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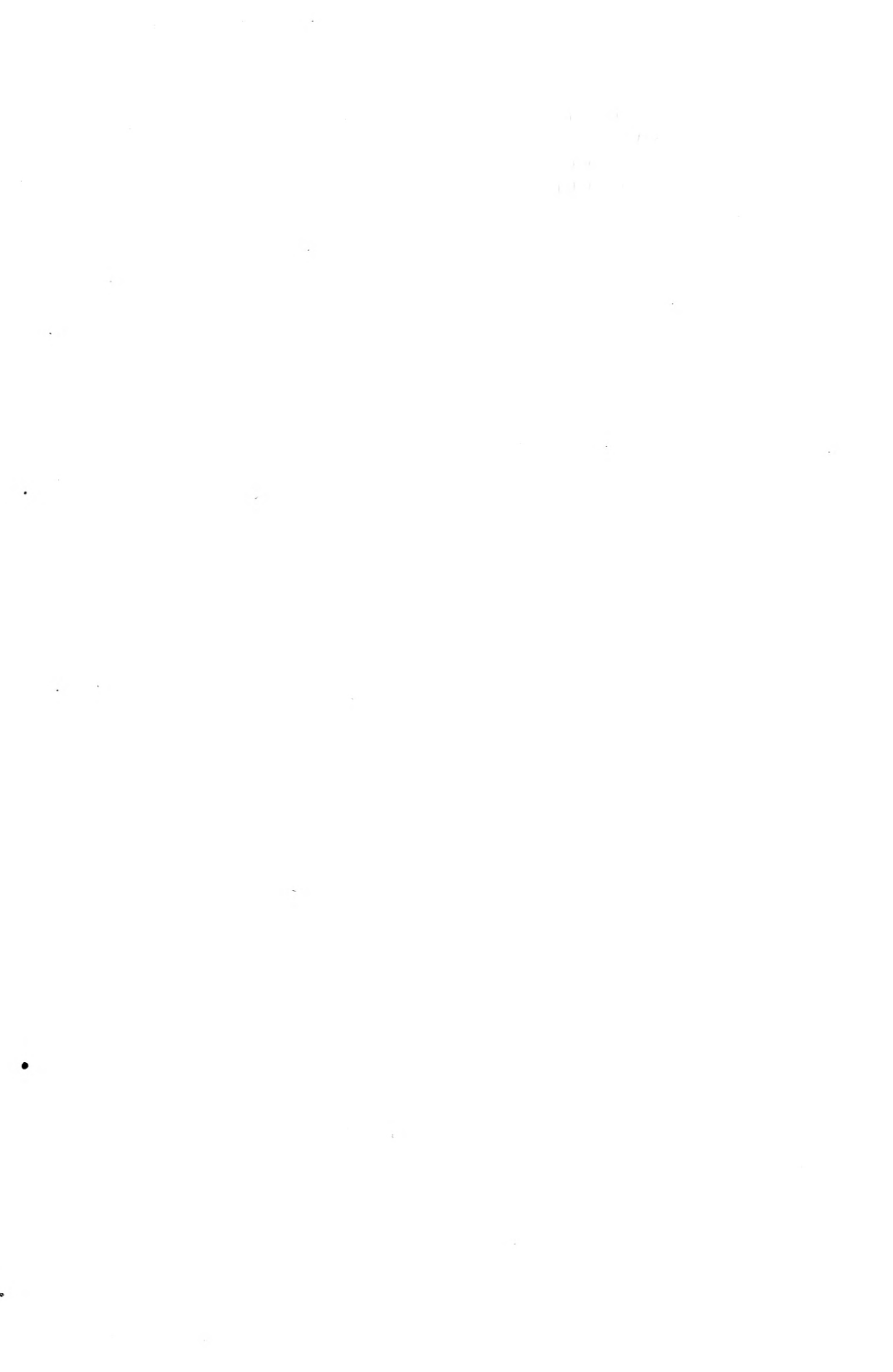
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THE
HORTICULTURIST

AND
JOURNAL OF
RURAL ART AND RURAL TASTE,

DEVOTED TO
HORTICULTURE, LANDSCAPE GARDENING, RURAL ECONOMY,
RURAL ARCHITECTURE, POMOLOGY, Etc.

Illustrated with Numerous Engravings.

VOLUME XXII.
JANUARY TO DECEMBER, 1867.

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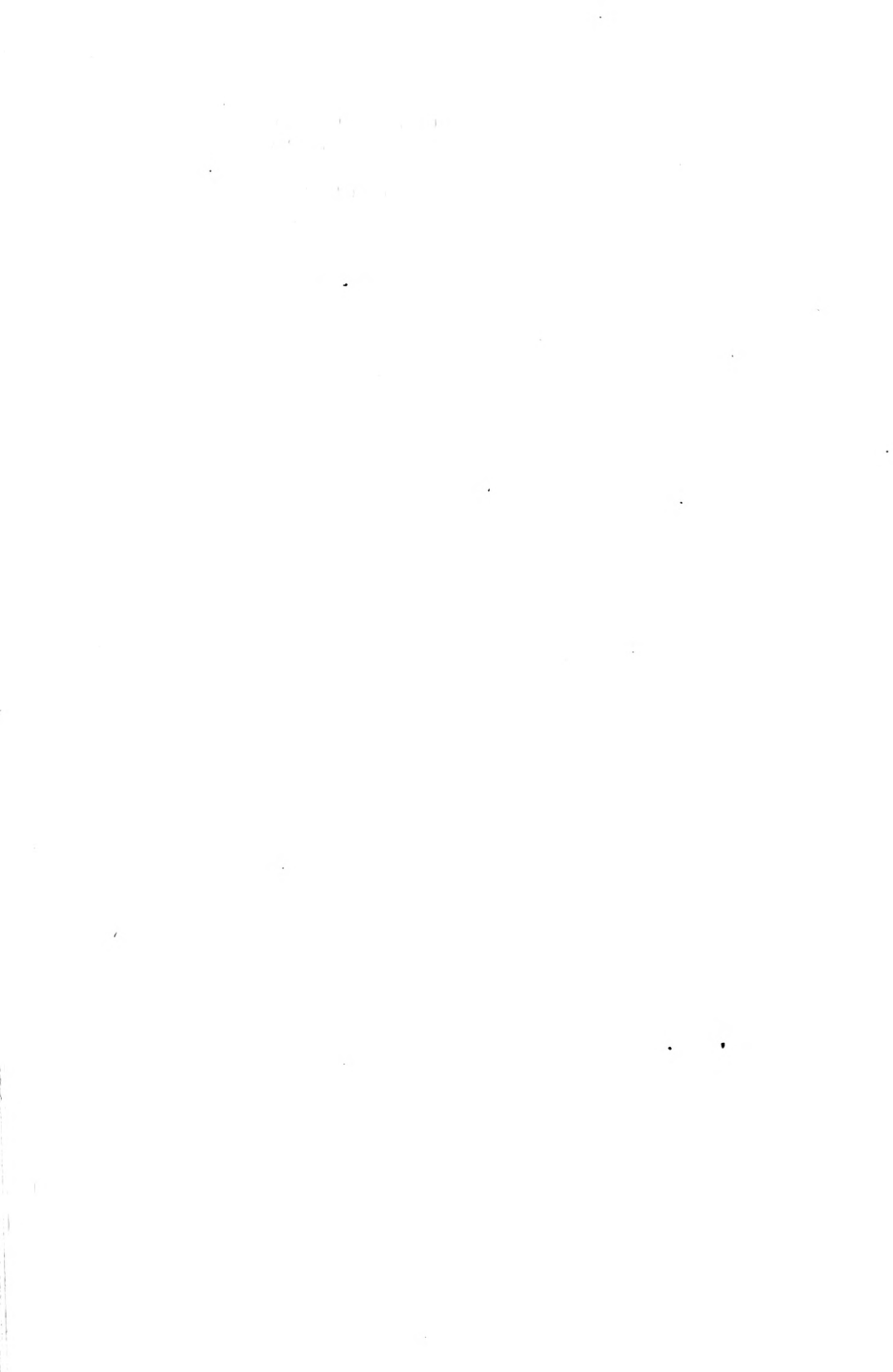
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THE
HORTICULTURIST.

VOL. XXII.....JANUARY, 1867. NO. CXXLVII.

REMARKS ON FLOWER GARDENING—THE FORMS AND POSITIONS OF
FLOWER BEDS—WITH NAMES AND POSITIONS OF SOME
PLANTS WHEN PLANTING.

As a people, we think Americans may justly claim to be floral children, for everywhere over our whole country, in the grounds of the wealthy, the homestead of the farmer, or the cottage yard of the poor, do we find more, or less of ground, care, and labor, devoted to the cultivation of flowers. Without thought, without study, but intuitively, as it were, no sooner is the house built and ground fenced, than out goes a plant of some sort, perhaps a rose bush or chrysanthemum, and from year to year it is added to, until, before aware of it, the owner finds that some arrangement is necessary in order to grow or bloom his or her plants in perfection. Again: without much of thought, the plants are spread around here and there, as room, or an idea of a "good place," occurs. Circles are formed; slight mounds made; because every lover of flowers has a natural impression of the "line of beauty," and loves the swelling and graceful, yet often irregular forms and lines of Nature. The varied

styles of arrangement, recorded and pictured in the books, are rarely known. The Italian, with its terraces, its parapet walls, its roses, and its straight rows of orange and myrtle trees; the French, with its parterres of complicated figures, elegant statues, labyrinths, and fountains; the Dutch, with its rectangular formality, its stiffly, yet often curiously-shaped trees and shrubs, are all styles unknown to our first planters, and even when known, can rarely be adopted, because of the expense, and the fact that the whole must be complete to be at all effective. The natural style, however, with a little aid of art, may be adopted by all, may be partially completed or wholly so, and yet be satisfactory; and it is this in its simplest form that intuitively, and without thought, that is adopted when commencing with a circle—a form that is always pleasing; and when the plants are placed and grown therein, with the highest stems and brightest colors in the centre, becomes very effective. The straight bor-

der is occasionally found in small places, not because its owner prefers it, but because they love and will have flowers, and know not how else or where else to plant them. We have seen this border, because of its unsatisfactory and stiff appearance, attempted to be broken up by jobbing gar-



FIG. 1.

deners, as see Fig. 1, resulting, as we think, in deformity rather than outlines of beauty. The simple circle, arranged in threes or fives, as see Fig. 2, cut out of the turf, and yet so near the path that the flowers may be all plainly seen therefrom, we consider far better; and certainly the breadth of eighteen inches or two feet of smooth turf next against the walk, is preferable to the bricks, strips of boards, &c., that too often line the borders of beds, as in Fig. 1. Circle groups in small plots of ground, where little labor, and that of a common laborer, is expected to be given, are pleasingly satisfactory, and from their simplicity can always be kept in form. Fig. 3 shows an arrangement of circles that, with the list of plants accompanying, which are always easily and cheaply obtainable, presents during the whole of summer a succession, or rather constancy of flowers most effective and satisfactory, and may be used on one corner of a lawn, or as a regular flower garden.

1. *Salvia splendens*—scarlet.
2. *Lantana rosea*—rose-colored.
3. *Lantana delicata*—white.
4. *Heliotropium*—of varieties, all shades of blue.
6. Trailing Lantana.
7. Cupheas.
8. In the centre of this bed, plant a fuchsia, and surround it with a quantity of *Phlox drummondii*.
9. In the centre of this bed, plant a hel-

iotrope, and surround it with, first, a circle of double petunias, then with dark purple and maroon-colored flowering verbenas, encircling the whole with white-flowering verbenas.

10. Plant the centre with a circle of, say, five plants of scarlet-flowering geraniums, one named Gen. Grant being among, if not the best; then surround these with bright scarlet verbenas, and these again with blush and peach-colored flowering verbenas.

11. As every one loves roses, let us give this circle to that flower, by planting all of

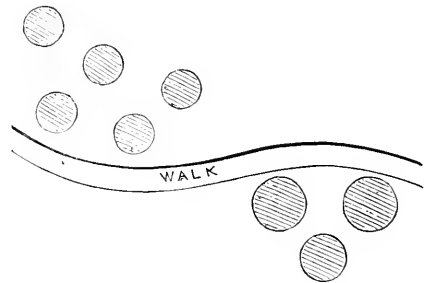


FIG. 2.

the tea-scented family, because they flower continuously. In the centre, then, put Caroline, and eighteen inches from her, in a circle, we put *Compte de Paris*, *Eugene Desgasches*, *Goubault*, *Souvenir, d'un Ami*, and *Bougere*; then for outer circle, dividing the remaining space, we use *Adam*, *Devoniensis*, *Gloire de Dijon*, *Moire*, *Lady Warrenden*, and *Sombreuil*.

12. In the center, we will use the old rose-scented geranium, because its foliage is so desirable in a boquet, and surround it first with *Tom Thumb* geraniums, or, if the plot is a little shaded from the mid-day sun, with fuchsias, and then again with verbenas of spotted and variegated flowers.

Other arrangements could of course be made, and perhaps with equally pleasing results; and the gardener or amateur having command of plants can arrange accordingly, keeping always in mind the placing of the tallest growers, and those of most brilliant

color of flower, as the center, shading down to the turf with less distinct and softer colors. Our list here given is, however, one that may be obtained at almost every little green-house in the country, and at low prices, and therefore within reach of the million, for whom we write.

Next to this simple form of circles, in what is termed the natural style, comes fancy forms, embracing art in their designs, and the use of which, unless managed with skill, is more apt to produce a bad rather

than a good effect. Fancy-formed beds of flowers should never be placed out upon a lawn, because such placing breaks up the repose and sacrifices breadth, thus injuring rather than adorning. They may be occasionally introduced to break the continuity of a line of shrubs, their brilliancy of flower and artistic form serving as a relief against the more sober tone. They may also be judiciously placed in the curves or on corners of the footpaths, and especially when near the house, care always being taken

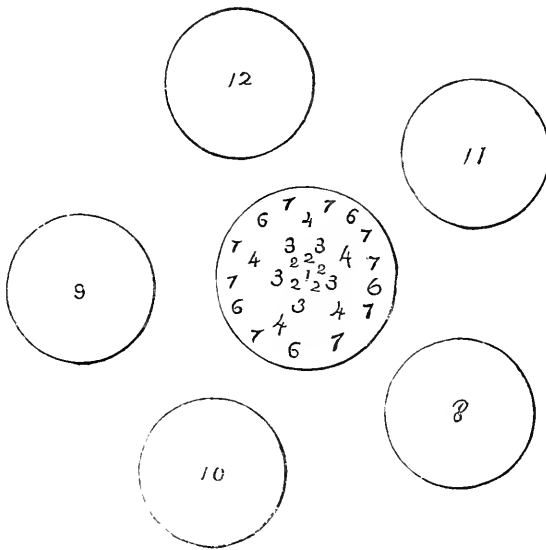


FIG. 3.

that the style of architecture of the house be thought of, and forms selected with more regular lines for a square-built house than for one of irregular form, and of pointed or broken architecture.

Fig. 4 gives position of the steps to a house, the starting of the paths and two beds, with some of the plants now growing in them, and which have been regarded as quite effective and satisfactory for some years.

No. 1 is a mahonia aquifolia; 2 is Afri-

can tamarisk; 3 is clethra alnifolia; 4 is spirea prunifolia flore pleno, and the remainder of this bed is filled in summer with salvias, lantanas, and heliotropes. No. 5 is a tree peonia; 6 is a calycanthus florida, or sweet scented shrub; 7 is spirea callosa; and 8 is colutea vel pocockii, the balance of the bed in summer being filled with geraniums, cannas, and other broad foliage and flowering plants. The result is blooms in early spring, and continued till late frosts and nearly all distinct and showy.

There are no definite rules which can be laid down in designing the form of a flower bed, all being a matter of taste and judgment; and so much more as that taste has been ripened by study, observation and comparison, so much more graceful in form and appropriate to the surroundings will be the art productions. Some landscapists have advised the various forms of leaves as desirable forms for flower-beds; but in our experience the palm leaf is the only one that, when worked, has proved satisfactory.

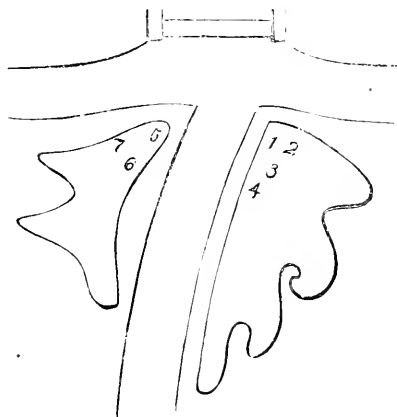


FIG. 4.

As a guide to the novice, we give here representations of some fancy forms (Fig. 5) that we have found effective, repeating, however, our previous remark, that their adoption in any place all depends upon the styles of architecture, and of the tree planting, breadth, evenness, or inequality of lawn, for the production of pleasing results in their use.

Ribbon planting has within a few years, become quite fashionable in the hands of gardeners who have command of plants in quantity; but it can never be effective on a small scale, nor do we think it tasteful except in any but a waved and long flowing line, where the eye is varied as it passes over it. In long or short straight lines it is stiff, and entirely out of keeping with

anything but the borders of the kitchen or small fruit garden.

The accompanying plan, Fig. 6, of a symmetrical flower-garden, taken from London, we have seen worked up with satisfactory effect:

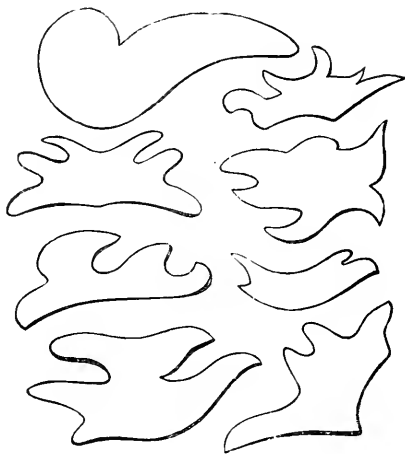


FIG. 5.

The centre was occupied by a fountain of water, and each bed planted with a separate variety of plants, the colors and heights

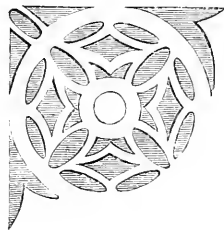


FIG. 6.

so arranged, that they graded and shaded from a centre toward the fountain, and also toward the outer walk. It was originally designed to be placed on a corner of a lawn, and hence the few beds outside of the circle. These, of course, are left out when it is placed, as we have seen it, surrounded by turf.

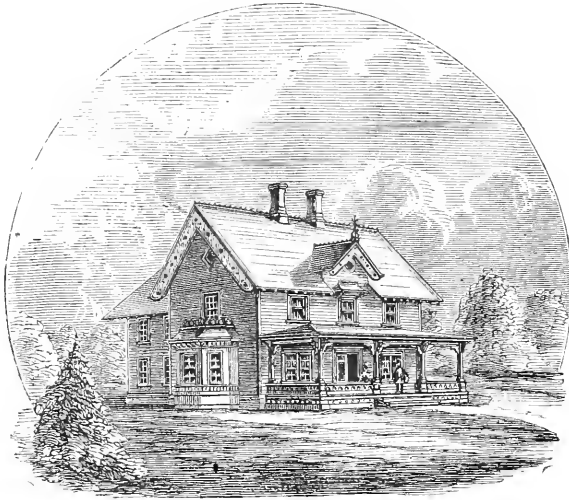
DESIGN FOR A VILLAGE RESIDENCE.

BY ROBERT MOOK, ARCHITECT, 111 BROADWAY, N. Y.

WE show here a design for a medium-sized cottage, such as one might build on a village lot of sixty or a hundred feet in width.

It is a framed building, filled in with brick (soft brick might be used), laid on their edges in mortar, and covered externally with weather boarding: the roof covered with shingles cut in patterns.

The framing may be of spruce or hemlock timber (the former is the best, but the latter is generally used), and the finishing of white pine; the details few, simple, and bold, with the roof quite steep, and the eaves of broad projection, to shield the sides, and the windows wide and airy. A light ridge ornament at the peak of the roof, a finial of iron over the dormer, and

FIG. 7.—*Perspective.*

the piazza railing of scroll-sawed penetrations, give a character to the design.

The accommodation of the plan is as follows: A verandah, 10 feet wide, shields the front of the first story, from which leads a hall 7 feet wide, and containing the stairway to the chamber floor; a parlor, 13 feet by 18 feet, on the left of the hall, with a bay window opposite the door, with a library or chamber back of it; on the right hand of the hall is a dining-room, 13 feet

by 18 feet, communicating with the kitchen, situated back of the dining-room, with closets and passage-way between; behind the kitchen fire-place is placed the private stairway to the chamber floor, and under the same the stairway to the cellar.

A porch covers the back door leading from the kitchen, which may be enclosed, and be used as a scullery.

The chamber floor contains five chambers, of large, medium, and smaller size,

with closets to each; and in the back part of the hall are enclosed stairs leading to the garret, which is here meant to be left unfinished, but is capable of containing several good rooms.

The cellar is to be under the whole of the house, affording ample room for all sorts of storage, cold-room, store-room, bins, &c.

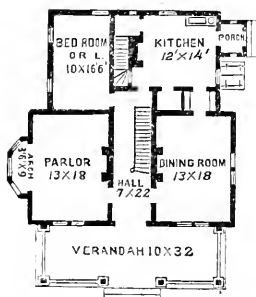


Fig. 8.

little more than good oilcloth, and does not need renewing.

The exterior should be painted of a warm rich brown, or yellowish brown, using four tints, the lightest for the whole body of the

It is not intended in this design to introduce any superfluous fittings; the closets fitted simply with shelves and hooks; the wood-work white, or (which is better) to be grained or tinted with color; and the walls of the principal rooms may be enriched with some simple, tasty paper-hangings. The hall floor may be laid with alternate strips of walnut and ash, which costs but

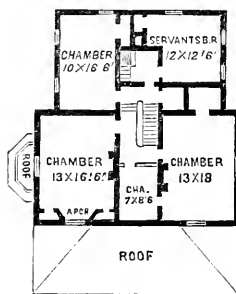


Fig. 9.

house; the next darkest for the eaves, verandah, window-trimmings, &c.; the third darkest for window-sashes, blinds, &c.; and the darkest only for touching up here and there to make it appear lively.

THE DETROIT GRAPE.

IN the November number of the *Horticulturist*, a notice appeared of the above-named grape, as shown at the Lake Shore Grape-Growers' meeting in Cleveland. From the same source, we have received the accompanying outline figure of a bunch and description, as follows:

Detroit Grape—First shown at Cleveland, October, 1866, by Mr. T. R. Chase, of Cleveland, who says the vine was found growing in a garden owned by himself in Detroit, Michigan, about six years since; supposed to be a seedling.

Vine very vigorous and hardy, with foliage much resembling Catawba. Wood,

short-jointed; in size, about half way between Catawba and Delaware; has so far been unprotected, and has yearly produced abundance of fruit; has shown no indication of mildew or rot, and may be classed as perfectly hardy.

Fruit.—Bunches large; very compact. Berries, very dark; rich brown claret, with a thick light claret bloom; round; generally very large and uniform on the bunch. Flesh, with very little pulp; rich and sugary, with a sprightly Catawba flavor. The juice must weigh from 85° to 88° of Oechsles scale. Ripens with Delaware.

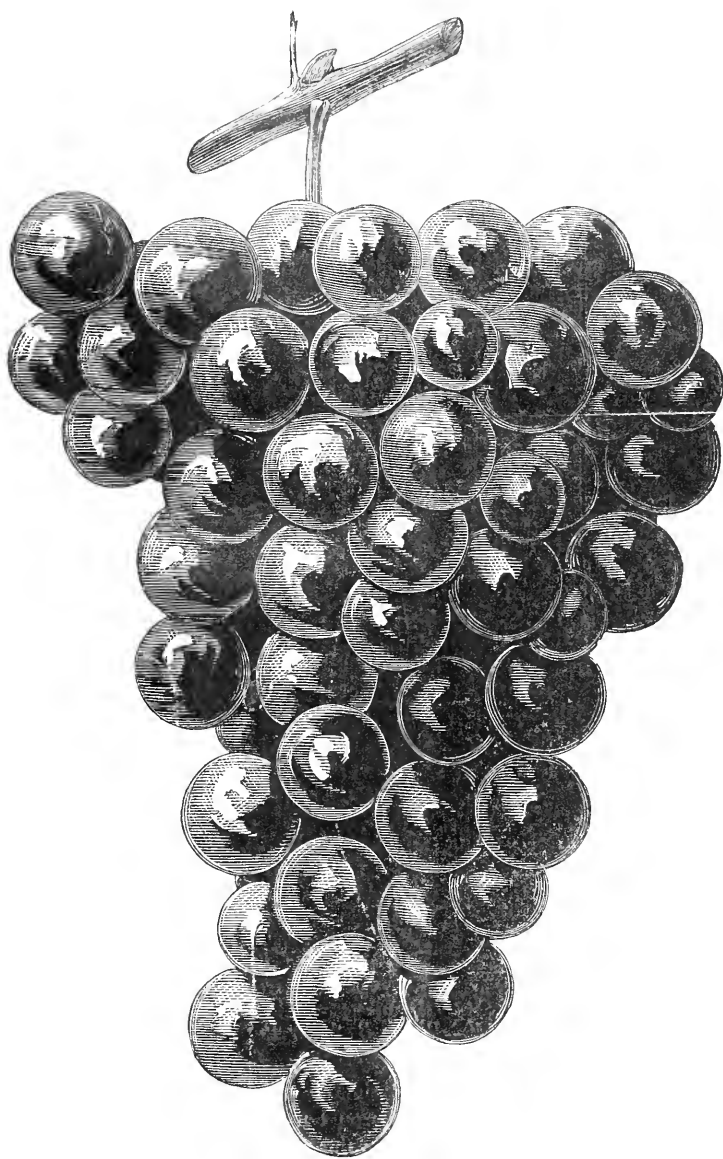
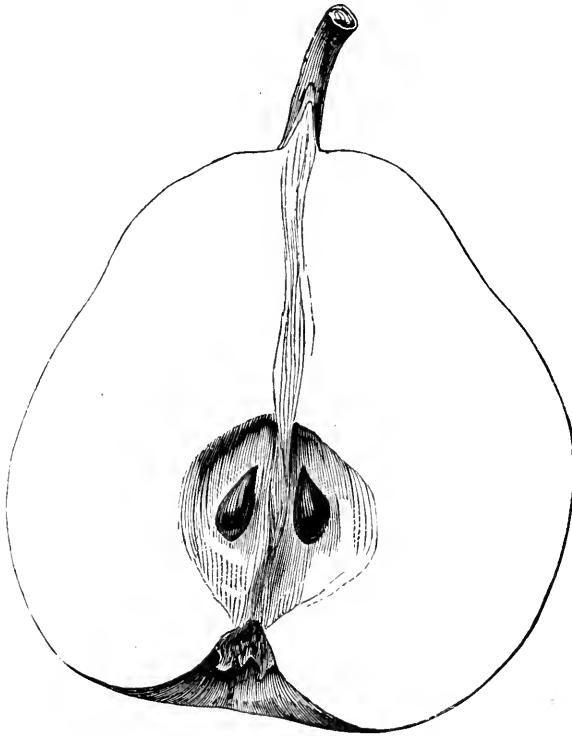


FIG. 10.—*The Detroit Grape.*

BEURRE BACHELIER PEAR.

FRUIT—size large; form oblong, obvate, pyriform; color, greenish yellow, mostly overspread and marbled with smooth, russet and scattering black dots of irregular size; stem, short, rather stout, sometimes set with a lip or neck, especially in highly cultivated specimens, usually as shown in our outline; calyx, partially open, with short, stiff segments; basin, open, regular, almost broad, rather deep; flesh, yellowish

FIG. 11.—*Beurre Bachelier Pear.*

white, buttery, melting, juicy, sweet and rich; core, small; seeds, very dark brown; Season, November and December.

