester, N. Y.
- Peter Henderson & Co., Plants and Seeds, New York.
- H. S. Anderson, Nurseries, Union Springs, N. Y.
- J. W. Thompson & Co., Nursery Dealers' and Agents' Outfits, Troy, Ohio.
- W. & T. Smith, Nursery, Geneva, N. Y.; 70.
- Michael Rains & Co., Bulbs, London, Eng.; 12.
- C. H. Perkins, Nursery, Moorestown, N. J.; 40.
- David Ferguson & Sons, Plants, Phila., Pa.; 68.
- A. T. Cook, Seeds, Clinton Hollow, N. Y.; 8.
- F. W. Harold, Salisbury, Md.; 12.
- Zimmerman Mach. Co., Fruit Driers, Cincinnati, Ohio; 60.
- Oriental Importing Co., Trees, Plants and Bulbs, San Francisco, Cal.; 4.
- Ellwanger & Barry, Strawberries, Rochester, N. Y.; 4.
- J. H. Haynes, Strawberries, Delphi, Ind.; 8.
- The A. C. Nellis Co., Seeds, New York City; 18.
- D. W. Cozad, Nursery, La Cygne, Kas.; 8.
- Davis Bro's Nursery, Boon's Path, Va.; 12.
- American Mfg. Co., Evaps., Waynesboro, Pa.; 61.

**The Household**

Whiting, dry or wet, gives glass a rich polish. Use bits of wet paper on the carpet when sweeping.

Stove polish mixed with vinegar and a bit of sugar will shine easier.

Mildewed cloth should be soaked in buttermilk, afterwards spreading on the grass in the sun.

For Mosquito or gnat bites an experienced traveler writes that he uses a solution of alum water as strong as it can be made, adding one fourth of aromatic vinegar and one fifth of glycerine. Shake well before using; it will instantly cure the bite.

**Omelette as Made in France.** Four eggs, three tablespoonfuls of milk, one teaspoonful of sweet herbs chopped fine (Parsley, Lemon Thyme, Marjoram; dried herbs in the winter), two teaspoonfuls of grated cheese, three ounces of butter. Beat up the eggs, then add the milk, herbs and cheese; put the butter into a frying-pan; let boil until it sputters, then pour in the omelette, stir it round carefully one way till it thickens, then shake it a little that it does not stick to the pan, and serve up hot.

**Iced Fruit for Dessert.** Select your fruit, small kinds like Currants or berries being especially suitable. Beat up the whites of two eggs and mix with a quarter part of water. Have some finely pounded sugar ready in a dish. Then dip the fruit in the egg water, drain for a minute or so and roll in the powdered sugar. Lay it on paper to dry, when the sugar will crystallize on the surface, producing a very pretty effect. A mixture of various fruits iced in this manner and arranged in one dish presents a fine appearance on the table.

**Cheap Home-made Filter.** The Scientific American describes one consisting of two stone pots or jars, the bottom one for receiving the water, with side hole and faucet if possible; or if no faucet is to be used the top jar can be removed so that the water can be dipped out of the lower. The top jar has a hole drilled or broken in the bottom and a small flower pot saucer inverted over the hole. Then fill in a layer of sharp, clean sand, rather coarse, a layer of finer sand, a layer of pulverized charcoal with dust blown out, then a layer of sand the whole occupying one-third of the jar.

**String Beans Without Pork.** String and cut the Beans the usual way; throw them in cold water; heat two tablespoonfuls of butter in an iron pot; take the Beans from the water, put them in the hot butter, using only the water that clings to them; stir them thoroughly through the hot butter; cover and let them cook until the water and butter are absorbed, and the Beans are clear and green, stirring once or twice to keep from burning; then add enough boiling water to cover them, also one-half teaspoonful baking soda; cook five minutes, then season well and cook until tender. Two hours will answer for cooking.—A NEW JERSEY READER.

**Drying Tomatoes.** A writer in an exchange, the name of which we cannot command, says: The Tomatoes are allowed to remain on the vines until they are quite ripe, when they are picked and pressed into bags made of coarse cloth, which allows the pulp to pass through while the seeds and skins are retained. The pulp is then spread out thinly on cloth on boards or shallow dishes and exposed to the sun to dry. When it has become quite dry it is broken up fine or ground and put into boxes or bags and sent to market. It is largely used in soups, but much of it is employed as we do Tomatoes preserved in tins or other cans. When used it is soaked for a few hours in warm water and then cooked in the ordinary manner.

**Preparing Mushrooms.** To Cook—Stew in milk or cream. To Roast—Cut the larger ones in small pieces, and place in a small dish, using salt, pepper, and butter to taste; put in about two tablespoonfuls of water. Then fill the dish with the half-open specimens and the buttons. Cover tightly and place in the oven, which must not be overheated, for about twenty minutes. The juice of the larger mushrooms will keep them moist, and if fresh will yield further a most abundant gravy. To Broil—Place the tops like oysters on a fine wire grid-iron. As soon as they are hot butter them lightly, and salt and pepper to taste. Put them back over the coals and when they are heated through they are cooked. Butter them if required, and place in a hot dish. To Serve with Meat—Chop the larger ones fine, using the buttons whole; let them simmer in a little water for ten minutes, adding butter, salt, and pepper, as for oyster sauce. Thicken with flour or ground rice; pour over the meat and cover quickly.

# Poultry.

Fancy stock requires close attention.

**Give the Hens fair treatment.** If pigs and calves were compelled to forage for a living as hens often are, they would be voted a great nuisance. For profit hens must have attention, and then they will pay.

**Cure for Gapes.** A correspondent of the Stockman and Farmer says he has found the following an easy and certain cure for gapes, where the work is well done: Hold the fowl in one hand, and with the thumb and forefinger of the other compress the windpipe or trachea at the lowest accessible point, almost but not quite severely enough to choke. Then remove the fingers, and in a moment or two repeat the performance a little higher up. Keep on in the same way, and as the head is approached the patient will "throw up" a mouthful of worms—and the thing is done. This remedy is always available.

**Guineas in Market.** Guineas are seldom sold in the markets, and never quoted on the price lists. Just why this is so we cannot explain unless it is because the city people are not educated up to the luxury of a good fat Guinea, for the Guinea is far superior both in quality and flavor of flesh to many of the game birds, so highly prized as choice eating. The flesh is somewhat dark, but juicy and tender, as well as having but a small proportion of offal. The carcass possesses a large share of breast meat, and they can be cooked in any manner suitable for a turkey or chicken. At all events the farmers know how delicious the Guinea is, and as they can be consumed at home they can be raised very profitably.—Mirror and Farmer.

**Green Food in Winter.** Many poultry keepers rely largely upon cabbage for green food for their fowls during the winter season, but of late years some have practiced laying in a supply of green frozen rye with excellent success. The ground should be made very rich, so as to insure a rank rapid growth, and the rye should be sown much thicker and earlier than where a crop of grain is desired. When the soil is rich and the grain sown in August it will reach a growth of from sixteen to twenty inches before the ground freezes. It should remain in the field until just before snow comes, then cut when frozen solid, and pack away in some convenient place where it will remain frozen all winter. As it is wanted for use, take out a small portion, thaw, chop fine, and feed it to the hens. Those who have tried this method claim that it promotes health and increases the number of eggs. No time should be lost in putting in the crop for next winter's use.—American Cultivator.

**Duck Raising.** In reply to a request for information on this subject we can do no better than to give the following synopsis of an article from the American Poultry Yard: A pond or stream of water may not be absolutely essential to the existence of ducks, but for permanent success there should be at least a fair amount of brook or marsh land convenient. The best water is a marshy, sluggish stream, in which they will find aquatic plants, bugs and worms, and upon which they will make a rapid and healthy growth. Where a good brook is not available a made pond or trough, large enough for the ducks to bathe in, answers fairly well. What is good food for common fowls will usually suit ducks. We have fed all out of the same dish and found all do equally well. We prefer common hens as hatchers. Some ducks do splendidly in hatching, and raise every duck, yet, taken all in all, less loss is incurred where hens are used. Duck's eggs hatch as certainly as hens' eggs. Ducklings should not be allowed free access to a pond or brook until several weeks old, and it is a trying matter for the old duck to be kept away from water so long. It is not necessary to have the duck house as warm as a coop should be for gallinaceous fowls, but if rather warm the ducks will lay sooner, which is desirable when ducks are wanted for early fall market or for showing. Artificial heat is hardly necessary. For ventilating a closely-built house a sub-drain of large size tiling, running a considerable distance and at two feet beneath the surface, entering the coop in the center, will admit plenty of fresh yet tempered air. A small opening in the center of the roof will lead off impurities. This opening must be arranged to prevent draughts. The floor can be either of plank or concrete and covered with sand or dry gravel to a depth of several inches, upon which straw, leaves or litter of some sort must be strewn in laying time. A duck house need not be high, as ducks roost right on the floor (Wood ducks and Brazilian or Muscovy ducks excepted), and they are not to be kept housed excepting at night and in bad weather.

# The Exchange

Amateurs often have an excess of certain seeds, plants, etc., while in want of others. This department is designed to bring about free exchanges in such cases.

In The Exchange may be named what can be spared, what is wanted and the address. No price figures admitted. Any offer that may appear objectionable to the publishers not admitted. No responsibility will be assumed for any results connected with The Exchange. Those using the column should correspond before sending articles.

204. Mrs. F. A. R. Wharton, Raymond, Miss., will exchange Hyacinths, Jonquils, Narcissus, hardy Gladioli, Lilies, Honeysuckles, Crape Myrtle, for Roman Hyacinth, White Polyanthus, Narcissus, Callas, etc.

205. C. B. Elliott, Panacea, Mo., has Iris, Lilies, Forsythia, Japan Quince, Moss Rose, Flowering Currant, Perennial Phlox, to exchange for Lilies, Purple Fringe, Weigelia, Syringa, Calycanthus, Dentzia, etc.

206. Mrs. W. S. Hammond, Carthage, N. Y., has greenhous and hardy plants to exchange for fancy work, shell work, stamped tidies, pillow shams, painting on velvet, etc.

207. Chas. E. Parnell, Queens, N. Y., has a large list of plants to exchange for books, magazines and other reading matter.

208. Mrs. J. M. Woodworth, Lakeville, Ct., has Lily Canadense, Apios Tuberosa, Hydrangea grandiflora to exchange.

209. Mrs. T. W. Nelson, Coffee, Va., will exchange strong Strawberry plants for hardy flowers.

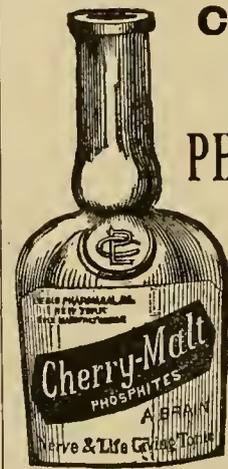
210. Mrs. W. M. Barrett, Huntsville, Tex., has native and house plants, books, stamping outfit, etc., to exchange for books on floriculture or botany.

WARREN'S FEATHERBONE WHIP  
Best in the world. Ask your dealer for them.  
Made from Quills.

## Of Interest to All Fruit Growers THIS AUTUMN.

Honey, thick and luscious as that from bees, is made from pure juice of pears, peaches, plums and sweet grapes without one grain of sugar or other addition. For this method, long used in Europe, with other valuable recipes, send for *Shirley Dare's Fruit Pastes, Syrups and Preserves*, 25 cents postpaid. **A. F. POWER, Walnut Hill, Mass.**

CUPPLES & HURD, Boston, Agents for trade.



## CHERRY MALT PHOSPHITES

Is a combination of Wild Cherry, Extract of Malt, and the Hypophosphites.

CHERRY MALT acts on the Stomach and Liver,

increasing the appetite, assisting digestion, thereby making it applicable for Dyspepsia in its various forms, Loss of Appetite, Headache, Insomnia, General Debility, Want of Vitality, Nervous Prostration, etc., etc.

If your Druggist does not keep it, send \$1.00 for one bottle, or \$5.00 for six bottles. Sold by all Druggists.

**Liebig Pharmacal Co.,**

78 Malden Lane, - New York.

## Cleveland Nursery.

We recently visited the Cleveland nursery and fruit farm, managed by M. T. Thompson, and was greatly surprised at its extent and excellence. It is situated on Madison avenue, a mile or so from the city limits. They have 26 acres in strawberries, about 20 varieties; 20 acres in Raspberries of all varieties; 4 acres in Gooseberries, 2½ acres in Currants, 4 acres in Blackberries, and 8 acres in Grapes, making one of the most extensive concerns of the kind in the State. Mr. Thompson is one of the best posted men on small fruits we have come in contact with. He knows the character, habits, quality, and worth of any variety you can mention. His knowledge extends to Pears, Peaches, Apples, etc., etc., all of which are grown in abundance, and all of the popular sorts, on this farm, the merits of which are comparatively unknown. Mr. Thompson originated a new seedling Red Raspberry last year that promises to be a great accession. It bore for the first time this year, and is exceedingly prolific, and of excellent quality. He has named it Thompson's Early Prolific, and claims for it the most prolific and earliest Raspberry known. It ripened this year June 19. He has a new variety of Strawberry, fruited on the place for the first time this year, which promises great things. We saw it in bearing, and the plants were literally loaded down with fruit of most desirable quality. This Strawberry has never yet been catalogued, but full particulars can be obtained by writing to the "Cleveland Nursery," East Rockport, O. We can confidently recommend this concern to our readers.—Ohio Farmer.

## GARDEN SUPPLY DIRECTORY.

- Grape-vines and Small Fruits.—Lewis Roesch, Fredonia, N. Y.
- Garden Seeds, etc.—Shaker Seed Co., Mt. Lebanon, N. Y.
- Grape-vines, etc.—Geo. W. Campbell, Delaware, Ohio.
- Market Gardeners' Supplies, etc.—J. B. Root & Co., Rockford, Ill.
- Nursery Stock, General.—John R. & A. Murdoch, Pittsburg, Pa.
- Nursery Stock.—Irving Allen, Springfield, Mass.
- Nursery Stock, Ornamental Trees.—Putney & Woodward, Brentwood, N. Y.
- Nursery and Florists' Stock.—I. C. Wood & Bro., Fishkill, N. Y.
- Nursery Stock, General.—E. Y. Teas, Dunreith, Ind.
- Nursery Stock, General.—E. H. Ricker & Co., Elgin, Ill.
- Nursery Stock.—H. S. Anderson, Union Springs, N. Y.
- Plants, Seeds, etc.—Paul Butz & Son, New Castle, Pa.
- Plants, Seeds, etc.—Harry Chaapel, Williamsport, Pa.
- Plants, Seeds, etc.—C. E. Allen, Brattleboro, Vt.
- Plants, Carnations a Specialty.—Chas. T. Starr, Avondale, Pa.
- Plants, Seeds, etc.—Ellis Brothers, Keene, N. H.
- Plants, Roses a Specialty.—M. A. Hunt, Gilbert, (P. O. Terre Haute), Ind.
- Plants and Seeds.—Rob't Veitch & Son, New Haven, Conn.
- Seeds, Pansies a Specialty.—L. W. Goodell, Dwight, Mass.
- Seeds and Plants.—William C. Beckert, Allegheny City, Pa.
- Seeds, Plants, etc.—F. H. Mooers, Pittston, Me.
- Seeds, Plants and Fertilizers.—Aaron Low, Essex, Mass.
- Seeds, Plants, etc.—Albert Williams, Sharon, Pa.
- Seeds, Plants, etc.—Frank Ford & Sons, Ravenna, Ohio.
- Seeds, Plants, etc.—H. C. Harman, South Bend, Ind.

POPULAR GARDENING may be ordered at the regular price of any of the parties named above.

# POPULAR GARDENING

## AND FRUIT GROWING.

"ACCUSE NOT NATURE, SHE HATH DONE HER PART; DO THOU BUT THINE."—MILTON.

Vol. II.

SEPTEMBER, 1887.

No. 12.

The Cornsilk tassels on the ridge  
Are bronzing in the sun;  
The Elderberries by the bridge,  
And all along the run,  
Grow purple through the golden days;  
Barberries by the wall  
Glow crimson in the silver haze  
That ushers in the Fall.

—Annie M. Libby.

AN EYE SHOULD be kept for the hairy caterpillar on Chrysanthemums; one on a plant will in a short time mar its beauty.

CASTOR-OIL PLANTS, now at the height of beauty, are so easily snapped off by a gust of wind, that they should not be trusted without a stake or stays running to pegs in the ground.

A WORD TO EXHIBITORS: In case of disappointment at receiving no premiums, bear up by considering that in the very nature of things your own judgment must be somewhat biased as that of the judges should not be.

FERNERIES for winter may be stocked at this season to be charming by the use alone of wild plants from the woods. The Squaw or Partridge Berry plant, with its dark, shiny evergreen leaves and red fruit is excellent for one, and then there are various low-growing evergreen Ferns of value for the purpose.

THE REMARKABLE CONTRAST between "the trade" of fifty years ago and now as regards the use of catalogues and advertising has recently been commented upon by an English writer. At that time the English house that advertised was hardly considered "respectable," and certainly not "genteel." But certain houses thought otherwise, and persistently appealed to the public through the pages of the journals that were ready to afford them the desired publicity. The consequence was that they shot ahead of their antiquated rivals, and many of the former are now the most extensive and the most prosperous to be found. In fact we may say that almost if not all the great firms that have sprung into existence during this period have attained their position through advertising. Another peculiarity of the old-fashioned trade was not to issue priced catalogues. Catalogues of their saleable commodities were common enough, but to indicate the prices of them was a privilege that the public was not admitted to. How all these are changed!

A LARGE commission merchant of New York has the following practical suggestions to offer to shippers of Apples: A new barrel only ought to be used, and after taking out the bottom, not the head, tack the lower middle hoop on each side of the bulge of the barrel with three-penny nails (no larger sized nails), and clinch inside for smoothness, putting the head of the barrel to the floor. Select perfect Apples, uniform in size and appearance, wipe and place with the stems down; when by placing in the fruit with the hand layer after layer till the barrel is a little more than full, gently press in the bottom head, and head line across the heading, using the three-penny nails and then tack the top hoop with five or six three-penny nails;

turn up the head and do the same. Mark the owner's initials and number of barrel, say No. 1 and up, so that when the fruit reaches your merchant it can be known. He has had much trouble from this omission. Ship with instructions to the carrying company to forward the bill of lading. Ship in round lots of 50, 100 or more barrels, as large uniform lots sell at better prices than small and irregular lots. Ship neither any defective nor any mixed fruit, and upon no account put large, fine fruit on the head and poor small fruit in the middle of the barrels; one such barrel will defeat the sale of a thousand. In plain words, pack honestly.

### Four Crops in a Season on the Same Land.

M. F. THOMPSON, EAST ROCKPORT, OHIO.

How I raise four crops on the same land and harvest three in the same season may be told as follows: Let me add, however, that I could have done even better this year by my plan but for the severe drought.

To begin with, I plant two acres of the Egyptian Onion along in September. These I commence bunching for market about the 1st of March. They are planted in rows one foot apart. By the 1st of May about half of them are sold; then the land is plowed and marked in rows 2 1-2 feet apart with a strong marker, which makes marks about 2 inches deep.

In ground thus prepared Cucumber seed is dropped in alternate rows, at about 3 to 4 inches apart in the row, I cover with my feet, just drawing them along the ground to bring the soil over the seed.

The Cucumbers planted, I next plant in the vacant rows, made by the marker, Red Raspberries about 3 feet apart, and between each Raspberry stool a hill of Sweet Corn.

At this writing (Aug. 3), my early Cucumbers on such a patch are out of the way, and I still have time enough to cultivate them up and put in a crop of the same for late pickles. The balance of the piece I dug out every fifth row and planted my Raspberries and Corn between. As the latter comes off early it gives the Raspberries a chance to make a good growth this fall.

I also dug four remaining rows of Onions and planted Cucumbers in these. Through-out I market from 200 to 700 dozen bunches of Onions per day, and by keeping the land planted and worked in this manner it is loose and requires very little hoeing.

Let me impress the fact that such heavy cropping takes lots of manure, but by planting so many kinds there is not much wasted. The reader can easily see how, by some such system, certain men will make more money from 10 acres of land than others will from hundreds. In these times market gardeners and farmers ought not to let a foot of land lay idle.

Some years, owing to unfavorable weather or other contingencies, this system may perhaps not be very successful, but one year with another there is no reason why it should not be, if done with a will and de-

termination not to give up and not to let your neighbors beat you. Let me add that I would at any time rather live in a neighborhood where men are enterprising than where they are not, for one helps the other. You see your neighbor going ahead it will start you and so on, but where everybody is behind you are apt to fall in the same rut.

To young gardeners and fruit growers I would especially advise that whatever you do, do it with a will. Get amongst enterprising men and one will push the other. If I am beat by a neighbor I will try my chance again, and so with others, and all are the better off for the competition.

### A Native Fruit for Cultivation.—The Dwarf Juneberry.

E. S. GOFF, GENEVA, N. Y.

The true horticulturist is not satisfied with attempting to improve our cultivated fruits. He wants to explore the forests and prairies, to see if Nature has not some new material upon which he may experiment. To him a poor fruit, taken from its native wilds and made to yield its crop in his own garden, is often of more interest than a far more delicious one that has been cultivated for centuries.

If the readers of POPULAR GARDENING include any such, I want to suggest to them the Dwarf Juneberry, *Amelanchier Canadensis*, as a fit subject on which to operate. I think there may be something really worth working on in this fruit. I have no hopes or fears that, even in its most highly improved state, it will ever drive the Strawberry out of our gardens. I do not, however, see why it may not take rank along with our finest varieties of Currants and Gooseberries.

My knowledge of this fruit commenced in 1882. Some young plants set out in the spring of that year bore a few berries the next season, and the yield continued to increase until the summer of 1885, when the bushes bore an immense crop. The berries, if such they may be called, average about the size of the largest samples of Blueberries, to which fruit they have a striking resemblance both in color and form. The flavor is sweet and delicate, but not very pronounced. No one that has tasted them in my presence has expressed a dislike to them, though some pronounce them insipid. With cream and sugar the flavor is rather heightened. The berries begin ripening toward the latter part of June and the crop lasts from two to three weeks.

The plant is a somewhat straggling shrub about five feet high when full grown, though our bushes at present are but three feet high. It appears perfectly hardy and in favorable seasons bears profusely. It is readily propagated by divisions of the roots and also by seeds. The latter method is, of course, the one to which we must look for the improvement of this American fruit.

### A Remarkable New Weeping Tree: Teas' Weeping Russian Mulberry.

In recent years no class of ornamental trees (the consideration of shade omitted) have been so widely planted as the better varieties of weeping trees. The Kilmarnock and other attractive Willows of the same class, and the various Birches of pendant habit, for example, have been in constant and increasing demand with home improvers in town and country everywhere, until the planting of these has reached far into the thousands annually. Indeed, of some localities it may be said that these trees have been planted even to excess, causing monotony in one or a few kinds.

Such facts, however, well show an existing and developing taste for fine trees of pendulous habit. Recognizing this we find pleasure at this time in introducing to the attention of tree lovers a new candidate in this line, namely, Teas' Weeping Russian Mulberry. This is a variety of Western origin, having been raised by Mr. J. C. Teas of Carthage, Missouri, from seed of the Russian Mulberry.

This new tree was brought to our notice some months ago, and being very favorably impressed by what we saw of its beauty and vigor, we procured a photograph of a three-year old specimen, from which was made the life like engraving annexed. Unfortunately, as we think, some leaves of the original of our photograph were removed, for the purpose of better showing the pendant character of the branches, hence our present engraving is slightly defective in the respect of showing a certain degree of nudity, with injustice to the real beauty of the tree. A leaf has also been engraved to exactly show its remarkably handsome lobed form. This leaf is about one-third the natural size.

Some of the more valuable qualities which have impressed us in this tree are as follows: The beauty of the leaves; these aside from being lobed in a form entirely unique in weeping trees, are possessed of that delightful, fresh-looking rich green that is common to all the ornamental Mulberries. The fact that they are produced in great abundance is also very favorable to beauty.

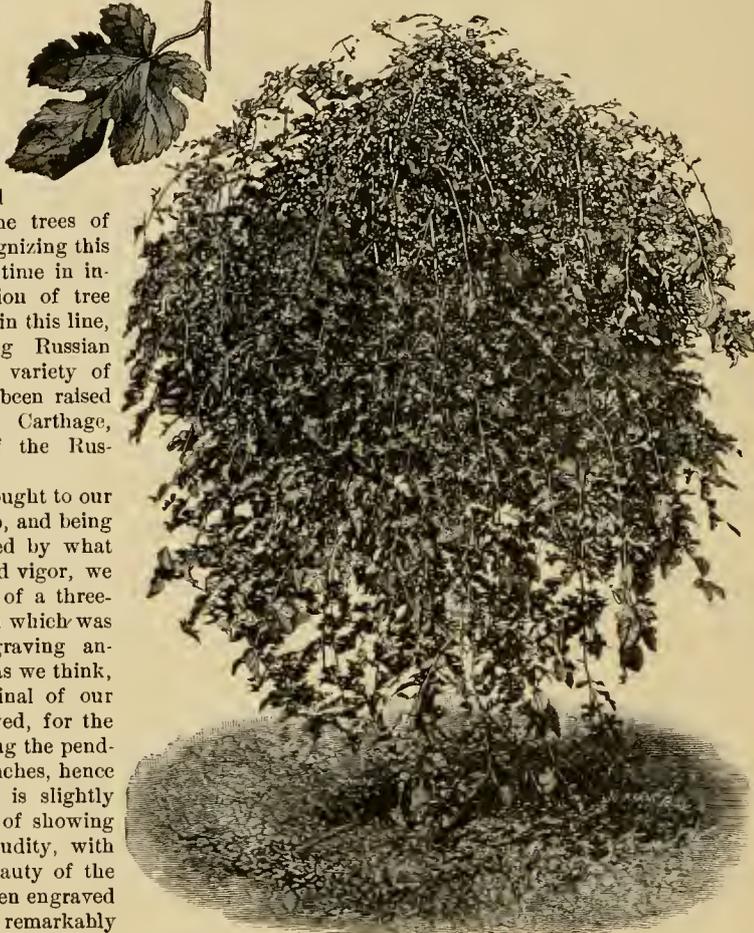
**Freedom of Growth.** This is quite remarkable, as will be inferred when we state that single light shoots have reached a length of from six to eight feet in one season. Such free growth in the small branches at once accounts for the natural grace of these as they droop earthwards, parallel with the trunk, some to reach the ground. Being of free growth each branch of the tree adds to the formation of a complete umbrella form after a few years.

**General Gracefulness.** The tree appears to be wholly free from that stiffness of form, which is, with some justice, raised against some of its class, in this respect partaking more of the habit of the Weeping Birches than of the Kilmarnock Willow.

The fact that it is a free grower indicates ease in transplanting, and this is a good

point in favor of its becoming widely popular. As to hardiness, those who know it best rank it with the Russian Mulberries, to which it is said to owe its parentage. It should therefore be found reliable where many of the older Weeping trees fail.

The stock of the Weeping Russian Mulberry is now in the hands of James B. Wild and Brothers, of Sarcoxie, Missouri, who, we understand, are taking steps towards its general discrimination.



A REMARKABLE TREE: TEAS'S WEEPING RUSSIAN MULBERRY.

### Oranges and Other Citruses for Home Culture.

The various Citruses, with the Orange and Lemon at the head, possess an almost unequalled array of good qualities as house plants. The foliage, dark, rich, leathery, fragrant, is always charming; the bloom, the very embodiment of simple beauty and sweetness; the fruit most delightful, whether considered as to its appearance or its value for eating. And yet these desirable plants are not as generally grown as they should be, or when grown are not usually to be found in a pleasing, healthy condition. Mr. Josiah Hoopes, who has had much experience with the Citruses in the North, offers in the New York Tribune the following practical information concerning their culture:

No other available plants for house culture will give better satisfaction for the same amount of care. The only exception is the bulk of old specimens making them difficult to move. This may be remedied by the use of strong castors securely fastened to the bottom of the tub. Cedar is the best material for tubs, and should be well hooped and thoroughly painted inside and out.

To secure a perfect drainage (of the greatest importance) some large holes should be bored in the box bottom. Two or three inches of broken pots and charcoal should be then thrown in. Over these a little moss to keep the inter-

stices open, and then the potting soil of light, rotted, turfy earth with a fair proportion of well decayed manure and a little sand. In potting pound the soil firm always. Water liberally when growth is free, but seldom when at rest. Most cases of poor health in the Citrus family are caused by injudicious watering, uncongenial soil or improper drainage.

Oranges must have a season of rest during winter, and will always grow better and fruit more certainly the succeeding year if kept over winter in a cool room. They are fond of moisture on the foliage at all seasons, so that a weekly sponging of the leaves will prove highly useful. Those who have the advantage of a greenhouse can syringe their trees, which answers still better.

In the case of greenhouse culture, care must be taken not to allow the temperature to rise too high. A structure that will grow Camellias, Chinese Primroses and the like will answer well for these.