This pear is comparatively new, and deserves further trial. The tree is not con-

sidered a first-class grower, and perhaps would not bear neglect, but under good ordinary cultivation, succeeds well, and gives a fruit rich and delicious in quality and we think pleasant to every palate.

COMTE DE FLANDRES PEAR.

FRUIT—size, medium; form, oblong, pyriform; color, yellowish, much covered, traced and dotted with russet, and occasionally some crimson red in the sun; stem, rather long, slender, inserted with a slight lip in a narrow cavity; calyx, broad and open, with short, stiff, erect and connected segments; basin, very shallow; flesh,

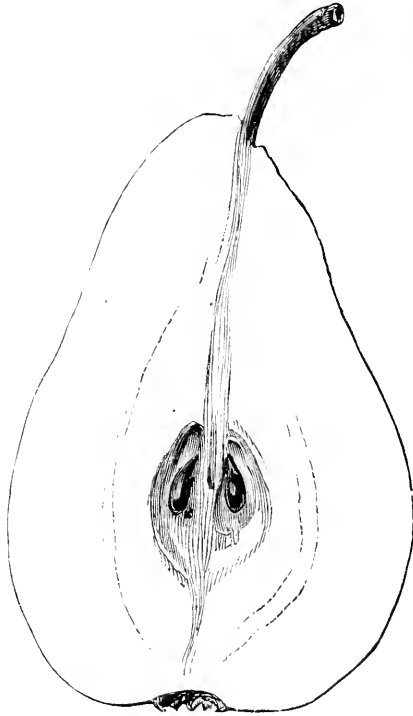
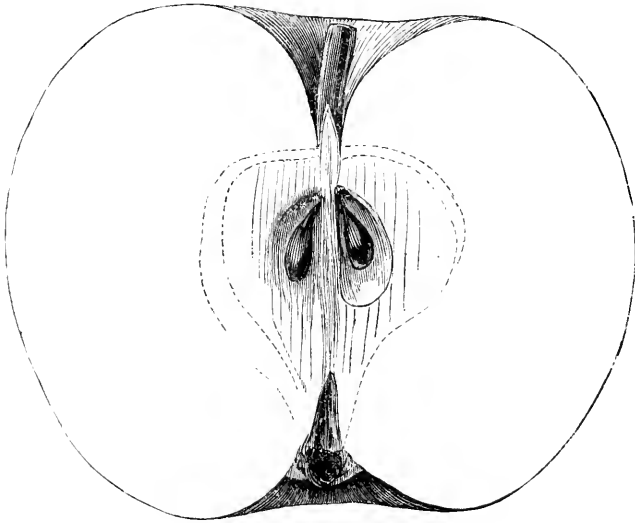


FIG. 12.—*Comte de Flanders Pear.*

yellowish white, buttery, with many apparent coarse grains around the core, but which melt freely in the mouth, sweet, juicy, and very good; core, medium or small; seeds, imperfect. Season, November. The tree of Comte de Flandre is vigorous, a good bearer, and should be in all amateurs' collections.

MAJOR APPLE.

FRUIT—size large, form roundish, often oblate, slightly inclining to conic, sides sometimes unequal, slightly angular; skin smooth; color, greenish yellow, ground mostly overspread, striped and splashed with rich deep red, and with many light russet grey dots, neither large nor small; stalk, short; cavity, deep, open, regular; smooth, at times a little russetty green; calyx, large, with stiff, short, lateral projecting segments; basin, broad, open and rather deep; flesh, greenish yellowish, with

FIG. 13.—*Major Apple.*

pale pea green marblings, crisp breaking, juicy, mild, sub-acid, rich aroma; core, small, seeds long pointed. Season, November and December. Originated in Northumberland County, Pa.

As a showy market fruit, this apple would

always command a ready sale; and as a table fruit, it is rich, mild and pleasant to the taste. We think it deserves attention from fruit growers, beyond what it has thus far received.

SHORT NOTES OF A TRIP EAST.

BY F. R. ELLIOTT, CLEVELAND, O.

WITH a view to refresh my memory on fruits, and to see if, in my practice of landscape gardening, I had by any possibility got behind the age, I recently packed up a few traps in a little carpet sack; my good wife put up some cold meat, fowl, and bread and butter; a friend gave me a bottle of dry Catawba wine wherewith I took seat in the cars for a visit among the pomologists of the East, and a look over and through the many elegant residences and grounds of the North and East Rivers, and so on east to Boston. I shall not undertake to tell all I saw, for, like some old country gardeners, I think, if I tell, it will be giving away knowledge which has cost me dollars to obtain.

I will, however, tell you of a wild, yet cultivated place that I saw in Springfield, Mass., owned and resided on, by George M. Atwater, Esq. A house in the Anglo-Italian style, unlike any other that I ever saw, is built on the very brow of a hill, from which commanding views of the city, the broad Connecticut River, Mount Tom, and various other mountains and hills are obtained. The entrance is from a plain through a natural wood, where the road, even although good, yet presents the natural, not artificial, appearance, until, as you approach the house, of which glimpses are occasionally obtained, you come upon view of a smooth, clean, open lawn, and enter upon a smooth, clean, artificially-made roadway. As I said, the house is situated upon a bold point of a hill, and all around it, say fifty to one hundred feet, with the exception of the lawn in front, comes up the wilderness of oaks, birches, pines, beeches, ash, maples, hemlocks, &c. Some tall, erect, towering one hundred and fifty feet in their grandeur, with their many arms outstretched; others slender and graceful in their foliage, swaying body and branches

to the breeze. An undergrowth in some places almost becoming a thicket, in others just enough to allow each bush to show its garniture of foliage and flower. Here azaleas, kalmias, rhododendrons, &c., are in their natural homes, and abound. Many a group that others would readily give a hundred or more dollars for, are here growing in their natural seed bed, the beauty of which requires only to be seen to be appreciated. Many other elegant places are to be found around Springfield; but, as a general thing, while they have expended liberally, true taste and judgment, combining knowledge of foliage, habit, and growth of tree and shrub, together with the laws of light and shade, to produce pleasing effect, have not been used in their forming. I saw few places where grouping had been made with any more judgment and knowledge than in Central Park, New York, where every one at all conversant with the subject agrees that, however well and perfect the roads and masonry, most egregious blunders have been made in the planting.

But perhaps I have said enough; if not careful, some reader may think I am half "hold" country myself, and think there is nothing like what we have around Cleveland.

In and around Boston; what a place. Just suits me. Fine buildings; pleasant homelike places; elegant country seats, with grand lawns, extensive green and grape houses; but, more than all, men—men who can, and will, and love to talk of fruits and flowers; of rock and rivulet; even while, as it were, engaged in the daily drudgery of money-making. I stepped in here, I stepped in there, and took a look. I called on this man, and on that; and now I'll tell you a little of what I saw when I called on C. M. Hovey at his garden. Here, let me show you a beautiful weeping beech

twisting, twining, drooping, yet erect—the most graceful, yet absurd tree, that, like a country gawk, always makes you pleased in spite of yourself when you look at it. Next, see this weeping, cut-leaved birch—graceful, pendulous, each leaf daintily cut; glossy; and on its pensile, spray or twigs waving airily, like feathers. Here is the Kilmarnock, and there the new American willow; both graceful, but low-growing; decided weepers; suited more to the cemetery than elsewhere. Here the weeping poplar, that is beautiful while young, but gains stateliness with its years, until its beauty as a drooping tree is measurably lost. Here—well, its no use going through the catalogue; but here, let me tell you, you can see well-grown specimens of everything enumerated in Leroy or Duvasse, in Hovey or Phoenix; and if you go there, don't fail to go through the plant-houses; even if you do not always choose to live in the tropics, it harms no one to see, from time to time, the many beautiful plants gathered therefrom. Over the way, across the street, you are among pear trees by the thousand; tall, yet pyramidal; so that, although standing within about eight feet of each other, they do not trouble their neighbors. Branches carefully pruned out; some of those inclined to be too rampant have their heads taken off, setting them back a little, like the boy that behaved bad, and had again to stand at table; but their bodies are all clean scraped, and all evincing health. That, together with the hundreds of other specimens in the gardens and vicinity of Boston, can but convince any doubter that pear-growing is not a difficult matter, provided they choose to give ordinary common sense brains to the subject. Mr. Hovey still keeps his magazine going, and to it we of the West are mainly indebted for the knowledge of the doings and sayings of that most valuable of all societies—the Massachusetts Horticultural.

ITEM OF THAT SOCIETY.—Since my last visit to Boston, they have built a splendid building for their own use, for discussions

on fruits and flowers, potatoes and cabbages, and the showing of the same on their *fete* days. It is a building every visitor of Boston should see. Immense halls, large library and office rooms, elegant statues, life portraits of all the presidents of the Society are among the points that attract, occupy, and invite your admiration.

From the Hall, I went to visit Hon. Marshall P. Wilder, where, as to everybody else who talks or loves horticulture, a kind welcome was extended; and after a run over the grounds, seeing the hundreds of *Beurre d'Anjou* and other pear trees, all evincing the care of a good husbandman, I carefully looked over large-bearing trees of *Clapp's Favorite*, and satisfied myself that its habit is a good one for pear-growers who do not love work, inasmuch that it is a strong grower, yet so open, and withal so erect, that little or no pruning is required.

From the garden to a look over various numbers of the Rogers' Hybrid grapes, of which I will write more some time; and then a hasty glance through the hundreds of outlines of pears, with descriptions, gathered in long years of care and attention; and then, with a look and taste of box after box, specimen on specimen of the newer and older sorts of pears, I had to come away—to come away from where, if I could stay a month, I could every day find something new to discuss, and a man to discuss it with.

From Boston to New York, where, leaving my little carpet sack, I took care to visit the Messrs. Parsons, at Flushing, where I found immense houses, filled with camellias, roses, rhododendrons, &c., and numberless houses in which grapes had been grown, but now all taken up and heeled-in, awaiting customers.

The Messrs. Parsons are very extensive growers and dealers, and especially in grapes, camellias, and rhododendrons, the latter of which I am desirous every man who pretends to have any flowering shrub in his grounds should possess. As yet, our plantations and grounds are too bare of

shrub evergreens, which add cheerfulness and life without the gloomy character created by large evergreen trees.

From Flushing back to New York, where, of course, I visited the rooms of the publishers of the *HORTICULTURIST*, where, although I expected to see much, I did not expect to find so much reality. The Messrs. Woodward are live men, and we who read the *HORTICULTURIST* may be thankful therefor; they see and appreciate the wants of the people, and are exerting themselves to create books and illustrations to meet those wants.

From New York to Newburgh, where, of course, every pomologist knows that Charles Downing is the first man to be called on by any one who wants to talk fruit. As usual I found him busily engaged, for he is a man knowing no idle hours, with his fruits, his flowers, &c. Outlining a fruit, gathering or protecting a flower, grafting, budding, planting, pruning and training tree or vine are his occupations, and the world knows not, nor will ever appreciate the value of such a man. With some fifteen hundred or more varieties of apples, nine or ten hundred of pears, and of cherries, plums, &c., with all the smaller fruits, growing in his own grounds, it is a labor of no small amount to examine, keep distinct, classify, portray, and describe them all, and he only who has practised on a hundred or two can, perhaps, understand it. Without pretension, without desire for public appreciation, this man, solely from the love of the subject, is sifting the chaff of fruit and flower from the wheat, and making his record thereof; and should he ever publish, we outsiders would reap the benefit.

The Hudson River, it is well known, abounds in beautiful places, many of which I visited, but cannot now write of. However, I may mention that at Fishkill, the place of H. W. Sargent, Esq., amused while it instructed me. As a landscape place, its arrangement is anything but correct; but as a place where one may study trees, new and rare, and particularly evergreens, it is,

perhaps, more valuable than any other. I may, however, say that the manner in which many of the rare evergreens are protected and shaded, by natural overshadowing trees and artificial screens, gives no actual criterion of their hardihood in exposed positions.

The most beautiful place that I saw hereabouts was a recently planted and arranged one belonging to General Howland. Good judgment has been used in the arrangement of the roads, with one exception, and especially has breadth and character been kept in the position of the groups; but in the arrangement of the trees, a few years will exhibit to all, what now only appears to the student, viz., the fact that many trees are too near the paths, and that others have centre positions when they should have outside ones. Such blunders, however, are too common, and perhaps no more apparent here than in many other places; at any rate, the place is richly worth a visit by any gentleman desirous of improving his own grounds, or by any landscape artist.

On the Newburgh side of the river, the place of Geo. Eliot, Esq., pleased me most. The house is situated about in the centre of the grounds, from which extensive views are had of the grand and beautiful river, the city of Newburgh, surrounding mountains, &c.; and immediately in front, one of the finest, though not the best kept, lawns that I ever saw. It is broken just right by groups, so that extent, and yet diversity of views are obtained; and the groups, as a whole, as well as the single trees, are most capitally arranged. In rear of the house, the hill rises gradually, and, with its planting of tall trees, gives to the place a background rarely found in our country.

Further on, at a little unpretending place, over the door of which I read "Welcome to Woodbine," owned by Mr. Burton, I saw the most beautiful views of all, both up and down the river. Very little has been done to the place, but it is susceptible of being made one of the most beautiful of

the many beautiful places on the noble Hudson.

At Mr. Rogers' place, I saw a grape and plant house, planned and built by the Messrs. Woodward, of the *HORTICULTURIST*, which, of all the number I saw, I liked best, mainly because of its low roof, which enables a more uniform heat to be retained,

at a less expense of fuel; at the same time the house is so proportioned that it presents a good architectural appearance outside, not "squatty," as too many do.

The next place—but stop, guess I have written enough for this time, so will leave my farther notes for a future time, should they be wanted.

NEW THEORY OF GRAPE ROT.

In a late number of the *New York Herald*, we find an article from Mr. John T. Bennett, Pittsburgh, Pa., upon the rot in grapes. Mr. Bennett we know to be a close observer, and to have traveled widely, ever having his eyes and ears open. In this article, he takes the ground that grape-rot is the result of blows, local, and produced by lightning. After rehearsing the various soils and the elements of growth—heat, light, water, &c.—and the various supposed causes of the disease, he goes on to say that "It is not caused from within by disease of the plant in roots or branches, otherwise all the branches and berries would be affected and not (as is the case) individual berries on some of the branches. Then it is caused by some external influence; and if external it must be mechanical—an effect.

In its manner of action it is shown to be local; a blow or wound received, more or less minute, causing death to the part receiving it, and spreading its decomposition into the parts surrounding. What is there in nature gives blows causing death? Lightning does. Lightning is an effect, and therefore mechanical. It is prevalent in summer and not in winter. It always takes place during close, damp, sultry weather, which it clears in showers of rain."

He then explains the manner in which lightning gives this deadly stroke which is the burning thereby of oxygen and hydrogen, producing steam which, in even minute particles, is destructive of life. He says:

"If the point struck is so minutely struck as to bear a small relative proportion to the whole of the living object, the part struck and become dead is ejected from the living body, leaving a scar or wound; if it bears so large a proportion that the remaining living part of the body cannot recover, the decay extends, and, in a longer or shorter time, the whole body perishes. If the body struck, by reason of the free and nascent elements within it, is capable of being ignited, and so continues the flash through its whole body, instant death in all its parts takes place. In all cases where vivid flashes of lightning occur, the influence extends a considerable distance around; and although the flash may appear to kill only where it strikes, it yet ignites the suitable free elements around it, and kills in part, or so as to injure more or less severely, all around. Also, where there is no vivid lightning or flash during the moist sultry weather, the same processes are taking place, minutely wounding every vegetable and animal life—in vegetables showing itself by small scars on the leaves, and in animals by a tendency to diarrhæa. During this hot wet weather, the earth becomes a bad conductor away of these free elements, and the more so when from the nature of the soil water is retained. Thus, the plants growing on clayey, marly soils are more subject to the attacks of this silent lightning or electricity than those growing on porous, sandy soils.

Where climbing plants are protected by the trees into which they climb, the leaves of the trees receive the injury, and the climbing plants and their fruit are protected. Where plants and shrubs are near forest or orchard trees, they are similarly protected. Where, as in neglected vineyards, tall weeds are allowed to grow and overshadow the fruit of the vines, the grapes are protected in part, and the weeds receive the injury. Where, as in young vineyards the few bunches growing are near the bottom of the stake, and the new wood and leaves overhanging them are not tied up, but allowed to fall down and cover, surround and shelter the bunches, the leaves receive the shock of the lightning, and the grapes are protected. Where, in bad tying of the vines many of the bunches are crowded into the middle of the bush, and there covered and hidden from sight, and apparently almost smothered for want of air and light, these inside bunches escape the rot. Where grapevines are producing fruit on the tops of arbors, the bunches of grapes hanging below, and the leaves shooting up above, the leaves receive the injury in great part, and the grapes comparatively escape.

Here let it be remarked, that though the grapes may have escaped the rot by means of the protecting influence of the leaves,

yet if the leaves are in great part injured or destroyed, the grapes do not ripen, and are valueless for wine purposes. The reason why old vineyards are more liable to rot than young ones is, that the old ones are not so well protected by leaves and vigorous growth of new wood. For the same reason, the Catawba is more liable than the Isabella, and the Isabella more liable than the Concord, and all vines of small growth of wood more liable than those vines that grow abundantly into wood and leaves."

Besides the grape rot, he classes pear blight, mildew, the rot in peach, plum, &c., &c., as all attributable to the same cause, viz., mechanical injury from the heat of lightning. As a remedy or preventive, he suggests the introduction of copper-coated lightning-rods throughout the vineyards, and among fruit orchards.

We confess, at present, we are unbelievers in his theory; but if there is anything in it, certainly the preventive is easily adopted, and we trust experiments will be made. If Mr. Bennett will show us vineyards in which the preventive has proved a success for a series of years, we shall feel more confidence in the theory than we now do.

NOTES ON THE NOVEMBER NUMBER.

WITHIN DOORS.—All here written is to the point; and I must say that, in reading, I had to repeat, "Thou shalt not covet thy neighbor's goods;" for I have just that love of all quaint old furniture, &c., that I cannot avoid a kind of envy whenever I meet with, or read of one possessed thereof. We are, however, I fear, too fast a people to have much respect paid to old furniture, because of early associations. I should go further than the writer has done. I would not stop at the dining or breakfast-room, but, in arranging my rooms, would al-

ways so plan, that the room in which the family were to pass most of their time should be the most pleasant in its exposure and outviews. Store-closets, pantries, and reserve parlors or bedrooms should, with me, if possible so to plan conveniently, be placed in the most uncongenial parts of the house. We want "line upon line" on this subject; and I do believe that if our ministers of the Gospel would occasionally unbend themselves, and preach home comforts and cheerful arrangements, they would accomplish more in perfection of their

mission than by any continued drumming of doctrinal points, or threatenings of future punishment.

RURAL ARCHITECTURE, No. 18.—A plain comprehensive, and yet effective design. I wish some of our country joiners were compelled to at least see plans by capable architects before they set up as designers and house-builders. I have before me, looking from my window as I write, an instance where taste in effect has been entirely lost, simply because of want of projection to the roof, and breadth of casing to doors and windows.

In low-priced dwellings, I think, there is more of effect obtained by some little additional breadth of board, or a plain hood, &c., &c., than architects, as a rule, credit. Or it may be that, as mankind are all selfish, the architects should not be counted exceptions; and as men work for credit as well as pay, and as these cheap houses do not, as a rule, afford any reputation to the designers, therefore, as a rule, they are planned with as little trouble as possible, and hence our country towns abound in specimens of house-building neither pleasant to the eye of taste, nor convenient for the wants of the dwellers therein.

ROGERS' No. 4 GRAPE.—I am glad to see this record, but I do not think the drawing correct. Most bunches that I have seen this year were more shouldered, and far longer; but perhaps it is well to err on the safe side, and in speaking of a fruit, say no more in its praise than it will fully merit.

I notice the editor of the *Gardener's Monthly*, in recent notices of the Rogers' grapes as examined at Hon. Marshall P. Wilder's, puts this number down as "late." Unless Concord can be called a "late" ripening grape, I cannot see how 4 can be so classed.

GRAPE MEMORANDA.—A readable record, but with a tinge of praise to the Ives Seedling that makes one wonder how such grape-men as Cincinnati affords, should

have so long remained in ignorance and blindness when the knowledge and light was yearly among them, and shown upon their horticultural tables. I am somewhat conversant with Cincinnati, and rejoice to learn that with all their discouragements in vine-growing, they have found at last a reclamer for past errors in a grape that yearly produces over 500 gallons to the acre, and sells at once direct from the press at four and a-half and five dollars per gallon.

I am glad, also, to learn that this grape, which gives such a large quantity of juice to the acre, "makes an excellent raisin;" for in so learning, I have again to go over my reckoning, which has heretofore been: that a grape for that purpose should have little juice and a great proportion of sugar.

The writer says, in effect, if not in so many words, that the Kelly Island people "regard summer pruning in any season as a positive detriment." It may be so; but if such is the case, I can only say I think Kelly Islanders have come too hastily to a conclusion.

With all kindness, I must say they have been a little vain of their years of previous success, and had built up a tower of Babel, as it were, among themselves that, as of old, has fallen, and left them in a semi-wondering, semi-chagrined condition.

Their lands, however, are no less valuable as grape lands than formerly; and if they have overrated their powers, it is only a question of time to restore.

The record given of Mr. Miller producing on an acre last year eight tons of grapes, and this season his vines with a show of only a quarter crop, and many vines winter killed, is only another evidence that man in horticultural pursuits, as well as in mercantile, often grasps at too much, and becomes over-confident of his own knowledge.

IMPORTING ENGLISH SPARROWS.—I do not personally know how much truth there may be in the writer's objection to the

sparrow. I am not an ornithologist, but I have heard those conversant with that study and knowledge, class the sparrow as only preying upon insects. I had supposed that the covering of fruits with nets, &c., in England, only related to the amateur or gentleman's grounds, where choice specimens were to be preserved. Is it possible that the grower of acres of small fruits for marketing has to protect them with netting? If that is to be so here, heaven protect us from the sparrow, or even the jenny wren, for our cultivators have enough to contend with now, let alone buying out a few dry goods establishments to cover in their strawberry beds.

HICK'S APPLE—DORSORIS PEAR.—Thanks for these records; but will not Mr. Hick give us a little more of detailed description? From these descriptions, the maker-up of a descriptive list of apples or pears would have but a sorry show, and in absence of a specimen would not know whether to class the apple among red, white, or green; or whether *best* as compared with Golden High Top Bough or other sweets.

EXPERIENCE WITH GRAPE SEEDLINGS.—A capital record of practice, and of value to every grower of grape seedlings.

GROWING ASPARAGUS.—Thanks for this record; to many it will probably be new; to me it is no novelty. I have tried this transplanting process as much as here described; have practiced sowing my seed immediately in the bed where designed to be permanent, and as they grew, thinned out the plants to proper spaces; and have also grown beds of fine asparagus by taking up

plants (self sowed) from an old bed, when about six inches high, and replanting them. In either case success came.

After all, the amateur who only wants a small bed had better purchase good, strong two-year-old plants, and set them in ground dug *deep* and made *rich*. And furthermore, if his ground is dry, let him set his plants in trenches eight inches deep, and cover as usual at first, and drawing on more soil from year to year, until about the third year the ground is level. Some of the very best asparagus beds that I know have been so prepared.

GRAPES IN CITY YARDS.—Good; here you have *multum in parvo*. Our friend literally revels within the shade of his own vines while eating of their delicious fruits. Your city readers and owners of small lots should take courage; but when planting, it may be well for them to think how much foliage their vines may be expected to grow when eight or ten years old, and ask themselves if a few less vines, giving each more space, will not produce equally profitable results.

GREELEY PRIZE ON GRAPES.—I do not see how the Committee could do otherwise than as they did in this matter. If these committee awards were to have any influence on the public, then we might perhaps regret the causes which led to their present decision; but we doubt if a good horticulturist in the country, will be swayed one iota by this or the former premium award on the Baldwin apple. Not one vine or tree, of either sort, more will they plant.

REUBEN.

THE GRAPES, OLD AND NEW VARIETIES—THEIR CONDUCT IN 1866.

IT may be interesting to your readers how—after the excessive wet summer of 1865, and the enormous crops which some varieties produced, and which occasioned an imperfect ripening of their wood—the different varieties behaved this summer.

Catawba—As this is the oldest, I will give it the first notice. Sorry to say, it did not improve with age. Most of our Catawba vineyards are dead, or so badly damaged that they will hardly recover; yet, strange to say, a few vineyards pro-

duced an exceedingly fine crop, some averaging as high as 500 to 600 gallons per acre. This shows again that location and soil have a great deal to do with the success of certain varieties.

Norton's Virginia—A fair crop generally, although some vineyards have suffered very much by excessive bearing last year. Most of the vines look well again this fall; have medium sized, well ripened wood, and promise a fine crop next year. Average yield this year, about 300 gallons per acre. This is *here* still the great staple variety for *red wine*. While I am on this subject, I will just refer to several grape articles, where the comparative merits of Norton's and Ives' Seedlings have been discussed, especially to "Grape Memoranda," in the November number of the *HORTICULTURIST*, where M. H. L. says, "that Mr. McCullough, of Cincinnati, writes to him." We think the Norton's Virginia grape the *best*, but *very unproductive*; the Ives' next best, and very productive, and hence the most profitable in cultivation. Mr. McCullough also stated, at the Grape-Growers' Meeting, at Cleveland, "that it was not true that Norton's Virginia averaged 400 gallons to the acre in Missouri, although it was so stated by respectable authority." Now, I can tell Mr. McCullough that Norton's Virginia averages more *here* than 400 gallons, as I can prove to him by years of trial and the testimony of all our wine-growers, who have cultivated that grape for *wine alone*, and not also taken a crop of layers from the vines at the same time, as has been but too frequently done. 1200 bearing vines, planted 6—6, consequently about an acre, produced 1,300 gallons of *pure juice* for me last year; and although this is the largest yield on record, we can average 500 to 600 gallons per acre with that variety easy enough. If he wishes *proof* of this, it shall be forthcoming. If it does not do so for him, or for the grape-growers around Cincinnati, it only shows that they have not the right soil for it, or do not give it fair treatment; and the lat-

ter is not so *very* improbable, when we take into consideration that it took those learned gentlemen fourteen to fifteen years of fruiting of the Ives to make the grand discovery that well-ripened grapes of it made better wine than they did when just colored—a fact which every child knows here. Just consider, gentle readers of the *HORTICULTURIST*, the Ives was fruited twenty-six years ago, in a grape-growing region, and only a few years ago it began to dawn upon their minds that it was *really valuable!* Nicholas Longworth, their great oracle, discarded Norton's Virginia, and said it would not make a wine fit to drink, in 1850; and now his fellow-townsmen decide that it makes the best wine, but is rather unproductive, since they have received it from us again. Comment is unnecessary. These single facts speak volumes for the discernment of our Cincinnati brethren. Were I uncharitable, I might attribute some of Mr. McCullough's preference to the fact, that the Norton is one of the hardest vines to propagate, the Ives one of the easiest; and that Mr. McCullough once almost monopolized the stock of the latter. But I will do no such thing. I will only advise him to "mind his own business," and not dispute *facts* which have occurred here, and about which he knows nothing whatever. I know but little of the Ives, am willing to believe all that our friends in Cincinnati say it does for them, but am satisfied (and they themselves concede it) that its wine will not, as a heavy red wine for medical purposes, rival the Norton's, *because the stuff for it is not in the grape*. It has not the astringency or the heavy body of the Norton wine, and I know of only two other grapes, the Cynthiana and Arkansas, which possess it in the same degree. Only in them need the Norton fear a rival, as the flavor of the Cynthiana is more refined and delicate than the Norton, with a still greater body, and otherwise the same qualities. It may, and I rather think it will, some day supplant the Norton, but it is yet very scarce, and very

hard to propagate. The Ives will, no doubt, make a very pleasant and excellent wine, but can not take the place of the Norton, according to all I can see; and 500 gallons per acre, which the Norton will readily give us *here*, at four dollars per gallon, will make it a very paying grape for us Missourians to plant. If the Ives suits the Ohio soil better, let them plant it; but let them not run the Norton down as unproductive in locations of which they do not know anything.

Concord.—This continues to grow in favor, has produced a good crop again, and is a very safe grape to plant for everybody, as it will stand more abuse, and greater diversity of treatment and soil, than almost any other. Its wine suits most palates, and sells very readily at \$2.50 per gallon. It will be emphatically the "poor man's drink," as it will pay to raise and make at fifty cents per gallon. Average yield, about 1,000 gallons per acre this year.

Herbemont.—This noble grape has made a fair crop again, wherever covered last winter, as it ought to be, and its wine is "hard to beat." As a delicate white wine, it will equal the finest hock wines, and I could readily have sold my last year's crop at five dollars per gallon. It has been free from rot and mildew this summer, ripened its fruit splendidly, also its wood, and promises a heavy crop next year.

Delaware.—Lost its leaves again, and consequently the yield was slight. Too delicate for us *here*, though it makes an excellent wine; and wherever it flourishes, it should be planted by all means.

Cunningham.—Fair crop, and healthy vines; "will do," under same treatment as *Herbemont*, and makes an excellent wine.

Hartford Prolific.—A large crop, and fair fruit; profitable for early market, and also makes a fair wine *here*; hangs well to the bunch generally.

Rulander.—Healthy and vigorous; crop fair, but not large; makes an excellent wine, of great body and fine flavor.

Clinton.—Hardy and productive, but is subject to excrescences on the leaves, and partial defoliation. It makes a fair wine, but will never rival the Norton, and hardly the Concord *here*; and as the latter produces more to the acre, I cannot see the advantage of planting Clinton.

Taylor.—Strong grower, and I think a fair bearer; will no doubt make an excellent white wine, very likely equal to Delaware. It is subject to the same leaf disease as the foregoing.

Martha.—Fine and healthy, like its parent, but sweeter, earlier, and thinner skin; will be a very valuable acquisition, and, I think, make an excellent white wine.

Rogers' No. 1.—Large and fine; very productive and strong grower; entirely healthy; makes a wine of a delicate muscat flavor, and will, I think, prove very valuable; may ripen too late for the North, but suits our climate very well. I think, if only half the praise the originator of the Iona and Israella (of whom more anon) has bestowed upon them, had been given to some of Mr. Rogers' hybrids, which deserve it much more, the public would be the gainers by thousands of dollars.

Rogers' No. 3.—Early; fine quality; looked healthy and productive; promises well for wine; had a fine crop.

Rogers' No. 2.—Not as pleasant an eating grape, but may yet be more valuable for wine; looked healthy and fine, and produced well.

Rogers' No. 9.—Seems less healthy in leaf as some others; fruit of fine quality, and enough of it; also promises well for wine.

Rogers' No. 15.—Handsome bunch and berry, but subject to mildew and rot. The berry has too much of a "scratch" to suit me.

Rogers' No. 19.—Very fine in quality; large berry and handsome bunch; one of the finest for the table; healthy and vigorous.

Creveling.—Somewhat slow in growth, but healthy, with abundance of rather loose bunches, of very good quality; will, I think, make a fine red wine.

North Carolina Seedling.—Healthy; enormous grower and heavy bearer; berry and bunch large and showy, but very thick skin; ripens early; a desirable market grape.

Louisiana.—Better than Rulander in quality, resembles that grape closely, but is also a very moderate bearer; will make one of the finest American wines known.

Avey.—Healthy, and the fruit of excellent quality, but slow grower.

Cassady.—Suffered from leaf blight; no rot or mildew; fruit good, and the must of prime quality; may do well on northern slopes.

Blood's Black.—Productive as ever, and of very fair quality, considering its earliness.

Mary Ann.—Rather inferior in quality, but very early, and an enormous bearer; profitable for early market.

Perkins.—Productive, foxy, healthy and early; will sell well in market.

Minor's Seedling.—Productive and healthy, but abominably foxy, with thick skin and little juice. It may be that our Cincinnati friends need this for flavoring their wines, as Mr. Longworth has often said; but we here would rather do without its flavor.

Iona.—Second season of its fruiting; set badly, rotted badly, mildewed badly, and lost its leaves; quality good, but too "hard to get" here, for us to plant it much. My vine, a very strong one, ripened about 100 berries, all told, and not one perfect bunch.

Israella.—Second season also of its fruiting; a pretty strong vine set three bunches,

which ripened about a week later than Hartford Prolific; not as foxy as that variety, but rather acid, and to my taste not any better; will hardly "pay" to plant *here*.

A number of other varieties, such as Northern Muscadine, Logan, Brown, Canby's August, Dracut Amber, Franklin, Lenoir, North America, Diana, To Kalon, Anna, Kingessing, I will not touch upon further, as they are either too inferior in quality, or too unhealthy to pay for cultivating them here.

The seedling of Norton's Virginia, by Mr. Langendorfer, of this place, has fruited again, and is very likely to become a great acquisition. The vine is a strong grower; immensely productive; bunch long and very compact, often nine inches long; berry rather smaller than Norton, black, makes a brownish yellow wine, of great body and fine flavor, equal, if not superior, to any Madeira I ever tasted. It will be only of value here and further south, however, as it ripens a week later than its parent.—Wine has been made from it twice, and "takes" wonderfully with every one who tries it. It is not yet in the trade, and never will be, unless found superior in every respect, therefore it has never been named as yet.

Of the Cynthiana and Arkansas I have already spoken before. They did well in every respect.

This is my experience *here* with grapes the last summer, and of course only a local one. My advice to your readers, North, South, East or West, is to try for *themselves* for *their* locations, and, *after trying*, plant that which suits *them best*, not what some would-be authority a thousand miles off, recommends to them as the "best grape, superior in quality over all others."

GEORGE HUSMANN.

Hermann, Mo., November 26, 1866.

BUDDING THE MAGNOLIAS.

BY CHARLES DOWNING, NEWBURGH N. Y.

IN the December number, Reuben asks for information respecting budding the finer kinds of magnolias, *Conspicua*, *Soulangiana*, &c. Having had some experience with these, I give my mode, first saying, however, that magnolias are more difficult to propagate by budding than most trees, and if not successful the first time, repeat the operation until you succeed.

The best stock to work upon is the magnolia *acuminata*, commonly called cucumber tree. The stocks should be young thrifty seedlings, two or three years old, or about half an inch in diameter near the ground. The trees from which buds or cuttings are to be taken should be thrifty and healthy, and about half or two-thirds the size of the stock to be budded upon. Make a lateral or cross-cut about an inch above and below the bud through the bark, then down each side of the bud perpendicularly from the crosscuts, so that the whole piece will be about half the circumference of the cutting; then with the thumb and fore finger wring it off, only be careful not to press and injure or tear out the inside of the bud,

in which case it will not grow, and another must be prepared. With the bud so taken from the cutting, proceed to insert it in the usual way, tying carefully below and above the bud with bass matting.

In about a week or ten days, look over the buds; if they remain green and fresh, it is probable they have taken, that is, will live; then examine the strings or wrapping, and if too tight, or appearing as if it was cutting into the tree, untie and rewrap it. If, on the other hand, the bud looks dark and dried, it is likely a failure, and you must perform the operation again immediately.

Some seasons the work has to be done two or three times over, very much depending on the weather, and the condition of the stocks and buds.

The right time for performing the operation, it is difficult to state; but it is when the stock is about, or just before completing its growth, and preparing to ripen its buds—usually about the middle of September.

 WHAT IS THE "RENEWAL" SYSTEM OF PRUNING THE GRAPEVINE?

BY VITICOLA.

CLEAR ideas about matters of practice are of vital importance. On looking over the literature of grape culture, we are led to believe that there is a great deal of confusion amongst horticultural writers in regard to the names of the different systems of pruning the grapevine; and hence, when we are told by a writer that he prunes according to the *renewal* plan, we are never quite sure that he means what he says.

Thus Fuller, in the preface to his "Grape Culturist," says: "The horizontal arm and

renewal system has been given, as I believe it to be the best for general vineyard culture as well as for gardens, where circumstances will permit of its being used." And yet Mr. Fuller's system is not a renewal system at all; while upon that system (the renewal) he throws unmitigated ridicule. It is true that the system which he has described is a very good one—one of the best; and it is also true that, in the abstract, the name is of little consequence; but when we hear a grape-grower say that

he prunes on the renewal plan, and prefers that to all others, we would like to know whether he prunes on the system which Mr. Fuller has described, or upon that which he has ridiculed.

We, therefore, deem it of sufficient importance to enquire what *is* the renewal system?

On attempting to look up a printed definition of the term as applied to grape culture, we were somewhat surprised to find ourselves unable to trace it as far back as even Hoare himself. In no work that we have examined can we find the term "renewal" prior to — well, we are afraid to say how late. We must turn this point over to Horticola, whose extensive research in similar directions is well known. Mearns, in Vol. IV. of Transatlantic Horticultural Society of London (1822), uses the term "succession," and this is the nearest that we can get to it.

From all that we can gather, however, the term *renewal* is always applied to those systems only in which a young shoot is trained up to take the place of the part which has been cut away, and thus *renew* the vine; hence the terms *succession* and *alternate* sometimes mean the same thing as "renewal." Of this renewal system there are several modifications. The oldest is that commonly called the "Ohio" system. This was the system first adopted in this country. After this manner, with some modifications, were pruned the vineyards of Antil, Legaux, Smith and others; and a very good engraving of this system, as practised by these grape-growers, is given in an old work now before us, entitled, "Rural Economy; a Treatise on Pisé Building, the Culture of the Vine, and Road Making." New Brunswick, N. J., 1806.

In this system the fruit is borne upon long canes, which are cut away each season, and their place supplied by young canes grown for that purpose during the time that the crop on the fruiting canes is being

produced. These young canes *renew* the vine, hence the name.

The second modification is that suggested by Mearns, and fully described by him in the work already cited. Phin, in his "Open Air Grape Culture," has copied Mearns' description and figures.

The third form is that which is called the "alternate spur system." This is evidently a renewal system, for each spur, after it has borne fruit, is cut away, and its place supplied by a cane grown as in the first case, the only difference being, that in the one instance the cane is left long, and in the other it is pruned to a spur. This system is never *called* the renewal system, but it is evidently a mere modification of that system.

Thus far, we have alluded to pruning alone. When we consider the subject of training, we find that another modification has been introduced.

The early forms of the renewal system were substantially those adopted in Ohio and elsewhere—the young shoot proceeding from a central head, and being bowed or not at the option of the cultivator. But some time prior to the year 1836, Clement Hoare applied this renewal plan to that mode of training in which horizontal arms are adopted, and then we had a system which has been extensively known as "Hoare's Renewal System." The horizontal arms have been adopted for more than a hundred years in France, but we believe Hoare was the first to combine these with the renewal system, properly so called.

We are aware that in making this assertion we go contrary to very high authority, but we do it, nevertheless.

Loudon, Grant, and others assert that Hoare's combination is very old. All the reply we can make is to ask for the authorities.

Grant, in his Manual, refers to Speechley's quarto volume for a description of Hoare's plan. Our copy of Speechley is the 8vo. edition of 1821. We understand, however, that the plates are the same as

those of the quarto edition, and if so, Dr. Grant has committed a singular mistake.—Speechley's alternate system is certainly not a renewal system. We could not have believed that Dr. Grant could have been mistaken on this point after the particular reference that he makes to Speechley's work, but we are certain that he has examined the plates without consulting the letter press.

Plate X., in the "Treatise on Fruit Trees," by William Forsyth (London, 1802) much more nearly resembles Hoare's system. Indeed, Forsyth came very near describing Hoare's exact plan. But a careful examination of his work shows that his system only resembles Hoare's during the first year, and that destroys its claim to be

considered the same as the alternate renewal plan.

From all that we can gather, the modern renewal system, with horizontal arms, does not date farther back than Hoare.

We believe that on this point we have examined most of the English and French authors, and we have also looked into some German works. Perhaps Horticola can set us right if we have made a mistake; but the history of the subject is not so important. The precise meaning to be attached to the term *renewal* is the great point, and the fact that both Dr. Grant and Mr. Fuller have committed an error here, shows that our ideas upon this point are not as clear as they ought to be.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

CORRECTION.—The name of the pear given in our December number as *Dorson*, should be *Dorsoris*.

HORTICULTURAL SOCIETY, JANESVILLE, WISCONSIN.—F. S. Lawrence, Secretary, writes: "Can you help us to procure some of the reports of State, County, or Town Societies, from various localities, for reference and to compare notes by. We have, as yet, nothing to give in exchange; but, having put our hands to the work, we do not intend to have any "let up," until we have placed our society upon a solid and enduring basis, and make it one of the institutions of the North-West."

We commend this society to the notice of our readers; and if any are able to supply the reports mentioned, we shall esteem it a favor if they will forward them to Mr. Lawrence.—[ED.]

WHAT GRAPES TO PLANT.—We have been asked to name the best varieties of grapes to plant. We should be glad to make a satisfactory reply by furnishing a *satisfactory* list; and were we younger, perhaps should attempt; but our present impression, after nearly half a century of experience, is, that we *know* little really of the different varieties of grapes. Of Catawba, Isabella, Clinton, and Concord, we may, perhaps, safely say that their characteristics and values, adaptation to soils, &c., have been pretty fairly exhibited, and yet it is only recently that traits have shown themselves in the Catawba, which the mass of growers knew not of ten years ago. The Concord, although by many called the "people's grape," and of late sent to the world by a "hundred dollar committee," from what we have seen this past fall, is certainly of doubtful character in its value

as a grape to be grown where it has to travel long distances to market.

While many are confident of Diana, Iona, Rogers' 3 and 15, as grapes for dry wine purposes, yet strictly, the Catawba and Delaware are the only ones whose real values are known; and of these the former will not mature in some localities, and the latter has too often a disposition to cast its foliage before maturing its fruit, unless under a very high state of culture. Of the dark grapes for the making of the red wines, no one denies the superiority of the Norton's Virginia in quality; but as it is a difficult sort to propagate, growers of the plants do not urge it forward, but claim for Clinton, Ives', and others, a wine *almost* as good, and more abundant in quantity, while they are propagated with great rapidity. Fifteen or twenty years, with an experience in every State, and various sections of the States, we consider necessary to decide the value of a grape.

FRUIT GROWERS often make mistakes in attempting to secure too large a variety. It is much more profitable and satisfactory to cultivate well a few choice fruits of each sort, than a large number imperfectly. It can easily be ascertained from experience and observation what kinds are best adapted to any particular soil and climate. For a moderate sized place, where fruit is not grown extensively for market, but mainly for home consumption, it is easy to select varieties which will furnish fresh fruit for the table every day in the year. From three to five kinds, each, of our well established favorites of the various sorts of fruit, will secure this end. Indeed, if we were engaged in raising fruits for market, we should prefer to confine ourselves to as few varieties as practicable, leaving it for amateur fruit growers, and rich gentlemen farmers to experiment with the new varieties which are constantly added to our stock of fruits.

ROCHESTER, August 10, 1866.

MESSRS. EDITORS :

The selling of old varieties of fruits under new names is certainly a great *nuisance*, terming it mildly. The latest development in this line, I have observed, is the so-called "Golden Queen" strawberry. I am certain that this "Golden Queen" is nothing more nor less than Trollope's Victoria. I saw them both exhibited, side by side, at the June meeting of the Rochester Fruit-Growers' Society, where they presented the same appearance, and were of the same size and flavor. Afterward I saw some of the plants of the so-called "Golden Queen," and the foliage was precisely that of the Trollope's Victoria. I am, therefore, convinced of their identity, as were also most persons at the meeting referred to, so far as I could ascertain.

Your's respectfully,

JACOB MOORE.

P.S.—What I have seen of McAvoy's Superior and Russell's Prolific leads me to believe they are distinct; but I doubt if McAvoy's Superior and Buffalo are so. C. Downing once told me the two latter were the same. The Buffalo I consider *worthless*.

MESSRS. WOODWARD :

Your remarks on "Street Shades," in your number for December, recalls the statement made to me, about thirty years since, by Col. Henry Rutgers, of New York; that, in passing through Bethlehem, Penn., during the Revolution, he was surprised at seeing two apple trees at the edge of the side walk loaded with fruit, within reach of every one passing. He dismounted, inquired for the owner, and, with his permission, picked off a couple, in order that he might say he had done so.

I informed him that the same, or similar trees in the same position, still produced crops that were untouched by the public. Since that time, large iron-works have been established on the opposite side of the Lehigh, the people are no longer exclusively

Moravian, and it is probable that the rights of the owner are not respected as formerly.

Also: It is a practice among the German farmers in Pennsylvania to tie a wisp of straw around one or more cherry trees, to indicate that any stranger may freely enter the enclosure, and help himself from any other tree.

B. A.

Passaic, N. J.

CUTTINGS of house plants, as geraniums, fuchsias, verbenas, &c., such as every one wants, may easily be grown in the house. One of the best materials for the purpose we have found to be clear fine charcoal dust, about like fine sand in the size of the grains. Use a common earthen crock; see that it has good drainage; then fill to within half an inch of the top with the charcoal, putting your cuttings in all around and near the edge, with about two buds in the charcoal and one bud out. If you can, get a little piece of hanging moss from the woods, and lay it over the whole, letting the cuttings protrude through it, and letting it (the moss) hang down all over the sides of the crock. Set it on the mantelpiece, or on a little bracket shelf in some part of the room where its height will add to warmth, and at same time, if you can, near the light; water once thoroughly, and afterward just enough to always keep it moist, but not wet. The object of the moss is to make the crock ornamental for the time being, and at same time serve to keep a more even condition of moisture on the outside.

THE WANTS OF THE MANY.—In our table matter, we shall endeavor, as far as possible, to remember that the many have not greenhouses, and gardeners skilled in the knowledge of the practice of horticulture and floriculture, but that they are as we have been, viz., new beginners, with a love of fruit, flower, and vegetable, but with limited means and appliances for their growth and culture.

GRAPEVINES may be pruned any time this or the coming month, provided the weather is at a temperature above 40°. Although we prefer early autumn for the operation, yet the labor must be done; and if omitted in the fall, then the first period of warm, soft weather, such as often occurs in January, should be seized upon for the work. At this season, make the cuts at least three inches from the bud, as by so doing there will be less risk of injury there-to from drying and freezing.

MICE, MICE.—Examine carefully your trees around which you have spread a mulch; so, also, your orchard left in grass. As we write, a friend has just come to say his young and thrifty dwarf trees, an hundred or more, are nearly all girdled by mice, because his man, when mulching in the fall, carelessly put the litter close to their bodies. If snow lies deep on the earth, it is always safe, and, in the light of preventive, profitable, to expend time in tramping hard, close around the bodies of all fruit trees. By so doing the injurious work of may a mouse may be checked.

It is a too common practice with farmers, and some professed fruit-growers, to prune apple, pear, cherry, and other trees in mid-winter. We do not regard the season as the correct or best one for the labor; and why, because if the operation is correctly performed, the cut made close to the bud or body, it is liable to dry hard, crack, and cause death or an enfeebled condition of the bud in the one case, or decay of the trunk or large limb in the other. Very rare is it that wounds made in winter heal over readily. If the work is not carefully performed at the first operation, that is, if to save the bud from drying, we cut an inch beyond it, then the whole has again to be gone over in spring or summer; or otherwise, on the end of each branch so pruned, we have a piece of wood to die and decay.

THE CAMELIIA.—Few plants are more beautiful in flower and foliage, none more universally admired, and perhaps none more easily managed by the gardener or owner of a greenhouse for their occupation; but as window or family house-room plants, they rarely furnish blooms, and are not desirable. A moist humid air is requisite to their perfect blooming, and that is rarely obtained in a living-room.

MELON AND TOMATO SEEDS WANTED.—During the coming season, a friend of ours proposes devoting land and time to the growing of two or more plants of every obtainable variety of melon and tomato; and if any of our readers have a choice kind, we shall feel obliged to them if they will forward us a few seeds.

HARDY SHRUB SEEDS.—The seeds of the barberry, strawberry tree (euonymous), and many others, yet hang upon the bush. They may be gathered; and if you have a piece of ground that has been dug the past fall, sow them on top even of the frozen ground, provided you can procure peat muck, or rotten leaf mold from the woods, to cover them three or four inches deep. In the spring, take off about one-half of the muck or mold, and as a general thing, your seeds will come forward into strong plants before the close of the season.

DRIED FLOWERS AND GRASSES.—Recently, while visiting a lady friend, who has great skill and taste in drying and displaying flowers and grasses, both in bouquets and on paper, we were reminded of how little labor is requisite in the practice, and of how much and lasting enjoyment they contributed. The process is simply *care* to gather the flowers when they are *perfectly free from exterior moisture*, arranging them carefully and tastefully, and placing them *immediately* between the leaves of a book, where they soon dry, retaining their colors.

The family of ferns, both native and foreign, are beautiful, as well as curious, and, dried, hold their color perfectly. Ladies will find a little practice in this labor very pleasant and satisfactory in its results.

GRAFTING ROSES.—It should be remembered that all the hardy perpetual roses, which are somewhat difficult to propagate by cuttings, can be easily and rapidly increased by grafting on small pieces of roots.

At any time when the ground is open, dig up roots of the manetti, or of the old Boursalt roses; cut them in pieces of, say, four inches long. For grafts, use well-ripened shoots of the past year's growth, cutting them into pieces, each having three to four buds; form the lower end into a wedge or V form; then having cut a piece of root, square across the top end, split it, and while with the knife in the split holding it open, insert the wedge-shaped graft, fitting as perfectly as you can on one side, bark to bark; then withdraw the knife, and with narrow strips of cotton or linen cloth, dipped in melted grafting-wax; wrap carefully all over and around graft and root, in such manner that the graft cannot be displaced, nor moisture get within or next to the wound or cut; pack away in moist, not wet sand, covering all the graft and root. In spring, when the ground is in good working condition, set out the graft leaving the upper bud just level with the ground, and farther care is needed only to keep the ground from baking on top, or to keep the weeds down.

PREPARATION.—Although January, and in some of the States, months before anything can practically be done in the flower-garden, yet it is not too soon to be thinking over and sketching out plans for forming the flower-beds, and arranging on paper the position of plants. In our present number we give some sketches, and shall be happy to receive from any amateur a sketch or sketches, on which, if agreeable to the designer, we will make our comments.

SEEKING NEW PLACES. At this season of the year, we always find more or less people that are desirous of changing their present location, either because of its unhealthiness, or from a wish to engage in a different line of pursuit. Sometimes these changes are beneficial, but too often they prove the truth of the old adage, "A rolling stone gathers no moss."

To any one about to engage in growing vegetables or small fruit for a market, a near point to the market he proposes to supply, and a light, warm, easily-worked, yet good soil, are two requisites to success. The grower of apples, pears, grapes, &c., may be at any distance from market, where he can command location, free comparatively, from early and late frosts. Distance and costs of transportation are often more than balanced in the price of lands, and yet oftener in the certainty of crop from year to year.

A VISIT, a short time since, paid to some of our Connecticut and Massachusetts men, brought to our mind their troubles with field mice. We found on every hand that each tree, grapevine, or choice plant, had been carefully prepared for the winter, by forming around its base a little mound of earth. We saw quite large orchards broken and irregular from missing trees, and were told it was all from mice girdling them in winter.

We suggested to them, and do so here, wrapping the crown of the tree with strong coal tar paper, letting it into the ground four inches, or thereabout, and extending up one foot. An application of this will last several years, and is certainly less trouble and expense than the yearly mounding up.

HYACINTHS in water for window winter flowering should have the bulb placed so, that its base only can touch the water; and for the first two weeks, either place the glass in a dark room, or wrap around it a wrapper of some dark shade of paper.—

After the roots have started well, take off the paper wrapper, draw the bulb from the glass, and emptying out the water, cleanse the glass, and replace with fresh soft rain water; replace again the bulb, and set the glass where it will have plenty of light, air, and warmth. If possible, never let the temperature of a room in which hyacinths are growing in glasses, go below 35 degrees Fahrenheit.

OUR Southern, and indeed our Middle States fruit-growers will find their raspberry, currant, and gooseberry plants to succeed best when the ground has an inclination to the North. Mulching is also even more requisite to production of good raspberries in the South than in our Northern States. Keep the roots cool and moist, not wet, and any tolerable soil will grow good fruit of the raspberry, gooseberry, or currant.

IN planning for your purchases of trees or vines for spring planting, it is our belief you will always gain by purchasing the best. One really good, healthy, well-rooted tree or vine is worth three or more second or third class.

PLANTS in pots, and kept in the windows or on shelves of rooms heated by air tight stoves or hot air furnaces, should have the pot in which they are growing plunged inside that of another, with the intermediate space of three-quarters to an inch filled up with fine moss, and this moss kept all the time damp.

DISTRIBUTE YOUR PLANTS AND SEEDS.—Plants or seeds received from friends serve as monuments of friendship. Each day throughout the season of vegetation, as one goes or comes, these living specimens bring forward kind remembrances, and point our thoughts to the absent with feelings of the purest gratification.

Messrs. EDITORS:

I send you a short account of the meeting of the Ohio Pomological Convention, held at Zanesville, Ohio, last week. The meeting was both pleasant and profitable.

Long tables were loaded with excellent apples, from the Muskingum Valley, chiefly. There were a few pears, and a little square of grapes—the free gift of Bro. Knox—as Concord, Hartford Prolific, Delaware, Catawba, To Kalon, and Herbemont. In the discussion on the apple, nothing new was especially elicited, the old favorites as heretofore recommended being still undisturbed in their reign. Of strawberries, Wilson's Albany seemed to give the greatest satisfaction, though the Agriculturist, Jucunda, Triomphe de Gand, Filmore, and Russell's Prolific, received high commendations.—There seemed to be a general impression that it would be well worth while to try the Philadelphia raspberry, and the Kittatinny and Early Wilson blackberries, of which the president gave a very interesting account, having visited them this last summer in the fruiting season. Yet it was by no means thought best to throw aside the well-deserving Kirtland raspberry, which has proved itself productive and hardy in our State, and of better quality than the Philadelphia.

The Iona grape was badly reported on from the middle and southern part of the State; chief faults: liability to mildew and winter killing; all agreed as to its excellent quality; along the Lake Shore it has a better record. So had the Delaware sadly disappointed hopes away from Lake influences southward. The leaves blight and drop before the fruit can be matured or wood ripened. But the Concord, "blessed grape," had everywhere withstood disease; had ripened a plentiful crop, and fully matured its wood. Likewise the Ives and the Hartford Prolific. The Ives, at Cincinnati, had yielded 530 and 600 gallons to the acre, where the yield of Catawba had been but a hundred gallons. The Hartford Prolific had brought forty and fifty cents in market,

and Mr. Knox had sent it to distant places, had it still at Zanesville, without dropping from the stem. The Martha was commended as a promising white grape.

The meeting next year is to be held at Sandusky.

M. H. LEWIS.

Sandusky, Ohio, Dec. 10.

OF magnolias, the *longiflora* appears to us as one of the most valuable. With equal hardihood of the *glauca*, it is a more vigorous grower; and while its leaves are equally glossy, green, and beautiful, they are full one-half larger.

AMONG the beautiful flowering second-class trees, or first-class shrubs, we may name *Kolreuteria paniculata*. In growth it is rapid, sometimes attaining a height of 30 feet, but usually only growing from fifteen to twenty, and in August covered with bright yellow paniculated flowers. It is easily propagated from seeds or small pieces of the root, and for sheltered grounds in cities or large towns is a very desirable plant.