Very few insects attack these plants excepting the troublesome scale, which can be destroyed by scrubbing off with a toothbrush, using whale-oil soap to form a lather.

Seedling trees cannot be depended on for fruiting, as they are liable to produce a crop of indifferent quality. When two or three years old they should be budded with some approved kind. One of the finest for size and flavor is the Maltese Blood, with red flesh, very sweet and juicy. The St. Michael is first-class, of rather small size but lusciously sweet and juicy. The little Otahaitian Dwarf forms a neat ornamental shrub, but the fruit is worthless to eat. The large Lemon, Lime and Shaddock may all be grown as directed above.

### Look Well to the Root.

Many who lift plants seem to have an eye more to the top—finely developed by this time—than to the root, and consequently make bad work of the job. With the roots mutilated and insufficient the part above the ground, no matter how fine-looking at the time of lifting, must soon reach a sorry looking condition, with the leaves turning yellow or flabby, and it would be strange if very many of them would not drop.

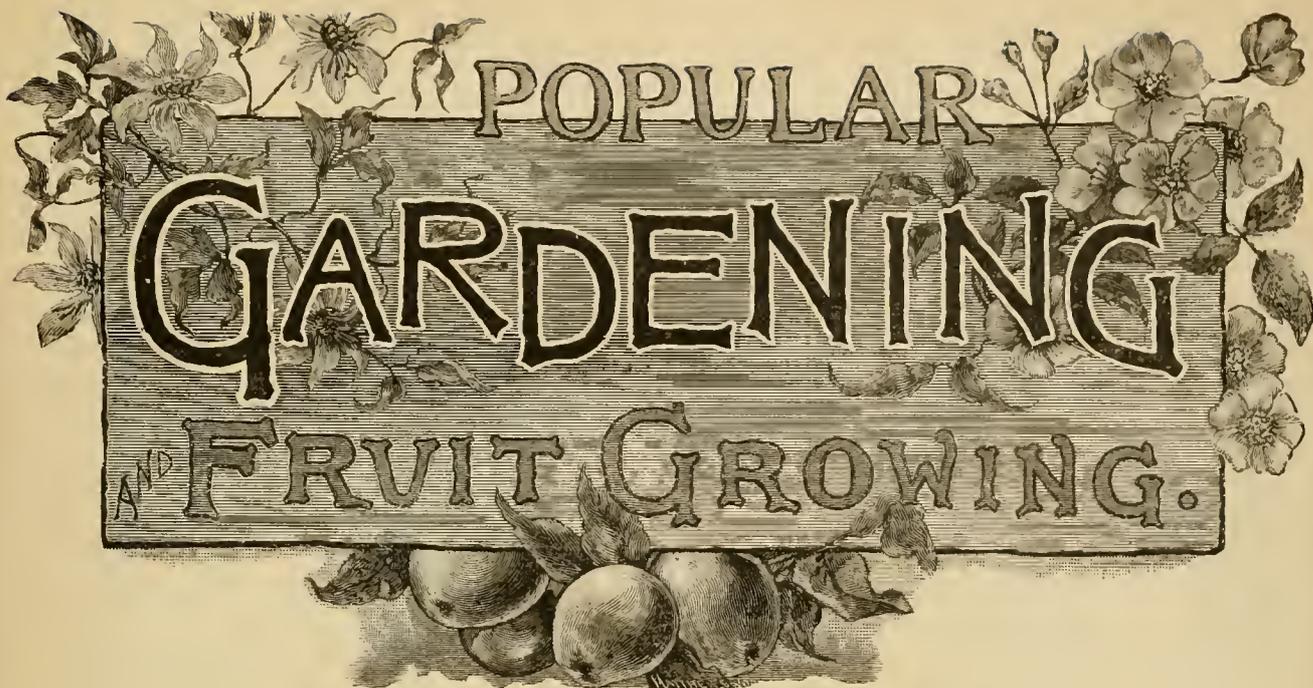
With an abundance of roots, and the plant somewhat relieved of excessive growth by pruning, the grower may expect soon to produce a handsome plant, even though the odds to a superficial observer might seem to be against him at this time. So we say, let the first thought be to saving all the roots possible.

### A Singular Autumn-blooming Plant.

A floral curiosity may be met in every garden where the Autumn Crocus or Meadow Saffron, *Colchicum autumnalis*, is growing at this season, for now the flowers are out.

The peculiarity of this plant lies in the fact that it has a season of leaf-growth in spring, and then a season of flower-growth in the fall from September until November. While the leaves, which start from the ground are forming, there are no signs of flowers, but then long before the time of flowering every vestige of the foliage dies away, and the flowers, which resemble those of the Crocus, shoot up numerously from the ground, with not a leaf in sight.

Clumps of these plants make a very pretty show in the fall months, for when the beauty of most plants is waning, or has been destroyed by the blackening hand of Jack Frost, the flowers, rising several inches above the surface in clusters, are fresh and in their prime.



AN

ILLUSTRATED PERIODICAL

DEVOTED TO

Horticulture in all its Branches.

CONDUCTED BY

*Elias A. Long, Author of "Ornamental Gardening for Americans,"*

*"The Home Florist," Etc., Etc.*

The groves were God's first temples. Ere man learned  
To hew the shaft, and lay the architrave,  
And spread the roof above them—ere he framed  
The lofty vault, to gather and roll back  
The sound of anthems, in the darkling wood,  
Amidst the cool and silence, he knelt down  
And offered to the Mightiest solemn thanks and supplication.

—Bryant.

Volume 2, 1886-87.

BUFFALO, N. Y.:

POPULAR GARDENING PUBLISHING CO.

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T O

## VOLUME II OF POPULAR GARDENING.

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There are several varieties of the plant, having respectively, purple, white, violet, or rose-colored flowers, or intermediate shades of those, and some are striped and others singularly checkered, with white on a dark-purple ground.

**A Successful Cold Storage House.**

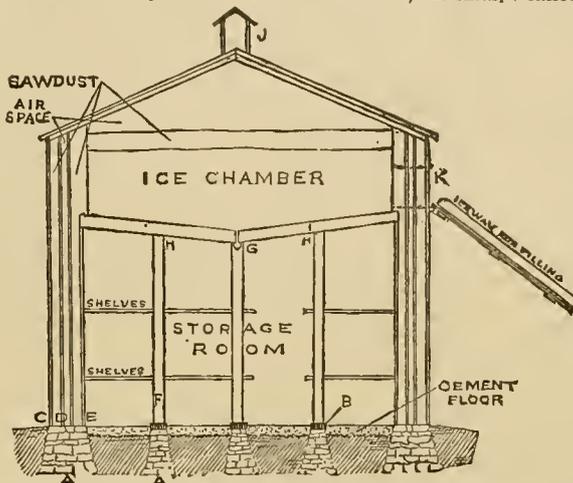
E. B. CUSHMAN, EUCLID, OHIO.

East of Cleveland some ten miles, located in the midst of the Euclid vineyards, is the cold storage house of Messrs. Hunt & Kendall. It is a wooden structure, and was erected in the summer of 1885, at a total cost of \$7,000, which includes the considerable expense of making two ice ponds, one seven feet deep, both being located within 40 feet of the building. A ground plan of the building and its surroundings is shown in the engraving below.

Of the apartments in the building the cold storage room is the main one, size 80x30x12 feet, and having a capacity of 200 tons of Grapes when packed in baskets. Off from the storage room, and connecting with the packing room is a small room 10x10 for gradually tempering the fruit in its passage to and from the cold room. The packing room is in the north end of the building, and this is neatly fitted up with scales, tables, desks, and everything convenient for packing fruit for market. Underneath is a cellar, and above is a storage room for boxes, baskets, etc., both of the same size as the packing place and connected by stairs. A loading platform opens out from the ground room.

The upper figure given is a cross section of the cold storage part of the building. The foundation is of stone and five feet in the ground. The piers for the posts that support the ice floor, of which there are thirty, are four feet square at the base, tapering to twelve inches at the top. On these are heavy cast iron plates, (B), upon which the posts set; the posts are of pine, 10x12 inches.

that go to make up this wall, the outside section (C), consists of heavy paper sheathing against the studs, and then siding on the exterior. The inside sections or partitions consist of ceiling stuff against studding. The outside space filled with sawdust is ten inches wide, the inner one eight inches. The central air space is six inches in the clear. The width of the inner sawdust jacket is increased three inches from the floor of the ice chamber upwards. II, are the joists of the ice floor. HH, the small



CROSS SECTION OF HUNT & KENDALL'S COLD STORAGE HOUSE.

gutters which empty into the trough G attached to the center beam. J is the ventilator, K the winter door for taking in ice. The floor of this chamber is a patented one, Mr. H. C. Cain, of Cleveland, being the patentee. The floor of the room below is cement, made of lake gravel and Portland cement. Shelves for fruit are shown in the cross section.

The ice chamber is of the same area as the storage room and eight feet deep, having a capacity of 500 tons. At the time of refilling last winter there was about 100 tons of old ice remaining over. The cost of filling is seven cents when ice is eleven inches thick, when three or four inches it costs twenty cents per ton. The ice is cut and run in the same as in filling a large ice house.

The temperature of the cold room is 35° when fifty or sixty tons of Grapes are in store, and a little higher when the fruit is first put in, but does not vary more than four degrees the year round. The fruit to keep well must be fair and sound; this is insisted upon or else there will be much loss. Especially is this true with Grapes.

I am informed by Mr. Hunt that the storage of Grapes is very successful and when taken out during cold weather they keep well. Catawbas have been tested most and retain their flavor until midsummer. Concord do not retain their flavor as well. Apples have their season prolonged about two months, and keep well after being taken from the storage room. It is the same with Pears, with this exception, Bartlett's when kept over a month spoil very quickly on being taken into the open air. Apples and Grapes should be ripe, Pears a little green when put in the storage room. Plums were kept over and exhibited at the Fruit and Flower show held the 14th and 15th of June, in Cleveland. Sweet Cherries have been kept in good condition six weeks, Black Cap Raspberries three weeks. Potatoes of last year taken out and eaten August 10 were declared to be better than ripe Potatoes of this season.

As the house has only been in operation one season, further experience is desirable before its merits can be fully estimated. The amount of profit in such a storage of fruit is governed so much by the demand and supply of produce that no general rules can be given on that point. It should be observed that cold storage will not make imperfect fruit fair, or bad eggs good, but will very profitably carry many kinds of perishable produce beyond glutted markets into times of scarcity and good prices.

**The Portage Co. (Ohio) Horticultural Society.**

The July meeting was held at the residence of Mr. G. B. Green, Kent. Considering the busy season, a large number were present. After the Society dinner the meeting was opened and minutes, reports, etc., were read. The report on the exhibits was especially interesting.

Mr. Frank Ford, of the Vineyard Committee, reported an almost total absence of what is called the first rot of the Grape, the bunches seeming almost perfect. President Beebe remarked that hitherto he had always bagged his Grapes with good results, but that this season they seemed quite as good without.

A profound and yet very interesting paper on "Soil, its Formation and Use," was presented by the well-known geologist, Prof. J. W. Pike, of Windom. It was illustrated with specimens of the various soil producing rocks, etc. Followed by a profitable discussion of the subject by many of the members, all of whom claim an intimate acquaintance with the soil, we believe. Secretary Albert Olin gave an admirable paper on "Horticulture for the Young."

Among the exhibits we noted the following: Ford's Early Sweet Corn, solid, well filled ears, fit for use by July 15th, by Mr. R. L. Shurtliff, Kent, O. Sabin Field Corn, early, and well filled, by Geo. W. Boosinger, of the same place.

A basket of fine Clark No. 1 Potatoes, seedling of Early Rose, ripe 59 days from planting, quite free from scab, productive, few small ones. Grown on rich soil. Basket of Shaffer's Colossal Raspberry, a few Thwack and Winards of good color, by Mr. H. H. Botsford, Kent, O. He spoke highly of the quality and productiveness of the Shaffer, as did the members generally, the sentiment being that this variety was the best in cultivation in this region for all purposes.

Some Le Conte Pears of good size, but of the usual Apple like flavor, grown near Jacksonville, Fla., were shown in good condition. Of two Blackberries, Snyder and Western Triumph, also shown by Mr. G. W. Dean, Kent, O., the Snyder was the favorite for market, though the Triumph presented the best appearance. Some nice Greggs were included in the exhibit of Mr. Dean.

Three lots of Peaches, Amsden, Waterloo, and Alexander were shown by Mr. Joseph Heighton, Kent, O. The Amsden being preferred both on account of quality and appearance. The Alexander seemed rather disposed to decay and was badly stung by Curculio. Mr. Heighton mentioned that he had gathered over 1800 Curculios by jarring the trees with a mallet, the pests falling on paper.

Several ladies contributed some fine lots of cut flowers, and these, along with President Beebe's display of Roses, did much to round up the beauty of the general display of products.

The meetings of this Society show a degree of interest on the part of the members that is worthy of wide emulation. Some of the meetings have had an attendance as high as 250 to 400 people.

SEND FLOWERS TO THE SICK. The case was touchingly cited at a meeting of the Missouri Horticultural Society of a young man sick with consumption, who had traveled for his health with little relief, and had come home to die. A lady who understood the benign and soothing influence of a few flowers sent a bunch daily to the sick room; they were intended and very likely answered the purpose to call off his attention from his sufferings and to point him to the better land where everlasting spring abides and never fading flowers. The young man so valued this kindness that he could not for a moment bear to have any one step in between himself and his bouquet.

RESPECT FOR THE SABBATH. Early in the season the committee on fresh fruits, etc., of the Produce Exchange of New York called the dealers together and proposed that the delivery of fruits and produce on Sunday be discontinued, having them arrive on Monday. It met with general favor, and a committee was appointed to visit the railroads and request them to give the pickers four hours more to pick on Saturday, and let the fruit arrive on Monday. They found them all ready to adopt the plan, and now Sabbath breakers are compelled to respect the wishes of those who think six days in one week is enough for fruit growers and commission merchants to work for a living.—C. W. I.



GROUND PLAN OF HOUSE, WITH SURROUNDINGS.

The outside wall of the storage room consists of two chambers for sawdust with an intervening one of air. Of the different features

## Notes from a Rochester Fruit Farm.

BY CHAS. A. GREEN.

**PRUNING AND PRUNING.** Near our fruit farm an occasional plant of Osage Orange hedge has been allowed to grow without pruning. The plants thus favored have made trees 18 feet high and 20 inches in circumference—as large as Apple trees planted 15 years in the orchard. It would be difficult to convince the ordinary observer that trees of the above size were planted at the same time and received the same culture as the insignificant shrubs not much thicker than my thumb, and only four feet high, growing by their side.

This is a striking illustration of the results of pruning. Apple, Peach, and Pear trees could have been kept by constant clipping much as were these Osage Orange. We may trim our trees and vines so that they will make scarcely any growth. Trees cannot grow without leaves. They make constant effort to throw out more leaves. If we desire to check or stop growth all we have to do is to cut off the larger portion of the leaf-bearing shoots. If we cut off all such shoots, thus removing all leaves, we destroy the trees in most instances, but if a few leaves are left the tree or vine will continue to live, but will make no perceptible growth of root or trunk. Every live branch cut from a tree, vine, or shrub lessens growth. Many trim that they may induce growth in one particular direction by thus pruning, but they will lessen the general growth. Thus it will be seen that good judgment is required in deciding how extensively to prune. Many prune too much; some do not prune enough; while but few hit a happy medium, cutting a little each year, causing no shock, and always with regret akin to that the surgeon feels when taking off a human finger or toe. Of all pruning nothing is so severely pruned as Grape-vines. When fall comes perhaps nine-tenths of the wood is cut away, the part remaining looking like the skeleton of the former vine. Then when growth begins the coming season numerous buds and shoots are rubbed off, and later, continual pinching and shortening is pursued. In fact the poor vine is not for a moment left to its own sweet will, not for a moment permitted to pursue a natural life. Is this reasonable, or is the matter of training the vine (which the Almighty endowed with wonderful qualifications for caring for itself) being carried too far?

**STANDING THE HEAT.** If a man unaccustomed to outdoor work attempts to labor hard in our scalding July and August sunshine he does so at the risk of his life. But if the same person began such work in April and continued through the heated season he could endure the strain with safety. A neighbor who sold self-binding harvesters used to protect himself with a covered wagon, but he discovered that when he went into the open field fully exposed he could not endure the heat, and was obliged to remove the cover from his wagon so as to become accustomed to it. A human being can accustom himself to heat many times more severe than our hottest haying or harvest weather, as is shown by the men who work as firemen in the hold of steamboats, where the heat has been severe enough to burn clothing hung near by, and where the novice could not survive half an hour. In contrast to this, men can endure the severe cold of the Arctic regions. Thus it is seen that man can adapt himself to greater varieties of climate than any other animal, and greater than any plant, vine, or tree. Plants and trees have the same peculiarity of adapting themselves to various climates, but it often requires ages for them to become acclimated.

**PLANT LICE.** The aphid is not so liable to attack trees in the nursery or orchard if the soil is kept free from grass, weeds, and rubbish. Nursery rows of young Apple trees, adjacent to standing Timothy were infested with Aphid, while on the third or fourth rows were much less, and the fifth, sixth, etc., were

not troubled at all. We have observed this in many instances from planting stocks near any grass or weeds. Usually at the ends of blocks of trees grass stands for a considerable distance from the fence. All such places, drive-ways and borders should be plowed and kept clean. Clean surroundings, rich soil, and superior culture are the safest treatment for the Aphid.

**THE WHITE GRUB.** This is a dreaded pest to the Strawberry grower. If in passing over the vines you find now and then a plant beginning to wilt be sure that the white grub is or has been there. Go over the field daily with a short stick or trowel, and dig close to one side of the plant until you find the grub, and kill him, disturbing the plant as little as possible; then return the earth, pack it firmly, cut off most of the leaves, from the plant, and search for more in the same condition. This is the only practical remedy I have found. Sometimes whole fields of Strawberries are destroyed by the grub in spite of vigilant efforts. Sod lands are usually infested. Thus such should be planted to hoed crops one or two seasons before planting Strawberries. The mother does not lay her eggs in cultivated lands, knowing there are no live roots there for her young to feed on. Thus after those found in the sod have taken wing as May bugs no danger need be apprehended. If not killed the grub goes from one plant to another along the row until the end of their existence in that farm. While newly-planted beds are often most infested, old beds are frequently attacked. I have seen new beds of matted plants, 5 feet by 50, entirely destroyed, looking as though fire had swept over the spot. I planted a small corner of the yard, surrounded by a grass plot, to the new Monmouth Strawberry. It had been cultivated for years and was very rich, but the grubs came in from the surrounding grass plot and ate every plant. The bed was unusually promising the first six weeks. If obliged to plant on infested soil, plant very early and layer the new runners as fast as they appear. Grubs do not usually attack the new plants.

In former years we have met with great losses by the grub. We did not fight him with enough vigilance. Now we go over the field daily. It takes but a short time to go over an acre, looking over six rows at a time. The first day we found 50 grubs per acre, the next 35, next 20, 18, 12, 8, 5, and so on down to none. We shall continue to watch the enemy, but not every day as heretofore.

**DO VARIETIES DEGENERATE?** Yes, in one sense. By using the small Potatoes for seed every year the variety will degenerate, but by using the best tubers we can improve the variety. The same may be said of the seed of grain and vegetables. Fruits do not degenerate so rapidly. If a Pear or Apple is planted in uncongenial soil, or when subject to disease or neglect for a series of years, that strain may degenerate, but strains of the same variety growing in congenial soil, with good treatment have not degenerated; therefore, strictly speaking, varieties of fruit do not degenerate, except those varieties brought under demoralizing influences.

**ERRORS WILL OCCUR.** He is a fortunate editor who does not in the course of a year publish some remedy or advice that injures the reader. I am led to this thought by one of my readers who says that I give methods of destroying insects, copied from a prominent entomologist's report, advising the use of tarred roofing paper around the collar of trees, tied at top to prevent eggs being laid of round-headed apple-tree borer. He applied the tarred paper and his trees died, the bark under the paper cracking, etc. It is generally understood that tar cannot be applied to the bark of trees with safety, but I think that few are aware that tarred paper, hard and dry, will destroy the trees. This shows the care that an editor must use in republishing the advice of others. There

are few so careful and reliable as Professor Cook of Michigan, yet through a printer's mistake one of his bulletins recommended so large a proportion of Paris green in water for spraying apple trees for canker worms that all the trees thus sprayed would have been defoliated. He was at great expense correcting the blunder, yet nobody knows but that a score of papers are publishing the report as first issued.

**BERRY PICKING MACHINE.** A fruit grower near Palmyra writes me that he and his neighbors have lost by depending on this invention for harvesting Black Raspberries, it being discovered at the last moment that it would not answer the purpose when practically applied. Many large growers there depended on the machine and neglected to engage hand pickers, thus when the machine failed they were helpless and lost a portion of their crop, which was a poor one at best, the berries blighting soon after forming. This blighting was a general thing, reducing the yield largely in this State. Who can explain the cause? Possibly it is caused by reduced vitality, owing to winter freezing. A frost would cause similar damage, but I think we had no frost.

**Blackberries.—Which are Hardest?**

E. S. GOFF, GENEVA, N. Y.

Much difference was noticeable in the amount of injury different varieties of Blackberries suffered during the past winter, though the weather was at no time very severe. The lowest temperature registered less than ten degrees below zero.

*Crystal White.*—Canes killed down from the tips one half or more.

*Early Harvest.*—Injured nearly as much as the above.

*Early Cluster.*—Only extreme tips injured.

*Staymen's Early.*—Some canes appear little injured, others killed back to the snow line.

*Wilson's Early.*—Canes killed to snow line.

*Wilson Junior.*—Canes killed back one-half or more.

*Taylor's Prolific and Stone's Hardy* appear uninjured and promise immense crops.

*Dorchester.*—Canes apparently much injured by the winter; some dead to the ground, others alive nearly to the tips,

*Snyder.*—Canes little injured, some being alive clear to the tips.

*Brinton's Early.*—Frozen to the ground.

*New Rochelle.*—Canes little injured; promises a good crop.

*Newman's Thornless.*—Canes killed back six inches to two feet.

The runners of Mammoth and Bartell's Dew-berry were largely killed, but new ones are starting vigorously.

With the exception of Dorchester and the four varieties immediately following, of which the plants were set in 1882, all of the varieties named were planted in the spring of 1884, and should bear their first full crop this year.

**Early Peaches and Other Matters.**

HENRY LUTTS, NIAGARA CO., N. Y.

There is such a variety of early Peaches, and a great many so near alike as to be almost impossible to detect any difference. Of these, Alexander, Amsden and Shumaker are nearly identical, although originating in different localities. I fruited them strictly from the originators and find the Alexander the best. For size, color and uniform growth with great hardness it has no superior in this class.

The Arkansas Traveler is a few days earlier but not so uniform in size, and the trees do not prove to be as hardy with me. The sample of these sent you were grown on trees budded on a species of Plum of the Wild Goose type. The Plum root does not seem to make the tree any hardier, but the fruit has been larger than when trees were worked on their own roots.

The Baker Peach is a larger Peach than Alexander, a few days later. Claimed to be

freer from rot, but as all varieties are doing well it will be difficult to notice any advantage.

The Early Beatrice sent are fair samples. This variety is now generally discarded as small and worthless. In my estimation the variety is worthy of cultivation if properly managed. They should be thoroughly thinned early in the season, as they are very liable to overbear, but here they are fine if well ripened down to the smallest. They are splendid keepers and ship well, being high flavored when well ripened, although picked hard. The tree is subject to the curl leaf, but the fruit buds are hardy. It ripens a few days after the Alexanders are gone.

The Early Rivers is a fine Peach, ripening some two weeks later than Alexander.

The Wild Goose Plums, of which samples were sent, are below the average size. The green one is a fair sized specimen. This variety is perfectly hardy here, always blossoms freely but fails to fruit heavy on account of not fertilizing well. I have it from good authority that by planting other varieties of the same species this defect may be remedied. From its earliness and handsome appearance it must be a profitable Plum to grow if this defect can be overcome. Owing to the severe drought this summer I have but little extra sized fruit. It must now be below the average. Grapes will be a fair crop here.

#### Acclimating Southern Trees North Peaches for the North.

D. B. WIER, LACON, ILL.

The article on this subject, by my friend Josiah Hoopes, may be right in most of the assertions made if he is understood by his readers; but I am sure he will not be generally. Had he said we cannot acclimate a *variety* of a species much farther north than its natural habitat, all would, I think, have understood him. But that a species cannot through its progeny thus be acclimated I am sure Mr. Hoopes is not going to affirm.

Examples like the latter we have before our eyes every day in our Indian Corn, Tomatoes, Potatoes, Egg-plant, all our Curcubitaceas and dozens, yes, hundreds of other things. In fact nearly every one of our cultivated trees, plants, etc., have been advanced from the South northward. On the fact that we can acclimate varieties of species depends our future hopes of improvement. That Southern trees can be and are continually being acclimated to the North by Nature's laws, and we by assisting Nature can do it much more speedily, is obvious. Take friend Hoopes' example, the *Magnolia grandiflora*. Finding a healthy, vigorous variety of that species, fruiting freely near the northern limits of its habitat, we gather and plant them, say, one hundred miles northward. Of these a few will undoubtedly be found hardy, and from such we select the most rugged ones, fruit them, planting the seeds again farther northward, and so on generation after generation; this is acclimation. If the experimenter could handle this *Magnolia* intelligently, say for 5000 years, I have no doubt but what he could carry it up to Manitoba.

I know what brother Hoopes means and says, namely, that one cannot dig up a young tree of *Magnolia grandiflora* in Louisiana, take it to Philadelphia, and there teach or toughen it to withstand the winters. But his meaning lacks plainness for the people generally.

It is true that so far we have failed in acclimating some valuable fruits; but it has been our own fault. Take the Peach. We have given our whole attention to perfecting the fruit, and little or none to developing a tree for our northern climate. At least this is true for the period previous to the last few years.

That the Peach tree can be acclimated far north of where it will now thrive and fruit I know from example. About twenty-five years ago in a Peach orchard of about 50 trees, grown from seed brought from Ohio, the severe winter

of '61-'62, when the thermometer showed 26° below zero, killed all but three or four trees, one of which bloomed the following spring and matured its fruit. All the seeds were saved and planted, and from them I grew trees that withstood 26° and matured Peaches the following season. The seed was again sowed; from this I grew trees that both wood and buds withstood 28°, and I thought I had a fortune.

But unfortunately I budded the whole outfit on seedlings of the European Plum, so as to have hardy stocks, but the last winter was very dry as well as cold, and spring found the Plum roots dead. And I here put it on record for the first time that these trees after 28° below zero should bloom enough for a full crop of fruit. All the varieties from that seed yielded really good Peaches, therefore the loss was a great one. The whole race was lost.

Farther, I now have two seedling Peaches of a very distinct race which have withstood without any protection or care 35° and 31°, and 28° several times, but unfortunately the fruit buds mostly kill at 20°, though a few stand 24°. The fruit of these is excellent though not large, and curiously enough these are the only Peach trees that I have ever known that sucker from their roots. This they do quite freely, and their seedlings as well. Twenty years of systematic effort, with a hardy race, should give us trees suitable even for Wisconsin.

But it now seems probable that this task has been done for us by others. The newly introduced Peaches from Northern China seem to be as hardy as our native Willows and Oaks.

#### W. W. Rawson on Some Fall Vegetables.

Cauliflowers require a great deal of moisture, being composed of seventy-five per cent of water. In a dry season I devote my steam pump to the Cauliflower crop; year before last I worked the pump night and day, thereby making a crop worth \$3,500, when without this it would not have been worth over \$1,000.

In irrigating, I first plow the land into ridges and run the water in the channels thus formed between the rows. Cauliflowers do not show the effect of dry weather until they begin to head, and if there is danger of a check then the application of water will cause them to go right on.

The variety selected makes some difference. The Early Paris Cauliflower is good, but if it grows large it becomes loose. The Eufurt is very solid and will grow in all situations, and not one in the end will miss heading. Last year I raised fifteen varieties. Cauliflowers are grown very extensively on Long Island, the Algiers being the variety chiefly cultivated there. It attains a weight of from ten to twelve pounds, but requires a season four to five weeks longer than other varieties.

Cauliflowers are attacked by a flea as soon as they get out of the ground. The only remedy is to drown them out, which is done by sprinkling freely three times a day. Owing to the ravages of this flea, I have frequently sold plants to cultivators to whom I had before sold seed. Cauliflowers will absorb a great amount of manure. They never get too much.

Mr. Rawson said he knew no remedy for the Cabbage maggot, but the Cabbages will recover from the injuries caused by it. As a preventive he plows the earth up as closely to the Cabbages as possible, and then hoes it up and treats it down.

He transplants all his Celery. He sows in drills annually to raise plants for sale. He sows in shade of a fence, digging the ground lightly and treading it down solid; then rakes it so as to make the surface firm and sows and covers very lightly. It must be watered frequently and should have sun half the day. As fences are built now it might be sown on the north side. He takes down his fence about the time the Celery plants come along.—Massachusetts Horticultural Society Report.