THE ANGERS QUINCE AS A HEDGE-PLANT.—We have recommended various plants and trees for hedge purposes, and have often found cases where profit from the fruit was sought to be connected with the usefulness and beauty of the screen in the growth of a hedge. To this end, we have tried the Angers quince, and successfully. It is vigorous in growth; has short stout thorns; and the more it is clipped, apparently the more vigorous and beautiful it becomes. Its fruit is similar to that of the orange quince; and in our little experience the clipped plants have borne more abundantly and earlier than our orchard standards. It is certainly worth trying, and especially do we think so in locations where the soil is of a heavy clay nature, and not well drained.

HANGING baskets serve, at this season, to add cheerfulness and pleasure to the family sitting-room. They are so easily made, or so cheaply purchased, that we wonder any home room can be called complete without one. A simple way of making a right pretty hanging basket is to take an ordinary wooden bowl, about eight inches in diameter at top; gather a few pine cones, acorns, horse chestnut seeds, shells, &c., and fasten them to the bottom of the dish, either by brad nails, or cement glue; then plant one or two small twining climbers in the bowl, embedded in moss and a little soil, and the addition of strings of green or red cord to suspend it with, and the basket is complete. Moistening the moss once each day will keep it fresh, and the vines healthy. In a future number we shall give some illustrations of hanging baskets, with more definite instructions how to make them.

POULTRY keepers should not forget that the eggs and chickens are not the only benefits obtained from their keep. The droppings from a poultry roost are equal to the best guano; and every grower of roses or turnips, lilies or celery, should be careful to clean up their poultry roosting-room from day to day, depositing the gatherings in a barrel or box, with a sprinkling of plaster of paris. In the spring work, this resource of manure will be found in almost daily request.

EARLY peas, early carrots, radishes, and the like, we have grown finely and satisfactorily by digging trenches in light dry soil, of about one foot deep, and the same width, depositing in them about eight inches in depth of fresh horse stable manure, then covering a little soil, sowing or dropping our seed, and covering as usual in practice. If we have on hand some old spare window sashes, their use laid over the trench serves partially to hasten the germination of the seeds. Of course, this will not give as early

results as a complete hot-bed; but in its absence, it is a step ahead of the natural course of vegetation.

COVERING GRAPEVINES IN WINTER.—There are sections where covering the grapevine in winter is not an essential to retaining its complete vitality, and the maturing a good crop of fruit the ensuing season; but there are other sections, such as Northern New York, Massachusetts, Northern Illinois, Wisconsin, &c., where merely taking the vine down from its trellis, laying it upon the ground, and covering with a little straw or other litter, will retain sufficient vitality in the vine to enable it to resist many severe changes in the spring season, and partially, if not wholly, the mildew and other diseases that would otherwise destroy the crop of fruit. Although January, many vines have thus far been neglected, and yet remain unprotected. We advise their laying down and covering, even at this late day.

WINTER is especially the season of calm thought and deliberation by the husbandman; and among other thoughts come that of how, most cheaply and effectually, to increase the crops of the coming year. Manure in some form is acknowledged as one of the essentials to success; and the more concentrated its form, the less the labor of application and probable chances of success. Now, then, is the time to prepare waste matters, by gathering them in heaps, and mingling either lime, salt, plaster, bone meal, etc., etc. with them, looking to a result and their use on garden, lawn, or orchard in spring.

BEAUTIFUL EVERGREEN.—One of the most beautiful of our hardy evergreens is *Picea Nordmainana*. It is upright, spreading in habit, and with the most beautiful silvery character of foliage of any evergreen in our knowledge.

PLANS FOR IMPROVEMENT OF GROUNDS.—We would recommend all who procure plans for laying out of grounds to require the artist to specify the name of every tree and shrub he desires should be planted, and to indicate the position of the same by numbers on the plan. Simple as the arrangement of groups or masses may appear to the novice, it is rare to find the artist capable of designating tree and plant, with full knowledge of its growth, habit, color of foliage, &c., to a final result, when mature, of the best effect. Such knowledge is only gained by patient study, combined with a natural love of the subject.

THE CLINTON GRAPE.—Reuben, in his notes, tells us "that we must grow a vine as free from mildew and as hardy as the Clinton, with a fruit as desirable for the table as Iona or Adirondac."

It is curious that the vine to which I referred as incurably afflicted with mildew, even when thoroughly dusted with road dust, was a genuine Clinton—*no doubt of it*. The Clinton is a most valuable grape—a grape that deserves more attention than has been given to it; but I despair of seeing a variety of the grape that, *under all circumstances*, will prove free from mildew.

VITICOLA.

NEUBERT'S RECIPE FOR MILDEW.—In the December number of the HORTICULTURIST, Horticola gives Neubert's recipe as 12½ ounces of salt to 100 ounces of water. In the volume for 1864, page 170, the recipe is given as 12½ ounces of salt and 36 ounces of water, and then one part of this solution to 100 to 120 parts (ounces) of water. This would give 12½ ounces of salt to 3600 to 4320 ounces of water, or, as I expressed it in my article in the September number, 1 part of salt to 400 of water; more accurately, 1 ounce of salt in 353 ozs. of water. Will Horticola please explain the discrepancy? Either of these solutions is far from homœopathic.

VITICOLA.

IOWA APPLES.—Mr. Burr Andrews showed to the editor of the Davenport *Democrat* a basket of 100 apples which weighed 125 lbs., or an average of twenty ounces to the apple. He offers to wager \$100 that this cannot be beat by any orchard in the United States.

Look over any plants that have been stored away for winter keeping in the cellar. If they are found to be dry, give them water just sufficient to moisten, not wet, the earth. If they are too moist, and any mildew apparent, take them out and dry them, or open the cellar to a free current of air, in the middle of a dry sunny day.

If by any accidental carelessness your plants get frozen, dip them at once, and hold them in a pail of rain water for a few moments. If frost got into the greenhouse, wet down the flues, and sprinkle all the plants freely with water; then increase the temperature gradually until the frost is extracted.

LARGE PINE.—Turning over the leaves of an old journal a few days since, we came across an account of a pine tree cut down in the State of Maine, in the year 1839, that measured seven feet diameter at the stump, and from which was made 10,610 feet of inch boards.

SEEDS of every description should be carefully looked over this month. The best way of keeping all the small seeds is in tight paper bags, and then packing in a tight box, placing the box in a cool room. Dahlias in the cellar, gladiolus and other bulbs in the closet, should be occasionally looked over.

Last year we left out a few gladiolus; this season past, most of them grew, but none flowered. We yet hope they may be kept out with a little care, and caused to flower.

THE necessity of pure air for the preservation of fruits and vegetables is too often disregarded. Many housekeepers deposit their winter supplies in their cellars, close up the windows, bank up the walls if necessary, and leave them to whatever fate may overtake them. The consequence is decay, and essential deterioration of flavor in such as escape decay. The cellar should be kept dry, clean, sweet, and at a temperature as near the freezing point as practicable. By proper attention to these requisites, and with careful ventilation, fruits can be preserved, and their proper flavor retained throughout the season.

REMOVING THE TENDRILS TO GRAPEVINES.—It is an old country teaching, that in pruning grapevines, whether winter or summer, all the tendrils should be removed. We confess to a doubt of the policy, and in our practice have left them alone, to twine and clasp the wires in our vineyard just as they please. We are desirous of hearing from grapemen reasons for removing them upon out-door vineyard vines.

TOOLS of every description should be put in order this month. A coating of oil on all wood-work, as well as iron, will help to retain their value for another year.

WORMS IN LAWNS.—During the past season, we have noticed a number of lawns injured by worms. In ordinary cases it has been checked by watering once or twice with weak lime water, say a quart of lime to ten gallons of water. In other cases, we have had to use salt, at the rate of about eight bushels to the acre, followed with plaster paris (*gypsum*), in quantity of one and a half to two bushels to the acre.—Roll firmly before applying, and then water freely.

IT is an old record, that manure applied to the vine affects to injure the quality of wine made from the grapes.

If you have any grafts to cut, select a time when the temperature is above forty degrees of zero. The earlier after the foliage has dropped that grafts are cut, the better; but it can be done any time this or the coming month. Always, as we have said above, select a time when there is no frost in the tree.

GRAFTS simply wrapped in oiled silk, in a manner to pretty effectively keep them from the air, may be safely sent by mail any distance.

ROOT PLANTS are freely grown from small pieces of roots cut from the parent plant. We think very few amateurs are aware how easily they may increase their stocks of raspberries, blackberries, or of seedling pears, apples, quinces, &c., by simple pieces of the roots. Early in spring, dig the earth away carefully from around the tree or plant that you wish to propagate; then, with a sharp knife, cut from the roots pieces from an inch to three inches long; take them to a piece of well-prepared ground, raked smooth on top; lay them on it, at distances of three to six inches apart; cover with an inch deep of clean sand, and then about two inches of peat muck, or light rotten leaf mold.—Nearly every piece of root will grow, and in the fall present you good strong plants.

CUT flowers in boquets will last many days longer if they are kept at night in a cool low temperature, say one or two degrees above freezing. Change the water daily, and each time see that it is almost lukewarm.

NEARLY all lands dressed at this season of the year with a sowing of common salt, say eight bushels, and of plaster paris, say one bushel to the acre, will be much benefitted. Dwarf pear orchards and old vineyards will especially receive benefit from such application.

THE seed of the common sunflower is greedily eaten by all poultry, and serves to fatten them more rapidly than any other grain. The plant is as easily grown as Indian corn, equally prolific in yielding quart for quart, and more or less of it should be grown by every one who keeps fowl. Make a note of this, and get some seed.

BONE MEAL or bone dust has come to be a general specific for many purposes in aid of horticultural pursuits. Many advise and use it indiscriminately on clay and light thin soils. It is well to remember that light thin lands receive the greatest or most direct advantage or stimulus from its use; and that heavy or clayey lands, devoid, or nearly so, of lime, experience more benefit from its use than those on which lime is prominent.

WEST NEW JERSEY NOT AN APPLE REGION.—From a long article in the Agricultural Department Report of 1865, written by J. S. Lippincott, we find a very unfavorable account of the value of that region as an apple-producing one. Good, remunerative crops, it is there stated, cannot be relied upon oftener than once in eight or ten years, either from apple or pear trees; and in consequence, entire orchards have been rooted out to give place to market gardening or truck culture, which is annual, and pretty certain in its returns. This is a decided reduction upon the character of that section for fruit-growing, which some land operators have reported, and would have us believe.

We have got one little item of belief in our head, and if any of our readers can controvert it, by giving records of continued success, we shall be glad to receive. It is, that no permanent apple or pear-trees productive of good fruit, can be found of thirty or more years on any light, sandy soil.

BOOK NOTICES.

CHRISTIAN ETHICS ON THE SCIENCE OF DUTY, by Joseph Alden, D.D., LL.D., author of "Elements of Intellectual Philosophy," "The Science of Government," &c.

Whatever tends to promote the moral education of the people, and especially of the rising generation, is worthy of commendation. The old adage, "Laws are powerless without morals," is as true now as when it was first uttered. We have daily illustrations of the importance of moral principle to the successful working of our free institutions. The work before us is designed as a text-book for high schools and academies, and is well adapted to that purpose. It teaches the "whole duty of man, inweaving with its philosophy the teachings of Scripture, yet in such a manner as to avoid all sectarianism. It is characterized by the simplicity, clearness, and comprehensiveness which have marked the previous productions of the author.

AMERICAN JOURNAL OF HORTICULTURE AND FLORIST COMPANION. We have received from Messrs. J. E. Tilton & Co., of Boston, the January number of this new publication. It is illustrated with numerous engravings, and its typographical appearance leaves little to be desired.

The contents are:

Spring Flowers.

Grapes in 1866.

Garden Architecture.

The Plants of our Woods and Fields.

Flowers in Cities.

Things New and Old.

Pear Culture.

The Horticultural Value of the Crow.

Table Decorations.

Culture of Roses in Pots.

Improved Culture of Hyacinths in Water.

Hydrangea for Out-Door Decoration.

Literary Notices.

THE
HORTICULTURIST.

VOL. XXII.....FEBRUARY, 1867.....NO. CCXLVIII.

DECIDUOUS SHADE TREES FOR PRIVATE GROUNDS.

IN our last December number we named some few varieties of trees that we consider eminently deserving to be planted for street shades. We now designate a few of the many beautiful trees that we regard as especially desirable for planting in private grounds. First of all, we name our Amer-

ican Beech, as combining more of beauty, grace, and magnificence than perhaps any other of our forest trees. True, it has not the grandeur of the oak; but, with its stateliness of upright, spreading growth, every line and twig is one of graceful ease, and from the first opening of the buds in spring, onward until in full foliage, its glossiness and changing shades are a constant but varying feature of beauty. In winter, its delicate spray, combined with the prominence of its long-pointed buds, make it especially an object of attraction and admiration. Some planters object to the Beech on account of a tendency to sucker, but we have never found any such tendency where the roots remained unbroken by cultivation.

Young trees should always be procured with branches starting from near the ground, and rarely does it need the knife applied to give it regularity and symmetry of form. A deep loamy, rather moist, soil gives it most vigor and causes it to grow to a large size; but it also grows freely in poor, thin soils, as the roots spread widely and keep near the surface.

Of fancy varieties of the Beech, the true Purple-leaved is the most desirable. It has rather stronger limbs and twigs than the common plain variety, and the young shoots and buds are of a rose color, while

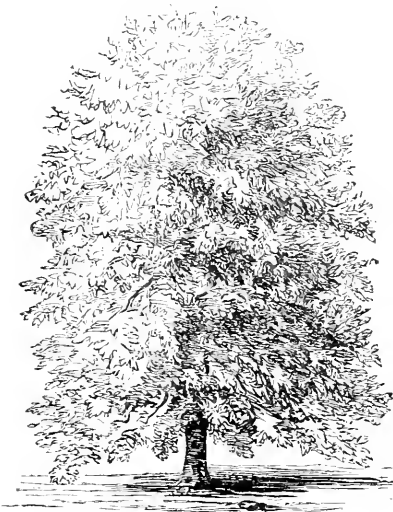


FIG. 14.—*American Beech.*

ican Beech, as combining more of beauty, grace, and magnificence than perhaps any

the foliage when young or half grown is of a reddish purple tinge, and when mature becomes dark purple, forming a pleasing and attractive contrast with the green of other trees. The Cut-leaved forms, while young, a vigorous, well-marked tree, with leaves variously cut, resembling in some cases ferns, in others willow; as it gets age,

however, these markings of the foliage become less and less distinct. The Variegated-leaved, Crested, etc., are all singular, but of feeble growth, and only desirable in an arboretum.

The family of Maples are all good as shade trees for lawn or roadside, but among them, the *Rubrum*, red-flowering, or,

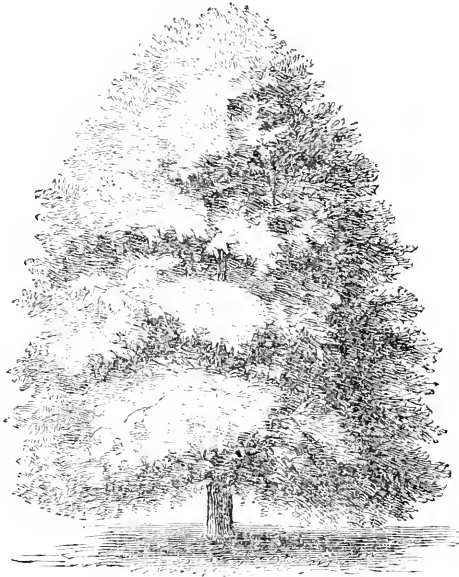


FIG. 15.—*Scarlet Maple.*

as generally termed, Scarlet Maple, is most to be prized. Its red flowers and leaves in early spring or beginning of summer, its brilliant shades of red foliage in autumn, taken in connection with its rapid growth and upright, half spreading form, render it one of the most ornamental of hardy trees. Although a native, and abundant in many parts of our Northern Middle States, one or more trees of it should be found in all grounds of half an acre or more in size. In places of considerable extent, when variety as well as beauty is desired, the following are varieties that possess characters rendering their introduction requisite,

viz., the Tartarian, on account of the early opening of its leaves. The Striped-barked, because of the stripes, white and black, upon its young, green wood, making it always a curiosity and attractive to visitors. The Norway, from its contrast with others in spring and fall, the foliage then being yellow, is deserving a place. Next to the Norway, and similar to it, is the Sycamore Maple, a variety of rapid growth, and forming at maturity a large and stately tree. As an avenue tree, or standing by itself singly, it is always effective. Of the fancy varieties, the *Purpurea* is the only one that is particularly desirable. Its leaves are

purplish underneath, and pale green above when fully expanded; and at midsummer, and thereafter until the fall of the leaf, every breeze that ruffles and disturbs them produces a singular effect.

MAGNOLIAS.—To this family, many varieties of which are the pride of our Southern States, too little attention is given by the majority of tree planters; whether it is because of good plants being difficult of obtainment, or from their being rather sensitive and unwilling to be carelessly and negligently handled when transplanting, we find few planters make room for them on their lists or in their grounds; but we do not see how any landscapist can form an extensive group of evergreens and deciduous trees without using more or less of Magnolias. In our experience we have found no difficulty when transplanting, provided we kept the roots from cold drying winds or clear burning suns; exposure to either of which, by reason of their soft spongy texture, is injurious, and often destructive of life. Of the varieties, all are beautiful; but some



FIG. 16.—*Magnolia Acuminata*.

are not perfectly hardy when grown in our Northern States. The *Acuminata*, or Cucumber Tree, as it is frequently called, is very

upright, almost cone-like in its form, and for backgrounds or the center of groups one of the most desirable of all deciduous trees. The *Glaucæ*, or Swamp Magnolia, is almost a sub-evergreen, often retaining its



FIG. 17.—*Magnolia Glauca*.

foliage until January, even in our Northern States. Unless grafted or budded on the *acuminata*, it is only a dwarf, growing from six to twenty feet high—more like a bush than a tree. In moist, cool situations it often flowers all the season—from June to September. The fragrance of its flowers, together with the rich, glossy, pale green foliage and young shoots, form for it a shrub tree that, were it now to be newly introduced, would cause an excitement, in the arboricultural world, that is rarely known. Some sub-varieties, as *Longifolia Gordoniana*, etc., are better because larger in foliage, and perhaps a little stronger in growth, but their actual hardihood in all positions, we think remains to be tested. *Magnolia Tripetala*, called Umbrella Tree, when grown north of Philadelphia, seldom acquires much size, but sends up numerous stems from its crown to replace decaying ones, which have perhaps flowered two or more years. In the warmer parts of our country it forms a large tree, and in all grounds is especially desirable. Of the Chinese varieties, *Magnolia Conspicua* and *Soulangeana* are the most generally known

—both good; but if either one was to be selected, we should choose the *Soulangeana*,



FIG. 18.—*Magnolia Conspicua*.

because it is a more rapid grower, and because its flowers appear to escape injury from frosts better than the *Conspicua*. Both form spreading round-headed trees of middle size, and should always be arranged in the foreground of a group of evergreens, because of their flowering early in spring



FIG. 19.—*English Elm*.

before the growth of their leaves. A variety called *Magnolia Lenne* is described in

Horty's Magazine as being as hardy as the *Conspicua*, of vigorous habit, with flowers the color of the *Soulangeana*, but more than twice the size, full as large as a tea-cup." *Magnolia Purpurea* and *Gravilis* are both shrubs, and perhaps should not here be spoken of; but as we have found in planting that their arrangement as undergrowth to the *Conspicua* and *Soulangeana* produces a happy effect, we venture to mention them.

Among Elms, we give the preference to what is termed English Elm—*Ulmus Campestris*—because of its less-spreading habit as compared with our American Elms, and more because of its retaining its



FIG. 20.—*Osage Orange*.

foliage later, thus carrying the season of foliage almost into the winter months. A great number of varieties of this species occur among the trees sold, because all are grown from seed. The planter can frequently select trees of a dozen different habits among those offered by the dealer. The Cork-barked is considered only a variety, but the cork-like covering of its bark renders it a tree of marked character, and always commanding notice. The Osage Orange, where a tree of medium size is wanted, possesses characters that should bring it more in use as an ornamental tree than has been the case. It forms a very regular round-head, with glossy dark green

leaves, very much like the Orange. It is entirely free from insects.

The Persimmon, or Virginia Date Plum, is another desirable shade tree, too little planted. It forms an upright round-head, rather erect than spreading. Varieties may be selected yielding fruit that ripens early in September or before frosts, and very palatable, in fact by many persons preferred to foreign dates; but the greater number of the trees grown do not produce a fruit at all eatable until after several severe frosts have mellowed its natural harsh astringency.

There are many other trees of value that we could name, but for want of room must defer doing so until a future time.



FIG. 21.—*Persimmon Tree.*

A CHAT WITH MY NEIGHBORS.

BY FRANK AMON.

I HAVE around me some very good neighbors, and all more or less imbued with a taste for horticultural pursuits. Some of them are readers of the *HORTICULTURIST*, and, as a consequence, advanced in their knowledge of the subject over those that do not read. I hope they will excuse me for thus telling their good points, but as it is my rule to tell the truth as I know it, I shall, of course, take nothing back. One of my neighbors is decidedly enthusiastic on fruits, and especially upon grapes, and at once sends off for every new one that has a shadow of promise to be valuable. He cultivates, by-the-by, a little over nine acres in vineyard, and takes care of it, too, which is saying more than I can for another neighbor, who has grasped tight the belief that no cultivation is the best of cultivation. Whenever any such doctrine is asserted, I have a habit of thinking the advocate likes to lie in bed pretty late of a morning, loves to go hunting, etc., rather than apply himself to practice with the hoe or pruning-knife. But to our chat.

Neighbor B. says he has had enough of puny, thread-rooted grapevines; that last season he tried some thousands, not because he believed in them, but that when he was ready to purchase in the spring he could find no others. This year he took time by the forelock, and laid in his vines this past fall, by purchasing plants of two to three feet growth, of well-ripened wood, as large as one's little finger; had the vines dug and delivered to him; then he selected a dry location, and heeled them in carefully, covering two buds with earth, and then covering the whole batch with straw, and thinks the spring will find him with plants of a quality and in such condition that, if he gives them good culture, will be satisfactory to him in their appearance next fall.

Neighbor L. thinks he would have preferred to have buried his plants in sand in the cellar, because last year his roots outdoors were injured, while those kept in the cellar were "first-rate." I suggested that burying in the sand in the cellar might answer if the cellar was a new one, and the

sand freshly put in, but I queried that if the cellar was an old one, and the sand had been in it one or more years, whether the miter engendered would not be injurious to roots and plants kept there. I know some tree-dealers have told me that their trees and plants imported too late in the fall for out-door heeling-in, and placed in the cellar, had not come out as they could have wished in the spring, nor as they did in years gone by, when their cellars were new, and they attributed the cause to the miter that had accumulated in the sand.

Neighbor K. said this growing of grapevines in the manner it had been done for the past half dozen years, by forcing, etc., had set us back at least ten years in vineyard culture, while at the same time it had made rich a few who he thought loved money more than the cause and advancement thereof. He knew he was speaking out loud, but it was too true. There is nothing, said he, to prevent growing grapevines as was done by nurserymen twelve or fifteen years ago, and then it was considered a profitable business to be able to sell all the hardy grapevines that could be grown, at ten to twelve cents each, at two years old.

Neighbor S. said our growers now offered Catawba, and some others of the old kinds, at from three to five cents each, one year old, but he supposed the price paid for buds of the new kinds had kept up the price for plants.

Neighbor K. said he was in favor of giving to an originator of a new fruit full compensation, but after it had been distributed years, there was no sense in holding puny plants grown in a forcing-house, at sixty, seventy, and eighty dollars a hundred, when abundance of well-ripened buds were for sale at two to five cents each. As he had before remarked, he believed the quality of the plants sold, and the exorbitant rates asked for them, had kept us back in vine culture at least ten years. He believed, also, that the check time had come, and that growers of vines, even this spring coming,

would have to sell at far less than advertised rates, or keep over, and that another season he hoped planters would be educated up to a point that would cause them to purchase only plants similar to what Neighbor B. had procured this last fall.

I suggested that vine-growers were very much like other men, and endeavored to obtain as much as possible for their wares; that the excitement on grape culture which had prevailed the past few years, had induced many a man to invest who had really no knowledge of, or love for, the subject, and who had invested as a source of prospective income without labor or care; that old vineyardists knew such impressions to be fallacious, but telling men so did no good—they wanted to try it themselves.

Neighbor P. said a man who did not love plants and trees for themselves could never succeed in growing them. He believed there was a close sympathy between plants and mankind, proof of which he thought could be daily seen in the fact that no one who really loved flowers ever failed to make a plant grow, while their neighbors without such love, but with ambition to have their yards look nice, often failed. Neighbor P. is a sort of Spiritualist, and looks forward to breathe the perfume of flowers and enjoy the aroma of good fruits forever.

Neighbor S. said, to change the subject, he wanted to tell them a little about one of his friend's pear-trees. From neglecting to take away the mulch, very many, if not all the trees in his orchard were completely girdled near the ground by mice, and he supposed he had lost them. It was a great loss, as many were bearing finely.

I suggested that a little labor and care would set that all right in one season, and put the trees in as good condition as if the mice had never been near them; that it was to be done by grafting. Select a warm day in February to cut from some thrifty, vigorous, growing pear-tree healthy, strong shoots, sufficient to make about six grafts for each pear-tree to be operated on. Lay

these away, the lower ends in sand, in a cool, dark cellar, until the frost is out of the ground. Then go at once to work, as follows: Pare the wound made by the mice smooth, cut away all ragged ends of bark, then prepare a graft by measuring its length two inches longer than the spaces between the bark on the tree where eaten by mice. Make each end of the graft in form of a wedge, but one side, that which is to fit next the tree, less sharp or tapering than



FIG. 22.

the other. [See drawing.] Next, having the bark on the tree around the wound trimmed neatly and smoothly, take a piece of flat, smooth bone or ivory, like a common paper-cutter, or the end of an old-fashioned budding knife, and raise the bark at the upper and lower sides of the wound on the tree, just sufficient to enable you to push the graft carefully under at each end, about one inch. Continue this insertion of grafts until you have four, six, or more, around the body, according to its size; the distance between each graft never being over two inches—if nearer, still better. Then wrap the whole with strips of cloth about two inches wide, to keep each graft securely in its place. Then paint the cloth over with warm, not hot, grafting wax, and finish by drawing a mound of earth up

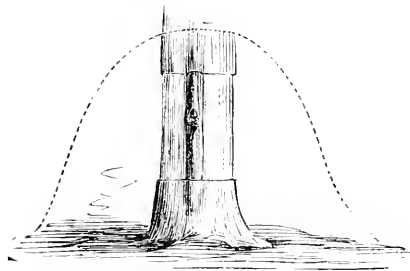


FIG. 23.

around the whole, and, say, two inches above it. The accompanying figure shows

the position of a graft when set, and the dotted lines outside, the lines of the mound of earth. Some practice cutting one side of the graft the whole length, and laying it on smooth and even; it may be better, but I have succeeded when doing as I describe. I will also say that I have often filled up a gap, or the want of a limb in a young pear or apple tree, by inserting a side graft in early spring, at the point where I wish the limb. The rough drawing here shows the



FIG. 24.

graft when set. I take a scion that will leave me two good buds after being trimmed for setting. I then form *one* end just as I have shown for recovering the pear-trees, cut the other an inch beyond the bud, the cut sloping toward the opposite side, make a horizontal cut across the limb or body of the tree where the graft is to grow, of about one inch, raise the bark carefully with my piece of smooth, thin bone or ivory, and press in my graft downward, tie it securely with bass matting, and then cover all with grafting wax, so that neither air nor water can reach the wounded parts.

Neighbor K. said he had a great love of pears, and faith sufficient in the practice of growing them as dwarfs to plant out some hundreds the past spring, but that the blight was a matter that troubled him. He had lost by blight quite a number of trees only planted in spring.

Neighbor B. said he had also lost from last year's planting, but that he had mainly attributed his loss to too deep planting, and water standing around the roots. Others, however, he noticed, had lost, who had no such cause, and he therefore queried whether blight was not preconceived from

injury the previous winter, rather than from atmospheric influence of the growing season.

Neighbor H. said he thought blight was in great measure attributable to influence of the temperature of the previous winter. In planting some hundreds of trees the past spring, he noticed occasionally one with a little black spot of bark on it, and, as the season advanced, the dark spot spread, until midsummer found all such injured trees dead.

Neighbor S. said he was about washing his trees with a weak solution of salt in water. Should also try some other things, as copperas, sulphur, etc., and watch the result. He had a great deal of faith in ma-

nuring with salt and plaster. Last year he manured some of his trees with hen manure, and some with salt and plaster, and while he had a little blight among those manured with the hen excrement, he had none with those where salt and plaster had been applied.

Neighbor P. — but, perhaps, Messrs. Editors, I have written enough of my neighbors' sayings for once, and, as I am not much accustomed to writing for publication, I may have made up these sayings in an erroneous manner—for while I have put them as if my neighbors had been gathered together, and chatting with me, the fact is, they are their sayings as expressed to me only at various times.

HARDY PERENNIALS.

THE rural flower-garden, where little labor can be given, and that generally from those of more zeal than knowledge of the cultivation of flowers, is best made up from perennials. As a rule, any good garden soil will serve to grow them, and should their culture be neglected a week or more, they are very accommodating, and instead of dying off, they exert themselves to rise above the surrounding weeds and shame their owners by their bloom into more careful attention and culture. Time was when a hundred or so comprised the list of desirable perennial plants, but now the number is so extended that to know and understand them all, one needs to devote all his time. We shall not attempt to enumerate even, much less to describe, all the sorts, but confine ourselves to remarks on, and names of, a few varieties that are always to be depended upon, and that may be obtained at any florist's. We say we will confine ourselves to varieties that are always to be depended upon, and yet here, at our first start, we place a plant, the *Dodecatheon Media*, that is hardly, and yet some-

times, from too much wet, or too much dry, when flowering time comes, is not in its expected place. It is, however, so pretty, with its stem of twelve rosy lilac flowers, that we should dislike much to omit it. Many of our readers, doubtless, know it as American Cowslip, and also know that a light loam and shade suit it best. A mark or label stake should always be placed near it, otherwise, when out of flower, it is liable to get dug or hoed out and lost.

The Columbine—*Aquilegia*—found wild in many parts of our Eastern and Middle States, especially in rocky, romantic sections, has been increased and multiplied into many varieties, all of which are truly beautiful. A rather poor soil gives the best flowers.

Campanulas, or Canterbury Bells, of which there are now numerous varieties, adapt themselves to almost any soil or situation. An old variety, called *Pyramidalis*, yet remains one of the best, frequently in good deep rich soils sending up flower stems six feet or more high, and covered with blue blooms from top to bottom. Many campa-

nulas are biennials, and require to have seed sown every year in order to produce the best of flowers the succeeding season.

Clematis.—No garden can be said to be even partially complete without one or more of the clematis family. All are free growers, twining and climbing upon anything near them which offers a support. The flowers are mostly white, very abundant in August and September. Although deemed hardy, they all succeed better by being slightly covered in winter with some coarse litter.

Coreopsis Lanceolata is a perennial of so easy culture, and producing such a continued succession of flowers from early to late in the season, that although not generally esteemed as very handsome, you can not well do without it.

The *Delphiniums*—common name, Larkspur—is a family varying exceedingly in its habits of growth as well as in its flowers. The Chinese—*sinense*—is slender, resembling the annual larkspurs in foliage, having blue and also white flowers. It is the best for small gardens.

Dianthus Barbatus, or Sweet William, although not a perfect perennial, yet often continues from year to year, and is so easily raised from seed, and so pretty in its endless varieties of colors in the flowers, that it must be, and generally is, in every garden. Choice seeds are imported each year, from which beautiful varieties are produced.

The *Iris* is a family of tuberous-rooted plants that are easy of culture, and bloom freely, with flowers of all colors, white, blue, yellow, etc.

The *Lychnis Flosculei*, or Ragged Robin, is an old plant, common in every garden, and universally admired.

The *Lychnis Chalcedonica*, or London Pride, is another equally, perhaps, as well known and appreciated. Besides these, the varieties *Vesicaria plena*, and *Vespertina* are desirable. Of recent introduction is one called *Haageana*, said to be of dwarf, slender habit, with bright orange scarlet flowers nearly two inches in diameter, a free bloomer and showy.

The Oriental Poppy, *Papava Orientalis*, is one of the most magnificent of perennials. We have seen people leave their carriages at the roadside attracted by its splendor, and walk some distance in a gentleman's grounds to examine it. There are several other perennial poppies, some with white and some with yellow flowers, but while they are good, the Oriental is indispensable.

Phlox.—Of perennial Phlox the number of varieties is almost countless, and embraces nearly every shade of color and imaginable variety of arrangement in the flower. We shall not here undertake to designate any particular varieties, only saying that every one grown at this day is good, and that when you have one growing, you will soon find room for more. To bloom freely, the Phlox requires a deep, rich bed of soil, and rather moist than dry.

The *Pyrethrum*, or Double Feverfew, although not strictly a hardy perennial, yet with a slight protection in winter stands admirably, and its constant succession of small, pure, white double flowers from June to October makes it a plant of the greatest value for bouquets, wreaths, etc.

Spiræas.—This is a family of which there are a number that are herbaceous perennials, and a still larger number that are shrubs. Among the best of the Herbaceous are *Filipendula plena*, dwarfish, and with double white flowers from June to October; *Palmeta*, with strong stems four or more feet high and large clusters of red flowers in July. Rich, deep, and strong, rather moist, soils produce the finest flowers and greatest quantity.

Veronica, or Speedwell, is a class of plants apparently suited to any soil, furnishing white and blue flowers in profusion in June and July. *Virginicum*, *Siberica*, and *Speciosa* are three of the best varieties.

The *Yucca*, or Adam's Needle, is a class of evergreen plants that although mostly natives of warm climates, nevertheless prove perfectly hardy all over our Northern States. Occasionally a winter blackens a portion of the leaves, but as a general thing they re-

main green and fresh. They are free to flower, and the height of their stems and abundance of flowers are greatly regulated by the depth and richness of the soil in which they are grown, a moderate or rather poor soil giving only stems of about two feet high, while deep, rich, strong soils give to the same plant a height of stem varying from five to seven feet and proportionate additional abundance of flowers. The flowers are white and bell-shaped. For points in rock-work planting they are well adapted, and also in forming groups of

evergreen shrubs. We have seen masses of them in position on a lawn prove very effective.

As we have before said, all these that we have named, and many more varieties, can be obtained of nearly every florist or nurseryman at comparatively low prices; and those who are often unfortunate in growing annuals, or have but little time to devote to the flower-garden, we advise to give attention to perennials, believing that in their culture satisfaction and enjoyment are to be found.

QUINN PEAR.

SEVERAL specimens of this pear were handed to us by P. T. Quinn, of Newark, N. J., on Jan. 2d, who stated that the fruit had been kept in an ordinary cellar, with-

their maturity. Some specimens were still hard, while others were in fine eating condition. The fruit is small and not particularly attractive to the eye, but the quality is unsurpassed among our winter pears, and will compare most favorably with the best of our autumn varieties.

A committee of the Farmer's Club of the American Institute, consisting of Dr. E. Ware Sylvester, Wm. S. Carpenter, and John Crane, made the following report upon this pear, which was read by the chairman, Dr. Sylvester, at their meeting, held Jan. 2d.

"The Committee on the Quinn Knight Pear (which had received its name by a vote of the Farmer's Club at a previous meeting) respectfully report:

"That they have examined the pears, and the trees upon which they grew. The tree was imported by the late Prof. Mapes about sixteen years since, without a name, being labeled as one of Knight's Seedlings. It was placed in the front yard, among the evergreens, and has not received the care usually bestowed upon fruit-trees, yet it has made a fair growth.

"The fruit is below medium size, the larger specimens measuring six inches in circumference; shape, pyriform, tapering rapidly toward the stem end; calyx, shallow,

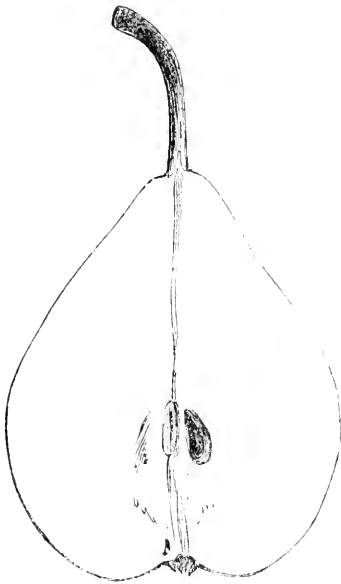


FIG. 25.—*Quinn Pear.*

out any particular care having been taken to preserve them beyond the ordinary time of

inserted in a regular basin; skin, thick, inclined to golden russet. The pears are in good perfection now (Christmas), and Mr. Quinn thinks its season is from the 1st of November to the middle of January, with ordinary care. They are rich and juicy, free from grit, and in flavor and aroma occupy the first rank. It is, in fact, a Winter Seckel; and if on trial it shall prove adapted to our climate, it will be a very valuable acquisition to our winter pears.

“Mr. Quinn objected to the motion to rescind a part of the name, inasmuch as he was not the originator of the pear, but only

the cultivator of the tree. He desired to retain the original name—Knight’s Seedling.

“N. C. Meeker said he was decidedly in favor of short names for pears. A great many people dare not sometimes pronounce the long names of pears, because they are so hard.

“It was then voted that the pear be called the Quinn Pear.

“Solon Robinson said he thought it the best winter pear that has ever been exhibited at this Club. A few specimens were distributed, which were really delicious.”



CORDON TRAINING.

ALTHOUGH an old practice in France, we believe training trees *en cordon* has been but little practiced in this country. For the purposes of testing a great variety of fruits in a small compass—for covering a trellis, thereby forming a screen—for growing varieties that require shelter from late spring or early autumnal frosts, the system of cordon training is undoubtedly a valuable method of practice. As there are many who have never seen a cordon trellis,

or know anything of the manner of its practice, we will present it a little in detail. First, then, a trellis or lattice-work is to be erected, by planting stout posts and nailing thereto horizontal rails, usually three in number. See our figure. To these, horizontal bars, vertical curved slats, or strong wire are nailed or secured at distances of about one foot apart, and at each upright curved slat or wire a tree is to be planted, and its main trunk or body fastened to the

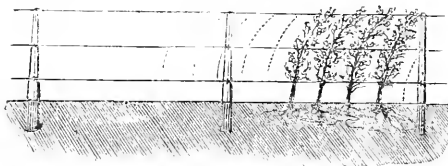


FIG. 26.

slat. Every limb is then to be shortened back to within two, three, or four buds from the main stem, and as the trees grow, these are to be from time to time pinched or cut back, until the whole body is a continuation of fruit-bearing spurs. If too vigorous growth occurs, then the roots are to be cut off within a foot or so of the body of the tree, by means of a long, sharp spade. Our figure shows the trellis in its various

stages, and with four trees planted and trained. The first expense of this method is greater than the usual one of espalier training, because of the additional number of trees required; but as it takes a much less time to bring the trees into a productive bearing condition, and as it enables one to grow a number of kinds of fruit in a small compass, it pays well for the additional first outlay.

BEZI DE CAEN.

FRUIT—Size, medium; form, oblong, pyriform; color, dull brown; skin, smooth, russet on a greenish yellow ground, scattering suffused dots of irregular size, and form dark, almost black, russet spots depressed; flesh, white, fine, granulated, melting, juicy,

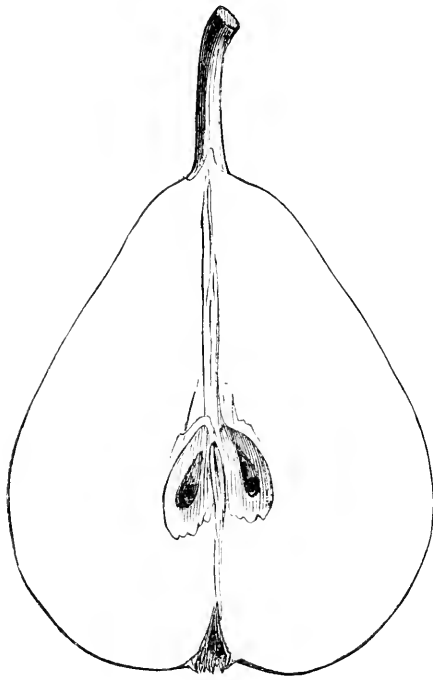


FIG. 27.—*Bezi de Caen.*

LUDWIG'S BIGARREAU CHERRY.

THE above is a new cherry figured in the *London Pomologist*, as having first fruited and been introduced by Mr. Rivers, of Sawbridgeworth. It is described as being long, heart-shape in form, bright, clear red in color, pale yellow, half tender juicy flesh,

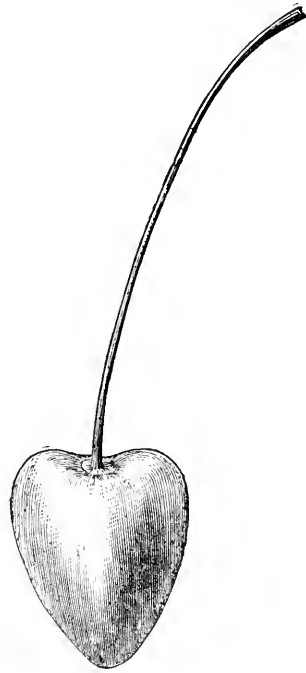


FIG. 28.—*Ludwig's Bigarreau Cherry.*

sweet, a very slight astringency, aromatic, perfumed; "very good;" stem, moderately stout, set without depression; calyx, small, with irregular, wavy, connected segments; basin, regular, shallow, smooth, and even; core, small; seed, small, plump, globular, acute, pyriform; season, December. The Bezi de Caen is a firm fruit, tree a good bearer, and promises to be of value as an early or mid-winter pear.

and ripening early, or about the last of June. Judging from the figure and description, it gives little promise of value in this country.

ALIDA PEACH.

MESSRS EDITORS: Accompanying I send you a drawing of a seedling peach originating with Charles Carpenter, Esq., of Kelly Island, O. Mr. Carpenter writes me that it is "doubtless a seedling of Crawford Late, quite as large, much darker, red cheeked, and nearly round. Flesh dark yellow, rich, juicy, excellent." The draw-



FIG. 29.—*Alida Peach.*

ing I send was made by a son of mine, and does not give the size as large as Crawford Late. I have never seen the fruit, and only send this as a record that pomologists may

have it when the fruit comes to be exhibited, as I learn from Mr. Carpenter it has been disseminated.

F. R. ELLIOTT.

INDIGESTION.

BY JOHN ELLIS (FOX MEADOW).

INDIGESTION may be the result of two causes—first, a diseased state of the stomach, and, secondly, by passing into a healthy stomach some cartilaginous substance which is not naturally adapted for it. In the former case, we may call it a perpetual disease, in the latter, spasmodic. It is this *spasmodic* indigestion, Mr. Editor, that your humble servant is sometimes troubled with; and as we are just now suffering in the stomach, and can not possibly digest one or two bony horticultural substances, we, in our present painful condition, apply for the soothing balm of horticulture, whose disintegrating action on the stomach may dissipate the bone and give us relief. In your December number, page 366, we read as follows:

“We know from the very interesting experiment of M. de Comini, near Botzen (Tyrol), that the germs of the oidium lie, during the winter, dormant in the brown bark of the canes of the vine. He cut, in November, canes with dark spots, the effect of the oidium spores, and kept them in pots, filled with sods and horse manure, in a warm room. After seven weeks the oidium appeared on those black spots, and covered, in a short time, the whole cane so treated.”

From the above extract, the inference seems to be that the oidium is produced by spores of the previous season, which live over the winter, and, by the influence of heat and moisture, burst forth into existence, and grow and flourish on *hard brown wood* just as well as on the green and tender. Dr. Walsh, in the “Practical Entomologist” of the December number, in answer to some queries of Dr. J. S. Houghton, in relation to the “bark-louse” on his fruit-trees, says they are produced from eggs of the previous season. This we know is true; but the question is,

do not myriads of these insects come into existence without previous fathers and mothers? Is there no oidium in existence without springing from the sporules of father and mother oidium? Why not contend that all the colds and coughs that our humanity is heir to are produced from a sporeal or fungoid ejection from and belonging to the order of Mammalia? Are there no plants in the world that come into existence without a prior father and mother? Has the great Father of all things ceased creating? Not at all, nor never will, so long as matter exists. Watch, in the summer time, a piece of shallow water, and note the slow but sure development of the thin, transparent vegetable mucus, extending globule by globule till it covers the whole surface, and on a spot, perhaps, where never water was before, nor aquatics ever grew. Go to the stone wall you built a year ago, when the face of the stones was all clean from vegetable life, as a sheet of white paper, and see the beautiful foliaceous expansions, growing onward and upward to higher orders. Are they the offspring of a *prior* father and mother, or the spores of some defunct cryptogamia of the order of Algæ? Some years ago we dug a hole, several yards square, in a swamp that had been drained to the depth of four feet, sinking some four feet below this; the water burst up like a fountain from the *bottom*, and the operation was suspended. No water could possibly get to this excavation but the rain and that which burst in at the bottom;* a brook ran through the swamp, but not nearer to the point in question than three hundred and fifty yards. In six months’ time this hole was nearly alive

* In swamps, the pressure of the surrounding matter will cause the water to burst up in this manner.

with small pickerel. This fish is considered a fresh-water inhabitant, but they are alive there to this hour, and constantly increasing in size. How did they get there? From whence came the prior father and mother? On showing this place in question, with its fishes, to a medical gentleman, and an intimate friend of ours, and wishing him to solve the mystery as to how the fish got there, he replied: "Why, there is nothing more simple, for," said he, "yonder is a brook—that brook contains the spawn or eggs of the pickerel—this swamp in its very nature is open and porous—the water from the brook percolates through this spongy muck, and of course the spawn of the pickerel comes with it—nothing more easy or simple." "But," we replied, "if this be so, why do not the spawn of the trout, sun-fish, jack-sharps, and the suckers get through in the same manner?" "Are there no other fish but pickerel in this hole?" "None whatever." "Then it is very strange," said the doctor; and so ended the subject: and we are sorry to say thus ends investigation by scientific minds when such a fact ought to lead them on to investigate cause and effect. Were there no insects brought into existence but what had fathers and mothers, we think we should not have half the trouble to get rid of them. Why, are clean shirts worn for no other cause than merely to look nice? or is it absolutely necessary to the prevention of the generation of some of those parasitic insects of the genus *Pediculus*? Where do the prior father and mother come from? Where are the prior father and mother of the wonderful *Washingtonia gigantea*? By what breeze and from where were the seeds wafted to California? What does "indigenous to the soil" mean? Similar thoughts and questions apply to mildew or oidium. We disbelieve the doctrine that the oidium is produced from secreted sporules of prior father and mother in the dry bark of the vine, and we also disbelieve the possibility (under natural conditions) for sporules to develop, grow, extend, and cover a

piece of *ripe cane wood* of the previous season. Were such actually the case, we question if we should have to-day a living vine in America, excepting those wild foxes of the woods. That M. de Comini performed the experiment as quoted, we believe, but as far as the oidium is concerned, we believe him to be mistaken. The sods and horse manure put together will do what any horticulturist knows it will do, and that is, produce a fungoid growth, and had M. de Comini stated that the result of his experiment had terminated with a fine crop of mushrooms on the vine stick, we should be inclined to place more confidence in it than we do in the statement of the oidium growing over and extending along a piece of *ripened wood* of the vine. Our opinion is, that no man ever saw such a thing, nor ever will. This and the lightning theory as the cause of rot in grapes, are on a par, for we know full well, numbers of us, that there are locations even in our changeable climate of America where no rot is found. Look, for instance, in California, where our fine exotic Hamburg, and Muscat of Alexandria, and Cannon Hall Muscat are sold in the markets of San Francisco, grown in the open air, weighing six and seven pounds! Still, we believe it thunders and lightens there? But what do they know of *rot*—the rot of the Northern States? Nothing at all. Why not tell us, Mr. Editor, that all the grape-rot oidium, with a host of other indigestible horticultural matter, are the result of the action and influence of MOONSHINE?

From whence sprang the prior father and mother of that nondescript (half elephant and half something else) figured in the *Gardener's Monthly*, having been sent to the editor of the latter-named journal by Dr. J. S. Houghton, who, after many a day's hard chase, succeeded in catching the monster in his orchard, and after binding the animal's feet and legs thoroughly, and securing the jaws of his monster head, caged it and sent it to the office of the *Monthly*. We think the Doctor should have sent it to

Barnum, and had it placed in the menagerie of wild beasts. However, if this monster ever had a father and mother, there still remains a chance for Mr. Barnum to procure a living brother or sister of this monster Leviathan, "who goeth down in the deep" of the Doctor's pear-trees, "eating great holes in their sides, and gnaw-

ing the skin in a most destructive manner!"

But though this monster may appear
 So hideous with its paws,
 'Twill catch, perchance, the oidium,
 Like the whale—with open jaws;
 For every change that nature brings,
 With deepest good is fraught,
 Though oft her motives lie beyond
 The grasp of human thought.

WHITE PLAINS, *January 10.*

CULTURE OF THE APPLE.

BY ISAAC HICKS, L. I.

WE hear from many portions of the country a general complaint of the failure of the apple orchards. Apple-trees are not growing and bearing as well as in former times. The climate, or something, has changed. What it is we can not tell, but orchards don't do as well as formerly. There must be a reason for this, and let us look around a little, and perhaps we may find the cause. Has the climate changed in the last century? Do we not have the same average temperature, and the winds blow from the same direction, only, perhaps, with more violence, from the great destruction of forests? We can perceive no difference in the elements of the air; but has not the mode of culture changed from what it was? The country then was new and rich from the decay of wood and leaves for countless ages. The soil abounded in the requisite food for the production of fine apple-trees then, and they grew and bore satisfactorily. Since then, by a long course of cropping, we have exhausted the potash and other elements of fertility to a great extent, and can we expect the trees to grow as formerly? Is there an instance where an orchard has been planted in virgin soil before it was exhausted by long cropping, and proper care taken after planting, that did not thrive luxuriantly? It is our opinion, that if we feed the roots of the trees with what they

require, they will grow now as well as ever. But we are too covetous of latter times; too many of us want two crops at the same time, and, of course, one or both will suffer by it. We want a crop of grain or hay and a crop of fruit, but do not give a double amount of manure to produce them. We cheat the trees, and lose by it ourselves in quality and quantity. The most successful orchards we have seen have been cropped with hold crops, and when young, manure applied sufficiently to produce remuneratively. When the trees became large enough to not require this annual stirring of the soil, they were left for grass to grow till the trees so shaded the ground it was impossible. The period an orchard of apple-trees may be plowed safely will differ according to the rapidity of its growth, say from twelve to fifteen years. It is evident that when trees are of large size, the plow will tear up a large number of surface roots, their most valuable feeders; hence we infer that plowing old orchards must be injurious, and by this destruction of roots which will have to be renewed every year, and if continually broken off, the trees are prematurely exhausted and will be short-lived. If all the grass or weeds are mowed and allowed to remain, they afford a fine mulch and help enrich the soil; and if in addition a dressing of manure, straw, or

stalks is added occasionally, and nothing but the fruit taken from the orchard, we think there is no reason why they will not bear and grow as well as ever. Some varieties of fruit once grown successfully now fail, and we are at a loss to assign a reason. The old Vergalien or White Doyenne was the best pear we had in our boyhood, and the Bellefleur and Fall Pippin and a few others are poor bearers in many places now. What it is that gives the flavor and makes the same stock, where several sorts are grafted on it, give such entirely distinct fruit, we can not understand, any more than why they yield poorly now. Some small trace of a mineral in the soil has probably since become deficient, and the roots can not substitute any other substance to replace it. But we need not grieve too much that we lost our old favorites, as the soil that refuses to grow them to perfection will yield us plenty as good or better than they ever were, of newer kinds. But when shall we have fruit on our young trees? is a question often asked by the timid. It is a difficult question to answer, for trees receive such different treatment, and some bear earlier than others. Too much stimulating is not favorable to early bearing generally; but it is better for us that our trees do not bear early, if we do feel in a hurry. We have had apple-trees bear good crops when eight years of age; but it is safe to estimate that, with good attention and culture, a small crop equal to three or four bushels to a tree will be borne when they have been planted ten years. We know of an orchard of 500 trees, planted about fifteen years, that bore in one year 700 bushels of apples. Other orchards may exceed this, but we think too few have attained to this amount. Some are discouraged from planting by the report of the great increase of insect enemies to the trees and fruit. Even if there are more, fruit sells at a much higher price, and we can afford to take more time and spend more labor than formerly in combating them. The price of apples, as well as other fruit, is greatly enhanced from what it was

forty years ago; and from the too apparent neglect in setting out young trees, we believe apples are destined to still higher prices in the future. There are but few pleasanter sights in passing through the country than a handsome, thrifty orchard. Somehow, we form a higher opinion of the owner's intelligence; we expect to find him in good standing in the community; and the reverse of his next neighbor, whose moss-covered, neglected apple-trees cast a feeling of desolation and sadness on all around. And there are but few trees more beautiful than a nicely grown apple-tree in full bloom, nor a more enjoyable sight than when laden with its crimson or golden fruit in autumn. Therefore we advocate planting the apple-tree. You may plant the grape by the million where the soil suits its growth; strawberries by the acre, or pear-trees, too, if you wish, but don't forget the apple, if you love the enjoyment of your family, your profit, and your health. We like to plant trees pretty close together, for the reason that they will shade the ground more perfectly and prevent the weeds or grass from growing when they have arrived at maturity. Nothing else should be expected of an orchard than to bear fruit for us when large enough, and we should plant accordingly. Some kinds, that are low-spreading growers, like the R. I. Greening and Roxbury Russet, will require more room; but from our observation, twenty-five to thirty feet should be the limit for all varieties. We do not like long, naked stems to our trees, peering up nine or ten feet without a limb, indicative of long ladders and bruised fruit. Standing on the ground and picking apples is so much easier, or on short fruit ladders, and if they quit their hold before we wish them, they scarcely receive a bruise when fallen. And another advantage to the low heads is, they shade the ground and keep it moist. During that hot spell last summer, our low-growing trees suffered much less than those that grew erect—indeed, they scarcely felt it.

NOTES ON THE DECEMBER NUMBER.

WITH this number closes the year of 1866—a year, perhaps, of more promise and disappointment than usual; but while we have had, comparatively, a small crop of fruits, yet in many sections they have been better than usual, and we are now commencing winter with all our wood of grape, pear, etc., perfectly matured, and consequently the tree or plant in good condition to endure changes of extremes in temperature, should they come.

Before making my monthly comment on the productions of your correspondents, permit me to say that, although I have monthly read their writings, yet I am, like all mankind, a little forgetful, and not until I opened this number to your list of correspondents did I realize how strong a body-guard you had. Without desiring to flatter you or them, I think I may say no magazine has a more truthful as well as practical list of writers.

Nearly all are conversant in practice with the subjects of which they write, and such writings are just what the country wants, rather than the compilations, readable though they may be, of office authors.

THE ORCHARD.—The writer justly advises good cultivation of orchard trees, and especially young trees. There is, however, a medium to be observed; for if young trees are stimulated too highly, their duration of life is certainly reduced. All trees should grow steadily, healthily, and so that the wood ripens perfectly clear to the tips of the young branches. Two extremes are to be avoided, viz., neglect or poor culture, so that moss, etc., accumulates, and the overgrowth, carrying the tree into late autumn with green, unripe wood at tips, and all of it, perhaps, soft and spongy, with a pith like the elder.