#### The Apple Harvest.

The crop that is worth growing well is worth harvesting well, and delivering to the markets in the best possible shape. And yet much fruit that is fair as it hangs on the tree depreciates in market value rapidly from inferior handling in the harvest. The following practical notes on this subject by Mr. Nelson Cox, of Ohio, appeared some time since in the *Ohio Farmer*, and we are glad to present them here. For picking, ladders and good half-bushel baskets with iron hooks, so there will be no dropping of baskets, are essential things to commence with.

The best time to pick is when the Apples have colored up to show well. Never pick red varieties till they get red. But do not wait till all the orchard or even all on one tree get thus into the proper condition to pick.

The best plan is to make two pickings from each tree. That is, pick all that have colored enough to insure their ripening up properly and only show the least sign of shriveling, as at that stage they keep the best. Some soils or situations will ripen up trees ahead of others; look out and pick these first. In ten to fifteen days all that have been left will ripen and redder so you would hardly know your own orchard. They will grow enough in this time to pay for all the extra work, and the last picking will give the most solid and best keepers.

To take care of the Apples as they are picked through the hot days of autumn till put into winter quarters or market I have practiced two ways. The first is to haul the Apples in barrels into the barn or other house, where the sun is completely shut out, but so arranged that the air will circulate freely. Pour them out on the floor not more than four feet deep and they keep that way very well till winter. The other way is to pack the Apples in barrels as they are picked. Put in no rotten or specked ones; fill the barrels as full as you can, put in the heads well without using the press. Haul in and store in a barn or apple house constructed without floor, on rolling ground, where it will never get wet. Permit free circulation through it, but no sun. Such a barn gives entire satisfaction.

Apples thus handled are worth 25 cents per barrel more than if left out till final packing time. Never put in piles in the orchard to take sun, rain and every kind of weather. Never cover with straw, I think it about the worst material one could use, as it heats in the sun, and makes a harbor for mice. It is also difficult to keep the straw and chaff out of the barrels. Corn-fodder is much better to cover with, if you use anything.

To put up the Apples for market, have a table about three feet wide, ten feet long, and with side boards six inches high. Empty two or three barrels on the table and pick off the rotten or specked ones before they get mashed. If they get the skin broken the cider will stick to the others making them look badly.

Pick out a basketful of medium size, not the biggest Apples, smooth and well-colored, and set two layers in the head of the barrels, stems down, and fit them in tight. When there are larger Apples in the body of the barrel than there are in the head they sell the more readily.

Make at least two grades and mark them as such. As there must not be a specked, bruised or rough Apple in the two grades, that will leave out some for the third, and they can be sold in a near market or for apple butter.

When you have filled the barrels shake them to settle the Apples into place. Level off the head Apples above the ends of the staves, and press the head down with as little hammering as possible. Nail the hoops, driving the nails as straight down into the staves as you can. Then when the merchant opens the barrel the nails will draw out as the hoop is knocked off. Mark the grade, name and your name on the other end and they are ready for market.

378. Trimming Evergreens. Pinch back the leaders, and the leading shoots of the side branches while they are tender in the month of June.—C.E.P.

THE COMPLETE GARDEN.\*

IX.

BY A WELL-KNOWN HORTICULTURIST.

(Continued from page 189.)

THE CULTIVATION OF THE SOIL.

No one operation can better serve to distinguish the successful gardener than that having to do with the preparation and after care bestowed upon the land he tills. One may underdrain to perfection and manure in abundance, but if good tillage is lacking the best results also will be lacking. Indeed, good tillage may in large measure make up for various other soil defects, as is shown by the fact that land somewhat impoverished may with the best tillage be made to exceed in fruitfulness that which is rich but poorly worked. This is reasonable. Deep and thorough preparation gives more space to the roots, promoting vigor at the same time that it opens up larger stores of food. The better the culture the more rain also is absorbed, and the better is moisture conserved for the wants of plants in times of drought. Deep and thorough tillage is therefore essential to that high culture which should characterize every complete garden.

**DIGGING AND TRENCHING.** The means of culture in gardening are digging, plowing, raking, harrowing, rolling, etc., in preparing the soil, and hoeing, cultivating, shallow digging or plowing for after culture. In small plots the first inverting of the soil for burying the surface plants, exposing a new top and pulverization is done with the spade or digging fork. To be well performed the first preparation should be two spades deep, with manure worked into the soil throughout. Such double spading is known as trenching, the second depth having to do with working over the subsoil in the trench formed by the surface spading. The comparative effect of digging to a single or double depth (trenching), is shown in the annexed figures 26 and 27. I think these engravings give a better idea than words could of the decided advantage secured to all plants and trees by thorough trenching.

The old idea of trenching, still advocated by some foreign gardeners, involved the bringing up of the subsoil to the surface, incorporating it more or less with the layer of surface soil. But this system is now generally opposed, the common-sense principle that the good surface soil should be kept at the surface prevailing instead. Good culture demands that the subsoil be broken up, somewhat manured, and perhaps gradually be mixed with the surface stratum, all to accommodate far reaching roots and to retain and equalize moisture. Of two methods of trenching to be described, the first is one which I am not aware is generally practiced, although on our own grounds it has of late years been the favorite course, being sim-

be made clear by reference to figure 30. First a trench, represented by space A, and some two or three feet wide, is made at one end of the plat to extend entirely across the plat, the loose soil being thrown out on the side away from the part to be trenched. Then the exposed subsoil shown by B is turned over after the ordinary manner of digging, turning in some manure also. Next the surface strata, represented by C, is turned over on the loosened subsoil B, after which the newly exposed surface of D receives the same treatment as that given to B, and so on across the plat. The last trench

digging and trenching for smaller ones. And with this added advantage that the surface soil becomes better pulverized than it is possible to have done with the spade, and at a fraction of the cost. But the subsoil stratum by trenching receives an advantage over that of subsoil plowing, in that it becomes more completely broken, and may more readily have manure mixed with it. If therefore land could once be thoroughly spade trenched and after that receive an annual surface plowing, with once in three years a cross subsoiling, a high state of cultivation would be reached.

For ordinary purposes, on good sized areas, however, simple plowing and subsoiling are looked upon as yielding very thorough tillage. Figures 28 and 29 show cross sections of land simply plowed and of that plowed and subsoiled respectively.

The fact that plowing of garden plots is so quickly effected by horse power makes it easier to plow the same land repeatedly between seasons with advantage. If, for instance, an area can be manured, plowed and subsoiled late in the fall, leaving the surface rough, then in the spring apply another coat of manure, this to be followed by cross plowing and subsoiling, the best possible condition of tillage would be secured. Where ground that has never been used for gardening is being fitted up it is well to devote it for the first season to some coarser crop, like Potatoes or Corn.

In ordinary subsoil plowing the lower stratum of soil is not inverted, but is simply loosened by running the plow of figure 31 in the bottom of the trench, to a depth of from 6 to 12 inches. Its effect on the soil is shown by figure 29 as compared with figure 28, the tracks of the subsoiler being clearly shown in the former. There is another style of plow in use, called the lifting subsoil plow, and this one tends to mix the soil of the lower stratum more or less with that of the upper with good results. While all drained soils are improved for creps by subsoiling and trenching experience shows that such as happens to be wet and without drainage is not, but rather the reverse, for here the broken sub-layer retains the wetness and becomes sodden.

**SUBSEQUENT CULTURE.** If that thorough culture which provides a deep, well-tilled soil at the beginning is not carried to the growing crop afterwards the first labor and expense incurred may be quite lost. Good after culture implies the idea of keeping the surface mellow and preventing the growth of weeds. A loose layer of soil, several inches in depth, is not only favorable to the admission of the air, that is needed by the roots of growing plants in performing their functions, but it is one of the best possible preventives against the bad effects of drought, for it serves as a mulch in retaining

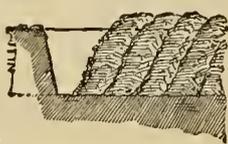


Fig. 26. Soil overturned a single spade's depth of 11 inches.

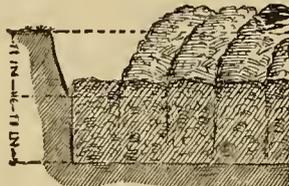


Fig. 27. The subsoil Trenched; full depth 22 inches.

DIGGING AND TRENCHING: CROSS SECTION VIEW.

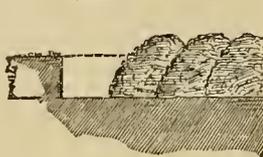


Fig. 28. Single Furrow plowing 7 inches deep.

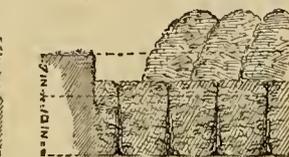


Fig. 29. Plowing and subsoiling full depth 17 inches.

PLOWING AND SUBSOILING: CROSS SECTION VIEW.

opened is filled by wheeling the surface soil first thrown out (A) into this.

Trenching once thoroughly done will continue to benefit the crops of the land for many years. In the case of open plots, flower beds, etc., which receive surface digging annually the trenching might, however, be repeated once in three or four years with desirable results. While either trenching or subsoiling (to be presently considered) are to be recommended for all parts of the garden, lawn, flower beds, vegetable and fruit areas, in case these cannot be applied throughout at the start, they should first be applied where the more permanent improvements, such as trees, shrubs, lawns, etc., are to come, extending to other parts as time will permit. On grounds where an abundance of water is available for lawn sprinkling throughout dry weather, the need of trenching is not very apparent, and here there would be no call for it beyond some special preparation needed for trees, flower beds, etc. In the case of trees, the writer never sets one in any location without first thoroughly trenching the soil underneath and for some distance beyond the circumference of the roots. And this, it may be said, is one secret of the uniformly free and rapid growth which he secures to all the trees he plants.

Both in digging and trenching a uniform depth should be aimed for throughout. It is usual to gauge this by the spade blade, thrusting this in nearly vertically to its full length. To keep the trench line tolerably straight and the trenches of an even width will give a better finish to the work. Digging when the direct object is pulverization is best performed when the soil is somewhat dry; but for the purpose of securing the benefits of air and frost to the land, as in the case of late autumn spading, then a degree of moisture and tenacity is more favorable to clods and these should be left unbroken. By spring the frost will have done the work of pulverizing very effectively, not to mention other benefits. Light soils may be worked at times when owing to wetness it would be unwise to tread on that of a clayey nature. Manure is applied in digging, either by spreading over the entire surface ahead of the spading or else over the trench bottoms and sides as one after another course opens.

**PLOWING AND SUBSOILING.** These for areas large enough to admit of horses turning around on them have in view the same end as



Fig. 30. Outline to illustrate wide Trenching.

what there is in the soil. The keeping down of all weeds is no less important, as these, with being strong, succulent growers, if allowed to grow, absorb much of the food and moisture belonging to the regular crop. The garden soil should therefore, for best results, be hoed, raked, or cultivated every week or two, so long as the size of the crop will admit, giving a preference for doing the work directly after heavy rains, that the hurtful crust formed by the beating of the rain may be quickly broken up. The good effects of repeatedly cultivating the surface is quite as apparent in the case of trees and shrubs, either fruit or ornamental, as in succulent growths. Indeed, thorough culture, both as to the preparatory work and regularly for years afterwards, is the main secret of securing that satisfactory growth in which all good cultivators delight.

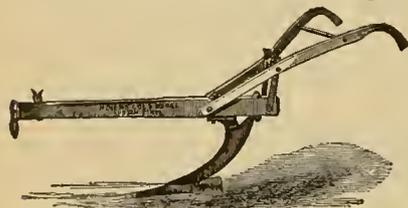


Fig. 31. A Subsoil Plow.

ple and economical of labor. This consists in keeping the trench of the top spit a foot or more wide (Fig. 27), and after scattering manure in the bottom simply spading over the subsoil from end to end of each trench, and before a new line of surface soil is turned over. With two men at the job, one taking the upper the other the lower spits, following each other across the plot, the work proceeds about as fast as common digging. The other method may

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**Notes From a Pennsylvania Fruit Farm**

BY DANIEL D. HERR, LANCASTER, PA.

Being a grower I deem it desirable to test all new fruits as introduced. I have now growing on my place 48 varieties of Strawberry, 20 varieties of Raspberry, 12 of Blackberry, 80 of Grapes, also all the latest as well as the old popular varieties of Apples Plums, Pears, Peaches and Cherries.

My experience of what will do best on a rich sandy limestone soil, no heavy limestone, is as follows: Out of 48 varieties of Strawberries I would only select the few following, named in the order of choice: Crescent Seedling, May King, Sharpless, Champion, Parry, Mt. Vernon, Cumberland and Charles Downing (Jesse, Jewell, Belmont and Bubach not yet fruited; will fruit next year).

Red Raspberries: Marlboro, Cuthbert, Hansell, Brandywine (Rancocas too dark and too soft; does no good with me and no other place that I have yet seen). Black Raspberries: Gregg, Sonhegan, Ohio, Tyler. Golden Queen (yellow); is a very large berry, good bearer, but does not sell well on our market.

Blackberries: Snyder, Early Harvest, Taylor and Wilson Junior.

Grapes.—Black varieties: Concord, Worden, Cottage, Moores' Early, Champion, Telegraph. Red varieties: Brighton, Salem and Perkins. White varieties: Niagara, Empire State, Lady Washington, Eve, Duchess.

Apples: York Imperial, Smith's Cider, Ben Davis, Roxbury Russett, Smoke-house, Baldwin, Maiden Blush, Jeffrie's Transparent.

Pears: Bartlett, Duchess, Lawrence, Seckle, Sheldon, Clapp's Favorite and Kieffer.

Cherries: Early Richmond, English Morello, Olivet, Empress Eugenie, Conestoga, Gen. Ward and Cumberland.

Plums: Lombard, Richland, German, Prince Englebert, Yellow Gage and Damson.

Peach: Globe (best of all), Mt. Rose, Stump-the-World, Old Mixon, Crawford (late and early), Sener, Salway and Early York.

**Notes from West-Central Illinois.**

JNO. M. STAHL.

I have at this writing (August 17) a Siberian Crab that has upon it blossoms and fruit in all stages of development from blossom to maturity. The blossoms and fruit are not on separate parts or limbs, but on the same limbs. The tree is making a good growth of wood, considering the drought. Who can beat this?

Numerous varieties of the English Cherries in this locality have been attacked by a fungous growth, belonging to the *Perisporiacei*. It is probably *Padosphaera Kunzii*—often very troublesome and destructive. It appears upon the under surfaces of the leaves as a white or gray mold.

Some of our Pear trees, treated to kerosene emulsion for Aphis, bear many leaves scalded, where the emulsion had run in globules. Is this not owing to the condensing action of the globules on the rays of the sun? It is a trouble to be avoided in the future.

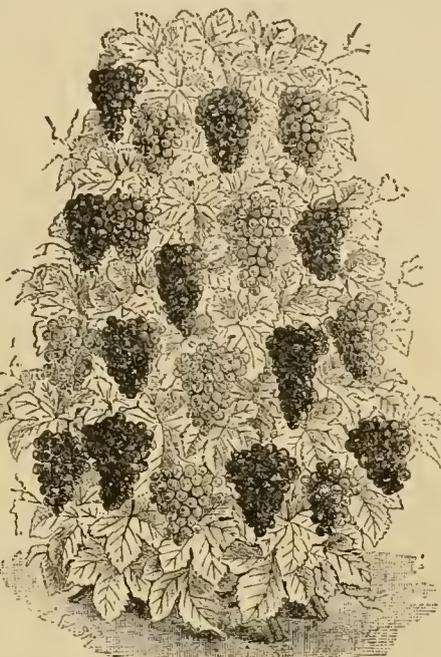
With a neighbor the Erhart Everbearing is the favorite variety among the black Raspberries. This variety contradicts all authorities by sending up late shoots which not only bear at the tips the same year, but bear by lateral spurs the next year, as new growth always does.

A friend in Louisiana writes me that he likes the Sucker State Strawberry very much, but does not like Crescent Seedling. Sucker State plants sell for three dollars per thousand in his neighborhood. He uses cow-yard manure and cottonseed hull ashes, and gets good results.

In pint boxes, Crimson Beauty Raspberries ship well, and one of my neighbors gets good crops of it by planting it in rows alternating with rows of Hansell. Grown in this way, it is productive (though not so productive as the Hansell), and the berries are well-shaped and of good quality—of better quality than the

Hansell. My neighbor has not found it tender. Both cane and berry are very handsome.

I predict that within three years berries will be shipped almost altogether in pint boxes. Certainly as fast as growers try them they will use pints in shipping long distances, and in shipping the softer sorts any distance. In the smaller bulks the berries reach their destina-



AN EXHIBITION STAND OF GRAPES.

tion in much better order, and sell better. We have been informed by the commission men that purchasers preferred the pint-box berries. It pays to ship in pint boxes, and that's what will make it popular.

Last winter and spring combined were very hard on our berries. The winter was very cold, and the spring dry. The plants weakened by the vigorous winter, were not favored by the spring. If there had been more moisture in the ground, the damage would have been much less. The Cuthberts were badly winter-killed—something very rare with us. The Sonhegan Blackberry we find very hardy, yet it was injured a little this year. The Gregg was winter-killed somewhat, as usual, and as usual it nevertheless made a good yield. Mr. Lightfoot claims for his new Lincoln Blackberry that it is hardy, and the very slight injury it sustained would likely not have been apparent if the spring had been favorable. This berry is early and of good flavor. As Mr. Lightfoot gave it practically no cultivation this year, the moderate yield it made goes as far towards substantiating his claim of its being prolific and the berry of good quality as a big yield of fine berries under good treatment would have done.

The Lincoln is a seedling found by Mr. Lightfoot, on his place near Springfield, this State. It is doubtless a cross of the Dewberry and Blackberry, and some think its Dewberry characteristics will detract from it for market. This reminds me that the color of Shaffer's Colossal is against it in new markets. Its dark purple when fully ripe gives it the appearance of a stale Red Raspberry, and people are slow to buy it until they get acquainted with it. Another thing against it is that it is not a first-class shipper; but it goes all right in pint boxes. No Raspberry cans more nicely, it is very prolific, the berries are colossal, and its sprightly flavor makes it very popular with many buyers.

**A French Method of Exhibiting Grapes.**

An excellent hint from the French on arranging show Grapes is found in the engravings on this page, reproduced from the *Gardeners' Chronicle* (London). The principal is that of

showing the fruit much as it hangs on the vine and in conjunction with an abundance of foliage. That there would be a great gain for appearances by such a natural method over that of laying the clusters on bare plates, which soon collect dust and dirt, is easily realized.

The lower engraving shows the form and features of the stand. It consists of upright metal pieces to which are attached the horizontal bands that support the water glasses.

We imagine how a show stand suited to the same purpose could be gotten up even more simple and inexpensive than this. It might be made of wood, the horizontal supports of slats some three inches wide. These could have notches sawed in from one side, of a size to admit the necks of water bottles, the bodies to be suspended beneath. These horizontal slats would not need to be circular. They might be arranged to a square, or six or eight sided form with the uprights placed in the inner angles.

**REPLIES TO INQUIRIES.**

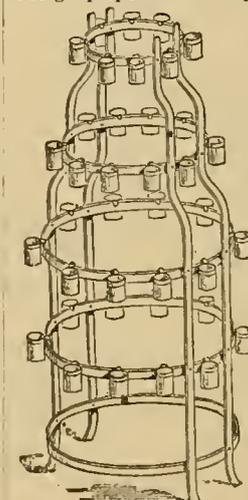
374. *Eucharis Amazonica* requires a high temperature at all times to succeed and flower successfully. I think there is little use trying to do anything with it in a cool greenhouse or window.—M. MILTON, Youngstown, Ohio.

394. Training Lima Beans. I use poles for Limas six feet high and pinch off the points of the shoots as soon as they reach this height; it induces them to fruit earlier and helps to concentrate the strength of the plant in the development of the fruit.—M. MILTON.

382. Ornamental Trees for Georgia. Evergreens.—(1) *Magnolia grandiflora*; (2) Cork Oak, *Quercus suber*; (3) Live Oak, *Quercus virens*; (4) *Cedrus Deodora*; (5) *Cunninghamia sinensis*; (6) *Lihocedrus decurrens*; (7) Fortune's Yew, *Cephalotaxus Fortunei*; (8) *Cupressus Forebris*; (9) *Cupressus Knightheara elegans*; (10) *Cupressus Lawsoniana*; (11) *Cupressus horizontalis*; (12) *Cupressus pyramidalis*. Deciduous.—(1) *Acacia Julibrissin*, var. *nemu*; (2) Silver Maple; (3) Golden Catalpa; (4) *Ilexia polycarpa*; (5) *Koeleruteria paniculata*; (6) *Magnolia acuminata*; (7) *Pawlonia imperialis*; (8) *Prunus Pissardii*, the Persian purple-leaf Plum; (9) Soap Berry, *Sapindus marginata*; (10) *Salisburia adiantifolia*; (11) Japan Varnish, *Sterculia platani-folia*; (12) Texas Umbrella, *Melia azadirach umbra-californis*.—P. J. BERCKMANS, Augusta, Ga.

397. Azaleas and Camellias. Often when these are not carefully watered after potting the roots are liable to decay. They are tender and very subject to decay if the soil is kept too wet, being more or less mutilated in removing from the pots. It takes them some time to heal over and commence growing. The soil should be sufficiently moist, but not in any sense wet. The hard, brown insect on the Camellia leaves is scale and can be easily removed by brushing off and spraying with a strong solution of whale-oil soap.—M. MILTON.

383. Spruce Windbreaks South. In middle Georgia proper the Norway Spruce is very seldom successful. Plants in



The Metal Stand Naked.

exceptionally favorable localities will sometimes grow to a fair size, but this is the exception.

Our long and dry summers are not suited to that species or to any of the *Abies*. For the upper sections of the State, especially in the mountainous districts, the Norway Spruce succeeds better. For wind-breaks the following are more desirable, viz: Amoor River Privet, *Ligustrum amurense*; Japan Privet, *Ligustrum Japonicum*; Carolina Laurel, *Cerasus Carolinensis*; Red Cedar, *Juniperus Virginiana*; Chinese Arbor Vitae, *Biota orientalis*, etc. As to the value of wind-breaks for orchards it is

demonstrated practically that Peach orchards which are protected from the northern winds by a belt of timber, Pines especially, are more apt to escape the damaging effects of spring frosts than others not similarly protected.—P. J. BERCKMANS, Augusta, Ga.

377. Raspberries Turning Yellow. They are growing in an unsuitable situation, and the only course you can pursue will be to remove them to a drier situation. Raspberries should not be planted in any low, wet situation.—C. E. P.

### Fruit Jottings and Talks by A. M. Purdy, Palmyra, N. Y.

"How about getting roots from tips?"

"We don't get near as many as when we nipped back later and caused so many tips to grow, but from our large plantation enough reach the ground to layer all we want in August and September."

"Why do you cultivate that Pear stock, there are no weeds and the ground is clean?"

"Simply because of the dry weather, and by cultivating we keep stock growing so that bark raises easily for budding. By cultivating every two or three days, no matter how dry the weather, budding can go right on."

"What! Sweet Potatoes so soon?"

"Yes; we set the plants about the first of June and dug our first Potatoes for the table the 4th day of August. All one needs at the North is light, warm, sandy soil. Keep the vines from rooting by occasional lifting from the ground and fine Sweet Potatoes can be grown at the North."

"What is your opinion about growing Red Raspberries in hills or rows?"

"If we can get plenty of stakes at little cost we prefer growing by the hill system, say 3 1-2 to 4 feet by 5 feet, and cultivating both ways and allowing 3 to 4 canes to grow in a hill, and with a cheap tooth cultivator cutting down all suckers that come up between the hills both ways."

"How about varieties?"

"For blacks we always grow the Davison's Thornless for extreme early; we can get two good pickings and obtain 10 to 15 cents per quart for them, while sorts coming on 5 to 6 days later drop down to 6 to 8 cents. Our choice is Davison's Thornless, Tyler, Ohio, and Gregg for blacks, and for reds, Hansell and Crimson Beauty; for extreme early, Turner and Cutbert—the last beats all for size and productiveness."

June 27th and first picking of Crimson Beauty and Hansel Raspberries—as also a few Davison's Thornless Black-caps—all of which sold quick in Canandaigua at 8 to 10 cents per fruit basket. The Crimson Beauty is the largest and much the best berry, but we notice when not near the Hansel to be perfectly fertilized they do not grow so perfect and fine. We shall plant largely this fall of such early sorts, as most are sold before they get below 10 to 12 cents per quart.

"Running your evaporator, I see?"

"Yes; we are drying all windfalls in our orchard and what we can buy, large and small, and chop or slice it up, and sell for 'chopped' fruit at about 4 1-2 to 5 cents per pound."

"What is it used for?"

"For making jelly, and largely for coloring in large factories. By thus keeping them used up a large share of the worms that would work upon our crop next year are destroyed."

"I see your Raspberry bushes are growing very luxuriantly since the rains. Wont you need to cut out the old wood soon and nip back the new growth?"

"No, we have changed our practice by leaving the old growth in till winter and then cut it out. We do this because we have become satisfied that the old stiff wood or canes make a good support to the new growth, and prevent them breaking down by hard winds, and, too, we have so much more time in open spells in winter to take out the old wood, and the reason why we are allowing them to grow so freely without nipping is that we are satisfied late nipping causes them to throw out a large amount of new growth, which growing so late in the fall is easily winter killed—especially is this so with the Gregg. We nip them once or twice in early season to cause them to branch low and each stalk to form three or four branches, and then we let them run, doing no more cutting back or nipping till the danger of severe cold weather is over in March. We find in this way we have better and stronger canes, standing more upright and yielding all the fruit they can carry, and, too, old plantations grown thus and properly fed with fertilizers will keep on yielding good crops for six to eight years."

### Evaporated Raspberry Outlook.

In answer to many inquiries from fruit growers I am safe in saying that the evaporated Raspberry crop in this extensive Raspberry section will not exceed two-thirds of last year's crop. I had last year of my own make 10,000 lbs. This year, with 1-3 more plants to bear, I'll not have over 8,000 lbs., and this is a fair criterion to go by all around me. They must command high prices, and 30 to 35 cents per pound would

be no higher this year than 20 to 25 cents last year. Let evaporated Raspberry holders take a hint and hold their crop.

As to Apples, the crop through the great Apple section will not exceed one-half of a full crop, because of failure of the Baldwins.

The reason for shortage of Raspberry crop is the bad open weather and freezing and thawing in March last, killing so much of the top on berry canes, as also are insects in many plantations, and also the severe drought through Western and Central New York, and the badly damaged plants over much of the East.

### Evergreens From Cuttings.

Having had some experience in raising Evergreens in this way I can readily endorse the statements below, which appear in Mr. A. S. Fuller's new work on forestry. By observing them closely any one should be able to supply themselves with a stock of Evergreens which if planted in nursery rows would, after a few years' growth, furnish an ample supply for ornamental hedges, wind-breaks, or ornamental trees for the lawn:

"Cuttings are made of the ends of the smaller branches, and mainly of the ripe one-year-old wood, but with some kinds a little of the two-year-old may be taken at the base of the cutting. The cutting should be from three to four inches long, and the leaves of the lower half cut away and the lower end of the cutting made smooth with a sharp knife.

"Sand is preferred to soil in which to raise cuttings of Evergreens, and it may be put in boxes of convenient size for handling, or in large frames, but boxes will be found most convenient, as it enables the operator to change his cuttings from one place to another should it be found necessary to secure a proper temperature. The boxes used may be four or five inches deep and eighteen inches to two feet square, and when filled with moist sharp sand they are ready for use.

"To make a channel in which to set the cuttings, use the edge of a pane of window glass, sinking it to the proper depth and across the width of the box. Set the cuttings in this close together until it is filled, and press down the same firmly against them. Then make and fill another crease in the same, two inches away, and so on till the box is full. Apply water to further settle the sand about the cuttings, then place the boxes in the shade until roots are produced, which in some cases will take six months, while in others they will appear in a less number of weeks.

"The object in all such cases is to give the cuttings a chance to throw out roots before the top is forced into growth, as will usually follow placing the cuttings in full light and in a warm atmosphere. In all cases where ripe cuttings are employed for propagating Evergreens time must be given for the cuttings to become well furnished with a callus at the lower end before they are forced into growth, else they are certain to fail. Sometimes cuttings are kept through winter in a moderately warm room, and in spring placed in a hot-bed where they may receive bottom heat, to assist in the production of roots and forcing the tops.

The propagator can always learn how his cuttings are progressing by taking out a few occasionally and examining the condition of the callus at the base. If after they have been planted two months or more no callus is to be seen, he must give a little more heat, or if they are in a cold frame in the open ground add a little more covering."

### Plant Some Evergreens.

SAMUEL C. MOON, MORRISVILLE, PA.

No matter how many fruit and shade trees there may be on the place there should be also some Evergreens in proximity to the buildings. A home in the country entirely destitute of these presents a cold and cheerless appearance in winter, and stands in marked contrast with

the one sheltered by groups or a belt of Evergreens on the cold quarter. In exposed situations such a screen is of immeasurable value for protection from the force of piercing blasts.

In order to form a wind break it is not necessary that trees shall stand either in straight lines, or so close together as to spoil each other's symmetry. They may be planted in a broken line or in a succession of groups or dotted about as single specimens in such a manner as to present a line of defence that will break off the wind, and at the same time present a pleasing effect, with room for the perfect development of each specimen.

The best adapted for common use in planting are Hemlock and Norway Spruce, White, Scotch and Austrian Pine, European Silver Fir and American Arbor-vitæ. These possess the merits of being very hardy, of rapid growth, and they all attain to large size. Beside these well known sorts there are many others more rare but equally hardy and desirable. Those who want something rare and beautiful that will flourish with ordinary care may safely plant any of the following:

Bhotan Pine (*Pinus excelsa*) is one of the largest and finest Pines, with long, graceful, pendulous leaves of a silvery green hue. Native of the Himalaya mountains.

Eastern Spruce (*Abies Orientalis*). An elegant very symmetrical Spruce of medium size and moderate growth. The branches are densely clothed with short glossy foliage, and retain their lively green color admirably at all seasons of the year. Native of Caucasus mountains and shores of the Black Sea.

The Siberian Fir (*Abies pichta*), from the mountains of Siberia, Nordman's Silver Fir (*A. Nordmaniana*), from the Crimean mountains and those east of the Black Sea, and the Cephalonia Fir (*A. Cephalonica*), from the rugged Mount Etna and Olympus, and the mountains of Greece and Cephalonia, have long been considered in Europe and America three of the finest Evergreen trees in cultivation. They are all extremely hardy and beautiful in color and in habit of growth.

The Retinisporas are a distinct family of Evergreens of more recent introduction from Japan. All of the varieties are quite distinct from any of our common native trees, adding a new and pleasing variety to old collections. *Obtusa* is called by the Japanese "The Tree of the Sun," and is the glory of their forests. It is a very rapid grower somewhat like the Hemlock Spruce in habit. There is also a dwarf variety, *R. obtusa nana*, a small tree of very glossy bright green color. *R. plumosa* and *squarrosa* have soft feathery foliage of silvery or glaucous color, and look like huge pyramidal plumes. In the Golden Retinispora (*R. plumosa aurea*), the young growth is bright golden yellow, making one of the prettiest trees of this character in the entire list of cultivated Evergreens.

Pyramidal Arbor-vitæ (*Thuja pyramidalis*) is a tall cylindrical variety, more slender and compact in habit than the common American. The dwarf Arbor-vitæ, *Thuja compacta*, *T. globosa* and *Silbertica*, are all symmetrical little bushes well adapted for small spaces.

### The Fruit Cure: Fall Boarders.

SUSAN POWERS, NORFOLK CO., MASS.

The best way to use up surplus fruit I can think of is to feed it to boarders. Not summer boarders, to oblige the women of the family to work hardest in the July heat, but autumn boarders in the full fruit season.

In Spain and the continent generally invalids are sent to the vineyard regions for fruit cure, by eating fresh fruit morning, noon and night. Consumptive and scrofulous or dyspeptic persons, those suffering with Bright's disease or gouty humors, and the rheumatic or neuralgic generally, beside ricketty and weakly children, are specially benefited by this treatment. At this season, when torrid heats are past, the

air is most invigorating, and the sun can well be borne. It is possible for people to be out-of-doors all day with advantage, and the fruit eaten fresh has a virtue it loses in transportation.

If these benefits were better understood it would be as regular for families to seek farm houses from September till November as it is now to go the other way. A season of ripe fruit eating, and stirring life in the country, when the air prompts to activity, would be better for many ailments than a course of Saratoga waters.

In not a few parts of the interior it is a growing custom for city people to seek the vineyards at the wine-pressing season, to drink the "must" or juice fresh from the press. Delicious draught, which as medicine far outdoes drugs. For consumptives it furnishes the phosphates of the vine, its acid quickens torpid livers and cleanses the blood of rheumatics. It is a corrective of obstinate obstructions, and sallow, languid women go home from a vineyard course with bloom on their cheeks, and spirit in their frames. But they do not live on fruit alone, even a pig will rebel at that.

Why cannot many farmers and fruit growers raise their own poultry and mutton, their fruit, Sweet Corn, Tomatoes and Peas plentifully till hard frost, with a little care and shelter? And then to feed such to boarders at \$5 and \$8 a week, rather than sell Apples at \$1 a barrel. Boarders don't need so much preparation after all. Clean uncarpeted bed rooms, for good sense and sanitation are pulling up bed-room carpets as abominations; good home-made straw, oat chaff, husk or clean wool beds, not with wire mattresses, which are the chief expense. Neat toiletsets of painted tin, which are the last English art fashion, and a very sensible contribution to thrift and convenience, such furniture as a carpenter could make, and cheese cloth curtains, with well drained grounds, good drinking water and good food plainly served would satisfy most people, and farmers ought to furnish all these to their own families. The women too had far better work for boarders in cool weather, when the air puts life into them.

It would be shrewd too for town people to buy their winter butter, fruit, cheese and honey right from good farmers in such a fall vacation. It would be profitable to both sides. The farm wives can get more than country price for their produce, and town people can stock their pantries for less than town rates, with vastly better quality. The fruit has the flavor of the sun, and has not been impaired by the fetid air of markets.

#### CONDENSED GLEANINGS.

**Greenhouse Without Heat.** An old or any house can be utilized to good advantage by in the fall planting the beds with Tulips, and Candidum Lilies, and let the house take care of itself, until toward spring, when with a very little heat, and sometimes with merely the heat of the sun, there will be Tulip blooms for Easter and Candidum for June school commencements. The treatment follows nature so closely that the bulbs are not injured for future blooming.—American Florist.

**Best Crop for the Young Orchard.** In our climate, Buckwheat. If any one doubts this it may pay to sow half the ground for the first four years to Buckwheat, and plant the other half to Potatoes, Corn, Cabbages, or other cultivated crops. By the end of the four years the trees in the Buckwheat will be the largest, healthiest and soundest of the patch. The Buckwheat has a tendency to keep the ground cool, mellow and moist during the critical period during July and August. With this kind of soil the nitrogen feeding roots can come up near to the surface and the trees seem to ripen up better for winter. The Buckwheat can be cut for use, but if left on the ground there is little danger of the girdling by mice.—J. L. Budd, in Iowa Register.

**Summer Pruning of Pines.** These trees when growing fast are apt to make thin, unpleasant-looking specimens. A remedy can be accomplished by shortening the growths which the tree makes this season. All the strongest growths are in the upper portions of the tree, and if these are cut back a few inches while soft and green quite a number of small buds will be formed, which next year will make numerous branches, and thus thicken up the tree. The leading shoot must be cut off as well as the rest. Another bud for a leader will be formed now, and the tree will in no way be disfigured by the shortening-in. It is important to be borne in mind that only the strong upper shoots should be pruned back. The weaker ones growing near the ground should not be touched.—Germantown Telegraph.

**Trees as Bushes or Pollards.** There is nothing finer for a small lawn or for groups on a large lawn. Among the best for this purpose are the Lindens, especially our common Basswood, Catalpas, Tulip tree, Beeches, and Birches; and among fruit trees, the Cherries. Even a dwarfed Apple may be made by pruning alone, and made very



HEAD OF DWARF GERMAN GREENS.

pretty. The Jonathan, grafted on ordinary stock and headed low, becomes a marvel of beauty. Of forest trees cut into shrub form; I have on my lawns many specimens of Catalpa. They do not exceed ten feet in height, and are in some cases as many feet through. Most of the Magnolias do better cut in this form. The Linden furnishes much larger leaves and will blossom freely when old. I have cut them down three to five inches in diameter, and in two years secured superb shrubs. Our wild lands often show us superb specimens of such planting, the result of cattle browsing. Nature thus gives us a hint.—Gardener's Monthly.

**Dwarf German Greens.** This hardy variety is well known to market gardeners near New York, and is more generally grown than any other kind of greens. It is called "Sprouts," and cultivated extensively on Long Island and in New Jersey for the New York market. It will grow and winter better on a rich, sandy loam than when raised on a heavy soil. The seed should be sown in September, using two pounds of seed to an acre, on ground well manured and worked in rows, from twelve to fifteen inches apart. When the plants are two inches high, let them be carefully hoed, thinning them out where they are too thick. Some gardeners put on a mulch of salt marsh-hay in December, removing it in April. When the Sprouts have made a fair growth in the fall, mulching is not necessary. When Spinach is scarce, this kind of greens sells freely in large quantities and at very profitable rates. Where it does well gardeners realize from two to three hundred dollars per acre profit. Prices often fall very low. I have known hundreds of barrels of Sprouts to be sold at fifty cents, and even less, per barrel, while other seasons they will range from two to four dollars per barrel. Two ounces of seed will yield enough for garden-culture for home use. The seed can be sown early in April, and tender greens can be had in this way in June. When grown on rich soil it is very tender.—Quinn's "Money in the Garden."

**The Philosophy of the Use of Fertilizers.** No soil can produce any crop abundantly if it does not contain all the food that the plants require.

The value of commercial fertilizers is based chiefly on the analysis showing the available phosphoric acid, ammonia and potash. The bone phosphate of lime existing in the bone meal must be made available by the addition of sulphuric acid, thus changing the bone phosphate into phosphoric acid, which is readily transported to the roots by the water of the soil. Should the undissolved bone phosphate in shape of bone-meal, bone-ash, bone-black, horn, hair, wool, etc., be applied to the ground they would feed the roots so slowly by natural decomposition that it would be insufficient for heavy crops, or else very large quantities of it are required. Many are under the impression that commercial fertilizers are nothing but stimulants. This notion is simply absurd. Commercial fertilizers furnish true plant food if made from raw bones, as their composition is the same as that of farm manure, only in a more concentrated form, and therefore more cheaply applied; a very few pounds of powdered bone meal will contain as much actual plant food as a load of barnyard manure. Plants have been grown to full maturity and abundant yield on poor lands with commercial bone phosphates only; this could not be done

with stimulants or ammoniates, same as cotton-seed meal, blood, castor bean, refuse, etc., as they contain only ammonia, which is soon exhausted in starting the growth of the crop, but unless there is an abundance of plant food in the soil without permanent results to the crop so far as the seeds go ammonia will produce grass and roots only. A sick man may be carried over a crisis with alcoholic stimulants, but cannot recover on the same or exist on it permanently. Sir J. B. Lawes, of England, has grown crop after crop at a practical profit on exhausted lands for forty-two years in succession on bone phosphates only, and his crop of 1883 was as large as in 1840, using the same quantity of fertilizer annually as necessary to produce that quantity of grain per acre.—H. Studniczka, in Coleman's Rural World.

**Handling and Marketing Grapes at Penn Yan.** Picking is usually done by men, but can be done by women. The best pickers are the men who have been with the vines from the spring. The qualities required in a picker are a thorough knowledge of the condition and ripeness of the fruit and care in handling. All the fruit can seldom be taken off at one time. Usually enough fruit is kept on hand in the cellar for two or three days' packing for the purpose of curing, and to guard against having to atop packing in unfavorable weather for picking. Dry weather must be chosen for picking if possible. The fruit is placed in picking trays 24 inches long by eight inches deep and twelve inches wide. These are taken to the cellar or packing room on wagons arranged for the purpose. Packing and trimming are done by the women. The packing-room is light, clean, and well ventilated, and is kept as cool as practicable to be comfortable to work in. Every imperfect Grape must be removed. The clusters must not be mutilated any more than positively necessary, nor the bloom brushed off. Each trimmer has a stand, chair, a pair of triumphing scissors with long, slim points, and a pan for refuse Grapes. Four hands to trim, one to pack, and a man for the lifting, covering, marking baskets, etc., are the usual gang. Five and ten-pound baskets with covers are universally used as packages. Good judgment and experience on the part of the packers will largely determine the condition of the fruit when opened. Seventy-five cents for trimmers, \$1 for packers, and \$1.25 for pickers are the usual wages per day. Many Grapes are shipped by express, but by far the larger part by freight, the roads giving refrigerator or well ventilated cars and quick time. Our markets are the larger cities east and west and the wine companies. Inferior Grapes are either thrown away or the juice is used for wine, brandy, or vinegar. Certain conditions of the weather will cause a large loss in shipping fruit which will in no wise injure it for wine purposes. Catawba, in a good, common cellar, can be kept for months with little loss, if properly ventilated, and with proper humidity, in a temperature which can be obtained without ice. Delaware are short-lived, or too delicate to keep long. Concord can be used to holiday time.

The Niagara, for a white Grape, though comparatively new, is without doubt a valuable variety and is being extensively planted—Geo. C. Snow, in Rural New Yorker.

### On the Culture of Hardy Bulbs.

WILLIAM FALCONER, GLEN COVE, N. Y.

**THE BEST TIME TO PLANT.** Any time between now and November will do, but bear in mind that the bulbs will be better if put into the ground now than they will be if left in the seedsman's store for another month or two. And the prices don't get any less no matter how long you delay buying, but the longer you put off getting your bulbs, the less likely you are to get a good selection or good bulbs.

**WHAT TO PLANT.** This will depend on what you want them for. If for beds, then Tulips, Hyacinths, Crocuses and Siberian Squills; the first two to fill the center of the beds and the last two for use as edgings.

If you want them to set out in your borders to give you a variety and display of spring flowers, then get Hyacinths, Tulips, Daffodils, Poet's Narcissus, Crown Imperials, Guinea-hen Flowers, Crocuses, Snowdrops, Siberian Squills, Spanish Squills, European Blue-bells, Grape and Feather Hyacinths, and the like. And this is a most enjoyable way of using them; you can plant them most anywhere, and in summer after they have bloomed and died down you may let other plants spread over them without hurting them. In the case of Crocuses and Snowdrops they seem most at home when spread broadcast in the grass or skirting the bushes. But in thus naturalizing them plant them in good, moderately moist ground only, and instead of spreading them thinly all over the grass, keep them together, quite thickly in the main patch and more thinly towards the outer edges. And don't mix up a lot of things, as Crocuses, Snowdrops, and Siberian Squills together; keep each in a colony by itself.

I wouldn't recommend expensive bulbs to an amateur; indeed, I always grudge the money for Hyacinths to bed. I think they cost more than they are worth, and after the first year aren't much good. But Tulips, Daffodils, Crocuses, Snowdrops, Guinea-hen Flowers, and some others, not only are showy and easy to grow, but with moderately kind treatment they continue to bloom well and multiply year after year, and they are quite inexpensive.

**SOIL AND SETTING OUT.** Bulbs love a deeply worked, light rich soil, but they will grow and prosper in most any good garden ground. With sand, coal ashes, burned clay or other light material we can correct a stiff soil, and by adding loam freely improve a sandy one. Good drainage is of much importance. A naturally rich soil, or one that has been well manured for former crops, is preferable to freshly manured land. Many bulbs, Tulips and Hyacinths, for instance, may enjoy well-rotted cow-manure in the soil, but Lilies display a great repugnance to it. Therefore be on the safe side and manure well from the surface in the way of mulchings rather than by working the manure into the ground.

In planting set the bulbs deep enough so that frost may not throw them out in winter. Hyacinths, Tulips and Daffodils may be four inches under the surface of the ground; and Crocuses, Squills, Snowdrops, and the like, some 3 inches. If planted early so that they may firm themselves by fresh roots before winter sets in, or if they are mulched over by some loose well-rotted material in winter, they are not likely to be thrown out by frost.

But observe if you set out your bulbs in ground matted by the roots of trees and shrubs they may bloom well enough the first year, but after that very indifferently. In such

quarters you can help matters by top-dressing in fall with manure and compost.

**MULCHING THE BEDS.** As regarding mulching with leaves, thatch or other rough material over winter, in the case of early growing stock, I cannot recommend the practice. Snowdrops, Crocuses, Winter Aconites, Erythroniums, Iris reticulata, Bulbocodium vernalis, Early Scillas, Roman Hyacinths, Duc Von Thol Tulips, Daffodils, many Fritillarias, and the like, should not be mulched, except by a thin coating of

The following is a selection of good, showy, reliable and inexpensive sorts:

*Hyacinths*, single, white—Baron Van Thuyt, La Candeur, Vesta; blue—Charles Dickens, General Havelock; red—Amy, Robert Stieger. Double, white—La Tour d'Auvergne; blue—Garrick; red—Bouquet Tendre. For very early have some White Roman Hyacinths. The Amethyst Hyacinth is a pretty little blue flowered species. Grape and Feather Hyacinths (*Muscari*) accommodate themselves to most any place in the garden, and are very hardy.

*Tulips*, single, red—Scarlet Duc Von Thol, Artus, Belle Alliance, and Vermilion Brilliant; Thomas Moore, Nankeen, Keiser Kroon, and Duchesse de Parma, red, striped with yellow; Cottage Maid, rose and white; Pottelaker, white; Canary-bird, Chrysolora and Yellow Prince, yellow. Double:—Imperator rubrorum, and Rex rubrorum, red; Tournesol, red and yellow; La Candeur, white; and Yellow Rose, yellow. Add a few Bybloemens and Bizarres by way of variety; and by all means some Parrot Tulips for their odd fantastic form and because they bloom so late.

*Crocuses*. Say "Spring-flowering mixed," with the addition of some large yellow flowered. And if you want some lovely fall-blooming Crocuses, get *Crocus speciosus*. And also to bloom in fall get some Colchicums, or Meadow Saffrons, as they are commonly called. *Colchicum autumnale* is the commonest, but *C. speciosum* the largest and loveliest.

*Snowdrops*. The common single and double variety of it; Elwesi, for beauty; and the Crimean Snowdrops for size and lateness.

*Squills (Scilla)*. The Siberian Squill is the best of its class, its flowers are porcelain blue, and appear in March and last through April. The Spanish Squill (*S. campanulata*), 12 to 18 inches high, makes a capital border perennial.

Blue Bells (*S. nutans*) are the blue Squills that abound so plentifully in European woods; they are just as easy to grow here. Glory of the Snow (*Chionodoxa Lucilic*) is a squill-like little gem well worth growing.

*Crown Imperials*. Get a few red and yellow flowered varieties and grow them in clumps and in good ground; also Guinea-hen Flowers to scatter along the front of the shrubberies.

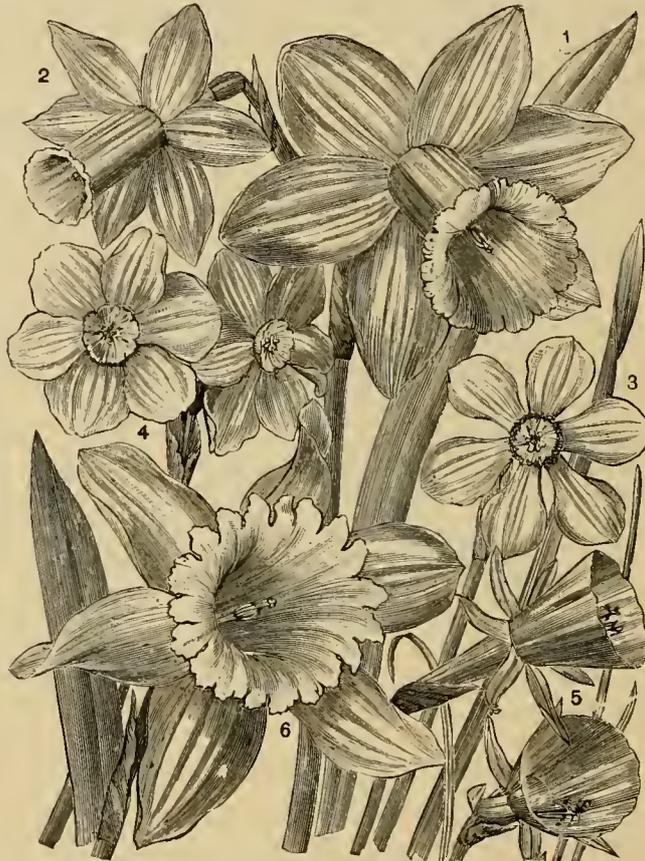
*Narcissuses*. Common single and double Daffodils and Poet's Narcissus. Orange Phoenix does well in most cases; so do Horsefield's Emperor and Empress, but these are too high-priced. No doubt many other species and varieties of Narcissus may prove satisfactory perennial plants with us, but really they seem rather refractory. The first year they bloom splendidly, the next year a few drop out, and so on until the collection dwindles very much. Even Jonquils are not always to be depended on. But with the aid of cold frames and pots, and lifting and drying in summer all the early growers, we manage most of them fairly well.

Besides the above we have Lilies, Dog's-tooth Violets (*Erythronium*), Belladonna, Amaryllises, Red and Blue Brodiaeas, White Cooperias, Star-of-Bethlehem, and several others.

### The Fragrant Pond Lily.

WM. H. YEOMANS, COLUMBIA, CONN.

Among the many beautiful flowers that grow wild, or without the attention of the cultivator, there is none, probably, more admired and more largely sought than the white Nymphæ of our ponds and rivers. While it is seldom



No. 1, *Narcissus Bicolor* Horsfieldi. No. 2, *Moschatos albicans*. No. 3, *N. poeticus rodulforus*. No. 4, *N. biflorus*. No. 5, *N. bulbocodium*. No. 6, *N. maximus*.

#### GROUP OF NARCISSUSES.

half rotted leaves or old manure, something put on for permanent. It is not the intensity of frost in winter so much as the tearing winds of March that destroys early vegetation; therefore it must be plain to any one that the time when the mulching should be removed is just the time when the bulbs would need it most. But what on earth is the use of mulching hardy bulbs at all in this way? It is all very well to mulch late starting stock, for instance, Hall's Amaryllis, Spanish Irises, and some Asiatic and California Lilies, but even here, in the case of Lilies, we must use great discretion, for while Auratum Lilies are late in starting, Hansonii is the earliest of all, and both are Japanese. A very thin coating or thatch may be beneficial in preventing sudden thawing and consequent "scalding," but it should not be used thick enough to blanch the growths. We mulch all of our Lilies with a heavy coating of tree leaves every winter, but the leaves are put on for permanent more as a protection against the summer's heat and drought than the winter's cold, and we mark the places of the Lilies with strong pegs, so that we can push the mulching aside from over the tops of the bulbs, which in spring send up their growths unimpeded.

**AS TO SELECTION.** Give preference to special sorts when buying rather than to mixtures, and, if you are a beginner, avoid high-priced bulbs till you know something about the good old standard sorts, and confine yourself to Tulips, Daffodils, Poet's Narcissus, Crocuses, Snowdrops, Siberian Squills, and other common plants that never fail to grow and bloom and make an excellent show.

that any attempt is made to cultivate it unless in artificial ponds, it should be understood that this plant may be enjoyed by every household, even without the facility of a pond or stream, and at the cost of comparatively little trouble.

All that is necessary to the growing of this flower is to procure a good sized, strong wooden tub in which is placed a layer of swamp mud and the roots of the Lily, which may be obtained from any pond or stream where they grow or procured from their natural place of growth, buried in the water, by the assistance of friends who reside near.

After the roots are well placed in the mud, it is advisable to cover with a thin layer of sand to hold the roots more securely in place, and then the tub filled with water and kept so as evaporation progresses. In this manner Pond Lilies may be enjoyed through the season, and before winter the tub can be set in the cellar or some place where there will be no great danger from frost, to be set out upon the lawn again in the early spring.

#### Eucharis Culture In the Window. The Amaryllis and Ismene.

A. P. NEEDHAM, MIDDLESEX CO., MASS.

It is timely that I should speak of the culture of this plant in the window perhaps, for mine grown here is coming into bloom, and to flower a plant well I believe is looked upon as the real test of one's success in its culture. My success with this exquisite plant, however, as with all my plants, seems to be more a matter of intuitiveness than anything to be laid down by fixed rules. Still, so far as I can recall the treatment, it is at the service of your readers:

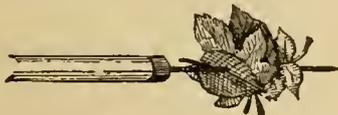
In the first place I started a pot with four good sound bulbs, in rich soil, made so by good loam and old cow manure, and a small portion of wood ashes, all well mixed, not giving too much water at the outset but increasing the supply daily. The Eucharis must be grown in a high temperature. When I see signs of flowering I give them liquid cow manure once or twice a week. I also add some wood ashes. It must not be given too strong.

For two or three years I had blossoms at Christmas, the time I most want them. Last year they did not blossom at that time, and in the early spring they were put in a back room and no attention paid them save an occasional sprinkling of the leaves. They were put under a window with light but no sun; the leaf growth, which was fine, did not in the least flag.

After about three months of absolute rest I discovered that they were about to blossom; the soil being perfectly dry, I immediately put them in water, soaking the earth through. I then put the plants in a light window with just a ray of sun, and gave them regularly twice a week liquid cow manure. The result was the largest and most beautiful flowers I had ever had. This year I repeated the experiment with the same result.

Preferring to have them blossom in winter, I am in hopes to again bring them round in the course of time.

Thus you can see how very informal my way of culture has been, and in this as in other



Pick for Gathering Leaves on Flower Beds.

classes of plants find my best results often come in the same way. With an amateur gardener it is not easy to follow in a beaten track, and the best results often depend on what seems to be very little things.

But of one thing I am sure: the foliage of any plant must be kept absolutely clean, and especially in the Eucharis keep it as perfectly clean on the under side as on the upper.

I would like to take this opportunity to recommend to your readers the Amaryllis formosissima and Ismene calanthen as late winter

flowering plants, as the florists recommend them for summer outdoor culture. It is very true they blossom in the garden in summer, but they are far more beautiful as house plants, indeed they are not the kind of flowers to well bear the vicissitudes of the outdoor garden.



PLANT OF EUCHARIS IN FLOWER.

I put my bulbs in their pots, using good, rich soil, about the middle of February, and through March and April they are a great delight. In May they are turned out of their pots and put in the ground for leaf growth, upon which depends their next year's blossoms.

#### Peter Henderson on Forcing Hybrid Perpetual Roses.

To get the Hybrid Perpetual class early (say during December and January) requires special skill and care, but it well repays the trouble, as this class of Roses now bring an average of \$50 per hundred buds at wholesale from the 15th of December to January 15th.

The method found to be necessary is to grow these Roses in pots, exactly like the evergreen or Tea Roses, except that, as they have a tendency to grow tall, the center should be pinched out of the leading shoots before they get a foot high, so that from five to six shoots run up, and thus not only make the plant bushy, but, what is of more importance, these slimmer shoots are less pithy and ripen off harder, thus insuring with more certainty a greater production of buds.

The varieties of Hybrid Perpetuals best adapted for early forcing are: Anna de Diesbach (rich pink), Countess of Oxford (very large, soft, rosy carmine), Magna Charta (splendid bright pink), La France (rich peach color), Mad. Gabriel Luizet (light pink, splendid), Paul Neron (immense size, dark pink), Baroness Rothschild (rich shade of rose), Rosy Morn (cherry rose, large and full), Merveille de Lyon (pure white, other characteristics same as Baroness Rothschild), Anna Alexis (dark pink), General Jacqueminot (crimson), Princess C. de Rohan (crimson, almost black), Dinsmore, (crimson, scarlet), Marquis de Castellaine (brilliant, pinkish carmine), Pride of Waltham (peach color).

The plants if started from cuttings any time from September to January, the season in which we prefer to root them, will, if properly grown, by August 1st, (or at less than one year old), have filled a seven or eight-inch pot with roots. Now is the critical point. The plants must be ripened off and rested, if a crop of buds is wanted by December, January or February; so, to do this at a season as early as the 1st of August the plants must be gradually dried off sufficiently to make them drop their leaves, though not to wilt them so violently as to shrivel the shoots. A rest of two months is necessary, so that the plants, which were commenced to dry off by the 1st of August, may be started slowly by the 1st of October, and those begun to be dried off by

the 1st of September may be started, also at as low a temperature as possible, by the 1st of November.

On first starting, give the dry balls a thorough soaking of water. If placed in sunken pits or greenhouses, where there is no fire heat, the one good watering will usually be enough until the buds swell, though the wood should be kept moist, by syringing twice or thrice each day. These, like the Monthly Roses, are best ripened off by placing them in the open air; though, if continued wet weather occurs when they are thus placed to dry and ripen their wood the pots must be placed on their sides, or some arrangement contrived to keep them from getting wet, otherwise the rest absolutely necessary for early forcing cannot be obtained. In our own practice we cover up the Roses every night while drying them off, either with sashes or sheeting, as one drenching rain during the period of drying off would defeat the whole work. The best kinds for early work are; Magna Charta, Anna de Diesbach, and Gen. Jacqueminot.

When the forcing of Hybrid Perpetual Roses is successful it is very profitable. And it is profitable because of the unusual care and skill that are required to have plants in the proper condition.—In Practical Floriculture Revised.