The writer speaks of large orchards (as ten acres), and of the long time requisite to bring an apple orchard into bearing.

Let me advise him to take a trip into Illinois, Indiana, and other Western States, and there see the apple orchards of four to six hundred acres each, and bearing good-paying crops at the expiration of four years from planting. If he wants to see peach orchards, let him go to southern Illinois, or the south shore of Lake Michigan, where he will find the extent even rivaling that of the Delaware Country.

RURAL ARCHITECTURE, No. 19.—This is a pleasing, yet plain design. I like the hoods and the bold casings of the windows, but no diamond panes of glass for me. They may do for a dark old English cottage, but American people like the light.

GRAPES IN KANSAS.—Has not Mr. Burns got a little mixed up in this matter? As I read the views of the Lake Shore Grape-Growers' Association relative to grape disease, it especially applied to the *rot*, and not to mildew.

IVES' SEEDLING GRAPE.—A good illustration. I have seen larger bunches, but as a rule, I think they range below rather than above this representation.

LADIES' EARDROP APPLE.—A curiosity, perhaps, and as such, therefore, well enough to figure it; but certainly no fruit-grower of common sense will cumber his ground with a tree of a fruit that is good for nothing but to look at, when there are plenty of sorts like, for instance, the Lady Apple, which are both beautiful to look at and good to eat.

WILLIS SWEETING.—This is a good baking sweet apple as I know, but I should be unwilling to class it, as Mr. Hicks does, as the "best baking sweet apple known." One thing let me suggest to Mr. Hicks, as well as all other delineators and describers of fruits, and that is a more perfect description. Always, if you can, give us all the particulars of form, color, etc., of the fruit,

and then its history, the character of the soil in which it is known to succeed, the habit of growth of tree, color of wood, etc. These are all points looked at closely by the careful pomologist in deciding him as to what to plant.

STREET SHADES.—The recommendation of the English elm is good. The writer might have added that it is a very free grower; and any person who chooses to visit the grounds of Charles Downing will see trees of it, now only about twenty-five years old, that many have estimated at from sixty to one hundred years. As I notice you are to give us descriptions of other trees, I will not forestall you; but, nevertheless, I will mention the Linden as one that has clean broad foliage, is of rapid growth, and valuable as a country street shade. Some years since it was badly affected with worms, and its foliage denuded early in the season, so that its use was abandoned; but for many years past I have seen no indication of the pest, and again hope to see it planted freely.

MR. NEUBERT AND THE ESSENTIAL OILS AGAINST GRAPEVINE MILDEW.—An explanation for which we are obliged.

RETROSPECTIVE OF THE PAST SEASON.—In most of this retrospect you are correct; but perhaps in saying that the crop of grapes has been good, you have partially erred. True, they have ripened up well, and so has the wood, but the crop has been light, comparatively.

SULPHUR AND ESSENTIAL OILS.—Here Viticola tells us when to use, and we shall be glad to learn the result of trial the coming season; and if the old saying of "an ounce of prevention is worth a pound of cure" is correct, we see not why this may not be the ounce wanted. Let us try it.

LETTER TO HUGH BLANK.—A pleasant letter; but the writer, I think, errs in classing the men who have gardeners, etc., as the "horticultural lighthouses." As a rule, I think it may be said our most enthusiastic horticulturists are those who do not hesitate to graft, bud, and plant with their own hands. I have seen many a zealous horticulturist set his choice trees and grafts personally, even when his gardener stood by. Many a choice fruit and flower of beauty and perfume grace our lists that owe their origin to the labors of the zealous, independent of show, working ruralist, and not to the pretended scientific professional gardener, who learned his art in the employ of the Duke of Cabbage, and can find nothing in this country as they had in "hold Hengland."

SALT AS A REMEDY FOR PEAR BLIGHT.—Thanks, Viticola. My pears are mostly dwarfs; and with the belief that salt is one of the agents to success where the quince root is used, I have used it. I am now thinking of dressing my orchard with bone meal, salt, and plaster—say, to the acre, one bushel of plaster, four bushels of salt, and four bushels of bone meal. What do you think of it?
REUBEN.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

MONTHLY CALENDAR.—We have had several requests to publish a Monthly Calendar of Fruit, Vegetable, and Flower garden operations. We are obliged for any suggestions for the improvement of our journal, but in reply to this we must beg our friends to remember that a monthly calendar would be merely a repetition from year to year, and would occupy space which we hope to be enabled to fill with some new suggestion or notice of tree, fruit, or flower, etc. In our "Table," we intend from time to time to give brief hints of such of the most important items of labor as are requisite in horticultural pursuits, and especially of such as at the time seem to claim a large proportion of interest.

By so doing, we believe we shall better serve the end for which we write, viz., advancement of all the arts of rural life, than to occupy two or more pages with stereotyped monthly calendarial instructions.

HERBEMONT VINEYARD, WARSAW, ILL.,
September 18, 1866.

MESSRS. EDITORS: Since writing the letter on transplanting, published in the September *HORTICULTURIST*, I have been experimenting with strawberry plants, and find that they can be transplanted during the hot mouths of June, July, and August, equally as safely and as well as in spring or fall. From July 1 to August 31 we have had unusually hot and dry weather, even for the Valley of the Mississippi, yet every week I have planted strawberry plants, from twenty to thirty each time. Some of the plants, in fact nearly all, were planted when the soil was as dry as it possibly could be—not a particle of moisture in the

surface soil, and after some of these plantings not a drop of rain fell for four or five weeks—yet they withstood the burning sun, *without protection, without watering, or checking their growth in the least.* I have not lost a single plant up to this time; and those planted first have thrown out runners covering nearly as large a space as the runners of plants set in the spring in the usual way.

I have chosen for my plantings the warmest part of the hot, clear, sunshiny days; and if well set, with plenty of water, the plants never wilt.

In a letter written me by Mr. H. Paddelford, of Carondelet, Mo., who is somewhat celebrated as a grower of small fruits (written since the reception of the September *HORTICULTURIST*), he says: "In July last, during the hottest weather of the season, I set out two thousand (2,000) strawberry plants in the same way as mentioned in your letter, with this difference: that, in place of drawing the dirt into the water, I dropped it gradually around the plant until sufficiently thickened up to hold it firm; then cover with an inch of dry dirt. A drouth prevailed at the time of setting, and continued five or six weeks, yet they withstood the scorching sun without protection, or watering, or in the least checking their growth. I have set out many hundred plants, but none looked as well. I take up a plant, shake the dirt from its roots, and set it out on a hot, scorching day, in the full glare of the sun, without wilting or in the least checking its growth. Few are prepared to believe this; but, nevertheless, it can be done, with the leaves remaining as erect as when standing in their original

bed. This plan, to those largely engaged in transplanting, will prove very valuable—no other will compare with it.”

Such is the testimony of Mr. Paddelford in its favor; and my own experience has proven, beyond a doubt, that any healthy plant, from a strawberry to the largest fruit-tree or evergreen, can in this way be planted, with the doubt of its growing removed from the mind of the planter who has never before set plants or trees in this way. No one who tries it once will ever plant in any other way. Out of thirty-four large evergreens, I planted thirty in this way, and four without water. The thirty are all alive, and have made a good growth; two out of the four are dead, the remaining two made no growth, not even starting to grow. Several persons who had trees out of the same lot have lost nearly all, so have they their fruit-trees, while none of mine have failed to make a large growth. As for the Delaware grapevines spoken of in my letter, transplanted from hot-beds into the open ground in June, I measured some to-day, that we pinched back two weeks ago, that averaged four feet—one had a cane eight feet high; and my Iona and Israella have canes averaging six feet. I will send some specimens to Messrs Woodward, that they may see for themselves. I am anxious that all horticulturists, and all others who have a tree or plant to set out, should try this method, for I know it will prevent much vexation and disappointment.

I would like to say a word for the Iona, Delaware, and Israella, I see so many writing about them. For instance, a writer says, in the *Prairie Farmer*, that his Iona and Israella made a growth of from one to six inches. I wonder what kind of plants he had, or what care he gave them. Another says the Israella is tasteless. Now, I have planted hundreds of each, and no vine is more healthy, hardy, or makes a larger growth than the Iona or Israella, or the Delaware either, at least on my own grounds. This year I have one hundred and fifty Delaware vines bearing for the second time

(third year in vineyard). I have picked and marketed them, and the vines averaged fifteen pounds each of the most perfect fruit. My Iona and Israella vines—this their first season of bearing—gave equally as much fruit. The Iona and Israella vines were a perfect picture of what a grapevine should be—the Iona loaded with its large, compact clusters, of a color peculiar to it alone, something like that of the Delaware, but more clear and pure, reminding one of the pure beauty of some precious stones (I don't know their name, but you get the idea). There is no grape that can compare with the Iona in beauty; then it is large, larger than the Catawba in bunch and berry; and in quality, none can equal it in purity and spirit. The Delaware has a more condensed sweetness, but has not the life. Besides these good qualities, it has, so far as my experience goes, proven to be as productive as any grape I have, not excepting the Concord.

What I have said of the Iona is equally true of the Israella, except that its fruit is black, with a heavy bloom; bunch large though not as large as the Iona; berry very large; the bunch very compact, more so than the Delaware; the quality of its fruit, when perfectly ripe, is excellent; it is very sweet, and free from any fox, or other bad taste; it has all the necessary qualities to make it our best early market grape, ripening here August 5th this year, when the Hartford could not be eaten two weeks later; very compact, so as to pack well; the berries never drop from the bunch; it is of good size in bunch and berry, which is very necessary in a market grape. I have clusters yet remaining on the vines that look as well as they did five weeks ago; and though we have had continued rain from August 31st, which has caused the Delaware and Catawba to crack badly and fall from the bunch, not a berry of the Israella or Iona has cracked or fallen. My experience is, that the Iona and Israella are as hardy as the Concord. Here, all varieties must be covered in winter to secure a crop. Last

winter, young vines of all varieties were killed, so were young apple-trees, hardy evergreens, and roses. That proves nothing, except that we must plant large, strong vines, so as to get them strong enough, and roots deep enough in the ground not to freeze out.

C. J. MAY.

PHILADELPHIA HORTICULTURAL HALL.

—This new building, now in progress of erection, is the largest of the kind in our country, being 75 × 200 feet, and will afford ample room for the displays of the Society. It is in contemplation to introduce a strong body of water into the building for the supply of fountains, cascades, etc. A narrow gallery will extend around three sides of the main hall, enabling visitors to look down upon the entire display. The ladies of the Society will hold a grand bazaar for the sale of floricultural and fancy articles on the 29th of May next, in the new hall, at which time the Society will also hold its spring exhibition of roses, strawberries, etc., the proceeds to be applied to frescoing and otherwise decorating the hall.

THE APRICOT AND NECTARINE are both fruits of great excellence, and we think we may safely say, so little cultivated that hundreds, nay, thousands, of persons, living in the bustle of life, both of town and country, and possessed of knowledge and general intelligence, do not know how they look or taste, never having seen one. The trees of both are as hardy as the peach, and we do not think the blossoms any more liable to be destroyed by late spring frosts. It is true the curculio preys upon them, but no more than he does on the plum; and as the fruit is, if anything, superior, and always commands more price in market, if it will pay to cultivate plums by destroying the curculio, then it certainly will pay to grow apricots and nectarines by using the same means to insure their ripening their fruit.

The practice of growing trees on trellises,

although as a general thing not necessary for fruit-growers in this country, can be adopted profitably with varieties that require the careful watching and management of a true fruit-grower. While many fruits can be, and are, grown by the careless cultivator, he who understands himself should find most money in the cultivation of sorts that require skill, watchfulness, and care to perfect them.

FACTS ABOUT "PEAR BLIGHT."—For twelve years I have been successful in raising pears. Dwarf and Standard never suffered any from "blight." Last year, and some the year before, I manured a piece of ground heavily, on which there were about fifty trees in good condition. The ground was well worked, and this year I had the mortification of seeing two thirds of all those trees taken by the "blight," and nearly all utterly destroyed. Another piece, containing about forty trees in a clover sod, escaped entirely, not a particle of blight on any one of the trees in the sod, and more or less "blight" on nearly all of the trees highly manured and cultivated.

A. F. S.

MOLINE, ILL.

EARLY PEAS.—As soon as the frost is sufficiently out of the ground to enable it to be dug or plowed, it is advisable to prepare for sowing peas. It is not requisite that the soil should be rich, but if deeply stirred and of moderate fertility, the crop will be abundant and long continued. Shallow soils and shallow planting give shallow returns, or, in other words, give dwarf vines, short pods, and but one or two pickings. Of varieties that we have found valuable, "Carter's Extra Early," or "First Crop," matures early and is productive. Ne Plus Ultra, Philadelphia Early, and Prince Albert are all good until "Champion of England" matures, with which we are satisfied, and continue its use by having succession of plantings to come along in due time one after the other.

ROOT-GRAFTING GRAPES.—Some cultivators are of opinion that the tenderness of our native grapevines is more attributable to want of energy in the root, than in the formation of a firm, well-matured vine. If in this there is any truth, then any variety, Allen's Hybrid, Adirondac, etc., may be grown just as successfully, and without protection in any section, as the Clinton, because the roots of the Clinton may be used to grow the other varieties upon by means of grafting. Root-grafting the grape is not a new thing, although when hardihood is increased thereby, one item will have been proved, in which as yet there are unbelievers. Many years since we practiced grafting on pieces of grape-roots in the house during the month of February, and packing them away for out-door planting in spring, in the same manner as with root-grafting of apples. We used pieces of roots from the common wild frost grapes, cut them about four to six inches long, and for our grafts or scions used well-ripened medium-sized wood, one bud to a graft, cutting it one inch above the bud and three inches below; this we inserted in the root; some in the usual way of cleft-grafting, and some by splice-grafting, tying with a strip of waxed cloth.

Late in spring, after the weather became well settled and the soil somewhat warmed, we planted out in the ground, so deep as to just cover the bud of the graft. This was our practice many years since, and we have since seen it repeated many times very successfully.

If roots should afterward start from the stock or graft when transplanted to permanent position in the vineyard, they can be easily taken off by removing the earth six or eight inches deep and using a sharp knife.

EARLY POTATOES.—Almost one of, if not the very first out-door seed planted in spring is the potato. Even before the frost was well out of the ground we have seen planters at work on land that had been

roughly but deeply plowed in the fall. Of the varieties most desirable, there is no question that the White Mexican, or White Neshannock, as some call it, is best in quality, but it is not productive, and therefore to the market grower not profitable. To the person, however, who has land plenty, and wants early potatoes for his own use, there is not its superior, if indeed its equal. In West Jersey they grow a kind called Michigan White Sprout as their earliest sort, and by some it is regarded as a good sort; others object to it. Besides these, there is the Early June, Early Kidney, Cherry Blow, Monitor, etc., all of which, as well as others, have their friends. In planting, it is said that animal manures applied in the hill conduce to a watery character and poor flavor; of its truth we can not vouch, but in poor land we have no doubt of its increasing the crop. Experiments of years in succession have shown that well-ripened but medium-sized tubers planted whole, result in giving the most vigorous character of plant and the most even-sized tubers as the crop. Large potatoes, planted whole, give a few extra large potatoes to each hill, while cut pieces of one or two eyes each do not give at first strong plants, and hence are later in maturing, and too often when mature have too many small and valueless tubers.

MANURING TREES.—Too many, in applying manure to their fruit-trees, forget the position of the roots, and apply within a foot or so of the body. If they were to carefully remove the soil, they would find that trees of vigorous growth, and from seven to ten feet high, have roots, that are really the main sources of nourishment, varying from six to ten feet from the body. The application of manure, therefore, to give the best results, should be distributed around the tree from five to eight feet distant from the trunk. In positions where the turf is desired to be retained, cut and roll it back, put on the manure, fork it in lightly, and then replace the turf.

EARLY TYING UP OF GRAPEVINES ON THE TRELLIS.—If there is anything in the theory, that great injury is often caused by extraction of moisture and evaporation when in contact with continual cold, then it is advisable to leave the vines lying upon the ground until after the cold, drying winds of March have passed. As the season advances, the circulation of sap increases, and in March there is more aqueous matter in the vine than in the month of January, and consequently it is more susceptible to changes of temperature, and is more affected by cold, drying winds; but to what extent injury is caused by continual cold, drying winds at this season, we will not undertake to say. There are those who believe the plant more often injured by the cold, drying winds in March or April than by any extremes of temperature during the regular winter months. Without attempting to prove or disprove the theory, we shall only say that our experience for some years has been in favor of leaving our vines on the ground until quite late in the spring. We have sometimes left them even until after they had bloomed and set their fruit, and once or twice we have thought that we escaped injury from frosts, and from cold, driving rain and sleet storms, by the vines being on the ground, we having plenty of fruit when some of our neighbors, whose vines were neatly and carefully tied up, were destitute.

GRAFTS, to be forwarded by mail, should be first wrapped in oiled silk, having the ends neatly turned over, and the whole tied securely with fine thread; this is to keep them from the air and from drying. Next, wrap the package in soft wool or cotton before placing it in a strong, thick paper envelope, for the purpose of preventing bruising while *in transitu*.

As the season advances, the heat in green-houses may be increased during the daytime, remembering always, that at night it

should be from fifteen to twenty degrees lower than during the middle of the day. With light, warmth is a requisite to healthy growth, but without light, its tendency is to render the plant tender and sickly, with soft, spongy, imperfect wood rather than that of a healthy character.

COPING TO PREVENT MILDEW.—A correspondent suggests that “one feature of action, in working of shelter overhead as a preventive of grape mildew, has not been touched, and that is, radiation of heat. It is well known that a plant radiating to the open sky cools off in half the time that another will when slightly sheltered by the projection of a wall. May there not therefore be more in the retention of heat, and more gradual cooling off produced from the coping shade, than in the prevention of dew? The value of these projections was known more than one hundred years ago, written upon, and practiced.”

THE discussion on Grapes, at the last Ohio Pomological Society's meeting, gave the Iona rather a bad character. Its hardness was doubted, while a tendency to mildew and rot came forward as one of its characters in a majority of the reports. We think the manner in which a majority of the vines have been propagated has much to do with the tendency to disease reported, and believe that when plants are grown only from healthy, well-ripened buds, and have an opportunity to develop the full character of the vine, that it will prove a hardy and valuable grape—not perfection, as has been claimed for it, but one that few cultivators can do without.

WHO KNOWS ABOUT IT?—It was written, some twenty years since, that at Walpole, Mass., a peach had been grown from seed more than forty years without variation in size or quality, any more than if budded. It was called the “*Allen*.” Who knows anything about it?

PLANTS in hot-beds are often destroyed by a too great heat, more especially on a clear, sunny day. Care should be taken to raise the sash, and to let in as much fresh air as possible, consistent with keeping up a requisite degree of heat for plant-growing. If one side of the sash only can be raised, on account of too great cold, let it be the upper side.

PROFITS OF FRUIT.—Each year records are made of private revenues from the growth and sale of fruits. Without reproducing these records of receipts, amounting to from three to five hundred dollars per acre from strawberries; of six to twelve hundred dollars per acre from grapes; of eight to twelve hundred dollars per acre from pears; of two to four hundred for apples, besides innumerable accounts of twenty, thirty, forty, and even eighty, dollars being realized from the fruit of single trees, we will utter one single statement, viz., that where the fruit grown is adapted to the soil and climate, no crop can be grown that will return as large a revenue ten years in succession as fruit. To this, however, we must add, that *fruit-growing is a business*, and will no more take care of itself than the business of the merchant. Both may move on awhile under the labors of employees, but the eye, knowledge, and guidance of the owner must be given from day to day, and month to month, winter and summer, in order to insure successful results. These records of large products, it must be recollected, are mostly from those who have but one or two trees, and who visit, watch, prune, and manure them almost daily, and with as much care as a mother does her children; and he who undertakes fruit-growing, calculating his profits from these records, must expect that his whole time, care, and attention will be devoted to his business. What banker would look for good profits if he only looked at his correspondence and bills of exchange, etc., once in a week or two, leaving the management, meantime, to the care of young and

inexperienced hands? and yet his chances of profits are just as good as those of the fruit-grower who depends upon the management of paid labor. An interest in, a love of, and attention to the business are requisite to profitable fruit-growing; but with such interest, love, and attention, fruit-growing proves, wherever pursued, a profitable and pleasing occupation.

FLOWER-BEDS are much benefited, and the durability of the flowers, together with their brilliancy, much increased where the ground is shaded as it were, or protected by a covering about two inches deep of peat soil, leaf loam, or moss from the woods.

MAKE A MAP.—We think the best way of labeling trees or vines is to make a map of the orchard or vineyard in a book, and then designate the row and number of trees, and position in a row, of each kind. The loss of labels attached to tree or vine is then of little account, as a reference to the book enables one to correct or supply a name at a glance. With the record of the name of the kind, the party from whom received might also be recorded, and then in event of a variety proving incorrect to name, blame would fall on the right person.

Sow none but the best seeds. Keep none but the best stock. Use none but the best tools. Plant none but the best trees or vines.

FOR small door-yards, or spaces of fifteen to twenty feet wide, when planting to improve, use flowering shrubs, of small habits of growth mostly. Occasionally a large-growing shrub or second-class tree may be admitted, but avoid large-growing trees entirely.

THE outlets of surface and under drains should be examined whenever a thaw occurs, and any obstruction that may be, cleared away

EARLY MAY CHERRY.—A writer in the *Rural New Yorker*, reporting the transactions of the Illinois Horticultural Society, says:

“What is known as the May Cherry of the West, or sometimes called Early Richmond, was decided to be a native or American seedling, originating near Richmond, Va., from whom the elder Prince took scions to Long Island, and christened the true Early Richmond, and Downing committed the error of making it a synonym of Kentish. It is supposed that the French cherry Donna Maria may be the same one sent back to us under this new name. At all events, the Society decided to call this cherry ‘Early May,’ and if our French friends lay claim to it, let them prove it.

“This cherry is the only market cherry of much importance in the State, and now stands at the head of the list. It was stated that there was an orchard of six hundred trees in bearing near this city; and that the trees were now heeled-in for one orchard of two thousand trees, and three of one thousand each, besides small lots of fifty and a hundred each.

“It was further decided that the common Morello suckers, or the seedling of the Morello, is the only stock suited to this cherry; that on its own roots it is less productive and ripens later, while on the Mazzard and Mahaleb it was of little value—often being killed by the sudden changes of winter, and liable to lose the crop by early frost. There were some exceptions stated to these positions, but on the whole they were sustained by the facts.”

PRUNING, if correctly understood and practiced, is a useful operation; but if not understood, the operator will be likely to cause injurious rather than beneficial results. The *result* of every application of the knife to tree or vine should be thoroughly appreciated; it is therefore the duty as well as interest of every grower of fruits to acquaint himself perfectly in the knowledge of pruning.

GRAPE CUTTINGS in the propagating-house should now have considerable bottom-heat, keeping the tops, or main temperature of the house, at about forty-five or fifty degrees.

“We religiously hold to the faith, that the pure juice of the grape, the apple, pear, and some other fruits, properly prepared and fermented, refined, and ripened, without the *addition of any* substance whatever, will answer every indication as an exhilarating beverage.”—*Kennicott*.

GRAPEVINES in the early vinery, which now begin to swell their buds, should be frequently syringed, and in other ways a moistened heat maintained. When there is a tendency of the vines to break only at the ends, bend them around until the buds have broken evenly, as they soon will do.

CAMELLIAS in the window or elsewhere, if flowering freely, should have plenty of water, and the foliage frequently washed if they become dusty.

ROSES that are blooming now freely will be greatly benefited by occasional waterings of liquid manure water. See that the foliage is kept clean; and while the plants have plenty of water, do not let them get soggy. If from any neglect your plant has become spindling and weakly in its growth, cut it all away at once down to three or four buds, give less quantity of water, and see well to the drainage.

EARLY WASHINGTON CHERRY.—Who can tell us something of a cherry under this name? It has been described to us as a very early ripening fruit, larger than Early Purple Guigne, but more the form of Black Tartarian.

ROOT-GRAFTING.—Whenever the frost is out so that roots can be dug, it is a good plan for every one who resides in the country to practice a little at root-grafting. Every fruit-book gives instructions how to do the work, and practice now will enable you to perform the operation on plant and tree outside in the garden, as you may desire to do in the opening of spring.

There are a great many things that the amateur grower can increase and improve by means of grafting: all tree peonias can be grafted on roots of herbaceous peonias; two, three, or more varieties of spireas or wigelas can be grown on one bush, and many other things can be done to improve and beautify one's grounds.

STRAWBERRY-GROWING.—While we desire as great an increase of extent in fruit-growing as the most enthusiastic, we also think injury rather than good is done to the cause by isolated and, we may almost say, exaggerated statements of the prices received per quart, and the number of quarts produced to the acre. As a good paying crop near a market town, returning, say, one hundred and fifty to two hundred dollars per acre, strawberries can undoubtedly be depended upon; but that \$800 to \$1,000 can be readily obtained, is one of the statements we do not believe will hold good as a rule, no matter what the cultivation. The young planter, the man just leaving town for the country to grow fruit for a support, has need, before embarking too largely, to weigh well all the statements, and to remember that from the gross receipts there are heavy items to be deducted for preparation of land, cost of plants, labor of planting, hoeing, mulching, picking, marketing, baskets, etc., and also that although as a rule strawberries may be claimed as a sure crop, yet there are seasons when the winter has injured a large number of plants, springs when frosts and cold rains have injured the blossoms, and summers when drought has greatly reduced the promise of a great crop.

As we before said, we are as anxious as the most enthusiastic to see fruit-growing increase, because the health of mankind is benefited by free use thereof; but we do not like to see illusive lights held out, when the real practical truths are in themselves sufficient to induce any reasonable person, with but a shade of love for country life, to engage in its pursuits.

THE GRAPE-GROWING AREA.—A writer in the *Rural New Yorker* estimates the extent of the grape-growing area of our Northern States at one and a half million of acres. He considers all soils as adapted to the purpose, but that it is absolutely necessary for success to have the location where the late spring or early autumn frosts will not destroy the crop.

WHAT FRUITS WILL KEEP BEST IN THE NYCE FRUIT-HOUSE.—Under the patent of Professor Nyce, a number of houses for keeping fruits have been erected, and arrangements made for the erection of more. We have given this patent plan some little attention, and have a suggestion to make to those who are interested. The process, as we are told, is intended to keep the fruit without change; but does it do so? If it does, why is it some fruits decay rapidly when taken from the house and exposed to the air, while others keep almost as well thereafter as they would at their regular season? There is certainly a change taking place all the time, although slowly, and it is the ripening change, or conversion of starch into sugar. Taking this as so—if we are correct—then the fruits best suited to these houses will be found to be those that at maturity have the greatest amount of sugar and the least acid. Thus, the Seckel pear will keep and come out better than Louise Bonne de Jersey, Dana's Hovey better than Vicar of Wakefield. Among grapes, those of a strong aromatic character will be better after keeping and exposure than those of a negative character, as, for instance, Concord will be better than Adirondac, Roger's 15 better than Delaware. There is much that is good in Professor Nyce's house, but we do not consider it perfect. There is another plan soon to be brought out, that, from what we are told of it, will be a step in advance, and so regulated that all fruits can be kept equally good. We have not seen it, but hope soon to do so, and then will make our comments.