#### Fallen Leaves on the Flower Beds.

To see handsome flower beds in early autumn littered with the first leaves that drop is not pleasant. Neither is it an easy task ordinarily to remove them, for now all the finer beds are such solid masses of verdure as to prevent one's gaining foot room for reaching their centers.

One of our readers, J. L. W., of Hartford Co., Conn., after suffering his share of annoyance from this cause, hit upon a simple device for picking the leaves off, which he refers to with a pencil sketch in a letter as follows:

"My leaf pick is such a simple affair for gathering fallen leaves from parts of the flower beds that cannot be reached by hand that I describe it for the benefit of others. It was made by myself, of a straight 1-4 inch steel rod a foot long, and this inserted in a light pole seven feet long. A ferrule was placed on the end of the pole to prevent its splitting, and a gimlet hole in the end's center. Into this the steel was driven three inches deep. Its projecting end was slightly drawn out, and made sharp with a file. The pencil sketch shows all that is necessary concerning its use."

390. **Watering Agapanthus.** We do not think it a good plan to keep pots in water in the open air, because during a period of rainy weather the roots are apt to become too clogged with moisture. All that you have to do is to water once or twice a day in hot weather, and if some liquid manure is given twice a week it will materially aid the growth and flowering of the plants.

348. **Clematis Failing.** Clematis Jackmanii and all others of its type require to be planted in a deep, well-enriched soil, and to be manured freely every season. As they flower on the young, vigorous shoots, they should be trimmed back before growth commences in the spring. In November they should be given a good mulch of coarse, littersy manure, and this should be well worked into the soil in the spring. Thus treated, they will commence to bloom in July, and will continue to flower as long as the plants have strength to throw out lateral shoots.—C. E. P.

376. **Botany for Beginners.** Wood's American Botanist and Florist is the best work that I know of, and can be procured at a moderate price.—C. E. P.

395. **Lilium Candidum Failing.** Dig up the bulbs, wash them clean and remove all decaying parts, and plant in fresh soil to which no manure has recently been applied. Probably the Lilies have got the disease. If they have, there is no known cure for it.—W. F.

378. **Trimming Evergreens** depends entirely on the condition of your trees and whether you wish to invigorate or check their growth, or promote their symmetry. Clip hedges in June, prune trees in September or October. In the case of specimen trees by disbudding in May and shortening back the current growth to an eye in June, I regulate the growth, and if further pruning is necessary, cut back to a fork or plump eye in August or September. But Norways and Cedars may be pruned anytime except in severe frosty weather.—W. F.

**Marigolds.**

When the Popples blaze with scarlet,  
In the fields of tasseled Maize,  
And the Cornflower shows its turquois.  
All along the woodland ways—  
When the Clematis its tangle  
Weaves above the filmy ferns,  
And the Cardinal's bright namesake  
In the rich green meadow burns—  
Then you come, O, radiant flower,  
Thee your glowing heart unfolds,  
Summer dons your rich tiara,  
Gorgeous, yellow Marigolds!

—Helen Chase.

**Country Board.**

Such luscious Corn, such fragrant Peas,  
Such berries rich and rare;  
How wise the man, I thought, who flees  
To this entrancing fare.

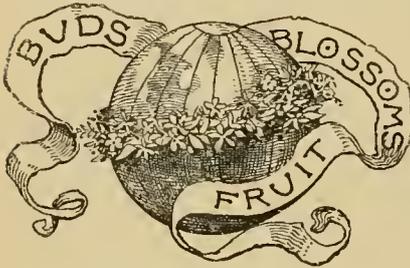
Ah, me, one day I carelessly strolled  
Down past the mid bushes rolled,  
And there I saw, 'mid bushes rolled,  
A hill of empty cans.

I read the labels one by one—  
"Sweet Corn." "Green Peas," a frown  
Stole o'er my face and hid the sun,  
As back I fled to town.

—Cleveland Sun.

**On a Gardener.**

To the earth and its flowers time gladly he gave,  
For labor is sweet when we love it;  
Now the earth, in return, has bequeathed him a grave,  
And the flowers bloom brightly above it.



Order the flower pots.

Late Parsley to be thinned.

The last issue of Volume II.

Now let's give the plants a lift.

Yes, set out some improved bulbs.

We prefer fall planting for Rhubarb.

Working with clean pots is important.

Celery must have free moisture at the root.

Strawberries should be planted this month sure.

Planting in clumps is our way with hardy bulbs.

Time devoted to the ornamental features is not wasted time.

Have an eye to the suckers on budded Roses, to rub such off.

An exception to the rule: the Seckel Pear ripens best on the tree.

It's always in order to see that no plant or tree is molested by insects.

Tree pruning may follow directly on the completed growth of summer.

New Type and other improvements will appear in our next month's issue.

Don't bother with old Verbena plants; strike fresh cuttings for keeping over.

Promptness in the renewal of subscriptions is life to a paper. This to many whose time is now out.

Few house plants give equal satisfaction with pot Hyacinths. The season to start such is at hand.

After September 10th is too late to sow Pansies, as well as Cabbage and Cauliflower for wintering over, according to our idea.

For family use we question whether any method of growing Celery, can be devised that is better than the trench, say six inches deep.

Hail Insurance. An association has been formed which is now ready to issue policies against loss to glass by hail. The secretary is John G. Esler, Sadle River, N. J.

It would be a good thing for Horticultural Hall at the fair if all unlabeled or incorrectly named specimens were excluded. Duplicate plates is another objectionable feature.

Here is a good clause in the rules of the Kansas State fair about fruits. "That the occurrence in a collection or exhibit of very large and showy, but comparatively worthless varieties, will be considered as a discredit to such collection or exhibit."

Speaking of Apple Pomace, I remember that New York farmers used to feed it with cut hay to horses, who ate it greedily, and showed glossy

coats for it. Seems to me it was kept in layers with the fall hay, and both were cut down with a hay knife.—S. Powers.

The Industry Gooseberry does not, after two years' fruiting, give our correspondent, Mrs. J. W. Kernan, of Norwalk Co., Mass., the satisfaction she had hoped for. It bears heavily but half the fruit drops before maturity. For flavor she prefers the common kinds. Her soil is well drained and rich.

Prunes. An exchange says that 60,000,000 pounds of Prunes were imported into the United States last year, but California is growing this crop more largely every year, and it is only a matter of time when the foreign product will be run out of the market by the home-grown product. The California Prune is said to be superior to the foreign one and sells at better prices.

Zebra Zinnias. A subscriber speaks of these as having turned out to be a fine addition to this class of annuals. The flowers are about medium size, and the variegation shows on about 50 per cent of the plants, on some of the flowers being in regular and broad stripes, and others are irregularly striped and spotted; and there are some new and desirable shades among the self colors not before found in Zinnias.

Cucumbers on Trellises. Did it ever occur to the reader, asks the Rural World, that Cucumber vines would grow on stakes or trellises? They will, and indeed this would seem to be the way they were intended to be grown, else why are they provided with tendrils? By giving them branching stakes or brush wood to climb over they will do so and thus the Cucumbers will be above the ground and more easily picked, and the vines less likely to be injured by tramping.

This is the last issue of POPULAR GARDENING AND FRUIT GROWING paid for by many subscribers. But judging by the way renewals for Volume III begin to arrive thus early a hearty and prompt response in this direction may generally be expected from all whose time is up. This is desirable. Done at once and your name need not be disturbed on our books, a gain both to yourself and to us. POPULAR GARDENING needs you as a patron; you need POPULAR GARDENING, hence our agreeable relations should continue without break. Let the dollars come.

Cranberries in America. Prof. L. H. Bailey of Michigan, writes to the London Garden that "it is only thirty years ago that the Cranberry was known in a wild state; now it is much improved, and several good varieties have been produced." He states that in New Jersey alone there are some 5,200 acres under Cranberry culture; that the leading Cranberry-growing States are Massachusetts (near Cape Cod), New Jersey, Wisconsin and Connecticut, and that the entire crop in the United States last year from cultivated plants was probably not far from 600,000 bushels.

Carrying Baskets of Peaches. Why carry one basket, using two hands, when any picker feels equal to two baskets, one in each hand? Because the ordinary Peach basket has no bale, or handle, hence must be grasped like a half-bushel measure. Mr. S. C. Case, of Flemington, New Jersey, thought about this matter and of the loss of time involved by carrying baskets singly, so he devised the detachable handle shown figured herewith. Beyond saying that the wire supports hook under the upper rim of the basket the cut needs no explaining. Mr. Case has had this device patented.

Firm Potting. The importance of this, particularly in the case of hard-wooded plants is not properly realized. When a shift is made, one should, not be content with simply knowing that the space between the pot and ball is filled with earth, but this should be thoroughly rammed with the square end of a label or similar potting stick. The writer recalls a visit to his greenhouse in his earlier practice of one of the best gardeners he has ever known, who on seeing him at Rose-potting remarked, "That's right; firm ramming for the bushes," a lesson he has never forgotten.

Drainage is quite as important proportionately in managing a few house plants or a greenhouse collection as it is in the land drainage in the large operations of the market garden and fruit farm. In pot drainage the crocks should be clean; if they are not, let them be washed by shaking in a partly, immersed sieve. Arrange the pieces regularly, the largest at the bottom, finishing with the smaller above. If there is a difference in plants as regards an absolute need of drainage, it is the slow or delicate growers, which can illly dispense with it. As a rule there is great safety in good drainage.

A Celery Enemy. Subscriber W. T. Alan, of Mercer Co., Pa., in a letter, says that one of the

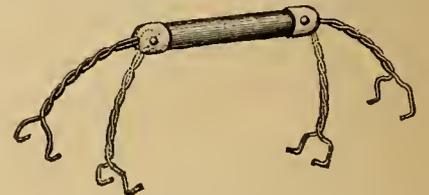
greatest pests to the gardener in storing Celery is the field mouse that gets in the trench and eats the heart out. He has had whole trenches ruined after being stored for winter. But this pest, he observes, is exceedingly fond of Lettuce. So he starts some good plants at this season to have them ready by the time the Celery is stored and then puts some (which has been first well dusted with Paris green) in here and there along the trench. This settles the mice and saves the Celery.

Cutting Long Stems. In the case of Gladioluses, Daffodils, Tulips, and Dwarf Lilies, I have often known people who cut these flowers with long stems, express disappointment because the same bulbs did not produce good flowering stock the next year. Plucking out or cutting off the flowers only strengthens and improves the bulbs, but if you cut off leaves or stems also you injure the bulbs, and this injury is in proportion to the amount of foliage you remove. In cutting Tulips, Daffodils, and Gladioluses with long stems, we cut them off close to, or in the case of Daffodils, under the ground. Now no rational person will expect those bulbs to produce flowering stock next year. —William Falconer.

To Turn or Not to Turn the window plants is a common question at this season of taking in stock. For the soft-wooded class that includes Geraniums, Fuchsias, etc., we would especially say don't; turning such causes them to repeatedly execute a right-about-face manoeuvre that has a weakening tendency on the plants, which soon shows in a vigorless, ragged look that is not pleasant. The finest specimens of window plants one may meet are not thus treated. Better to have health and vigor with one-sidedness than weakness of growth and something like symmetry of form. Cactuses bulbous plants, and those with narrow or hard leaves are less liable to injury from frequent turning than most others.

The Gold Strawberry is a new pistillate variety which originated with the Angurs, of Middlefield, Conn., seven years ago. Four years since, when shown with many others at an exhibition by the Connecticut State Board of Agriculture, it first attracted general attention. Indeed, Secretary T. S. Gold of the Board, then pronounced it the finest berry on exhibition, and later on by his own consent it was allowed to bear his name. Last year the Gold received the silver medal of the Massachusetts Horticultural Society as the best new seedling Strawberry. Its shape is shown by the accompanying cut, some of the berries being rather more conical. The texture is said to be firm, the color bright, the season long and the quality the best.

Two Incorrect Names. Says W. E. Endicott, Canton, Mass., in a recent letter: Two species of Oxalis were offered in a catalogue of 1886 and several of 1887, under incorrect names. It seems desirable to make a correction in the interest of intelligent gardening. The species offered as Oxalis Deppei is described as bearing white flowers, and Oxalis lasiandra is also erroneously described. In point of fact the one thus called Deppei is O. umbrosa, and the other is the true Deppei. The real lasiandra has rose-colored flowers, smaller and more numerous in the cluster than those of Deppei, and borne on taller stalks. The foliage is also very different from that of Deppei, having from seven



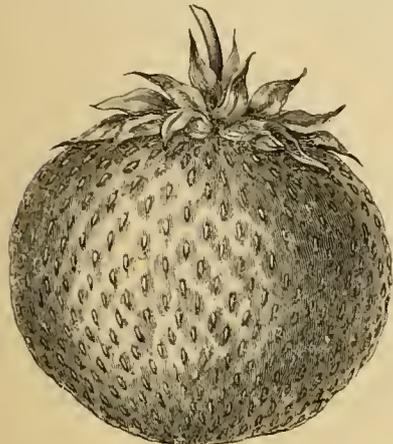
Detachable Handle for Peach Basket.

to nine long and narrow leaflets instead of three closer-shaped ones, as the latter species has.

Raspberries in Iowa. The Nemaha Raspberry fruited finely this season. The fruit seems identical with the Gregg, but the plant is much hardier and proves a better bearer with me. Prof. J. L. Budd was at my place a few days since while fruit was on the bushes ripe, and at first sight pronounced it Gregg, but he was soon convinced that it was not that variety. He was very much interested in it. I esteem it of great value for the Northwest. Shaffer is growing in favor every year, and is becoming very popular in Iowa. The fruit brings the highest price in the market. Marlboro is not hardy enough for this climate. I had a few plants of Caroline that fruited this year and I like it very well. Fruit crop is not heavy with us.—H. A. Terry, Crescent City, Iowa.

Mushrooms in Cellars. A writer who has had experience in this line adds to what was said on

the subject last month by saying he grows them readily in boxes fixed against the walls. He thinks the best arrangement is to have a bench about three feet wide, and an 11-inch board in front to keep the bed in its place. Beds on the ground he prefers also to have a board in front of. The beds ought to be made up of short stable litter, which has been thrown into a heap and turned daily until the violent heat has subsided. They should



The Gold Strawberry.

be filled with the manure and it ought to be packed in firmly. When the heat falls to 85 degrees insert pieces of spawn the size of a hen's egg about six inches apart and two inches deep. The whole should be covered with two inches of loam, beaten down firmly with the blade of a spade. The mushrooms will appear in six or eight weeks.

**Fruit and Vegetable Diet.** At a late fruit banquet of the London Vegetarian Society Dr. Nichols said that fruit was a perfect food, and the Apple alone was able to sustain life and health for a very long time. Why, then, he asked, needlessly take the life of any creature, when they had at hand so much delightful food? He had been a vegetarian for fifty years, and during that time he had had only one week's illness. Mr. A. F. Hills pointed out that the vegetable-feeders were among the strongest of animals—for example the horse and the elephant. Dr. Allinson was of opinion that vegetarianism would do away with the need for the services of members of his profession. Fruit contained vegetable substances that were very useful in carrying away the injurious mineral matters that tended to increase in the system. A mixed diet of fruit and grain was the most valuable that could be devised.

**A Talk With the Reader.** We are striving hard to make POPULAR GARDENING AND FRUIT GROWING the most useful and beautiful journal of its class in existence. In this work we desire and need the support of every well-wisher of the enterprise. What we have especially in mind is the great help that would result in further improvements if every present subscriber would take pains to induce some neighbor or friend to subscribe. That the paper even now is well worthy of such efforts on the part of its friends there can be no doubt. But this we can say further: if our subscription list, large as it now is, could be just doubled (as our readers easily have it in their power to make it), we could promise not only a better paper in some respects, but also one larger by some pages than at present, and all at the present low price. To this end we aspire, and to this end we solicit the aid of every friend of horticulture. What say you?

**How to Measure a Tree.** Various ways for doing this have been suggested, but in practice we have not found a better or more simple one than that illustrated on this page. Take a stake, say six feet in length, and place it against the tree you wish to measure. Then step back some rods, 20 or more if you can, from which to do the measuring. At this point a light pole and a measuring rule are required. The pole is raised between the eye and the tree and the rule is brought into position against the pole, as shown in the engraving. Then, by sighting and observing what length of the rule is required to cover the stake at the tree, and what the entire tree, dividing the latter length by the former and multiplying by the number of feet the stake is long, you reach the approximate height of the tree. For example, if the stake at the tree be six feet above ground and one inch on your rule corresponds exactly with this, and if then the entire height of the tree corresponds with say nine inches on the rule, this would show the tree to possess a full height of fifty-four feet. In

practice it will thus be found an easy matter to learn the approximate height of any tree, building, or other such object.

**Parrot and Other Tulips.** The Parrots as now improved are among the most effective of spring flowers, being especially suitable for large borders among green foliage. To grow the best they should flower in the sunshine when the light is reflected and intensified, as if from petals of burnished brass. Even when seen at a distance the blooms have quite a lamp-like effect, and are so bright that ordinary kinds of late Tulips look dull beside them. They are free-blooming, strong-growing kinds, and vary in color from pure yellow through all shades of orange and red until a glowing blood-red or crimson ends the scale. On warm, dry, sandy soils they are not only hardy, but increase rapidly from year to year. Among some of these flaming Parrot Tulips we have a pretty single kind (*T. turcica*) of a pinkish terra-cotta color, which is much admired. Can anyone tell us where roots of the old yellow late Tulip, having a green bottom, can be obtained? It was formerly much prized as a hardy kind, and endures fresh and fair for a long time after it is cut and placed in water indoors. The great crimson-red *T. Gesneriana* is a very fine sort, and endures both sunshine and wind bravely. It is one of the best of the hardy border kinds, but there are two or three forms, varying in size, and although all are good, Major or Strangeways are the largest and best.—*B. B. Lynde.*

**To Mount and Label Dried Flowers.**—The plan adopted at the great Kew Herbarium, London, as given by an English writer, is as follows: "A mixture of gum Arabic and gum tragacanth is used. The specimen is placed face downwards on a sheet of common paper and entirely gummed over. Every leaf, tendril, &c. is gummed. The specimen is then laid gummed side downwards, on the paper intended for it. A sheet of absorbing paper, (ordinary drying paper or newspaper will answer) is then placed on the specimen, and pressure applied till the whole is dry. By this means the plant is entirely fastened to the paper, so that it cannot be injured when the sheets are rubbed together. Should the specimen have a thick stem, a further precaution is taken by placing one or more straps of paper across each stalk. To prepare the gum, take equal parts of the best gum arabic and powdered gum tragacanth (the latter being frequently adulterated, should be procured from a reliable druggist); melt the gum arabic, and when quite fluid stir in the gum tragacanth. Let it stand for twelve hours or so to thoroughly dissolve. These gums swell considerably, hence a good-sized vessel should be used. It can be kept in well-corked bottles ready for use. When required, mix with water until it runs readily from the brush. Some persons prefer a sheet of glass on which to gum the specimens. A thin and flabby specimen, difficult to lift, it will be necessary to lay on paper, gumming each part separately.

**Saving Flower Seeds.** I think that my way is simpler than the Elder's Wife's, referred to on page 153. I save all my letter envelopes. In May I get an open chip basket (one costing 5c to 10c is good enough and big enough for any one who has only a small garden) and a bunch of old envelopes, and start a-gathering, beginning with Rock Cress, Erysimum, Crown Anemones, and other early bloomers, putting the seeds of each kind into a separate envelope, on which is marked the name with pencil, and the envelopes, as they are filled, put upright in the basket and bring them in. And every now and again, all summer, as there are seeds ready to save I gather them in the same way. And when I bring them in I remove the envelopes from the basket to a flat box—the same as I use for starting seeds in—and set the box on a dry, airy shelf secure from mice. After the summer's gathering I clean the seeds, return them to the envelopes whence they came, the envelopes to the boxes, and the boxes to the shelves. But I never bother to put the seeds into closed bags. As they are, they are always handy, easy to get at, and open to ventilation. So long as they are dry, hard frost in winter won't hurt even tropical seeds. In cleaning seeds I use a small sieve made out of a piece of mosquito wire netting. In order to separate such woolly-coated seeds as Anemones and Globe Amaranth rub them in dry, clean sand; this will not remove the wool from the seeds but it will render it less liable to stick in bunches.—*William Falconer.*

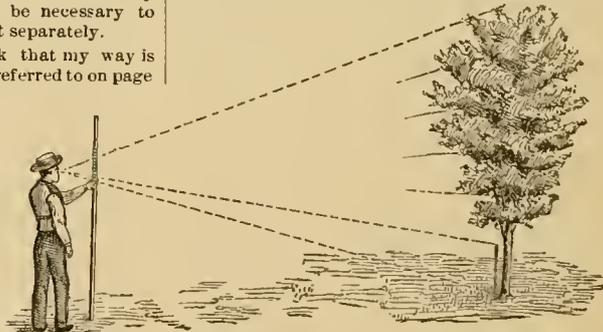
**An Indiana Report on New Strawberries.** This season I have fairly fruited several new Strawberries, of which Bubach, Itasca and Logan are some of the best, and will soon be widely known and planted I have no doubt. Bubach's berries are of the largest size and fine appearance, and are borne in great profusion on robust, free-growing plants, with foliage free from all trace of rust. Its flavor is not first-rate, but quite equal to some other popular market varieties. Itasca is more productive and a better grower than Crescent, with larger, sweeter and more solid berries. Its foliage was free from rust, although it grew near other varieties which were almost ruined by that disease. In productiveness, solidity and flavor I know of no variety that would excel this. Logan produces berries that are very large and beautiful, and it is remarkably productive. In flavor it is rather better than Bubach but not as good as Itasca. It is the most rampant grower in my patch. It also is free from rust. It will be offered to the public next spring. I fruited Jessie on plants set last spring and these produced some very fair berries. All who have fairly fruited it have a good word for it, and I have no doubt it will prove valuable. Some of the largest, most beautiful and delicious Strawberries I ever ate were taken this season from "Wabash," a seedling of J. A. Foot, of Crawfordsville, Ind. It is unlike any other variety I ever saw, and in size, beauty, solidity and flavor seems equal to any. It is a compact, strong grower with large staminate flowers.—*G. Cowing, Delaware Co., Ind.*

#### Carting the Gift Packages.—A Merchant's Side of the Case.

In the July number I noticed your correspondent's special pleading for fruit growers, in which a reduced rate of freight is demanded, and that commission merchants pay the carters for carting the "gift package," simply because they do not return the package. The writer must know that transportation companies, in all fairness, calculate to make a profit on the capital interested, yet he seems to think they should be run for fruit growers.

It is true the fruit is handled roughly, both in receiving and delivering, but that is caused largely by the pressure brought to bear on the company for a reduced rate. Better far did the growers submit to the freight rates and demand greater care. These boats are not arranged for carrying Peaches, but there is a railroad whose cars can be. Why not ship Peaches by them?

When the Fruit Committee waited on these companies for reduced rates I think they succeeded in obtaining 20 cents per ton, a very trifle considering that the larger portion of Grapes would be shipped in gift cases and no empties to be returned. Yet they deliberately demand of the dealers a reduction of about \$2.00 per ton on cartage. A gift case filled weighs say 50 pounds, cartage 5 cents per package.



#### HOW TO MEASURE A TREE.

Why did not those gentlemen wait upon the carters, or get the merchants to ask for a reduction from them instead of asking the merchants to pay for the cartage in full?

I challenge any Grape grower to show that these "gift cases" have been detrimental to their interest. I will prove that they have been a benefit and one brought in operation largely through these merchants, and I consider that instead of the merchants being taxed they should be rewarded.

It is not the case that the merchants refuse to return all packages, as some would have it appear. The fact is, that with the exception of the Peach basket, all have been returned as usual, gift cases, of course, excepted.

There is one peculiar feature in this movement that is worthy of notice, that those most active are noted wealthy men. The poorer fruit growers of the country are willing to live and let live, asking no favors of merchants but honest returns for their fruit.

COMMISSION MERCHANT.

NEW YORK, July, 1887.



### GLEAMS.

At the Toronto (Ont.) Flower Show in July a Grape Myrtle tree fully six feet high in full flower was one of the conspicuous exhibits.

**The Weeping Hemlock.** My windows look out upon one which I planted some years ago, and which is now ten feet high and ten feet in diameter. My eyes constantly turn to it, and I can compare it with nothing so well as an evergreen fountain, with close, compact, spray-like branches in place of falling water. This is certainly one tree which every man should plant.—S. B. Parsons, before *Pennsylvania Horticultural Society*.

**Tillage and Drought.** In a discussion as to the relation of these factors, at the recent meeting of the Wisconsin State Society, the importance of continual and thorough cultivation was conceded by all, while a difference of opinion existed on the question of deep or shallow culture. The prevailing sentiment seemed to indorse deep culture early in the season, and shallow culture later, after the roots of plants were well grown.

**Twelve Ornamental Trees.** As a select list, Mr. George Ellwanger, the veteran nurseryman of Rochester, named the following at a recent horticultural meeting: Maple, Schwedlerii; Birch, Cut-leaved; Judas Tree, red; White Fringe Tree; Dogwood, white; Thorn, Paul's Double Scarlet; Beech, Rivers' Purple; Koeleruteria paniculata; Magnolia Lennel; Magnolia speciosa; Crab, Fragrant Garland Flowering; Mountain Ash, Oak-leaved.

**Influence of Chrysanthemum Shows.** Chairman Fox, of the committee on new products of the Pennsylvania Horticultural Society, reported: "An impetus has been given of late to the culture of Chrysanthemums, especially the Japanese section. The new varieties are marvels of beauty. The influence of the various shows of this flower held in the towns has been felt in the improvement of varieties and the increased interest manifested in this section of the floral kingdom."

**How the Taste for Horticulture Expands.** Robert Manning, of Boston, some time since before their horticultural society related a reminiscence of a gentleman who came into one of the Dahlia shows of the society fifty years ago and was so pleased that he procured a few plants for his city garden, which he afterwards increased and cultivated so successfully that he soon carried off some of the prizes. At much expense he enlarged his garden and planted a few Pear trees, and finally bought an estate on the bank of Charles River in Watertown, where he practiced every branch of horticulture successfully. This gentleman was Josiah Stickney, who afterwards became president of the society, and by establishing a fund for the increase of its library has been the means of its possessing the best collection of horticultural and botanical books in this country, if not in the world.

**Co-operation and Advertising.** At a meeting of the Maryland Fruit Growers' Exchange, the secretary stated that from the money spent in last year's advertising in Eastern and Western papers, many fruit buyers were reached and attracted to the Peach growing section, and their Peaches were sold for more and growers realized better prices than could have been obtained otherwise; other markets were reached that heretofore had been unknown; they had become recognized abroad as the Peach centre, and hoped for still better results in the future. He also thought that the fruit of many orchards was sold before the new buyers put in an appearance, rendering it impossible for them to purchase in such quantities as would justify

them in remaining. Norris Barnard, from Still Pond, gave a graphic and thorough statement of the benefits the fruit-growers in his section had obtained through hearty co-operation.

### The Florists' Convention.

The third annual meeting of the Society of American Florists has come and gone, and, like its predecessors at Cincinnati and Philadelphia, the proceedings resulted in much valuable information for all branches of the trade. The interest in the workings of the society seems to increase, extending over a still wider field.

The meetings were held in the First Regiment Armory, the lower floor being occupied by the exhibits, while the conversational part took place in the drill room above.

The greatest showing in the exhibits was made by the dealers in florists' supplies. Philadelphia was well represented in this respect by Messrs. Bayersdorfer & Bacharach, their exhibit consisting of baskets, designs, Immortelles, and other florists' requisites. J. C. Vaughan & Co. made a fine showing, as usual, in both bulbs and florists' requisites.

There was a large exhibit of designs in Immortelles and the like, some extremely good, and some calculated to provoke the keenest torture in an artist's sensibilities. There were some bead funeral wreaths, such as we see in foreign cemeteries. The maker's intentions are doubtless good, but somehow it is difficult for an American to connect the idea of lament for the loved and lost with an eccentric cobweb of shiny black bird's eyes, varied by step-ladders of black bugles like miniature gas-pipes. Sometimes a cheerful variety is given these erections by the addition of white beads like juvenile teeth, or very dead grass. There certainly is nothing frivolous about them.

There were but few flowers on exhibition, but Mr. Moon of Pennsylvania and Mr. Vick of Rochester showed fine Gladioli, which were very attractive. Mr. Siebrecht showed some Orchids as a living comment on his clever essay. There were the usual tools and appliances for greenhouse work, including some very able-bodied boilers.

The visiting delegates were welcomed with hearty cordiality by Mr. Vaughan, thanks being returned by Mr. Wm. Elliott. Then President Craig delivered a comprehensive address, touching on the progress of his art during the year, and reminding us of the Western origin of the Society. The Secretary and Treasurer delivered their reports, and then the Committee on Insecticides reported the progress of their conspiracy against the health and happiness of Rose bugs and Red Spider. They decided that the Australian wash was all our fancy painted for the former, while the latter, like most ladies, couldn't stand Tobacco smoke, especially with sulphur.

At this session the President announced that Mr. Otto Schucht, of Sheboygan, one of the visiting delegates, had met with a severe accident, being run over by the cars, so a collection was promptly taken up for his aid, resulting in the sum of \$136.

Mr. Thorpe's paper on Hybridization, read at the afternoon session, was followed by an interesting discussion, in which Messrs. Anderson, Harrison, May, and Starr took part. Some remarks were made on the same subject by a distinguished guest, Mr. Henry Bennett, of Shepherton, England, the noted Rosarian. F. R. Pierson's paper on "Business Methods," and C. L. Allen's essay on "Fungoid Diseases," were omitted the authors being absent.

Mr. E. G. Hill read a strong paper on "Summer Propagation of Roses, with List of the Best Varieties for Outdoor Flowering," which was followed by a discussion in which Messrs. Peter Henderson, John N. May, Charles Anderson and A. Winzer took part.

On Wednesday Mr. Anderson told us about "Roses on Stocks for Winter Forcing," and gave much information on the subject. Mr. Siebrecht gave a bright and practical talk about "Orchids," and Mr. Ernest Asmus told what he knew—and that's a good deal—about forcing Bulbs and Tubers.

Mr. Jackson Dawson was not present, so Mr. W. J. Stewart read his paper on "Forcing Hardy Shrubs." Mr. W. R. Smith, of Washington, was absent through ill health, so we missed both his essay and his genial presence.

The Hail Committee presented a most favorable report; their project of hail insurance is fairly established and growing. The discussion following was extremely entertaining. Mr. G. C. Evans causing much amusement by his irrepressible remarks. Mr. Peter Henderson is a staunch upholder of this insurance, which speaks volumes for the practicability of the scheme. But the committee made a mistake in telling us that the first man to go in for hail insurance was the first victim of damage from this cause. It might be a special providence, as the speaker said, but doubters might look upon it in the light of a warning.

Proposals were made to raise the secretary's salary, at present ten per cent of the membership fees, which is totally inadequate compensation for the work involved.

Committees were appointed to try for reform in the mail rates on plants, and the express rates on plants and flowers. The question of duties on bulbs was also agitated, the present duty of 20 per cent being a colossal absurdity of our tariff system.

The chief officers of the Society for the ensuing year are as follows: President, E. G. Hill; Vice-President, John W. May; Secretary, Wm. J. Stewart, and Treasurer, W. H. Hunt.

The ladies were there in full force. Not merely as lookers-on, either, for there were many skilled florists among them, who were among the most attentive part of the audience at all the sessions. It goes without saying that they were cordially entertained by their sisters of Chicago, some charming drives about the city's superb parks being a most delightful feature. The sterner sex, too, were generously entertained, and the social features of the convention were, as usual, a delightful success.

The retiring President, Mr. Craig, was presented by the society with a handsome watch appropriately inscribed, and a watch charm, while Mrs. Craig was the recipient of a handsome bloom of Dianthus diamondii, a new species, occasionally found in jeweller's windows.

The society has increased in a gratifying manner during the past year; it now possesses members in nearly every state in the Union. The meeting of 1888 will be held in New York, where the eastern members hope in some degree to return the hospitality extended them by the Queen of the Lakes, the city of glorious parks and boundless hospitality.—EMILY LOUISE TAPLIN.

### The July Flower Show at Toronto.

[Reported by D. B. L., of Erie Co., N. Y.]

For a mid-summer Flower Show that given jointly by the two horticultural societies of Toronto, on the horticultural grounds, July 20th and 21st, was a very successful affair. Its most striking feature consisted of the magnificent display of plants, and especially in the line of specimens, contributed in the main by private conservatories. In the possession of a goodly number of which Toronto is fortunate. That these are at the same time a class of well kept conservatories was sufficiently attested by the plants at this show.

Horticultural Hall, in the public grounds and in which structure the exhibit was made, is ample in size and otherwise well adapted for such purposes. It was well filled. The main feature of the arrangement was the elevated circular space 18 feet across containing large Palms, and this surrounded by the floral exhibition tables in circular form, a few feet high from the floor. The upper space devoted to Palms was quite filled by six large specimens, one in the center, a Seaforthia, towering over five Latanias and others.

On the lower table were the floral designs, flowers and plants; Specimen Coleus in pots, with foliage spreading to a diameter of 3 1-2 feet; Geraniums in full flower nearly as large; show leaf Begonias as attractive and perfect as can well be conceived, combined with good size; specimen plants in tropical growths, Palms and Ferns in large numbers and variety. Three Fittonias in 3 varieties were attractive specimens. Lycopodiums grown in pyramidal form a foot high seemed quite novel. Most of the Begonias were in shallow pots or deep dishes.

In the cut flower display some good annuals were seen. Roses at this late date were few and inferior. The designs and made bouquets were neither numerous, nor in quality seemingly on a parallel with the other features. To an outsider it would occur

that the sooner the invariable use of stiff European bouquet papers could be discarded for such purposes, the sooner will the Toronto florists be in the way of leading their customers to demand better flowers and arrangements.

Berries, Plums, Currants, and some Peaches helped make up a display quite creditable to any society, and its attracting, as it did, thousands of visitors during the two days, must have been altogether gratifying to President Geo. Vair and Sec'y J. R. Edwards, whose kind and courteous attentions to your correspondent shall long be remembered.

### July Meeting of the Wisconsin State Society.

[Reported by George J. Kellogg, of Janesville.]

The summer meeting at Baraboo, July 20-21st., was a decided success. The weather was of the finest, and although the complaint of the drought was universal, the show of Raspberries, Blackberries, Dewberries, Currants, Apples, Vegetables and flowers excelled any summer exhibition. The reception was cordial, entertainment ample, and local attendance better than usual. Papers very fine, discussions spicy, and the two days full of good Horticultural work.

I was surprised to find Bartell's Mammoth Dewberry carrying off 1st prize, competing with Lucretia. While Bartell is not productive on some soils, Lucretia has been sent out by some nursery firms badly mixed, though there was no doubt of the genuine being on exhibition, and it took 2d prize. The Golden Queen Raspberry is not up to its recommendations, and no Blackberry gets ahead of Snyder, Stone's Hardy and Ancient Briton.

Members of the convention visited the extensive orchards and nursery grounds of A. G. Tuttle, who has more varieties of Russians in bearing than any other man in the United States. While some varieties have the off year others are bearing to breaking, and the blight is no more serious on them generally than on Duchess. His Duchess orchard is very heavily loaded, while among his old standard varieties I do not think he has a bushel of Apples. He exhibited Russians of last year's crop and a fine show of early varieties of this year's growth side by side.

The report of the Jessie Strawberry as fruiting on Mr. Loudon's grounds this year, on low black soil, was fully equal to last year's crop on high clay soil; and M. Crawford, of Ohio, writes me that after fruiting it 3 years he finds no weak point in it and considers it the best variety ever sent out.

The show of Grapes in the vineyards about Baraboo is very full and forward, and about the only fruit crop in our State that promises to be up to the average. I found most of our fruit men taking your valuable paper.

### Strawberries in Michigan:—Apples Triumph over Whiskey.

[Report of Meeting of the Grand River Horticultural Society, by F. E. Skeeles.]

The Society met with S. S. Bailey, June 10, at his farm in Paris township. Over seventy members with their wives attended. The Strawberry was the topic for discussion. Nearly all members were of the opinion that high culture paid best with this fruit. After a "basket picnic" Mr. Bailey helped each guest to a plate of "Maggie" Strawberries, a variety which he raised in large quantities and of the best quality, as all could aver.

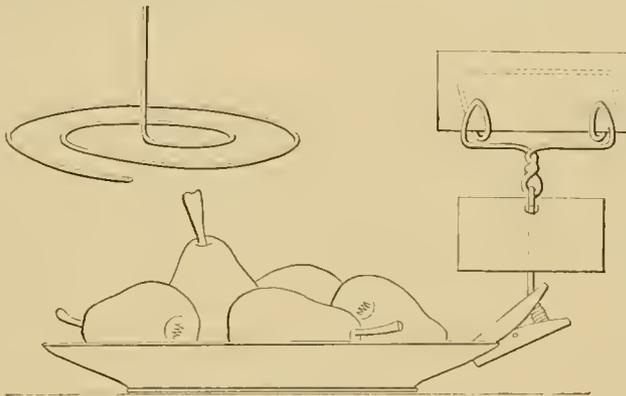
A stroll over the farm showed that, of the many varieties cultivated, the Parry made the best appearance. Belmont, a strong, vigorous plant with good fruit, May King, Maggie, Crescent, and Cumberland were in prime condition. One great advantage here was the seeing of most of these varieties in large plates, an

eight of an acre or more each, and all in good tilth, instead of a few plants of each.

Our host prefers the Crescent for market, as did most of the members when called upon to express themselves in the discussion later on, some objected, however, because of so many small berries at the close of the season. The Cumberland was recommended as a prime table berry, but too shy a bearer for market. The Sharpless was reported as doing well on clay soil, but as being worthless on sandy.

Before the close, Mr. Bailey told an interesting anecdote of early life here before a fruit tree or plant of any kind had been set out. Soon after coming here from New York he had a barn to raise and invited his neighbors to assist. In those days whiskey was thought to be absolutely indispensable on such occasions, and Mr. Bailey being known as a temperance man was told that without that article he could not get his building up. He, however, relied on the curiosity of mankind, believing they would come just to see if he had it or not.

He was not mistaken, for the morning brought all hands ready for business and the barn went quietly up. At the close of the work all expected to see the whiskey jug brought out, but instead our friend went into the house and brought out the rare treat of a two bushel bag of fine Apples, all the way from New York State, which he emptied out upon the forest leaves and told each man to help himself. Many of the men had not seen an Apple for years



ATTACHING LABELS TO PLATES OF EXHIBITION FRUIT.

and were of course much surprised, and hesitated some time before making an onset upon the beauties, but finally the Apples disappeared and all returned home satisfied that whiskey was not a necessary adjunct in barn raising.

### Attaching Labels to Plates of Fruit.

[Report of C. W. Garfield's remarks before the Fruit Growers' Association, of Toronto.]

In Michigan we have had that thing under advisement for some years. We succeeded in getting a style of plate that pleases us very much, a tin plate japanned. We can transport four or five thousand of them in small space.

But when we got a label on the plate at a state fair somebody who wanted to see exactly what was on that label would reach over, take it off, and then set it back on another plate. We then doubled up some wire and fixed it so it would slip right over the edge of the plate, and then there was a twist at the top of it that we could stick a card in. The twist on the bottom to slip on the plate was not like the twist on the top, so that in the majority of cases people got it wrong side up, and then when the labels were put in they were in all shapes. We were sick of it the first year.

For three or four years we were trying to get over that, so at our last exhibition I had a wire so arranged that there is a circle with a standard going right up in the center of that circle (see upper left engraving). That circle may be a couple of inches across, and it lies on the plate. You put the Apples right on the circle, and the label sticks right up in the center, and the Apples that are on the edge of the circle keep it firm. You can have an entry card and the name of the fruit both on the upright part.

An important point in connection with this article is that you cannot jerk the label away without pulling the Apples off the plate. Another advantage is that there is no doubt to which plate the label belongs, as the label is right in the center. It was estimated these could be made for a cent apiece when made by the thousand.

Mr. Wright was afraid this thing is not going to work, for this reason: They arrange their plates at the exhibition five rows deep, and the result is that the tickets at the back are hidden from sight. The Montreal Horticultural Society has about five thousand little clips for sticking on the plates, with a thing standing up in the center to place a label in; and the Renfrew Society also has some of them.

Mr. Garfield said that back labels would not be hidden if the fruit was exhibited on low tables.

### The Work of Village Improvement Associations.

(Concluded from Page 193.)

**Objects to be Gained.** Some of the more important objects of these associations are as follows:

**First.** They foster public spirit and town pride. Their influence is marked and happy in fraternizing the people of a town and leading all classes to meet and work for the common good. Illustration: in one town where a large foreign population is engaged in extensive quarries and in manufacturing, the manufacturers, operatives and quarrymen joined with the citizens on a Saturday afternoon in a "big bee," where many hands made light work, or, rather, did much work, and all "had a good time." Henceforth they thought more of their town and more of their homes, which shared in these improvements, as did the sidewalks, roadsides, cemeteries and other public grounds. The village improvement bee may help to counteract the tendency of rural life to isolation and seclusion. In some towns, after such a day of united work, a collation prepared by the ladies becomes another bond of union and fellowship.

**Second.** A prominent aim is the improvement of the home. There remain many homes desolate, neglected and repulsive, where taste and trees, shrubbery or vines, with a lawn, would seem to make the "wilderness blossom as a Rose." Slatternliness in and around the house repels from their rural homes many youth who might otherwise be bound in straitened ties to the fireside. Many farmers and mechanics, and their thrifty wives, now realize how easily and economically they can surround their dwellings with flowers, shrubs and vines, like the Virginia Creeper, or the still more beautiful Japanese Ivy, and thus increase the attractions and market value of the homestead. If taste and culture adorn our homes and grounds, and music adds its charms, our children will find the healthful pursuits and pleasures of rural homes more attractive than the pomp and glare and whirl of city life.

**Third.** Another aim is the promotion of public health by securing better hygienic conditions in the homes of the people and in their surroundings. Many sanitary improvements have thus been made, especially in drainage, in the removal of waste—the putrescent animal and vegetable matter around the house—and in guarding wells and water supplies from impurities. I often find faulty drains; some times an open, stagnant pool under the kitchen window, or neglected privies or cess-pools too near the well, or a cellar made foul by cats, rats or decaying vegetables, and tainting the air of the whole house. I find many wells vitiated by surface water, fouled by impurities, and decomposing substances lying on the ground.

**Fourth.** The making of sidewalks meets a felt want in many towns. In no other way can the comfort and sociality of a village be promoted so economically as by making sidewalks. One town has lately completed many miles of neat gravel sidewalks, which add greatly to the attractiveness of the village. I have observed with interest the public appreciation and usefulness of the concrete sidewalks in Clinton, Conn. The fine footways abounding throughout England invite the pedestrian habits of the women of that country. It is largely because they exercise daily in the open air that they retain so long the bloom and vigor of youth. More outdoor rambles would promote the health and prolong the lives of American women. Good footways invite friendly calls and foster social life and rural enjoyment.

**Fifth.** Street lights remove another hindrance to social intercourse in country villages. Evening is the favorite time for calls and for various gatherings. The cost of kerosene illuminators is now moderate. It is one of the signs of social advancement that so many of our associations are thus saying, "Let there be light."

*Sixth.* The improvement of roads, though of great importance, has secured less attention from these associations, as the town authorities usually care for them, and other objects are more urgent.

*Seventh.* The improvement of roadsides is attracting much attention. Some towns clear them of brush and rubbish, and keep them like a lawn. Others are adorning them with extensive lines of trees. Nothing can add so much to the beauty and attractiveness of our country roads as long avenues of fine trees. One sees this illustrated in many countries in Europe, where, for hundreds of miles on a stretch, the road is lined with trees. Growing on land otherwise running to waste, such trees yield satisfactory returns. The shade and beauty are grateful to every traveler, but doubly so to the owner and planter.

*Eighth.* Increased attention is given to parks, the village green, the cemetery, church grounds. In many towns the graveyards are shamefully neglected—overgrown with unsightly weeds and brush, the gravestones slanting, and sometimes prostrate.

*Ninth.* Many village improvement associations, by concerted action, have created a public sentiment in removing front fences, so that the private grounds seem to unite with the wayside in one large lawn. This improvement is now adopted widely over the country, except in those towns and states where the battle of the cows and hogs has not been fought.

*Tenth.* The educational bearings of this subject are important. The taste should be early cultivated. To love the beautiful should be held as a religious duty. In God's plan, facts and objects, as best seen in the country, are the earliest and the leading instruments in developing the faculties of the juvenile mind. They cannot be fully trained when cooped up within brick walls, witnessing only city scenes. In all history the country has proved the great school of mind. The country sends far more than its proportion of gifted men to the great centers of influence. In the language of Dr. Bushnell, "It is not in the great cities, nor in the confined shops of trade, but principally in agriculture, that the best stock or staple of men is grown. It is in the open air—in communion with the sky, the earth, and all living things—that the largest inspiration is drunk in and the vital energies of a real man constructed."

*Eleventh.* The improvement of the surroundings of railway stations enlists the efforts of these associations. One of the most tastefully adorned stations in this country—that at Wyoming, a suburban town of Cincinnati—owes its attractions to the Village Improvement Society, which offered \$1,300 to the Cincinnati, Hamilton & Dayton Railroad on the condition that they would expend double that amount on the improvement of that station—an offer at first declined, but at length accepted, and with results so satisfactory that *this liberal railway now offers to expend on the grounds of any station an amount equal to that so expended by any village on its line.* Every village station wants its outlying green to give character and dignity to the new approach.

*Twelfth.* Among minor aims are the providing of rustic seats under the shade; setting up watering troughs for horses at convenient points, furnishing plans for rural architecture, the suggestion of neutral tints for dwellings and outhouses in place of the glaring white hitherto so common; arrest of stray cattle, for strolling cattle usually are, and always ought to be, outlawed; preventing nuisance, such as tearing up the turf fronting a dwelling by inconsiderate road menders. A village improvement association develops a public sentiment which corrects these evils without occasioning any neighborhood strife or alienations. In this matter the interest of one is the interest of all.

### Small Fruit Culture.

[Abstract of a paper by Mr. B. F. Albaugh, before the Farmers' Institute in Sidney, O.]

As to the best way to plant half an acre, 8 by 10 rods, for an ordinary family, I would, after putting the plat of land in excellent order, plant 8 feet from the outside with Concord, Clinton, and Lady Grape-vines. The first year the vines cut back to three eyes, and, after they had started the next spring, rub off all but one, the next year to two eyes, and the third year to three, which I would let grow.

I then would put up a trellis of wire. Of three shoots I would train one vertically up on the wires, the other two respectively to the right and left in a fan shape, and keep them trained and trimmed in this way. I would ad-

vised also planting the Moore's Early, which is a large Grape, and earlier than the Concord. I also like the Pocklington.

Eight feet from the Grape-vines I would plant two rows of Blackberries, 8 feet apart, of the Snyder and Taylor varieties. They should be planted very early in the spring, and deep in rich soil. When about 2½ feet high they should be cut, and kept so. Pinching the tender shoots off is not so good as cutting them off with a slanting cut with a sharp knife. This does not wound, and insures a stout, stocky, bushy plant, that can better withstand the winter.

I would then plant Raspberries the same distance, two rows of Gregg and other blackcap varieties, and two rows of Red Raspberries, of Cuthbert and other good varieties. They do not have to be set out so early or so deep, but rather shallow, and immediately after being taken from the ground. The roots should not be allowed to get dry, but must be packed in wet moss, or something that will keep them so until planted. The same trimming given Blackberries should be practiced upon Raspberries, and continued throughout the season.

At the same distance from the Raspberries I would plant two rows of Currants and Gooseberries. The old wood should be kept cut out, and white hellebore, mixed with middlings or flour, should be dusted over the bushes, taking care to reach the under leaves near the roots, where depredations of the Currant worm commence. By a little watching and care this enemy can be extirpated. I would in no case use Paris green.

In the remainder of the patch I would plant Potatoes and Strawberries, alternately. I invariably plant Strawberries in the spring, and would advise the planting of a row of Wilson, three rows of Crescent and one of Sharpless, or other good staminate variety, to fertilize the Crescent. There are many other good varieties, but these are enough for an ordinary grower. I plant in rows several feet apart, and cultivate with a horse. In no case plant the Manchester, though it be a great bearer. It is almost sure to rust, and will infect the other varieties.

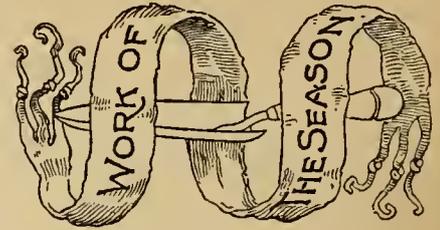
I mulch with straw lightly in the fore part of winter. Last fall I sowed oats thinly in my patch, and they were knee high and more when the frost came. The oats, of course, were killed, and the first snow settled them into a perfect mulch. I sow about one bushel to the acre for this purpose. There is no danger of getting foul weed seeds, as is often the case in mulching with straw. I also mulch my Blackberries and Raspberries, to retain moisture in summer. I set out Strawberries where I raised Potatoes the year before, setting a new patch every year, and do not think of getting more than one or two crops from one bed. It is easier to plant a new bed than to keep an old one clean. Strawberries will stand any quantity of fertility. I grow for the market and can make money at from four to five cents a quart wholesale. A hundred bushels is an average crop, although 200 and 300 are grown.

### The Work of the Boston Flower Mission.

June Roses having faded, and the other early flowers of the season having passed, there is somewhat of a dearth of blossoms in the gardens, the effect of which is very apparent in the baskets of contributions to the Boston Flower Mission.

But the workers there are very desirous that their rounds amongst the poor and sick should not be curtailed just at this time when these flower tokens of the beauty and fragrance growing all about for those favored enough to live amongst it, or to be able to seek it, are so peculiarly acceptable to the weary, suffering invalid, and to those shut up in close workrooms and hot, crowded city streets.

The Boston Flower and Fruit Mission is the original society of this kind, which had its headquarters for many years at Hollis-street Chapel, and is now located at Warrenton-street Chapel (entrance 33 Pleasant street), where on Tuesdays and Fridays, from 8.30 to 12 o'clock, a committee of ladies is in attendance to receive all contributions and see to their immediate distribution through hospitals, workrooms, crowded tenements, vacation schools, and to many a lonely sufferer and weary invalid cut off from liberty to go out under the bright skies and into the gardens and fresh, pleasant places of city or country. These flowers are never made the passports for tracts or scripture texts, the kindly visit and the bright, sweet blossoms preaching, it is hoped, most effectively their own texts.



PREPARED FROM DIARY NOTES BY CHAS. E. PARNELL, QUEENS, N. Y.

### HOUSE PLANTS.

**Abutilons.** Pot plants that have been plunged in the open air should directly be taken up and repotted. Those in the border to be wintered over should be lifted before frosty weather.

**Achania.** Repot and at same time trim as needed.

**Aspidistra** may now be divided, giving each part a pot. Thoroughly cleanse the leaves by sponging before bringing the plants inside.

**Begonia Weltoniensis** will, during active growth, be helped by an occasional dose of liquid manure.

**Bulbs of the Hyacinth or Tulip class** for winter blooming should, for the earliest flowers, be procured and potted as early as possible.

**Cactus.** Those planted outside should now be taken up and potted.

**Cestrum.** As soon as flowering has ceased gradually reduce the supply of water.

**Cyclamen Persicum.** Old corms or tubers to be taken up and potted. Young plants to be shifted for keeping them in a growing condition.

**Fuchsias.** *Speciosa* and other winter bloomers to be taken up and potted. As the summer bloomers cease their growth, gradually reduce the water to ultimately reach a state of rest.

**Geraniums.** Plunged pot plants to be repotted at an early date, others to be lifted and potted, cutting them in well at same time.

**Ivy.** Those bedded to be lifted by end of month. Young vigorous plants in pots to be shifted. Before taking inside let them be sponged off thoroughly.

**Jasminum grandiflorum** from this time on should be given liquid manure once a week.

**Jerusalem Cherries** to be lifted and carefully potted. Bear in mind they need much water.

**Oxalis.** Repot and start into growth *O. horibunda*, *Bowei*, *lutea*, *versicolor*, and *vespertina*, all of which are excellent for the window garden.

**Rivina humilis.** Take up and pot. See especially that good drainage is secured.

**Taking up plants for wintering over** will call for activity now. Kinds in bloom all summer to have at least one-third of the top removed. Others specially prepared for winter blooming by having had the flower buds removed and the tips cut back will need little or no pruning. Place a high value on every root to save it. To do this lift large balls of earth and reduce with a pointed stick to a size suitable for potting. It is best to work with rather small pots, using good fine loam. This should be well firmed between the ball of earth and the pot. After potting, the plants should have one thorough watering and rather close shade, with frequent (say every two hours) light sprinklings of the foliage. This to be kept up for a week, after which give more light and space between them, but not full sunlight yet for several weeks.

### FLOWER GARDEN AND LAWN.

**Dahlias.** See to correctly labeling plants before frost cuts them down.

**Frost** may be expected towards the end of the month. Have all tender plants in readiness for removal inside, or else covering. As soon as plants are destroyed or rendered unsightly by frost let them be removed and the beds neatly levelled off.

**Gladioli.** Support the spikes. If the flowers are removed as they fade the bulbs will be benefited.

**Herbaceous Plants.** As soon as growth of the various kinds ceases it is a good time to take up the roots, divide and replant them.

**Hyacinths.** The earlier these and other hardy bulbs are planted after September 1st the better.

**Lawns.** Mow regularly to the end of the growing season. Remove perennial weeds as soon as noticed. Rake up and remove fallen leaves, and endeavor to keep everything neat and in good order.

**Petunias.** If cut back about the middle of the month will produce good cuttings for propagation.

**Taking up Plants.** See under "House Plants."

**Vases and hanging baskets** may be made to do duty for some time after frosts, if fairly protected in some manner during threatening nights.

**Walks.** An occasional raking and rolling is helpful to securing a firm, even surface.

#### PLANT CULTURE UNDER GLASS.

**Acacias** to be kept well watered. Neglect here leads to the loss of both foliage and flowers.

**Achimenes, Caladiums and Gloxinias.** When growth ceases remove to a frame or other situation, where the supply of heat and moisture should be gradually reduced.

**Begonias** coming into bloom will be helped by liquid manure. They should go to a light, sunny situation about the end of the month.

**Bouvardias.** Lift and pot before the middle of the month, syringing and shading carefully until the starting of new roots takes place.

**Carnations.** To be lifted and potted, or else planted on the benches. Stake as necessary.

**Chrysanthemums.** Lift and pot those that were bedded out. When well rooted give liquid manure two or three times a week. Plants intended for show purposes should be properly staked and tied.

**Cinerarias, Calceolarias and Chinese Primulas.** The directions for July will apply. Water with great care. Gradually reduce the amount of shading towards the end of the month.

**Dracenas and Crotons.** Examine and repot if necessary. Syringe them occasionally.

**Epiphyllum truncatum,** when brought inside, should be given a sunny situation.

**Eupatoriums and Stevias** that have been kept in pots all summer to be repotted, or else planted out on benches in the greenhouse.

**Fire Heat** to be applied as soon as required. Do not let the plants become injured by damp or those of the stove suffer from cold for want of heat.

**Fumigation.** After the plants are brought inside, and until they are taken out, the houses should be slightly fumigated twice a week, as a preventive rather than a remedy for insect pests.

**General.** Syringe the plant houses occasionally. Ventilate freely in all favorable weather. Remove dead and decaying foliage. Aim for neatness.

**Greenhouse Plants.** All to be brought in and arranged before the approach of cool weather. Have all pots washed and the plants neatly staked and tied that require this. Carefully examine every one to see that no insect pests are brought in.

**Habrothamthus.** Lift and pot, giving them position in a light sunny place.

**Hebeclinums.** Repot as needed. Plants growing rapidly can well receive some liquid manure.

**Justicia carnea.** Lift the bedded plants and pot.

**Pelargoniums.** Keep the plants in the coolest part of the house watering rather sparingly.

**Roses** in pots for winter flowering to be shifted before they become greatly pot bound.

**Stigmaphyl-  
lum siliatum** now flowering freely should be given liquid manure moderately.

**Thunbergias** will now be growing rapidly. Give liquid manure freely, and keep the young shoots tied properly. Syringe to prevent Red Spider.

**Torenia.** Repot the plants and give a warm, moist place.

**Violets.** Lift and pot or plant into frames for winter blooming. They thrive only with much air.

#### FRUIT GARDEN AND ORCHARD

**Apples.** Gather the fallen fruit often. Pick early varieties as soon as they show indications of ripening. If it was not done earlier, severely thin the fruit of heavily laden small trees.

**Blackberries and Raspberries.** Keep them clean of weeds, but avoid cultivation as much as possible, in order to discourage late growth.

**Currants and Gooseberries.** See Blackberries.

**Gathering and packing fruit** for market requires strict attention. Always assort the fruit and send the best. This neglected and the returns must be poor after all the trouble of raising the fruit. To pick properly, good ladders of different lengths are needed. We show a pattern of a Canadian ladder that was lately figured in the Farmer's Advocate and which strikes us as being excellent. In gathering be careful not to injure the trees. The fruit should, as a rule, be mature when picked, but never approaching softness; it should reach the retailer by or before its best eating state. Use new barrels for Apples, half-barrels or crates for Pears, crates, baskets or boxes for Quinces, Plums, Peaches and Grapes. In closed packages there must be gentle pressure to prevent shaking of the fruit in transit. How the fruit opens at market is the true test of the good grower.