GLASS HOUSES.—There is a too general dread of glass structures among our amateur fruit-growers and owners of suburban places, caused, doubtless, by the fussy and complicated rules for their management laid down in most books. A grape-house or orchard-house for peaches, etc., can be just as easily managed as a vine or peach-tree in the open ground, and with an almost certainty in the house of a good crop, because in the house temperature can be controlled, while out of doors it can not. With a house constructed so that ventilation can be had only at the top, there is little fear of any mildew, or other disease, so often destructive to vines in houses constructed with both upper and lower ventilators, and there is no trouble whatever in controlling the temperature. In such houses (in the season of frosts) we have seen months pass without the ventilators being disturbed, the temperature being regulated by that outside. The rules for forming borders of rags, old horses, etc., are all humbug; any good rich soil will grow table grapes; and if any enriching material is required, bone meal or well-rotted manure is all that is necessary. In managing, also, the main point is to keep moisture in connection with heat; and as heated air is an absorbent of moisture, it will extract it from the vine or tree, unless it can be obtained from the soil; the surface, therefore, should never be allowed to become entirely dry during the period of vigorous growth. After the fruit has commenced coloring, if the soil becomes partially dry, it will not be injurious. Some think the flavor of the fruit better with less moisture during the latter part of the ripening season.

DAHLIA IMPERIALIS.—This is a strong growing plant, with somewhat the habit and appearance of the Dahlia, yet quite distinct, that has flowered in various collections the past season. The French description of it is, that it grows to a height of six to ten feet, has graceful foliage, with large, drooping, white, bell-shaped flowers.

Hovey's Magazine describes the flowers as pink or pinkish white, while Mr. Phoenix says they are white, with a purple tinge deepening at base.

It is unquestionably a good starting-point on which to produce a class of valuable flowering plants, but in itself will probably be found to flower too late in the season to be of value north of Philadelphia.

SUFFOLK BEAUTY APPLE.—The *Gardener's Monthly* describes a new apple under the above name as of the "Rambo family," and being $2\frac{1}{2}$ inches wide by 2 deep; oblate, tapering somewhat toward the apex; basin, small and shallow; calyx, small, and mostly colored; stem, cavity medium depth, stem one inch long, slender; color, yellowish white, with a few dark green dots and a little russet near the stem; flesh, white, agreeable sub-acid; season, 10th August to October.

HOUSE PLANTS.—Roses, geraniums, etc., kept in living rooms where the temperature is variable, and where often it is quite dry, are perhaps most affected in their roots, which become too dry or too wet, either of which is extremely injurious. As a preventive cheap and effective, procure pots, say two inches larger than those in which your plants are growing, made with a recurved rim, one and a half inches high, surrounding the hole for drainage at bottom (see figure);



FIG. 30.

Into this set your plant pot, its drainage point resting over the raised rim; then fill all around with finely pulverized charcoal or clean sand, which you can always keep moist, and thus prevent the changes from wet to dry, otherwise almost unavoidable in pots of plants kept in warm rooms.

NEW ROSES.—Every season the foreign journals teem with lists of new roses that are described as “superior,” but when obtained and flowered in our grounds do not fully sustain their published characters. If, however, we get one good one, distinct in flower and free to bloom, out of a dozen new ones, we consider the investment as a good one. The following is a list of such as from the description promise most, viz. :

Clothilde—vigorous, free-flowering, large flowers, white and rose color, or rose and salmon, occasionally exhibiting a mixture of all these colors. A Tea Rose raised from Bougere.

Aurora—same origin as above, with flowers of the Tea Rose and foliage of the Hybrid Perpetuals, flowers large, full *rose aurora*.

From the list of Hybrid Perpetuals we select the following :

Comte Litta—flowers, four inches diameter, large petals, velvety purple shaded with fiery red and bordered with violet.

Jules Calot—bright carmine edged with blush.

Madame George Paul—large, full, imbricated, lively deep rose shaded and edged with blush.

Madame la Comtesse de Turenne—flowers, full, flat ; delicate flesh.

Napoleon III.—flowers in clusters, three to six, bright scarlet with dark slaty violet.

*Alba Carne*a—flowers, medium size, well formed, white tinged with rose.

Charles Verdier—raised from Victor Verdier, flowers large, rose color edged with blush.

Comtesse de Valliere—medium-size flowers, deep violet purple shaded with a blackish hue.

BRONX PEAR.—This is claimed as a new seedling, originating with James P. Swain, of Bronxville, in 1850, and described as follows in the *American Agriculturist* :

Tree, an upright grower, pyramidal ; wood, reddish brown ; regular and abundant bearer ; fruit, medium, obovate pyriform,

thickly sprinkled with russet dots, which frequently run together and form patches of russet, especially near the stem and calyx, where the skin is often completely russeted ; stem, 1½ inches long, moderately stout, and enlarged at its insertion, which is usually in a well-marked, uneven cavity, though in some specimens, where the form approaches to turbinate, the cavity is wanting ; calyx, open, with short segments set in a slight and obscurely furrowed basin ; flesh, yellowish white, slightly coarse grained, very juicy and melting, sweet and rich, with a delicate perfume ; season, first to middle of September.

A CULTIVATOR of the Grape, writing twenty-two years since, says that “Norton’s Seedling, at five years old, gave him two and three quarter bushels of grapes.”

DRESS asparagus beds freely this month with salt and about two inches deep of well-rotted manure, to be lightly forked in as soon as the frost permits working the ground.

THE name of **Grimes’ Golden Pippin* apple was changed, by the Ohio Pomological Society at its last meeting, to that of *Grimes’ Golden*.

SAVE THE WASTE BONES.—There is in almost every family a daily waste of bones, that if saved and applied to the roots of the pear-trees and grapevines in the garden, would supply yearly sufficient manure for one hundred plants.

We have seen the roots of a pear-tree turn from a two-third radius of the circle to embrace and feed upon a few bones that were buried on one side of the tree. Hoare, in his “Treatise on the Vine,” gives an account of the roots of a vine passing through dry clay to reach a bone, giving out no lateral or fibrous roots until it reached the bone, but when there, sent out numerous fibers, perfectly embracing and covering it.

FOR WHOM DO WE WRITE?—Recently, on reading over again “Our Farm of Four Acres,” we were amused at the accounts there given of learning how to make butter, in which the writer says, that entirely without knowledge of the first practical working, they gathered together various books for the purpose of learning; and that one author told them “the butter must be washed and well cleansed,” another that “it must be beat on a board and not worked with the hands,” but not one gave the practical minutiae of how to get the butter from the cream. Turning from this work to a recently published article in the Agricultural Department Report, we found information of “how to bud” consisted in telling us that “the operation is simple, an expert hand setting as many as two thousand in a day,” and further, that “the bud is cut about one inch in length, the eye being in the middle.” Turning to a friend who sat by us at the time, and who is a perfect novice in all relating to practical country life, we handed him the book and asked him if he thought he could bud a tree from that description. The reply was, he “could make nothing of it.” This set us thinking and reviewing, with a conclusion that far too many writers word their matter in such manner as to be only understood by the initiated, and who having no need of such writing rarely read it. At the risk of being criticised, we will venture therefore to say that every writer who attempts to instruct in any horticultural operation that is principally if not wholly mechanical, should remember that the reader for whose benefit he writes is utterly ignorant of the first movements, and that it is almost impossible to be too minute in giving directions for performing the work. Strange as it may appear to the person who has all his life been engaged in horticultural pursuits, and who understands fully every item, there are hundreds, nay, thousands of readers and new beginners to whom the terms “head in,” “shorten back,” “pinch the laterals,” “heel in,” etc., are as so much Greek,

no more understood than the Rule of Three in arithmetic is by the child who has but just mastered the alphabet.

GRAPE CUTTINGS.—Many persons have a few grape cuttings which they wish to propagate. A good way is to trim them this month, February, cut them up into cuttings, each having two buds. Make the cut at the lower bud just at its base, not too close or so as to cut the bud, but yet as near as may be without injury, and square across the wood; above the upper bud make the cut sloping, and about two inches therefrom.



FIG. 31.

Now procure a box of a size to hold all the cuttings, and also some clean, white building sand. Spread a coat of sand about an inch deep in the bottom of the box, then lay in a layer of the cuttings, and then fill the interstices and cover them with the sand; again lay cuttings, and then sand, and so continue until all are laid in and covered. Now set the box away in a dark place in the cellar, where it will be neither dry nor wet, but where the sand will keep all the time moist; and at planting-time, say the month of May, the cuttings will nearly all be found to have callused, as the term is, that is, the lower ends will have a mass of little, white, globular excrescences that are the germs of roots. Cuttings made in this way are for planting out in the open ground. Those who have hot-bed frames in which to grow them may form the cuttings of one eye only, cutting one inch above and one inch below the bud for each, and packing away same as above.

NEW JERSEY STATE AGRICULTURAL SOCIETY.—This Society held its annual meeting in the State House at Trenton, January 16. The President, General N. N. Halsted, occupied the chair. His annual address was concise, pithy, and to the point. The President paid a well-deserved tribute to the State Geologist, Prof. Cook, for his valuable reports on the agricultural resources of the State.

The following is a list of officers elected for the ensuing year:

OFFICERS.

President, N. N. Halsted; *Vice-President*, J. C. Deacon; *Corresponding Secretary*, R. S. Swords; *Recording Secretary*, W. M. Force; *Treasurer*, B. Haines.

DIRECTORS.

Essex, Stephen H. Condict, John Boylan, W. A. Brintzinghoffer, Geo. R. Dunn, Jno. H. Meeker, Nehemiah Perry; *Union*, Amos Clark, Jr., Josiah O. Stearns, Jno. M. Pruden, David D. Buchanan; *Sussex*, Jno. Rutherford; *Passaic*, Martin J. Ryerson; *Bergen*, Francis W. Woodward; *Somerset*, J. V. D. Hoagland; *Middlesex*, Isaac S. Buckalew; *Monmouth*, N. S. Rue; *Salem*, B. Acton; *Hudson*, W. H. McClear; *Mercer*, G. J. Campbell; *At Large*, I. R. Cornell.

The report of the Treasurer (Benjamin Haines) shows that the finances of the Society are in a hearty condition. There is a balance in the treasury of over \$700.

Col. Swords, the newly elected Corresponding Secretary, deserves much praise for his untiring labors for the past two years in promoting the interests of the Society. The report of the Executive Committee was carefully prepared, and contained many valuable suggestions, which I hope will be put in practice by those members of the Society who were present. The Committee in their report dwell at considerable length on the insects that are injurious to fruit in the State, and in this connection commend Dr. Trimble's labors in the highest terms, and urge him to continue his researches—among the insects. Prof. Cook, State Geologist, made some interest-

ing remarks on the mineral wealth of the State, also on the value of marl as a fertilizer.

P. T. Quinn made some remarks on fruit culture in New Jersey, and urged prompt action of the Society to collect and publish such information as would guide the fruit-grower in his labors.

It was resolved that Mr. Quinn be requested to read before the Society at its next meeting a paper on the culture of fruits, and the adaptability of the different sections of the State to the growth of the various kinds.

Dr. I. P. Trimble, David Ayers, and P. T. Quinn were appointed a committee to memorialize the Legislature to pass a law to sell vegetables by weight instead of measure. It was decided to locate permanent grounds near Newark.

"NEW JERSEY."

THE artist-farmer of Edgewood, Donald G. Mitchell, whose charming "Farm at Edgewood," and "Wet-Weather Days," as well as his actual work on his own estate, have proven him master alike of the poetry, the science, and the practicalities of rural life, is preparing now a volume on landscape gardening and rural embellishment generally. Nothing could be more timely, or surer of warm welcome, as no one is so well fitted for the work as Mr. Mitchell. And if, as we hear, he proposes to offer his services to those wanting special suggestions and plans for the selection and development of private home grounds, and the management of model farms, he will at once, we are sure, become the new Downing of America, and something more. What we need in this country is to learn how to marry taste with profit in rural life, to have elegant country homes and conduct farm estates with an eye to neatness and beauty, without an annual impoverishing of our purses; and Mr. Mitchell has shown, both by his example at New Haven, and his rural writings, that this can be done. The secret is too valuable to be kept to himself.

SEEDLINGS AND GRAFTED TREES.—In an account of the farm of W. C. Flagg, of Alton, Ill., published in the *Farmer's Advertiser*, an examination of the apple orchard was made after forty years from the date of its planting, the result showing forty per cent. of seedlings and grafted trees living, there being no difference in longevity. Pryor's Red, Kirkbridge White, and Newtown Pippin were the three sorts of which the largest percentage was alive.

TOMATO SEEDS.—We shall feel obliged for a few seeds each of any new variety that our friends have grown and consider valuable. We propose testing, side by side, every obtainable variety the coming season.

TWO WAYS OF GROWING ASPARAGUS.—Among our many asparagus-growing acquaintance there are two who are side-by-side neighbors, and who both grow large and succulent asparagus of the very finest appearance, and yet whose practices are so at variance that we consider them worth record. The one forms his asparagus-bed by digging a deep trench, say one foot deep and about eighteen inches wide; into the bottom of this he deposits a coating of well-rotted manure, forks it into the soil, and then sets his plants, covering from the side soil. From year to year he adds soil from that thrown out, until the whole has come to a level, when he again forms new beds.

The other practices as follows: He turns over a piece of rich sward, on which he builds twelve to fifteen inches deep of compost, composed of well-rotted manure, muck, and rich virgin loam, and on top of this bed he sets his plants.

THE common periwinkle—*Vinca*, the English Ivy—*Hedera*, and the Evergreen Honeysuckles—*Caprifolium sempervirens* and *flexerosum*, are all good plants to grow as trailers covering the ground under trees where the foliage is too dense for grass to flourish.

HARDINESS OF SWEET-APPLE TREES.—It has been frequently stated that, as a class, trees bearing sweet apples are more hardy than those producing acid or even mild sub-acid fruit. We should like to hear of this from some of our Western fruit-growers.

DWARF PEAR-TREES.—A writer in the *Kansas Farmer* says he practices transplanting his dwarf pear-trees every other autumn, that it adds to their vigor and causes them to bear earlier. He thinks the Bartlett and Doyenne d'Ete do not agree well with the quince, and should be grown on pear roots.

DIED.—Dr. Von Siebold, to whom we owe the introduction of many fine plants from Japan, died in October last, at the age of seventy-one years.

BOOK NOTICES.

THE AMERICAN GARDENER'S ASSISTANT. By Thomas Bridgeman. New edition, revised by S. Edwards Todd. New York: William Wood & Co., 61 Walker Street. Price, \$2 50.

We are pleased to see a new edition of this old and valuable work. It is now many years since we first conned its pages and recommended it to all inexperienced in garden or orchard culture as a work full of plain, practical instruction. The revised edition contains all the old matter, perhaps a little more systematically arranged, together with numerous illustrations. We take the liberty of suggesting to the revisory editor, that although illustrations are valuable, they are more so when accompanied by descriptions, and we should also remind him that in varieties of plants and fruits there has been considerable progress in the past twenty-five years, and that if he will inquire of any good, practical, commonly well-informed man, he will find he has retained in this book descriptions of varieties now discarded, and omitted any notice of many well-known popular sorts.

THE
HORTICULTURIST.

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A TALK ABOUT PORCHES.

BY THE AUTHOR OF "MY FARM OF EDGEWOOD."

A COUNTRY house without a porch is like a man without an eyebrow; it gives expression, and gives expression where you most want it. The least office of a porch is that of affording protection against the rain-beat and the sun-beat. It is an interpreter of character; it humanizes bald walls and windows; it emphasizes architectural tone; it gives hint of hospitality; it is a hand stretched out (figuratively and lumberingly, often) from the world within to the world without.

At a church door even, a porch seems to me to be a blessed thing, and a most worthy and patent demonstration of the overflowing Christian charity, and of the wish to give shelter. Of all the images of wayside country churches which stay in my mind, those hang most persistently and agreeably, which show their jutting, defensive rooflets to keep the brunt of the storm from the church-goer while he yet fingers at the latch of entrance.

I doubt if there be not something beguiling in a porch over the door of a country shop—something that relieves the odium of bargaining, and imbues even the small grocer with a flavor of cheap hospitalities.

The verandas (which is but a long translation of porch) that stretch along the great river front of the Bellevue Hospital diffuse somehow a gladsome cheer over that prodigious caravansery of the sick; and I never see the poor creatures in their bandaged heads and their flannel gowns enjoying their convalescence in the sunshine of those exterior corridors, but I reckon the old corridors for as much as the young doctors, in bringing them from convalescence into strength, and a new fight with the bedevils of the world.

What shall we say, too, of inn porches? Does anybody doubt their fitness? Is there any question of the fact—with any person of reasonably imaginative mood—that Falstaff and Nym and Bardolph, and the rest, once lolled upon the benches of the porch that overhung the door of the Boar's Head Tavern, Eastcheap? Any question about a porch, and a generous one, at the Taberd, Southwark—presided over by that wonderful host who so quickened the storytelling humors of the Canterbury pilgrims of Master Chaucer?

Then again, in our time, if one were to peel away the verandas and the exterior

corridors from our vast watering-place hostelries, what an arid baldness of wall and of character would be left! All sentiment, all glowing memories, all the music of girlish foot-falls, all echoes of laughter and banter, and rollicking mirth, and tenderly uttered vows would be gone.

King David, when he gave out to his son Solomon the designs for the building of the Temple, included among the very first of them (1 Chronicles xxviii. 11) the "pattern of a porch." It is not, however, of porches of shittim-wood and of gold that I mean to talk in this paper—nor even of those elaborate architectural features which will belong of necessity to the entrance-way of every complete study of a country house. I plead only for some little mantling hood about every exterior door-way, however humble.

There are hundreds of naked, vulgar-looking dwellings, scattered up and down our country high-roads, which only need a little deft and adroit adaptation of the hospitable feature, which I have made the subject of this paper, to assume an air of modest grace, in place of the present indecorous exposure of a wanton.

But let no one suppose that porch-building, as applied to the homely lines of a staid old house of thirty or fifty years since, can be safely given over to the judgment of our present ambitious carpenters. Ten to one, they will equip a barren simplicity with an odious tawdriness. A town-bred girl will slip into the millinery bedizenment of the town haberdasher without making show of any odious incongruity; but let some buxom, round-cheeked, stout-ankled lass of the back country adopt the same, and we laugh at the enormity. In the same way, every man of a discerning taste must smile derisively at the adornment of an unpretentious farm-house with the startling decorative features of the shop joinery of the day—the endless scroll-work (done cheaply, by new methods of machine sawing)—the portentous molding—the arches, whose outlines are from Byzantium or the new Louvre—columns whose proportions are

improved from the Greeks—capitals whose fretting sculpture outranks the acanthus! Seriously, I think the carpenters, if left to their own efflorescence, nowadays, can outmatch Demorest or any of the wide-hooped milliners. We seem to have drifted into an epoch of the largest and crudest flamboyance—in morals, in brokerage, in carpentry, in (may I not say?) congressional eloquence. A sober, simple-minded man is worse than lost in this brood of improvers. Why measure things by what they are really good for, when the larger part of the world measures them only by what they seem to be good for?

Notwithstanding all this, I venture to plead for a wholesome severity of taste; if simple material is to be dealt with, it should be dealt with simply. If we have a homely old-style house to modify and render attractive, do not let us make its modification a mockery by the blazon of Chinese scroll-work. There is a way of dealing with what is old, in keeping with what is old, and of dealing with what is homely, in keeping with what is homely. A sensible middle-aged lady of the old school, if she have occasion to present herself afresh in society, and assert her prerogatives once more, will not surely do so by tying tow-bags at the back of her head and widening her skirts indecorously. But she will bring her old manner with her, and so equip the old manner by the devices of a judicious art that we shall wonder and admire in spite of ourselves.

In illustration of my views about homely porches, I venture to give a rough drawing of one of the plainest conceivable. (No. 32.) A sort of cross between the Dutch stoop and the lumbering rooflet which in old times overhung many a doorway of a New England farm-house. It offers shelter and rest; it is no way pretentious; it declares its character at a glance; you can not laugh at it for any air of assumption that it carries; you can find no such shapen thing in any of the architectural books. What then? Must it needs be condemned for this reason?

I do not, indeed, commend it for any beauty, *per se*, but as being an honest, well-intended shelter and resting-place, which



FIG. 32.

could be grafted upon many an old-style farm-house, with bare door, and set off its barrenness, with quaint, simple lines of hospitality, that would add more to the real effect of the home than a cumbrous series of joiner's arches of tenfold its cost. In the door itself I have dropped a hint of many an old door which confronts the high-road in a score of New England villages. People do not instruct their carpenters to build such doors now; yet I can conceive of worse ones, glazed up and down, with blue and yellow and green glass, in most irritating conjunction. I do not know that I would absolutely advise the building of those ancient divided doors with their diamond "lights;" but wherever they show their quaint faces, looking out tranquilly upon the clash and turmoil of our latter half of the century, I would certainly cherish them; or if I hung a porch over them, it would be such a one as should be in keeping with their quaintness, and yet offer all promise—which a sensible porch should offer—of shelter and rest. There is a village I never pass through but I ache to clap over one or more of its old-time doors (now battling, without vestige of rooflet, with sun and rain), some such quaint, overhanging beacon of hospitality

as I have pictured; I am sure the houses would take on a double homeliness, and I should think of all the inmates as growing thenceforth, every day, more kindly, and every day mellowed in their charities.

I next give (No. 33) a little stone porch which, if I do not mistake, is taken from some stone cottage in Cumberland County, England. It belongs, certainly, by its whole air and by its arrangement, to a country where stones of good, straight-splitting quality (such as gneiss) are plentiful, and are used for unpretending cottage architecture. It would seem to have pertained to a house of very modest character, and to one whose position and exposure demanded special shelter. I think it may offer a hint, at least, of the proper use of similar material in our country. We have not half learned yet all that may be accomplished in domestic architecture, with the wealth of stones scattered over our fields. Dear lumber is teaching us somewhat; but necessity will presently teach us more. The great cost of mason work is in the way of any present large use of stone for building purposes, least of all such purpose as a cottage porch. But with straight-cleaving stone at hand, such a porch as I have drawn could be put together, with all its real effect (though not perhaps a great nicety), by common wall-layers; and it is for this reason I have introduced it, hoping that



FIG. 33.

some intelligent proprietor who is in the neighborhood of quarries will put his hands to the task of imitation.

I give still another design (No. 34), copied rudely from an actual porch at Ambleside (Westmoreland); it was shading the door,



FIG. 34.

some fifteen years since, of a village curate. There were vines clambering over it, which I have omitted, in order to give full idea of the simplicity of its construction. I know it is the way of the grand architects to sneer at all rustic work as child's play; but I can not see the pertinence of their sneers; it is quite true that rustic work will not last forever—neither will we; householders and architects, and all the rest of us, have the worms gnawing at our vitals, and the bark falling away, and the end coming swift. But a good, stanch tree trunk, cut in its best season (late autumn), is a very tolerable sort of God's work, and, seems to me, can be put to very picturesque uses. I don't think the curate's porch is a bad one; as a hint for better ones, I think it is specially good.

Upon the question of the use of right material for rustic work, there is very much to be said; here, I have only space for a suggestion or two. There are some trees which hold their bark wonderfully well; of such is the saffras, which after its

tenth year takes on a picturesque roughness and a rhinoceros-like thickness of skin, which admirably fits it for rustic use. The white ash, assuming after fifteen years a similar thickness of outer covering, holds its coat with almost equal tenacity. The ordinary "pig-nut" hickory holds its bark well; the oak does not; neither does the chestnut. The cedar is perhaps most commonly employed for rustic decoration; cut in the proper season, and due precaution being taken, by coating of oil or varnish, against the ravages of the grubs (which have an uncommon appetite for the sapwood of cedar), it may hold its shaggy epidermis for a long time. I would suggest to those using it for architectural purposes a wash of crude petroleum; it is a wash that, so far as I know, is proof against the appetite of all insects. Its objectionable odor soon passes away. Very many of the smooth-barked trees, such as beech, birch, maple, and sycamore, will hold their bark firmly if precautions be taken to exclude the air by varnishing the ends and all such cuts as have been made by the excision of a limb. Old and slow-growing wood will, it must be observed, have less shrinkage, and maintain a better bark surface, than young saplings or trees of rapid growth. But, irrespective of all questions of durability, is there not something rurally attractive in this unpretending porch, whose columns have come from the forest, and whose overarching arms are the arms that overarch God's temples of the wood? Not lacking, surely, some elements of the beautiful in itself; and at the door of a village clergyman, with the ivy showing its glossy leaflets in wealthy labyrinth, and the convolvulus twining up at the base upon whatever vine-hold may offer, and handing out its purple chalices to catch the dews of the morning—is there nothing to be emulated in this? Let those who love God's simplest graces, answer.

DROPING DECIDUOUS TREES.

WITHIN a few years the popular taste has been largely turned to the introduction of drooping trees as objects of graceful beauty, harmonizing with the smoothness and verdure of a lawn, or the high keeping and neatness of a pleasure-garden. Indeed, to such an extent has this taste prevailed, that the very object aimed at in their introduction has been often defeated by a too free use of them, as well as by their arrangement in masses, when their side branches—which are their peculiar beauty—are intermingled or hidden entirely, and their too heedless distribution on all sides.

Drooping trees, like water fountains, are dangerous in the hands of those who attempt their use in the decoration of grounds without possessing a considerable knowledge and good taste in the composition of a landscape. Gracefulness and elegance being the prominent characteristics of drooping trees, they are shown to best advantage either singly or in wide yet tasteful groups, on lawns or borders, where symmetrical art, rather than the natural picturesque, is sought to be embodied as the leading feature. Where bold expression is desired, they are entirely unfitted, and when planted mixed indiscriminately with those of upright, round-headed forms, their individual character is lost. Placed on the borders of groups, at sufficient distance to enable them to exhibit their peculiar habits and develop freely their forms, many of the drooping trees may be used effectively, provided the group of which they form a part is composed of trees with similar pensile, although not so distinct, habits of foliage or spray, as exhibited in the American Elm, Black Birch, or Wild Cherry.

For planting on the borders of ponds, or streams of running water, or as symbols of sympathy between the living and the dead in cemeteries, they are all valuable;

and with judicious knowledge of their expansion in growth, to arrange them on lots or in positions suitable to their future lives, they can not be too much used.

With these few remarks on the use of trees pendent in their habits of growth, considering the popular taste and demand for them, we can not perhaps better serve the wants of our readers than by briefly describing some of the most desirable varieties.



FIG. 35.—*European Weeping Ash.*

THE EUROPEAN WEEPING ASH. *Fraxinus excelsior pendula.*—This is one of the oldest varieties of weeping trees known, and more extensively planted than any. It was discovered about the middle of the last century, growing in a field in England. The branches are stiff, and can not be called graceful in their downward curves; but its clean, glossy foliage and its very rapid growth render it one of the most valuable, especially for forming arbors.

THE GOLD-BARKED WEEPING ASH. *Aurea pendula.*—This is a singular variety, because of its bright, golden-yellow bark,

which gives it a striking appearance when devoid of foliage. In growth and habit it is similar to the last-named.

THE LENTISCUS-LEAVED WEEPING ASH. *Lentiscifolia pendula*.—A tree of later introduction than the two preceding. Equally rapid in its growth, but with branches more slender and graceful. It is much the most beautiful in appearance, but in some locations is not perfectly hardy, losing occasional branches, which destroy its symmetry. There are two other varieties of Weeping Ash, viz., the Gold-Striped Bark Weeping, with variegated foliage, and the Weeping Black, with very dark-green foliage. We have never seen either of them of any size, and therefore can not speak of their values.

THE WEEPING BEECH. *Fagus pendula*.—This we consider the king of all the drooping trees. It is perfectly hardy, grows freely and rapidly in almost any soil, and forms one of the most graceful and picturesque yet unique trees. Its branches are thrown out irregularly, while its spray is long, descending almost perpendicularly downward. For creating a distinct, strongly-marked, and attractive



FIG. 36.—Weeping Beech.

feature for universal admiration on the skirts of a lawn, it has no superior.