**Grapes.** Gather and pack the ripe fruit very carefully, handling as little as possible. Remove every imperfect berry; store in a cool, dry place.

**Pears** should be gathered as soon as they show indications of approaching maturity, and ripened in the house. The indications are, a change of color, and the readiness of the stem to part from the branch when the fruit is gently raised.

**Planting.** If to be done this fall, prepare the ground at an early date. Apple and Pear trees can be planted in the fall with decided benefit. Prepare list and order trees without loss of time.

**Strawberries.** There must be no let-up on keeping the beds well cultivated. Trim the runners frequently from stool plants.

#### VEGETABLE GARDEN.

**Asparagus.** On sandy or well-drained ground new beds can be planted about the end of the month. Remove all seed tops before seed ripens.

**Beans.** Gather as soon as ripe, placing in a dry, airy situation; the shelling can be deferred.

**Broccoli and Cauliflower.** As heads commence to form, turn a few of the outer leaves over these for protection from the sun and dew.

**Cabbage.** Keep up cultivation of the growing crop. The disposition of the earlier plantings to burst the heads can in part be prevented by somewhat loosening them by pushing over to one side or slightly lifting with a fork.

**Cabbage and Cauliflower** for early spring plants can be sown in a nicely prepared border before the middle of the month, wintering them in cold frames.

**Celery** for winter had better not be handled before the middle of the month. That intended for early use to be earthed up as necessary growth appears.

**Corn Salad** can be sown now in drills a quarter of an inch in depth and six or eight inches apart.

**Egg Plant.** If there is much fruit, thin severely.

**Endive.** A frame may be filled with plants not likely to mature outside for later use. Keep cool and dry, or else they will be certain to rot.

**Leeks.** Draw earth up to them as they grow.

**Melons.** Remove all fruit not likely to ripen.

**Neatness** in all gardening operations is indispensable and should be maintained from beginning to end. As fast as one crop matures, all that remains should be removed, and the ground prepared for another, or else it should be repeatedly cultivated so as to keep down weeds. Keep all growing crops well cultivated and in good growth, as tenderness and good quality depend on this.

**Peppers.** The slightest frost hurts these. By carefully lifting the plants and heeling them in uprightly under glass their season will be prolonged.

**Root crops** of all kinds will require to be cultivated or otherwise kept free from weeds.

**Saving Seed.** It should be gathered from the most perfect specimens only. If such cannot be selected and cared for then don't save any.

**Spinach** for early spring "greens" to be sown about the tenth of the month.

**Tomatoes** can be considerably prolonged if the vines are pulled up on the approach of frost, laying them closely together under glass, or where they can be given some protection.

**Turnips.** Some of the earlier varieties will still produce a fair crop if sown the first of the month. Cultivate the growing crop well.

#### FRUIT AND VEGETABLES UNDER GLASS.

**Cold frames** to be put in repair, painted, etc., ready for later use. Provide mats or shutters.

**Figs.** To be well supplied with water until crop ripens, then water less to insure ripe wood.

**Grapes.** In the earliest houses the leaves will soon begin to fall; when the wood is ripe prune, clean off and lay down. Keep the houses as cool as possible. At the between season clean, repair and paint wood work. Successional houses to be freely aired. In the late houses as the fruit ripens keep the atmosphere dry, maintaining an average night temperature of 60°. The fruit ripe, keep the house cool, dry and freely aired.

**Lettuce** sown now and grown in frames or cool greenhouses will head before severe winter.

**Parsley.** For winter use a frame of the earliest outside sowing may yet be planted.

**Peaches, Plums and Nectarines** growing in pots or tubs should be treated as advised for Figs. Those that are growing in cool houses, or houses slightly heated, should now be given a dry atmosphere and much air.

## Inquiry Column

*This being the People's Paper, it is open to all their inquiries bearing on gardening. Correspondents are urged to anticipate the season in presenting questions. To ask, for instance, on April 15 or 20 what Peas had best be sown, could bring no answer in the May issue, and none before June, when the answer would be unseasonable. Questions received before the 10th of any month stand a good chance of being answered in the next paper. Not more than three questions should be sent at one time. Inquiries appearing without names belong to the name next following. Replies to inquiries are earnestly requested from our readers. In answering such give the number, your locality and name, the latter not for publication, unless you desire. Write only on one side of the paper.*

408 **Spotted-Leaved Calla—Asparagus Ten-  
uissimus.** Will you please tell me why a Spotted Calla and a climbing Asparagus will not grow when given the treatment of Geraniums?—Mas. W. M. BARRET, *Huntsville, Tex.*

409 **Cloth Frames.** Can you inform me as to the value of the new fibre cloth for covering hot-beds, frames, etc. How can it best be used to keep the wind from blowing under and unfastening it?—G. K., *Barry Co., Mich.*

410 **Chrysanthemums Shooting Up.** My plant is pot-grown in good shape, but sends up shoots from the root. Should they be removed?

411 **Rosebuds Blasting.** A Princess Camille bush five years old, dug up and taken to the cellar annually, starts about twenty-five buds at a time. These grow very large and then seldom mature. It is in good soil and is cut back closely in the Spring. Must it be thrown away?—Mas. J. C. HUNNELL

412 **Clitoria mariana.** Is the enclosed plant a perennial, and what is its name? How propagate?

413 **Gooseberries and Currants.** How are they best propagated?

414 **Grape Rot.** Will bagging prevent? Will mosquito netting answer as well or better than paper?—T. W. L., *Trenton Mills, Va.*

415 **Transplanting Walnuts.** I have ten trees, three years old from seed, to transplant. When is the best time and should the roots be pruned?—Miss H. C. B., *Hartford, Conn.*

416 **Grapes in N. E. Iowa.** (a) What is the best time to set them here? (b) What three varieties for home market would you recommend for this section?—J. RILEY, *Winneshiek Co., Iowa.*

417 **Cauliflower not Heading.** Please tell how to prevent the plants all running to leaves and no heads.—D. L. P., Jr., *Fort Randall, Dakota.*

418 **Sheldon Pears Cracking.** A standard tree just coming into bearing shows much cracking of the fruit. It is in sod now, but was cultivated for five or six years. What is the remedy?

419 **Currant Worm Remedy.** I find that Hellebore used strong enough to kill the worms causes the leaves to drop. Is there any better remedy?—C. J. G., *Chester Co., Pa.*

420 **Moon Flower.** Is this (*Ipomoea noctiphiton*) annual or perennial? To be potted and housed or be left out and covered?—W. T. SANDERS, *Mass.*

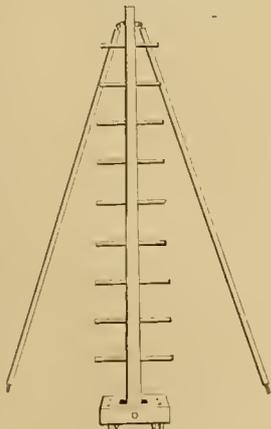
421 **Seed Weed in a Compost.** Would the little salt from the seed weed in a compost heap be detrimental to Strawberries, used as a fertilizer?—Miss S. R. T., *Waldo Co., Maine.*

422 **Bone Manure for Fruit Trees.** Is there anything better than ground bone for newly planted trees on land newly cleared up and that has never been fertilized except by leaf mold? How much to be applied?—Average New England soil, elevated.

423 **Effects of Regrafting.** Does regrafting change or have any influence on the nature of the Apple? That is, a Pippin or Nonesuch, originally grafted on a natural stock, after making two or three years' growth, is again grafted with Porter. Does this second grafting affect the Porter?

424 **Killing Shrubs.** What is the best method of killing sprouts around stumps of recently cut-over land?—H. H. B., *Providence Co., R. I.*

425 **Sowing Tulip Seed.** (a) Can you tell me when and how to sow Tulip seed? (b) Can you give me name of enclosed flower?—L. M. D.



Canadian Fruit Ladder.

426. **Hardy Catalpa for Timber.** Will some one inform me whether it will pay to plant hardy *Catalpa speciosa* for timber, fencing, posts, etc., in Northwestern Ohio.—SUBSCRIBER.

427. **Keeping Grape Seed, etc.** (a) What is the best way to keep Grape seed, dry or bedded in earth? (b) The best time to plant Black Raspberries? Most of mine set in the spring have failed.—E. P. F., *Sterling, Kansas.*

428. **Budding Query.** In cutting the bark of stock for inserting the bud, should the inner bark be cut through to the wood?—R., *Toronto, Ont.*

429. **Peas for Canning.** Parties here want us to raise 10 or 15 acres of Peas for them for canning purposes. What do canning establishments East pay per bushel for Peas? Are they a profitable crop to raise at 40 cents per bushel where land rent is three dollars per acre? Distance to deliver, half mile?—KANSAS SUBSCRIBER.

430. **Squashes Failing.** Why is it that my Squashes wilt and die when full grown? I find no grub. How prevented?—JAMES WORCESTER.

431. **Currants Losing Their Leaves.** Several weeks ago my bushes began to turn brown and the leaves drop, although they have had fair treatment. I do not know whether the cause is insects or the peculiar weather we have had. Will some one tell me?—W. S. H., *Montclair, N. J.*

432. **Propagating Clematis.** Will you please inform me as to how these plants may be propagated?—A CONSTANT READER.

433. **Pruning Passion Flower.** Would pruning as soon as a crop of flowers is past induce a new crop soon? What is the best treatment as to pruning?—G. L. WISE.

434. **Wire Worms in Carrots.** Mine are badly infested. What remedy can be applied.—ANXIOUS.

435. **Mammoth Trees.** Can any reader tell me the sizes of the largest trees of *Sequoia gigantea* in California?—A. M.

436. **Vinegar From Cider.** I would like information as to the best course for rapidly converting cider into vinegar.—GEO. WATSON.

437. **Stephanotis Culture.** I have a *Stephanotis* which has got through blooming. Ought it to be cut back? It seems to be turning yellow.

438. **Moon Vine or Evening Glory.** Can you inform me how to treat a plant that is growing rapidly but has not yet bloomed? How is the same to be treated for the winter? I am anxious to preserve mine.—Mrs. J. W. K., *Brookline, Mass.*

439. **Peach Evaporating or Canning.** Which way is the most profitable for disposing of this fruit?—D. S. H., *Northampton, Mass.*

440. **Celery Culture.** What soil is best adapted to this crop? How is it best grown? Is there any work devoted to its culture for market.—A. GANDY, *Shawnee Co., Kansas.*

441. **Penstemons from Seed.** I would feel obliged for information on the raising of *Penstemons* from seed.—Mrs. CHAS. J. WELLS.

442. **Warts on Vine Leaves.** I enclose a specimen of leaves, from my graper, that are covered with warts. What is the cause and cure?—ANXIOUS.

#### REPLIES TO INQUIRIES.

366. **Autumn Blooming Crocus.** Woolson & Co., of Passaic, N. J., offer a number of these.

375. **Small Fruits South.** For Georgia and the South generally the following list with directions will be found most suitable. *Strawberries.* Varieties, Charles Downing, Crescent, Cumberland, Kentucky, Sharpless, Triumph de Gand, Wilson's. Any soil not too wet will answer, deep, rich light loam preferred. Plants set after the fall rains will yield fairly the next season, and a large crop the second year, after which it will not pay to keep up the bed. Set in rows three feet by one foot. As a fertilizer a compost of 100 bushels of cotten seed to ten two-horse loads of manure per acre applied between the plants after setting is unequalled. *Raspberries.* The red Cuthbert and the black Gregg varieties are the best for you, with the American Black and the McCormick (Mammoth Cluster) worthy of trial. Plant in rich well worked land, the reds three by six, or four by five feet apart, the blacks somewhat further. They will bear the second year. *Blackberries.* Varieties, Kittatinny, Lawton and Wilson's Early. Soil and culture same as Red Raspberries. You should be able to procure the needed plants at the Fruitland Nurseries, Atlanta, Georgia, P. S. Berckmans, proprietor.

399. **Birds and Vineyards.** The robin, we believe, is the only bird that injures the Grape crop. If the law prevents you from shooting the birds, the only alternative left you is to frighten them off some way. Strawberry-beds may be protected by nets laid over, so that the birds cannot get at the fruit. The best plan we can suggest in regard to the vineyard is to keep one or more boys, or even girls, that can be hired cheaply, to frighten them off, either by clapping two sticks together, or by the use of a watchman's rattle, which makes a noise they do not enjoy. The owner of a vineyard remarked to us the other day that he adopted this plan, and it was a good investment of his money.

403. **Rose for Wisconsin.** Make your selection from the following: *Summer Roses*, Centifolia (Hundred-leaved), Chendolle, Magna Charta; *Moss*, Common Moss, Crested Moss, Princess Adelaide; *Hybrid Perpetual*, Baronne Prevost, Baroness Rothschild, La Reine, Mabel Morrison, General Jacquemint, Marshall P. Wilder.

405. **Lucretia Dewberry.** See directions on page 185 of the August issue.

439. **Peach Evaporating or Canning.** We have always evaporated Peaches, getting about six pounds of evaporated fruit from one bushel. Any leading hardware house has parers and pitters to do the work of paring and pitting. The fruit should be cut in halves and laid flat side down on racks. A. M. P.

409. **Cloth Frames.** The fibre cloth referred to has made for itself a good reputation in the time it has been before the public. It is light, strong and mildew proof. The simplest way of using this or any cloth for protecting hot-beds, etc., is to tack it to light frames, say three by six feet, using these like sashes. These should cost not more than 20 cents each, while glass sashes cost about \$2 each. While such sashes can never answer every purpose of glass they have at least one advantage. This is in the case the covering be left on in the daytime when the sun is shining, there is comparatively little rise of temperature underneath it, while it is well known that if the ventilation of frames covered by glass sashes is not carefully attended to the crop beneath these may be quickly ruined. Peter Henderson has recently stated that last spring in his establishment they covered a lot of Cabbage plants with the protecting cloth for three weeks, never once taking it off, night or day, and the plants were nearly as good as those covered by glass. In experiments with it last winter it was found that while the thermometer marked 25 degrees, the temperature under this covering was 5 degrees higher, while under glass it was but 7 degrees higher. Experienced cultivators know that the difference of five degrees in temperature in most cases would save nearly all plants exposed in the open air to the danger of injury by frost. The sashes of cloth being much lighter than those of glass, should be secured against lifting by the wind by hooking down or weighting them with scantlin, or the like.

440. **Celery Culture.** The fact that Celery in its wild state is found growing in wet ditches and marshy situations sufficiently indicates the soil it prefers. Those who grow the improved sorts for market seek for level bottom lands of light soil and rich in vegetable deposits. A light soil is desirable for aiding the important part of earthing up. It must be very rich to suit the crop, for no attempt to grow it in a poor, harsh soil can be successful. On a large scale it is usually grown by the level method, and not in trenches as in garden culture. Ordinarily it is treated as a second crop, following early Beets, Potatoes, Cabbages, Onions, Peas, etc. A course of management may be outlined as follows: Sow the seed in a sheltered seed bed of light, mellow, rich soil as early as the ground works up well in the spring. Usually this is done in drills a foot apart, scattering the seeds thinly, and afterwards covering lightly and firming the soil over the drill with the feet. When the plants are up some three or four inches the tops are cut off by most growers to induce stockiness. July is the usual planting out time for the winter crop, setting the plants five or six inches apart, in rows three feet apart for the dwarf kinds and four feet for the strong growers. The plants should be sorted to have those of the same size come together, and some trimming of the top is desirable. Plant firmly with a dibble; if the weather is very hot and dry some shade is beneficial. Until the growth is a foot long nothing need be done but to keep the crop thoroughly cultivated. That stage reached, the first step in hilling—handling it is called—is done by bringing the leaves of each plant closely together and pressing the soil against the mass of stems, afterwards drawing some earth against the raised soil, and repeating this at intervals as growth proceeds. About the middle of September the regular banking up begins, which has in view the bleaching of the hearts. This is done by raising a bank of earth against the Celery on each side and to within three or four inches of the tops, taking much care to not have the soil enter the heads. About November 1st the crop is dug and stored by packing closely in trenches a foot or less in width, and of a height corresponding with the length of the Celery. As the cold increases, the trenches are covered to keep out hard frosts, and to render the product accessible for use and marketing at all seasons. More extended directions for culture may be found in such works as Henderson's "Gardening for Profit," and Quinn's "Money in the Garden."

433. **Pruning Passion Flower.** You may cut back the laterals that have flowered, and it is possible, if the plant is strong and its position in the conservatory light, that fresh growths would push that might flower later in the season. The shortening of those growths would, moreover, admit light and air the more freely to the growths not cut back, and these would ripen the better. Overcrowding should be avoided, and any parts of the plant may be removed to prevent a close thicket of growth, that being neither agreeable in appearance nor good to the plant; but a general system of close pruning must not be carried out till late in autumn.

425. **Sowing Tulip Seed.** (a) Sow any time after they are ripe, in shallow boxes or in cold frames, in light soil, and strew some half-rotted leaves or chopped swamp moss over the surface of the soil to keep it from getting hard, and shade from sunshine with lath or brush, shading till the seedlings appear, when the shading may be gradually lessened. (b) *Manettia bicolor*.—W. F.

432. **Propagating Clematis.** Clematis may be propagated by means of cuttings, layers, and grafts, but as grafting and striking cuttings require considerable skill and experience to insure a full measure of success, layering is the best method for those who are not proficient in propagating these plants. The layering should be done when the wood is moderately firm, and in your case it will be preferable to layer the shoots in pots. Take a sufficient number of five-inch pots and after placing bits of crocks in each, fill them with a sandy mixture and place them in convenient positions about the plants from which the layers are to be taken. When this has been done bring down the shoots, cut them partly through in a slanting direction and peg them securely in the pots, one in each, and cover with sand. The soil must be maintained in a nice moist state, and the pots should, if possible, have soil or coal ashes packed about them.—A. H. E.

434. **Wire Worms in Carrots.** We fear there is not much chance of saving the rest of the crop from injury. Potatoes buried in the soil form a good trap; a stick should be placed through each Potato to show its position. Visit the traps frequently, and destroy the worms found therein. When a crop is cleared, a dredging with salt and fresh air-slaked lime is said to assist in getting rid of them; if you dig the surface, you will expose the worms to birds, which are fond of them.

408. **Spotted-leaved Calla—Asparagus termissimus.** The Spotted Calla, *Richardia alba maculata*, grows only for about five months in the year. It should be grown in a well drained pot and given a compost composed of two-thirds turfy loam and one-third well decayed manure, well mixed. Start the plant into growth early in the spring, and in the winter store the pot in a warm cellar or under the greenhouse stage. Water sparingly at first; during its season of growth give an abundant supply. As soon as the foliage commences to decay gradually reduce the supply of water. *Asparagus termissimus* will grow very well in a similar compost, if given a moist, shady situation in a warm greenhouse. It should not be overpotted, and yet likes a liberal supply of room for its roots. Water freely at all times when the plant is in a state of growth. See that the pot is well drained—this is an essential point.—CHAS. E. PARNELL, *Queens, L. I.*

417. **Cauliflower Not Heading.** The cause of Cauliflower growing all to leaves usually is poor or cheap seed. The best Early Dwarf Erfurt never grows all to leaves. But the seed costs about \$5.00 per ounce, which deters many from sowing it. The cheaper varieties need a rich, moist soil and cool weather to grow to perfection, and even then there is apt to be some that have many leaves in the heads.—D. N. LONG.

396. **Dressing for Roses.** The guano killed the Rose. For plants both indoors and out I prefer to use guano in the liquid form. Dissolve two ounces of guano in a gallon of water and water thoroughly every ten days during the season of growth. The best dressing for outdoor Roses is thoroughly decayed stable manure.—C. E. P.

400. **Planting Evergreens in the Fall.** Yea, they can be grown with success in August or September if moist and the situation is sheltered. Otherwise I would prefer the spring.—C. E. P.

380. **Fuchsia Leaves Crinkled.** It is evident that something is wrong with the roots of the plants. It may be that the plants are overpotted; they may have been kept too wet, or else potted in too rich a soil. Or the pot drainage may be imperfect. Your best course will be to turn the plants out of their pots and repot them. Use clean pots, fresh compost, and be sure to drain well. Place the plants in as small pots as possible. Give them a compost composed of two-thirds turfy loam, one-third well decayed manure, with a sprinkling of bone dust. When the pots are well filled with roots shift into larger pots. It is not advisable to propagate from such plants.—C. E. P., *Queens, L. I.*

390. **Watering Agapanthus.** If the plants are properly cared for there will be no necessity of placing their pots in pans of water. I do not think that they will be benefited thereby.—C. E. P.

392. **Liquid Manure.** This will do very well, but be careful not to use it too strong.—C. E. P.

400. **Planting Evergreens in the Fall.** In warm, sheltered places, and in the case of full-rooting plants like Yews, or very hardy ones of any sort, September is a capital time, but August is usually too dry and hot. But in the case of very choice plants and if the place is at all bleak or exposed, defer planting till early spring.—W. F.

406. **Brush in Balsam Fir.** When Balsam Firs attain that size they generally assume a backward move and nothing can prevent them. Yes, cut out the dead wood. No danger from sun now.—W. F.

398. **Crown Imperials Not Blooming.** These plants dislike disturbance at the root and often miss flowering the first or second year after moving. They do best in light, rich, well-drained soil.

402. **Apples for Washington Territory.** The following have been found reliable for that section: *Summer*, Carolina June, Early Harvest, Golden Sweet, Red Astrachan, Summer Rose; *Autumn*, Fall Pippin, Gravenstein, Rambo; *Winter*, Baldwin, Belmont, Blue Pearmain, Dutch Mignonne, Golden Russet, Hubbardston (None-such), Monmouth Pippin, Northern Spy, R. L. Greening, Swaar, Vandevere, Winesap, and Yellow Bellefleur.

404. **Plums for the North.** The varieties that have proved most reliable in your state are Imperial Gage and Yellow Egg for large, De Soto and Lombard for medium size.

320. **Hardy Palms.** No, not one. The Chamærops are the hardest we have got, but they are nothing like hardy enough for any outdoor Northern garden.—W. FALCONER.

391. **Wintering Tender Plants.** Geraniums and others of the hardier greenhouse plants may be preserved in winter in a room or the dry cellar you mention, provided you can admit air as well as light to them. Take the cuttings as early in the season as you can, strike them in the open ground, and when well rooted pot them singly in small pots, place them on and partly bury the pots in fine ashes, to keep out worms and to protect the young roots. Get some rough wooden trays, the sides just the height of the pots, raised about 16 inches from the ground and sloping to one corner, where you must make a hole to drain off what runs through the pots when watering. Put a pan to catch the water to keep the floor dry. About the middle of September bring the plants in, and pack them into the trays, where you will keep them till spring, giving only just enough water to keep them alive, and every day in which there is neither frost nor rain keep the windows open till half an hour before sunset.—A. H. E.

392. **Liquid Manure.** You could not have better manure water than horse droppings soaked in water until it forms a clear dark brown liquid. Rather err on the side of having it too weak than too strong. Roses, Chrysanthemums, and Dahlias would be greatly benefited by it, and it might be used weak for all kinds of soft wooded pot plants.—A. H. E.

398. **Crown Imperials Not Blooming.** A common occurrence. Their period of growth is so short that impoverishing conditions always set against them. In good, rich soil, not devoured by other plant or tree roots, and with a moderate amount of moisture in winter or spring and a warm sheltered spot, they bloom year after year with me.—W. F.

394. **Training Lima Beans.** A pole five feet in height is the most desirable. As soon as the vines reach the tops of the poles they should be pinched back.—C. E. P.

435. **Mammoth Trees.** The dimensions of the Sequoia in the Calaveras Grove, from which the sections of bark exhibited at the Crystal Palace were taken, were as follows, viz: circumference at base, 84 feet; ditto at 30 feet from the ground, 69 feet; at 70 feet from the ground, 43 feet 6 inches; and at 116 feet (the height to which it was stripped of its bark), 39 feet 5 inches. The height to the first branch was 137 feet, and total height 321 feet. Different accounts vary a little, but these figures I think are the most correct. This probably was not the largest tree known, although it is the largest of which I can give anything like exact figures. It is recorded of one tree that across the butt as it lay upturned it measured 35 feet without its bark, and that when in its vigor and with its bark on it must have measured 40 feet in diameter, or 120 feet in circumference. With regard to the Australian Eucalyptus, some figures, which were published some years ago giving the sizes of some Tasmanian forest giants (gum trees, but specific name not stated) may be of service. One of these was 130 feet in circumference at the ground, and at 3 feet from the ground 102 feet; the height was not ascertained. Another lying on the ground reached to 220 feet in height without a branch. This was 30 feet in diameter at base, and 12 feet diameter at the first branch (220 feet).—Editor of The Garden.

397. **Azaleas and Camellias.** If the Azaleas were healthy when repotted they must have suffered at some time from want of water, or the foliage would not have dropped as it has done. The leaves having dropped it is improbable that roots have been made in the new soil, and were the plants ours we would replace them in the old pots, watering them carefully through the autumn and winter. This is the only way of restoring root action and causing the plants to break again, when judicious treatment will perhaps bring them into good health once more. Perhaps they were shifted before young shoots formed, which is wrong; they should have formed shoots an inch long before shifting them. The roots soon begin to work into the new soil, otherwise it is some time before they do so, and they never break so well. When making their growth they should, in fine weather, be fairly syringed morning and evening, and the soil should never be allowed to become very dry; if it does so frequently the fine hair-like roots perish and the leaves fall off. About the middle of August put them in the open air. The Camellias are attacked by brown scale, which must be destroyed, or they will never thrive. Dissolve 3 ounces of soft soap in warm water and add a gallon of water to that, syringing the upper and under surfaces of the

leaves, as well as the wood, with it. In a week afterwards thoroughly wash every part with clean water. Probably a few more insects will make their appearance, but if watched for and cleaned off this pest will soon be completely eradicated.—A. H. E.

382. **Ornamental Trees for Georgia.** (a) *Cladastri tinctoria*, *Gymnocladus canadensis*, *Magnolia acuminata*, *M. macrophylla*, *M. grandiflora*, *Paulownia imperialis*, *Salisburia adiantifolia*, *Taxodium distichum*, *Ceridiphyllum Japonicum*, *Fagus sylvatica purpurea* Riversii, *Pterocarya fraxinifolia*, and *Fagus sylvatica pendula* will no doubt prove very satisfactory. (b) Yes.—C. E. P.

384. **Books on Rural Art.** Scotts "Suburban Home Grounds," would prove an excellent addition to those already mentioned in the August number.—C. E. P.

380. **Soot for Plants.** Put four ounces in a gallon of water, stir up briskly and apply.

395. **Lilium Candidum Failing.** The bulbs may have been injured by the application of rank stable manure. Or they may have been injured by wire worms. If the bulbs are rotting you can do nothing for them. Still you might try those left by planting in good garden soil.—C. E. P.

374. **Eucharis Amazonica.** You can start your bulb at any time providing you have the facilities for giving it the necessary heat and moisture. It should be given a well decomposed manure with the addition of a little sharp sand. While they are growing give water freely and liquid manure water twice a week. Repot as necessary, but avoid disturbing the bulbs. If wanted for winter blooming water sparingly from August to October. The *Eucharis* should be given a good share of sunshine and moisture with from 66° to 70° of heat.—C. E. P.

397. **Azaleas and Camellias.** Your Azaleas may have been destroyed by the Red Spider or else killed by an over watering. You should have planted them out on a nicely prepared border in a partially shaded situation. There the leaves could have been sponged off occasionally or the plants freely syringed without being injured by excessive wet. I think that your Camellias are infested with scale. Remove the insects and sponge the leaves off with soapy water. Repeat if necessary.—C. E. P.

398. **Crown Imperials not Blooming.** The bulbs may not have been large enough, or they may have received some injury. Your best course will be to take them up, divide and replant.—C. E. P.

407. **Fall Planting of Fruit.** Pear and Apple trees can be safely planted in the fall, but Cherries and other stone fruits should be left until spring. I cannot make a selection of varieties until I know your locality. You can get the Apples on Paradise of Ellwanger & Barry, Rochester, N. Y.—C. E. P.

### The American Pomological Society's Meeting at Boston, Sept. 14.

As announced in our June issue the twenty-first session of this society will open in the city of Boston, Wednesday, Sept. 14, 1887, at 10 o'clock A. M. Very many prominent pomologists have indicated their intention to be present, and the promises are for one of the most important gatherings in the history of the society. Every state organization devoted to the advancement of horticulture should have a good delegation at this meeting, and it is desirable, if practicable, that notices of these delegations be sent in advance of the opening of the convention.

We are informed by Secretary Garfield that it has been found impracticable to arrange for a general reduction of railroad rates, and it is suggested that those who can arrange in some numbers to travel over one route, confer with each other and arrange early with railway managers for a reduction in fare.

Addresses will be delivered by Dr. J. A. Lintner, Albany, N. Y.; Dr. Henry P. Walcott, Boston, Mass.; Dr. John H. Brakeley, Bordentown, N. J.; Hon. H. E. Van Deman, Washington, D. C.; John J. Thomas, Union Springs, N. Y.; J. M. Smith, Green Bay, Wis.; P. J. Berckmans, Augusta, Ga.

The list of subjects chosen for general discussion, with the names of those who will open the topics with short papers, are as follows:

- 1—Progress in Fruit Identification by Flowers. Dr. W. J. Beal, Michigan.
- 2—Climate, as Affecting Color in Fruits. Dr. B. D. Halsted Iowa.
- 3—Notes on Cross Fertilization of Grapes. D. S. Marvin, New York.
- 4—Relation of Forest Destruction to Fruit Deterioration. Secretary Geo. W. Campbell, Ohio.
- 5—The Apple Scab. C. A. Hatch, Wisconsin, and Prof. D. P. Penhallow, Quebec.
- 6—The Peach Yellows. T. T. Lyon, Michigan.
- 7—Relation of Soil Starving to Fruit Deterioration. C. A. Green, New York.
- 8—Some of our Most Promising Wild Fruits. E. S. Goff, New York, and A. S. Fuller, New Jersey.

9—Fruit Breeding and Seed Extinction. Prof. L. H. Bailey, Michigan, and Dr. E. L. Sturtevant, New York.

10—Behavior of Fruits at Various Altitudes. A. E. Gilson, Colorado.

11—Honesty in Testimonials and Recommendations. Prof. T. V. Munson, Texas, and M. Crawford, Ohio.

12—Commercial Fertilizers as Affecting the Vigor and Health of Plant, Yield and Quality of Fruit. P. M. Augur, Connecticut.

13—Possibilities of Small Fruits with Water. Dr. A. Shaw, Colorado.

14—Hardiness of Fruits, Causes and Experience. Dr. T. H. Hoskins, Vermont.

The discussion of new varieties of fruits will be a prominent feature of the meeting, and opened by Prof. James Troop with notes from Indiana.

The Massachusetts Society is completing arrangements to make everything pleasant for delegates, and the headquarters will be at the United States Hotel. Any communications for the convention should be addressed in care of Secretary Robert Manning, Horticultural Hall, Boston, Mass.

### Horticultural Exhibits at the New York State Fair.

It is expected that the exhibits of both fruits and flowers at the coming fair, to be held at Rochester September 8th to 14th, will be the largest and finest ever made in the state. We learn that the entries which have come in indicate that the Society will need two tents of the same size as the one usually employed to hold the exhibit. Entries of fruits and flowers may be made up to Thursday morning, Sept. 8th, the opening day, but all fruits and flowers will be in position by Friday morning, and this day and Saturday will be especially devoted to the display in Floral Hall. All lovers of flowers should not fail to attend on one or both of these days, and as all railroads make very low excursion rates no one has an excuse to stay at home.

Friday will also be children's day, on which only 10 cents admission will be charged them. The Society generously offers prizes of \$10, \$8, \$6, \$4 and \$2, to children for the best collection of cut flowers grown by themselves, and the same number of prizes of like amount for floral designs, the flowers to be grown and arranged by children.

### The Western New York Fair.

This fair, the grounds of which are located in Rochester, will be held this year simultaneously with the State fair, Sept. 8-14, but entirely distinct of course, and on different grounds. The horticultural exhibits of this fair always have been a leading feature, as is natural from its location in this great fruit section. Inasmuch as visitors to Rochester will have the benefit of attending two great fairs on these days their numbers should swell to the largest possible proportions. Horticulturists in all branches should find a visit to Rochester of especial profit at the time. Reduced fares on the railroads.

### The Philadelphia Fruit Market Outlook This Fall.

Under date of August 10th, Messrs. Pancoast & Griffiths, fruit merchants of Philadelphia, report that Grapes in Georgia, the Carolinas and Virginia, have been so near a failure this season as to preclude any shipping North of any account. The Jersey crop is near about a total failure—none to ship. The New York State crop promises well and will be the sole dependence of this market.

Peaches in the South have been the most complete failure for years and are done. The source of the usual superabundant August and September supply of Peaches (the Delaware and Maryland Peninsula) will fall short of the late estimated short crop. Dropping continues, and from present outlook the Peninsula cannot ship this season over one-fifth a usual yield. In the southern portion of New Jersey Peaches will be very light; but in some sections of the upper counties the crop promises to be fair, and will doubtless find its way to the Philadelphia market more satisfactorily than heretofore to fill the deficit caused by the Peninsula shortage, and to avoid the competition in New York City and the West of the New York State crop, which will be heavy, and the immense California fruit crop, which is being shipped on passenger train time, three trains per week of eighteen cars each, to Chicago and New York. The Western crop of Peaches is reported the best one for many years, and this, with the California shipments, will probably supply the Western cities. Apples of fall varieties are a poor crop about Philadelphia.

## Some Questions and Answers.

CHAS. A. GREEN, ROCHESTER, N. Y.

"How can I subdue a garden that is overrun with weeds." By keeping the hoe handles well polished. "How is it that my neighbor always takes premiums at the fairs, while I make twice the effort to produce fine specimens?" Some men, though poor horticulturists, are great travelers, and very successful in taking premiums. I have seen Apples grown in Arkansas take the prizes repeatedly at local fairs. State exhibitions of fruits at National exhibitions are occasionally impositions. I have known men to brag of having gone into the markets of large cities, purchasing right and left, not knowing or caring where the fruit was grown, for the purpose of making an exhibit for their State. "What pursuit promises the best health and longevity?" Fruit growing, or living where fresh fruits and exercise in the pure air are taken regularly. Eat less, drink less, worry less, cultivate hopeful views, forget your health as a topic, and become enthusiastic in something. "Are grafted trees inferior to budded trees?" I submitted the question to Patrick Barry at the Rochester meeting last winter, and he replied: "One is as good as the other." Tree agents started this scare. They must make their victims believe that no trees are worth planting but those they offer at \$1 each; hence this falsehood. "How shall I enrich the soil so as to secure extraordinary growth on expensive new fruits?" is a question I am often asked. My reply is to avoid all attempts at enriching the soil the first season after planting rare varieties of Strawberries, Grapes, or other fruits. The soil should have been enriched the year previous by applications of yard manure, or where that is not possible, commercial fertilizers. An experienced person might largely increase growth by skillfully applying fertilizer to the best now planted, but it is attended with risk to the novice. More valuable plants and trees are killed by such treatment than are benefited. At first when planted there is only a brief period when the plant is in a condition to feed upon the soil largely. Its roots are mutilated, and new ones must be formed. While soil made rich previously is highly desirable, even at the beginning there is security in refraining from its application. The writer has a field of spring-planted Strawberries that he has intended to fertilize as soon as the plants become well established, and he has the ashes and nitrate of soda in hand for the purpose; but he hesitates to apply it, knowing from past experience that injury to the young plant is liable to occur from the application of such powerful agents. Last year we applied nitrate of soda to a similar field in June. No injury was observed except in one part, where the plants were set out later. Here the plants were destroyed, probably owing to the immaturity of the roots.

But there is one safe method of securing extraordinary growth. This is by frequent cultivation with the hoe and cultivator. There is no danger in advising this course, and the result will astonish you if you are thorough, and leave one row with ordinary culture in the same field for comparison. For instance, I have Apple trees growing in the nursery row with yearling Pear trees. We do not ordinarily give Apple trees as frequent cultivation as Pear trees, but these being in the same block received constant cultivation. The result is that the yearling Apple trees stand nearly as high as my head, an unusual growth.

## Canadian Fruit Growers in Council.

*(Condensed from proceedings of the summer meeting of the Fruit Growers' Association of Ontario, held at Collingwood, Ontario.)*

The president, Mr. Alex. McD. Allen, said that the Apple trade with the mother country was scarcely in its infancy yet. The Colonial

Exhibition had done much to draw attention to our fruits. The visitors to that exhibition would not believe that the specimens preserved in spirits in glass jars were genuine fruit. But when the freshly grown Apples arrived, and were placed on the tables, to show there was no deception, then surprise took the place of doubt.

Each year the consumption of Apples in Britain is on the increase; and as the taste for that fruit gets cultivated, the greater will be the consumption. Think he is perfectly safe in predicting a great future for Canadian Apples. Already the buyers are placing their orders in advance, and some of the larger dealers are now visiting the country.

One gentleman, a Mr. Cecil, from Glasgow, gave the meeting some valuable information upon packing as follows: Pack honestly and in neat barrels. The appearance of the package had a deal to do with selling the contents. Buyers expected a superior quality of Apples when the barrel was neat. Care should be exercised to see that all fruit from the bottom layer up to the top is as nearly of a size as possible. Always put your own brand on the package. When the retail dealer is pleased with a particular brand he invariably inquires next year for fruit bearing that brand.

As regards varieties, the Northern Spy was the best to handle. Then came the Baldwins and Greenings. Wagners will be appreciated when better known. Russets also sold well. King of Tompkins County, Spitzenburgs and other choice varieties, as a rule, did not arrive in such good condition as those first mentioned. No use sending sweet Apples to England, the people will not look at them.

It would not be long ere the wholesale men from the Old Country would come to this country to make their purchases, instead of as in the past Canadians having to search for the market, and it only required the growers to act honorably, and there was a great future for the fruit industry for the Dominion. Following are some of the expressions of the meeting presented in a brief form:

**Concerning Apples.** Young Apple trees should be shaded during the first year after planting. No use trying to grow Apples profitably upon sandy soil. When planting on stiff clay, the earth around the roots should be mixed with broken bricks or stones. When trees are placed in a close warm situation, the fruit is most liable to spot. Want of drainage has to do with most of the winter killing in orchards. Trees grow well till the roots get down to the wet subsoil, and then fail, especially where drainage is difficult. Thorough underdrainage is necessary to success. Drains where an outlet can be had should be five feet deep. They will drain a greater area, and consequently not so many required. At four feet deep there is no danger of the roots finding their way into the tiles. No danger from freezing the trees when the land is drained.

Locality has a good deal to do with successful Apple growing; although failure frequently results from bad stock. High and level not so suitable as high and rolling land for locating an orchard.

There are some excellent varieties of seedlings. Tender varieties will thrive better when grafted on stocks. Duchess of Oldenburg and Astrachan stand the winter well, and are heavy croppers. Duchess of Oldenburg is the best early Apple for market and family use, being good for cooking when green, and does not ripen hastily. Astrachan good for home consumption; excellent when first ripe; but soon become spongy. Early Harvest does well only for a few years. Of late they have been spotted badly.

Apples are valueless if not good for exportation. So many varieties grown, only fit for local use, that there are too many wasted. Only grow good marketable fruit, say two or three early varieties, same of late fall and winter varieties. Astrachan, Duchess for early, Wealthy and Fill Basket for late fall. Northern Spy, Baldwins, Greenings for winter, Golden and Roxbury Russets for spring use.

Russets should be held by growers till spring, when better prices can be realized. British dealers prefer handling the Northern Spy to any other variety. The Blenheim and Ribstone Pippins grow larger here than in Britain; and as they sell at the highest prices, they can be grown profitably when circumstances are favorable. No demand for small Apples in the British markets. The Duchess will be a favorite to ship where the carriers provide cold storage. Baldwins are playing out, especially in the Niagara district. Twenty barrels of Greenings were gathered off one tree last season.

In packing care should be taken not to press too hard on the heads of the barrels. Fill till the center is raised two or three inches above the chime, shake gently to settle, and then head up. Best place to sweat Apples before packing is on the ground. They should be left there eight or ten days to toughen the skin.

Price is not so much an object with buyers in Great Britain as good, large, sound fruit. Uniform size is a desideratum. Keep the different sizes in separate packages. Dampness in storage will greatly help to keep Apples. Barrels are the best for storing in. Shrinking shows decay to be going on.

Wood ashes when not placed too close to the trees are invaluable to the soil. Every hundred barrels of Apples remove as much phosphoric acid as 100 bushels of wheat, and as much potash as fifty bushels of wheat. Sowing salt aids an orchard. Four hundred pounds per acre not too much.

A jackknife should be large enough to prune a tree with. Go over an orchard once a month and rub off the shoots. March is considered the best month to prune large limbs. A difference should be made between butchering and pruning. Examine trees carefully in March and April for insects. By this means they can be kept in check.

**Points About Plums.** Thinning gives as much bulk in fruit, without exhausting the tree. Plum orchards should be kept cultivated.

Lombard is a great bearer, and one of the best varieties for shipping. But the trees soon bear themselves to death. Washington stands the longest, and bears just enough fruit to ripen; good for light or sandy soil. Imperial Gage not desirable for shipping, but excellent for home consumption. Baker's German Prune is extremely hardy, stands frost well, and is a heavy cropper. Dewan's Purple is the largest of Plums.

When seeds of Plums are to be sown they should be placed in the earth directly the flesh of the fruit is removed, or they will soon become too hard to germinate. Damsons can be grown profitably in most northern situations. So many trees from nurseries fail to fruit that it is an open question whether it is not better to raise seedlings. Pond's Seedling is a good general purpose Plum.

The knife should be instantly applied directly the black knot is noticed. Leave all other work to attend to cutting it out, and carry to the stove for burning. The spores, being microscopic, readily blow to other trees. Spraying with sulphate of iron will help trees to resist the attacks.

**Strawberries.** Wilson's Albany is still the favorite. It fills the bill with both consumer and grower. Dominion and the Sharpless are next in order. They come in after the Wilson's are over.

Hen manure is the best fertilizer for Strawberries. Planting out freshly each autumn, and taking only one crop, was considered the best system. When properly cultivated Strawberries are a paying crop. A Mr. Johnson, residing in the town, sent some berries that for size and quality would have been difficult to excel. This gentleman grows only three-quarters of an acre, mostly Bidwells, yet about \$350 is the annual net value of the crop.

**Roses From Cuttings in Summer.** A writer in *Gardening Illustrated* on this subject remarks that the cuttings are often planted in sandy soil, but that it is a mistake. A porous soil requires much water, while all that the cuttings need to insure a good strike is an equable condition as regards moisture. A partially spent hot-bed, having a temperature of 76 degs., covered with a frame and lights—it being essential for the cuttings to be kept close—will make a good summer striking bed. On this bed place 6 inches in depth of partially decayed Coconut fibre or sawdust from hard wood that has lain in a heap for some time exposed to the weather, and press it down firmly. These substances are easily kept in an even, regular condition without the use of the watering-pot. In summer propagation, to which my remarks refer, the cuttings should be taken when the buds on the young wood are plump and well developed, but not started. They will then be acquiring a certain degree of firmness, and the danger of damping off will thus be diminished. The cuttings may consist of single buds or eyes, with 2 inches or so of wood at the base. If cuttings are plentiful greater length may be allowed, and if convenient they may be taken with a heel of older wood. They may be inserted as thickly in the bed as the foliage will permit. When inserted, the sawdust and fibre should be pressed firmly around them. They must be kept close until signs of growth are visible, and shaded from bright sunshine. All the water that will be needed will be a light dewing over with a fine-rosed pot to keep the foliage fresh, and this attention will only be required in very bright weather. A

great deal depends on keeping the leaves left on the cuttings from withering. If allowed to flag they will prove a source of weakness; but if kept fresh they will be a source of strength, as they encourage the formation of roots. As soon as they have made roots a quarter of an inch long they should be potted into small pots, and be plunged in another frame till established; then they should be hardened off preparatory to planting out.

**Frauds in Flower Selling.** It would seem the most difficult thing in the world to perpetrate fraud in the sale of fresh flowers, but the street dealers here (New York) are up to some cunning devices. For ten cents the other morning I purchased a bunch of what looked like fresh-cut Roses from a basket man at the end of the Brooklyn bridge. Fifteen minutes after I noticed a sudden drooping of the flowers. Upon investigation I found that every seemingly compact rose had a wire run through the center and bound to a slender stick. The curled edge of the faded leaves had been clipped off and the wire run through to hold the rest together. An hour later the seemingly beautiful bunch of cut Roses was a faded, drooping mass of color. These street dealers buy the leftover stock of florists, clip off the dead leaves, and keep the rest hidden in a pan of water until a customer comes along. They are scattered over all the streets of the city on bright, sunny days, and especially in the districts where the dry-goods and other stores for women are located. Most of them sell out every day and their profits average \$5 easily. On Sunday they run much higher, for nearly every girl wants a bunch tucked in at her waist. Mayor Hewitt tried to stop this flower peddling business on Sundays, and his efforts were highly successful for a while. As in his endeavor to enforce the excise laws, the peddlers established guards and sold when the police were not looking. Lately, they have dispensed with these lookouts and sell openly.—*Corr Philadelphia Press*

**A Word for the Walnut.** Some of the fruit growers in our northern counties are at a loss to determine whether Apples and Plums will be more profitable to grow than Black Walnuts. The fruit from the Apple and Plum may pay a trifle more annually as we go along than will the Walnut, but the Walnut will fully overcome the difference in profit of fruit by its wood growth. Each Walnut tree after the fifth year will increase its value in timber from one to three dollars.—*Field and Farm.*

**What Londoners Say of American Apples.** Compared with our home-grown sorts it must be admitted that Canadian or American Apples generally present a handsome appearance with their glossy clean skin and telling colors, in which as is well known, red or some shade of it—generally intense—plays a predominant part. Their size must also be taken into consideration. They are seldom, however, possessed of those firm and brisk qualities that characterize so many of our British Apples. They are sweet, soft—except in the case of Russets, perhaps—and liable to become mealy or spongy when over-ripened or out of season. Amongst a number in the fruit-room at Chiswick, Fillbasket presents a truly handsome appearance, both from its size and striking colors. In all probability it is the largest-growing variety amongst the Canadian collection at this date. Northern Spy is a British variety that seems to attain considerable size in Canada. It is a dessert Apple of the best quality, with brisk and sweet white flesh. The skin is streaked and flushed with red on the exposed side, and presents a fine appearance on the table. A small, or medium-sized Apple, named Johnstone, presents a fine appearance from its deep, shining red color. Another large showy variety is that named Wealthy. Foundling is another large sort, but seemed soft and less desirable at this season; it is, however, a fine-looking Apple.—*London Gardening World.*

**Glaze and Crystalized Fruits.** The French excel in the preparation of these fruit confections, and here is the method of their preparation as given in a foreign periodical: It is a process by which certain fruits are preserved by withdrawing their juices—that part which always leads to fermentation—and substituting in its place a thorough saturation of sugar. The fruit must be exactly of the required degree of ripeness, hence must be kept a certain length of time (depending on the kind) before it is ripe. It is then assorted, its stones and coarse skin removed with as little injury as possible to the form and texture of the fruit; a process of whitening then follows, by a sudden immersion in boiling water, which quickly penetrates the pulp, ditiing and drawing off much of the juice. It must be done with exact nicety, the period of immersion being determined by the size and ripeness of the fruit. If immersed too long, the pulp is left

too dry and woody or is over-cooked; if taken out too soon, the juices retained prevent perfect absorption of the sugar, and also lead to fermentation and damage to the product. And here further assortment may be necessary, for if those of different degrees of softness be kept together they take up the sugar unequally. The fruit is next immersed in a syrup made from pure clarified cane sugar. This sugar, held in solution in the syrup, enters the fruit and displaces the remaining watery juices, and as the juices pass into the syrup and the syrup loses its sugar, it becomes cloudy, and this appearance marks the commencement of fermentation. When this point is reached the vessel containing the syrup and fruit is placed over a fire and heated to two hundred and twelve degrees; the heat corrects fermentation and removes impurities. This process of impregnation with sugar will occupy about five weeks. The fruit is then taken out and washed in pure water; if it is to be made into glaze fruit it is dipped into a thick syrup and then left to dry and harden in the open air; if it is to be made into crystalized fruit it is dipped into the same syrup and then cooled and dried slowly in a kiln heated to ninety degrees; this causes the syrup to crystalize. The fruit is then packed in light wooden boxes.

## The Household

We think Peas need longer cooking than they usually get. They are greatly improved by the addition of a little sugar, a teaspoonful to a pint.

**Fried Okra.** Slice two Onions and fry in a skillet with bits of fat bacon. Cut a quart of Okra and stir in; fry brown. Sprinkle with salt and Cayenne pepper.—*Eliza R. Parker.*

**To Remove Fruit Stains.** From white cotton or linen, fumes of burning sulphur, warm chlorine water. From colored cottons or woollens, wash with tepid soap-suds or ammonia. Silk, the same, with very gentle rubbing.

**Stuffed Egg-Plants.** A correspondent of Good Housekeeping directs as follows: Parboil the Egg-plants, split, and take out the inside. Fry one Onion in butter; stir in bread crumbs, salt, pepper, a little nutmeg, and some meat gravy. Fill the Egg-plants with the mixture, put in a pan, dust with stale bread crumbs, put on bits of butter, and bake brown.

**Fried Breakfast Vegetables.** Fried Potatoes, hominy and mush aside, the ordinary American breakfast is destitute of vegetables. In the Southern or Middle States some cooks have become acquainted with the merits of fried and boiled Tomatoes as a breakfast dish, and sometimes Egg-plant is so served. As a matter of fact a vegetable properly fried is a great help toward an economical breakfast, giving the zest called for by a languid appetite when meat seems too substantial. A very narrow list will allow for the change of seasons, variety being secured by altering the methods of frying; for instance, one morning rolling the vegetable in dry flour seasoned with salt and pepper, and frying it in only enough fat to prevent burning; the next time breading it and frying it like doughnuts; another day frying it in batter. Summer and winter Squash, Pumpkin, Sugar Beets, Egg-plants, Tomatoes, Cucumbers, Parsnips, Oyster-plant, green Corn, green and ripe Tomatoes. Any boiled vegetables remaining from dinner, minced and warmed with a little cream or butter, or in white sauce, make an agreeable variety for breakfast, and dispose of portions not large enough to serve the second time.—*Juliet Corson.*

**Variety in the Use of Tomatoes.** *Fried.*—Peel and slice, salt and pepper; dip in egg, then in grated cracker. Fry brown in butter. *Baked.*—Cut slices from the blossom end, take out the seed and fill with dressing made of bread, butter, minced onion, salt and pepper. Bake half an hour. *Broiled.*—Slice and broil over a hot fire. Serve with melted butter. *Escalloped.*—Put in a dish a layer of bread crumbs, with bits of butter, and then a layer of sliced Tomatoes, sprinkled with pepper, salt and sugar. Continue until the dish is full. Spread bread crumbs and butter over the top. Bake one hour. *Tomato Farcie.*—Prepare a dressing by chopping cold meat seasoned with salt, pepper, mustard, cloves, lemon juice, and a grated Onion. Add to this two parts of bread crumbs and a little cold rice. Have some large Tomatoes, cut off the tops, scrape out the inside, and fill with the dressing. Make sauce with half a pint of soup stock, three tablespoonfuls of wine, one of Currant jelly, and a little extract of Celery; thicken with flour, pour over the Tomatoes, and bake twenty minutes. *Ravioli aux Tomatoes.*—Make a paste with flour, eggs and a little water. Roll thin and cut in rounds

about three inches in diameter, put on each piece a little of the stuffing prepared, fold them over and turn up the edges. Let them dry, and boil in salt water half an hour. Drain well, and dress with Tomatoes stewed in butter and melted cheese. To make the stuffing, boil some Spinach, mix with bread crumbs soaked in cream; season with nutmeg, pepper, salt, and grated cheese. Serve with fried Tomatoes. Tomatoes and macaroni are very nice cooked together.—*Good Housekeeping.*

## Poultry.

Don't forget the occasional coat of whitewash, with a bit of Carbolic acid, for the roosting places.

**The Manure Point of View.** Do you know that the droppings of a hen in a year will more than buy her feed? It will pay to take a little extra care in this matter. Prof. Horton says that 300 pounds of well kept poultry manure is equal in value to fourteen loads of stable manure.—*Rural World.*

**The shape of eggs** has nothing to do with the life germ; it conforms with the shape of the ovary and duct, hence we have long eggs, short eggs and round eggs. The air cell and germ is in the broad end, and if this part is smooth and even and if the germ is fertilized, that is all that is necessary so far as shape goes. Hens lay larger eggs than pullets.

**The Dorking.** Heretofore it was supposed that this fowl was very tender when young and not easily raised. Recent experiments show that the Dorking feathers rapidly, the same as the Leg-horns, and if the chicks be allowed a small quantity of meat once a day they will prove as hardy as other kinds. This difficulty overcome, the Dorking will hold the highest place among poultry as a market fowl. It is to the barnyard fowls what the shorthorn is among cattle.—*Philadelphia Record.*

**Rearing Chicks in Confinement.** Certainly chicks could be reared in so small a space as that named by "Alfrie," but great care would be necessary, and if an amateur attempted to rear them, he would be pretty sure to fail. Disease is ever ready to break out where animals, etc., are crowded, and in so small a pen as the one described fresh supplies of vegetables, bones, grit, water, etc., would have to be given daily, and a sharp look-out kept for the appearance of insect pests in the run and on the birds themselves. The sun, too, will have to be taken into consideration, and some means of shelter devised for the birds.

**Peach Trees in the Yards.** Plant Peach trees in the yards. We can show trees that have made wonderful growth here, with leaves as green and entire trees as healthy as one could wish. Trees planted the spring of 1886 would have borne fruit this year, only we would not permit them, as all fruit was picked off. The hens keep the soil around the trees clean, catch many of the insects, and manure the trees with their droppings. We are satisfied that when fowls are kept in confinement Peach growing can be made an adjunct, thus adding to the profits as well as affording excellent shade in the yards in summer.—*Mirror and Farmer.*

**Care and Management.** In the first place let us secure some suitable place warm and comfortable the poultry may call home. A descent to the south is a very suitable place for a poultry house. Build warm, with perfect ventilation and perfect drainage. A house sixteen by thirty-two, two stories high, is large enough to accommodate all the fowls that should be kept in one place. This will give room for one hundred, if properly cared for. Divide both stories into two rooms each. We would use one room in lower story for feed room, the other for nesting; both with dry earth floors. The upper story has one room for roosting, the other for setting hens and young chicks.—*Ohio Farmer.*

**Profits on Poultry.** The Farm, Field and Stockman has no doubt but that the United States can produce poultry cheaper than any other country. They really require less attention than any other stock. To the fact that poultry is generally neglected on the farm and the birds expected to take care of themselves is due the loss of profit therein and the high price in comparison with other flesh. When poultry comes to be generally raised with the same skill and care as other live stock, not only will the price be cheapened but at the same time larger profits will accrue to those who understand improved methods. Many poultry raisers understand this, and to-day they are reaping more profit for their labor and capital expended than those engaged in producing almost any other kind of flesh food.

# The Exchange

Amateurs often have an excess of certain seeds, plants, etc., while in want of others. This department is designed to bring about free exchanges in such cases.

In The Exchange may be named what can be spared, what is wanted and the address. No price figures admitted. Any offer that may appear objectionable to the publishers not admitted. No responsibility will be assumed for any results connected with The Exchange. Those using the column should correspond before sending articles.

211. L. E. Pike, Ladora, Iowa, has 30 varieties Coleus, 100 Geraniums, Ageratums, Vincas and bulbs to exchange for Lilies and other things.

212. Allan Gilmour, Emigrant, Oregon, will exchange Tulips for Hyacinths, Lilies and other hardy bulbs or shrubs.

213. S. T. White, 127 Quincy St., Brooklyn, N. Y., has Downing's Landscape Gardening and Rural Architecture to exchange for hardy Lily bulbs.

214. C. C. Harper, Mt. Carmel, Ill., will exchange botanical and geological specimens from Mississippi Valley for same from other portions of the United States and Canada.

215. Mrs. M. F. Sink, Cloverdale, Cal., has Poly-anthus Narcissus, Hyacinths, Callas, Lilies, Anaryllis, Anemone Japonica, Smilax, Oxalis, Coleus, Begonias, Iris and Solanum, to exchange for Harper's, Century, Vick's or St. Nicholas Magazines.

216. Clara W. Boyd, Derby Depot, N. H., offers Storm King Fuchsia and slips of other new Plants, embossed oleographs of flowers and landscape-printed in colors, in exchange for plants, small fruits and magazines.

217. Mrs. Jessie A. Lynch, Humboldt, Nebraska, wants to exchange three varieties of Hybrid Roses, pink Almonds, Celastus, for bulbs, perennials, shrubs, climbers, etc.

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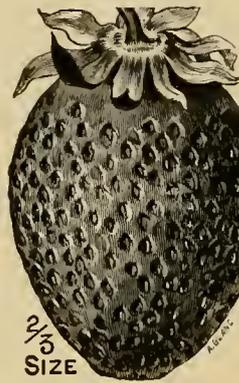
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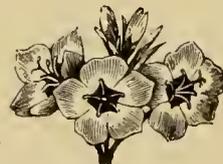
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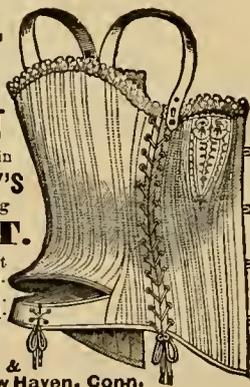
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