THE EUROPEAN WEEPING BIRCH. *Betula pendula*.—A tree of rapid, upright,

spreading growth, that while young exhibits very little of a drooping habit, and even when old is not marked as a weeper, like many others. It is, however, very



FIG. 37.—Cut-Leaved Weeping Birch.

graceful, and as it increases in years presents more and more of the pensile features that, combined with its delicate foliage, make it a charming tree for grouping with others of a like slender spray and airy foliage.

THE CUT-LEAVED WEEPING BIRCH. *Betula lasiniata pendula*.—An elegant, erect tree, similar to the preceding, but with more slender drooping branches, and with delicately cut leaves, that attract and please every observer.

THE EVER-FLOWERING WEEPING CHERRY. *Cerasus semper florens*.—This is of comparatively recent introduction, and forms a charming tree of a decided drooping habit, and producing a succession of flowers and fruit all the season.

THE DWARF WEEPING CHERRY. *Cerasus pumila*.—For small grounds, points on the outskirts of a group, or other positions

where a limited space only can be allowed, this is one of the prettiest of weepers. Its



FIG. 38.—*Dwarf Weeping Cherry.*

branches are slender and decidedly drooping, growing freely, and forming a charmingly graceful little round head.

THE SCOTCH WEEPING ELM. *Ulmus montana pendula*.—The habit of this variety of Weeping Elm is very irregular, sometimes spreading its branches fan-like, at others drooping them almost perpendicularly downward. It is a tree of rapid growth, with an abundance of coarse, heavy, dark foliage, that is suitable for positions where it can have abundance of room, and where it will be viewed at some little distance. This is the variety generally found in the nurseries; but there are two varieties of more recent introduction, which

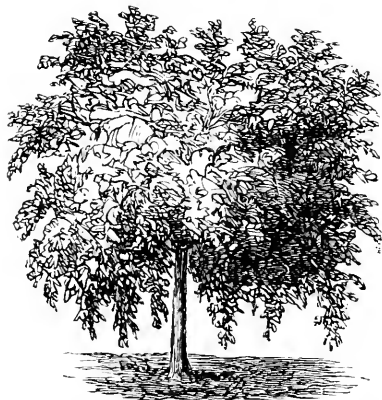


FIG. 39.—*Scampston Weeping Elm.*

we consider superior in growth, as they certainly are in symmetry of form.

One of these, the SCAMPSTON, droops its branches very distinctly and regularly, giving the tree a symmetrical form, almost as regular as if it had been trained, trimmed, and tied from time to time by the hands of a skillful gardener. The other variety is called the CAMPERDOWN, and differs from the Scampston in its branches, having a less tendency to regular drooping, and its foliage not being quite as abundant.

There are also two varieties, called the Rough-leaved Weeping and the Hertford-

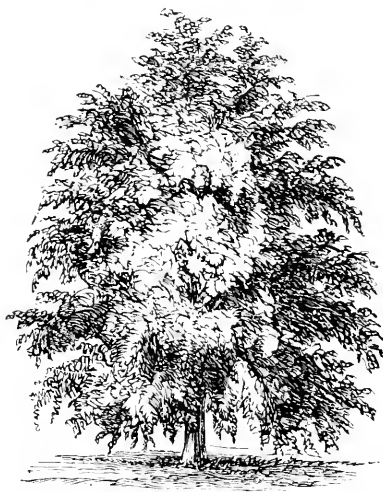


FIG. 40.—*White-Leaved Weeping Linden.*

shire Weeping, that are not counted as desirable as those previously named. There is also one called the Small-leaved Weeping, which is said to be very pretty and distinct.

THE WHITE-LEAVED WEEPING LINDEN. *Tilia alba pendula*.—Although a tree of slender drooping shoots, it is not a weeper after the style of the Weeping Willow; but, like the Birch, as it increases in years, it exhibits a drooping habit, that combined with the silvery character given to its foliage when stirred by the breeze, by their white under-surface, makes it one of the most attractive and graceful of lawn trees. It is of rapid growth, and deserves to be planted in every place of any extent.

THE WEEPING MOUNTAIN ASH, *Pyrus aucuparia pendula*. This is a rapid growing, beautiful variety of the Mountain Ash. Its long, pendulous branches, with their

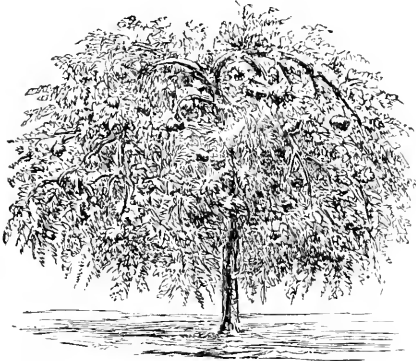


FIG. 41.—Weeping Mountain Ash.

white flowers in spring, and red berries thereafter, make it very beautiful and attractive. Those who plant it should, however, remember that it is extremely liable to be attacked by the borer, and unless closely watched, the tree will be found destroyed ere the owner is aware.

THE WEEPING POPLAR. *Populus tremulus pendula*.—One of the most rapid growing of all the weepers, and while young, its decidedly pendulous branches, neat and pretty foliage, make it especially desirable. As it increases in years, however, it puts on more of an erect habit, until at times its upper limbs present very small indications of a weeping habit. For large grounds, or groups of weepers, or as a tree to plant a little back from the margin of lakes or large ponds, it is desirable; but for small grounds, or for cemetery lots, where we have of late occasionally seen it planted, it will not prove as satisfactory and pleasing as many others.

THE WEEPING SOPHORA. *Sophora Japonica pendula*.—The smooth, dark-green, and very pendulous branches, together with its pinnate leaves, give to this tree a very elegant appearance. It is a rapid grower, but does not form a very large or spreading

head, and is therefore an admirable tree for grounds or positions of limited extent. Although we occasionally find trees of it that have stood the winters of years perfectly in our Northern States, yet it is unfortunately a little liable to be injured by extremes of temperature, and probably from this cause has not been as extensively planted as its beauty would seem to merit. Where it can be grown perfectly free from winter's injury, it may be counted as one of a choice collection.

THE WEEPING WILLOW. *Salix Babylonica*.—Our old, common, and well-known Weeping Willow, like too many other trees that are familiar to all, yet deserves the attention of every planter of weeping trees. It may be that because we have so often watched the willow droop and dip its branches in the water of some stream or lake, seeming as it were to sympathize with and kiss the sparkling drops that it disturbed as the gentle winds swayed its tresses of light and elegant foliage, we have come to love it, and regard no water landscape as complete without the graceful flowing lines of the old Babylonian Willow. From long usage it has come to be associated with either water or the sadness of life—in the one case indicative of a marshy region or stream of water, in the other of the last resting-place of friends once on

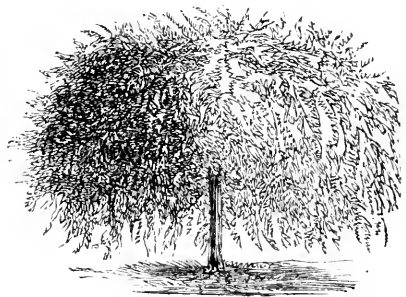


FIG. 42.—American, or Fountain Willow.

earth. Beautiful as it is in itself, however, these very associations preclude its introduction into almost any suburban or even

extended country place. By the side of a spring at the foot of a hill, or bordering a stream where crossed by a bridge, or in large grounds, shading almost entirely from view the under-gardener's house, are some of the places where its position produces a satisfactory effect; but if planted near where art and architecture have combined to give a tone of grandeur and magnificence, its form of outline and waving spray seem rather to weaken than add to the appearance of cultivation and refinement.

THE AMERICAN, OR FOUNTAIN WILLOW. *Salix Americana pendula*.—A variety with very slender, graceful branches, which droop perpendicularly, like so many cords, that, taken with its light and comparatively sparse foliage, form for it one of the most airy and pleasing weepers in the whole list. It is admirably adapted for planting upon small lots in cemeteries.

THE KILMARNOCK WILLOW. *Salix caprea pendula*.—With this tree we shall close our present record of weepers. We know of no one weeping tree that in the same length of time has become so universally known and so extensively planted. Its foliage, large, glossy, and abundant, its pendulous, close, and regular habit, with its brown colored branches, that are almost hidden

within its foliage, render it one of the most distinctive as well as graceful trees that have been for many years added to our collections. It is perfectly hardy, and almost

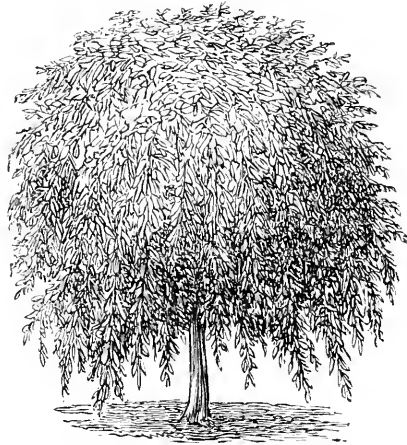


FIG. 43.—Kilmarnock Willow.

unlike anything else, seems to adapt itself to almost any position, whether as a point tree to define a road, a specimen of beauty and attraction on a small lawn or garden plot, or as an outline to some more aspiring tree of a similar drooping caste.



DESIGNS IN RURAL ARCHITECTURE.—No. 20.

BY G. E. HARNEY, ARCHITECT, COLD SPRING, N. Y.

THIS design was built about two years ago, and is now owned and occupied by P. K. Paulding, Esq., of Cold Spring.

It is built of wood, filled in with brick, and roofed with slate. It has a fine cellar underneath, containing laundry, store-rooms, wine-room, and coal and wood bins; is warmed throughout by one of Boynton's base burning furnaces, having in addition open fire-places for wood in every room; is supplied with range and plumbing, with

hot and cold water in the bathing-room; and contains in all fifteen rooms, as follows:

Nos. 1 and 2—The hall, extending through the building from front to rear, and opening, at the farther end, by French windows, upon a wide veranda which commands an extensive view of the Hudson River and the surrounding mountains.

No. 3—Parlor, sixteen feet by eighteen, exclusive of the bay window which was more recently built, and which adds much

to the appearance and convenience of the room.

No. 4—Library, twelve by sixteen, sur-

rounded by fixed book-cases, and communicating with the parlor and the front hall.

No. 5—Dining-room, fifteen by sixteen,



FIG. 44.—*Villa at Cold Spring, N. Y.*

exclusive of a bay window which projects about five feet from the room, and around which the western veranda extends.

No. 6—A staircase hall, containing stairs to the chambers and to the cellar—shut off

from the main hall by a door, and having easy communication with the kitchen.

No. 7—A gallery or terrace, opening from the entrance hall by French windows.

No. 8—A butler's pantry, connecting the

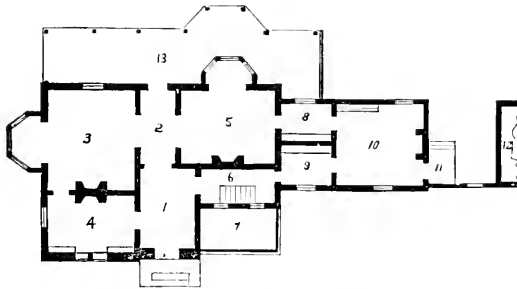


FIG. 45.—*Ground Plan.*

kitchen with the dining-room, and fitted up with cupboards, etc.

No. 10—The kitchen, fifteen feet square—opening out into the yard by a stoop, No. 11.

No. 12—A small wood-shed for storing wood, etc. It was found, after the house had been occupied for some time, that the kitchen accommodation was somewhat limited, and, quite recently, the small building

before used as a wood-shed has been joined to the kitchen wing, and now serves the purpose of an outer kitchen and servants' hall. Connecting with it is another building, recently added, which is used as a wood and coal shed, etc.

The second floor contains four good-sized chambers in the main portion, and a bathing-room, a large dressing-room, and a large wardrobe in the kitchen wing, besides a good number of closets. The attic has three chambers, and a large open space for trunks, etc.

An important feature of the house is a large ventilator on the peak of the roof—having sashes in its four sides which can

be opened or shut at pleasure by means of ropes and pulleys. When any or all the sashes are opened, a thorough circulation of air is produced in all parts of the house; and in summer particularly—even during the hottest weather, when the doors and windows of the lower stories were kept open—an agreeable current was maintained at all times.

The first story is ten feet high, and the second nine feet.

The wood work throughout—with the exception of the parlor, which is painted in tints—is stained light, with dark moldings, and the walls of all the rooms of the lower story are painted in oil in different tints.



TWO NEW GRAPES.

LONGWORTH GRAPE.—The report of the Ohio Pomological Society's meeting, as published by the Secretary in the *Ohio Farmer*, notices a grape under the name of Longworth, and describes it as follows: "A very delightful fruit, the vine remarkably healthy and productive, found in the garden of the late N. Longworth, Esq., of Cincinnati. It was marked by him as his No. 20, and was deservedly a great favorite with that pioneer of American viticulture, hence we propose to give it his name. This grape is of the same class as the Herbeumont, but earlier; the bunches large and shouldered; berries, small, round, black, juicy, very piquant and refreshing, good for table, and promising to make excellent wine."

THE LYMAN GRAPE is also described, by the Secretary of the Ohio Pomological Society, in the same paper as having been found in the Longworth grounds, and having the

"appearance of the *vitis riparia* species. The vine is very thrifty and healthy, with no signs of mildew on the foliage; very productive, yielding handsome large bunches, sometimes shouldered, of medium-sized berries that are round, dark blue or black, and full of sweet juice."

We are always rejoiced at the production of any new and really valuable seedling fruit, as such production is a positive benefit to the world; but from the well-known fact that Nicholas Longworth cultivated more varieties of grapes, of which the cuttings had been sent him, than he ever did seedlings, we should hesitate, without full certainty of the fact, to place these varieties as seedlings, and suggest whether it would not be as well before giving a name, to ascertain fully whether it might not be a variety well known in some section of our States.

JAMINETTE PEAR.

FRUIT—*Size*, medium; *form*, globular, medium length and size, inserted with a obovate, obtuse, pyriform; *skin*, rough; very slight depression; *calyx*, small, with short segments; *basin*, shallow, regular; and marbled with russet, especially around the stem insertion and calyx basin; *flesh*, yellowish white, rather coarse and gritty until fully ripe, when it becomes

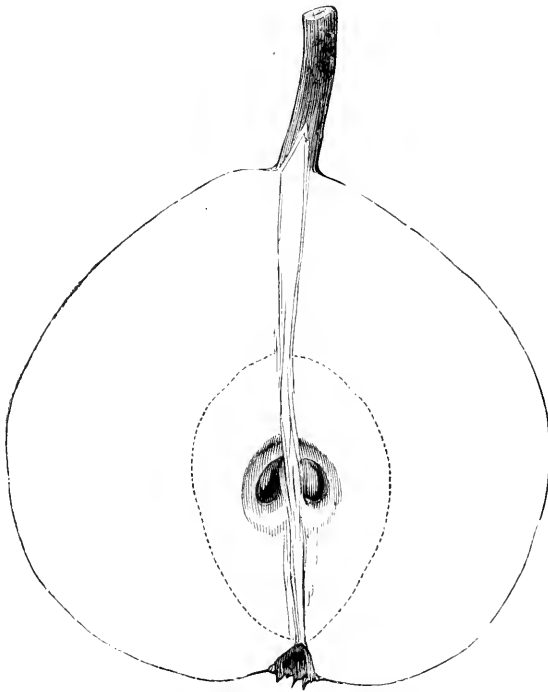


FIG. 46.—*Jaminette Pear.*

melting, juicy, sweet, vinous; *core*, small; *seeds*, globular, obovate, pyriform; *season*, December to February.

The Jaminette is an old pear, which, we think, has been too much overlooked and neglected, or thrown aside to give place to new and untried sorts. The tree is a strong, healthy grower, forming a beautiful up-

right spreading tree, producing freely, and when under good cultivation, the fruit of even and regular size. As a winter pear for amateur growing, that is, for use in our own family, few, if any, winter pears surpass it. As a market sort, however, it is not sufficiently showy to meet sales at a high price.

THE CURCULIO VS. PEACH-ROT

BY J. C., COBDEN, ILLINOIS.

At the late winter meeting of the Fruit-Growers' Association of southern Illinois, held at Cobden, a long discussion was held, occupying nearly half a day, on the curculio, its ravages, and the best means of destroying it, but failed to bring out anything new in reference to this troublesome insect. One gentleman contended very earnestly that the puncture made by the curculio is the sole and only cause of the rot of the peach, and gave as his reasons that he had watched very closely, and had seen the curculio alight on the peach and sting it; he then marked it, and invariably found it to commence to rot in a few hours afterward.

Now, I take issue with the gentleman, and deny that the curculio is the sole and only cause of the rot, but only auxiliary thereto, from the following reasons:

All peaches do not rot that are stung or punctured. This is sufficiently evident from the immense quantities of fruit that arrive at perfect maturity without rotting, still containing the full-grown insect, and only the contiguous parts diseased, the incision made by the curculio having completely healed, which would not be the case if the puncture of the insect was poisonous and, as alleged, the sole cause of the rot. Moreover, we also find the epidermis of the peach diseased without any puncture or larvæ underneath. So also in different localities and in favorable seasons they do not rot though badly stung by the curculio. On the other hand, the fruit will rot when securely protected by thin muslin bags. It rots also in countries where the curculio is unknown, in precisely the same manner as it does with us.

Now, I contend that there are various causes combined, in a greater or less degree, which does produce the peach-rot. First, uncongeniality of soil and climate. We know that the peach is a native of the

dry, arid climate of Persia, and of other similar parts of Asia, and that the finest flavored fruit is produced on the dry, sandy soils of those countries; and there the tree lives to be from fifty to one hundred years old, producing fruit annually. Our soil here, in southern Illinois, is a very heavy, loamy clay, underlaid by a compact, yellow clay subsoil, cold and very retentive of moisture, which extends downward two or three feet, then changes into whitish clay to an unlimited depth, exceedingly compact, holding water, especially in wet seasons, within eighteen inches of the surface, for weeks together. Now, is it reasonable to suppose that trees can long remain healthy in such soils? the trees, though flourishing for a few years while young, on coming into bearing become diseased, and fail to produce more than one crop of good fruit in four or five years. Add to this the very sudden changes from hot to cold, the slovenly manner the majority of the orchards are allowed to remain in, weeds growing rank and thick, often from four to six feet high, all this trampled under foot, rotting, smoldering, and steaming in a hot but moist, suffocating atmosphere.

Now, all know that the state of things here described is all that is necessary to produce that terrible disease among fruits, the fungus. Now, this disease, I contend, from ten years' close observation, is the principal cause of the peach-rot. The disease is invariably discerned first by a small, brown molecule, which enlarges rapidly if the weather is hot and moist, more slowly if dry and cool. All this points most unerringly to the fungus. Where two peaches touch each other, and a drop of rain or dew is held between them, the disease is sure to manifest itself. It rages more violently in very hot, wet seasons than in dry ones. For instance, trees well filled

with fruit, and to all appearance sound, with the exception of a few specked ones which were picked off, the day following not fifty sound peaches could be found on the tree—the disease spreading to both leaves and limbs, and killing both. So also a few specked peaches placed in a basket of sound ones, nearly the whole will be found in a few hours diseased.

Now, Messrs. Editors, I argue from this that the peach-rot is not caused by the curculio at all, though peaches punctured by this insect are more likely to rot than those that are sound, because the fungus, like all other contagious diseases, always make its attacks on the weak and sickly first, no matter from what cause such debility may have arisen—whether from constitution or from violence. Wherever insects or contagious diseases are found, they always select such subjects to feed upon. No doubt, then, but the fungus is the main agent in

producing the rot in our fruits, superinduced by uncongeniality of climate and soil, too close planting, decaying vegetable matter, lack of judicious cultivation—all of which prevent a free circulation of drying winds, but harbor excessive moisture and a close, suffocating atmosphere, where the poisonous fungus loves to feed and revel unmolested. Moisture and warmth generate the spawn of the fungi, and possessing strong accretive powers it agglutinizes itself to the peach, and being highly poisonous, infects the whole fruit, and in a few hours completes its entire destruction. Such is my experience with the peach-rot. I have extended my remarks longer than I intended. My only excuse is to try to make the subject clear, and to induce others to give it closer attention. With your leave, I will give, at some future time, a paper on the best way to prevent the peach-rot.

ANGERS AND ITS NURSERIES.

BY E. FERRAND, DETROIT, MICH.

ASIDE from the information derived from a description of the cities of France that have a direct horticultural importance by those of the readers of the HORTICULTURIST who contemplate visiting that country next season, these lines will be interesting to any lover of horticulture.

Angers, which supplies a large share of the young stocks that fill the nurseries the world over, is a large and handsome city, which every traveler through France should visit. It lies about three hundred miles southwest of Paris. The climate is very mild, and the soil, of the first quality, is worked in the most intelligent manner.

Le Mail is a magnificent promenade, edged on each side with four rows of huge elms, with its squares planted with the rarest evergreens, the beauty of which we can not enjoy here for lack of suitable

temperature. Near the Mail are located many of the floral establishments; where are to be seen, besides many things of equal importance, some of the largest camellias to be found in Europe, measuring twenty-five feet in height, with a stem of six to eight inches diameter. The botanical garden is deserving a visit. Aside from its rich collections, there are very large trees of the improved varieties of magnolia grandiflora (evergreen); these are planted along the walks as shade trees, and have attained the largest proportions. Speaking of the camellias above-mentioned, I should say that those large specimens are planted out of doors in the open ground, and bear the inclemency of winter. Nothing can give an idea of their beauty when the month of April comes, the time of their flowering. They have no protec-

tion whatever, but a few amateurs, however, make a temporary roof over their plants, or spread a cloth in order to prevent the snow from coming in contact with the leaves and flower-buds. This covering is removed as soon as there is no fear of snowy weather. A trip through the country will be full of interest to those wishing to get a perfect knowledge of the horticultural resources of France, as the neighborhood of Angers, as well as the whole basin of the Loire, produces an enormous quantity of fruits and vegetables, which are exported to Paris, London, and the large cities of the north of Europe. But above all, will an examination of the fine nurseries be of the deepest usefulness to American visitors. The thorough and superior manner in which all the work is done; the *pro rata* amount of work obtained from a day's labor; the perfection and evenness of the trees, will astonish all visitors. Going through the fruit nurseries, the visitor will remark that scarcely any buds or grafts have failed to grow, and that there is not to be found what is termed second-class trees. The blocks of evergreens will at once arrest attention. All these are grown in pots imbedded in the ground, and when kept to make large specimens for lawns, are planted in willow baskets and set out wider apart, allowing them full space to perfect their natural form. This practice is applied to all evergreens, conifers, and others; plants grown that way are sent out at any time of the year with all their roots, and never fail to grow, scarcely feeling the removal. The most tedious work is the raising of stocks from seeds. Notwithstanding the good quality of the soil and the thorough preparation of it, the seedlings have to be watered daily for two or three months, and a large gang of men never stop pouring the water on them for that length of time, from daylight till evening; the seedlings are sown broadcast in beds four feet wide, separated by foot-wide paths. They are mulched over with the rubbish and

heavy dust made at the rope-factories in breaking the hemp; those factories are numerous at Angers, and established on a large scale, and can supply the nurseries in that way. The transplanted seedlings receive the same care as the yearlings. A specialty in which *Angévins* excel is the growing of some evergreens from layers; those extensively grown in this way are principally camellias for stocks. Rhododendrons, magnolias, viburnum, and *lanrocerasus*, but no conifers, are grown by layers. Seeing a bed of camellia layers, one would think that he sees a bed of seedlings, as the work is so clearly and evenly performed.

A most gorgeous sight is that of the plantations of standard roses, some of which contain nearly 50,000 plants in one block, all exactly alike in height, as the stocks are topped off the same length after planting, measured with a pole that the workman holds in his left hand close to the stock while he cuts with a *scateur* that part of it which is above the pole; these are budded the same year in July, and the next spring when in bloom offer to the eye a beautiful picture, and exhale their delightful perfume.

Some of the nurseries are very extensive, but there is no exaggeration in saying that in a given space ten times as many trees or plants are grown as is done in American nurseries. This will be easily understood when it is known that *all* the work is done by hand, including the tillage and cultivation of the land, and consequently the plantations made closer, the rows of fruit-trees being only twenty-four to twenty-six inches apart. Peach and apricot trees, which are grown largely, are kept only one year in the nursery; no two-years'-old trees of these finding any sale, people having come to the conclusion that one-year trees of the above are attended with better results than older ones. Pear and cherries for dwarf are not kept over two years.

The garden of the Comice is deserving a visit, but some of the private collections

and fruit schools are more interesting than it, as to the completeness of their collections and the most elaborate systems of training.

In other than horticultural matters, Angers is of interest to the traveler. A fine museum of paintings and antiquities; the old castle built of black slates; some large wool factories, rope factories, the

splendid private places in the country around, and the very fine buildings in the city itself. The new city (that part on the north side of the river) is one of the best built in France. The slate mines around the city supply the roofing of a good tenth of the buildings in the whole of France.

Let no tourist go to France without visiting Angers.

WARDIAN CASES.

In consequence of the vitiated atmosphere caused by the generation of gas in the combustion of coal, it is found very difficult to grow plants in rooms, and almost impossible to grow them with satisfaction to ourselves, for though they are not killed outright, they linger along a feeble existence, slowly though surely drop their foliage, and are soon past recovery. To obviate this and protect your favorite flowers from the baneful influence of the impaired atmosphere, it is only necessary to inclose them in a limited atmosphere to have them grow as vigorously and as freshly as in the free air of the country. The so-called "Wardian Case," or "Ward's Portable Conservatory," will protect your flowers and preserve them in all their natural beauty. It is one of the few blessings that comes within the reach of all, because it is practicable on the simplest scale, and may be adopted at a trifling expense by any person. Boxes of common wood with glass above, a bell glass, or a crystal bottle with bottom cut away and fitted over a wooden box, or placed over a common flower-pot, will answer perfectly well, and in this manner many delicate plants can be grown and preserved in perfection.

It can not reasonably be expected that all plants will flourish in a humid atmosphere; for instance, those plants which are natives of a dry soil and air would soon deteriorate; but then there are enough to

feast the eyes and delight the heart of any lover of the

"Bright gems of earth, in which perchance we see
What Eden was, what Paradise may be."

And when the apparatus is once fitted up and filled with the plants adapted to a humid atmosphere, it requires scarcely any care or attendance; the inconvenience experienced from dust and litter, which often render the ordinary mode of keeping plants in the house objectionable, is here entirely avoided.

Another advantage gained is, the plants being shut off from all communication with the external air, no apprehension of their injuring the atmosphere, even of close rooms, can be reasonably entertained.

These are advantages which render the Wardian Cases easily practicable by persons of every class; and if those who have never tried this method of growing plants will but practice it even on a small scale, there is little doubt in my mind but that they will derive more real heartfelt enjoyment in watching the steady and luxuriant growth of their floral pets than they had ever conceived to be possible. I will endeavor, in a short time, to give you a list of plants which I have learned from practical experience are adapted to grow in Wardian Cases, and also some other facts connected therewith which may be of interest to your readers.

O. H. PECK.

NOTES ON THE JANUARY NUMBER.

JANUARY, eighteen sixty-seven—an odd number that. Can it be that, according to the views of a deceased horticulturist, we are to have a barren fruit year, or, stepping across a broad chasm, that, as Rory O'More has it, there is "luck in odd numbers?" We shall see. As I now write, the records all over the country are that trees and vines were well prepared for winter, and thus far the temperature has been favorable—all looks well for a great crop of fruit the coming year. May it prove so to be, for great gatherings of fruit men are expected, and an unfavorable fruit season would keep back progress. However, let the fruit crop be what it may, of one thing we are certain, and that is, that January, 1867, has blossomed out more abundantly than ever before with Agricultural and Horticultural literature. New magazines and weekly and monthly journals have sprung into existence over all the land in such numbers that I almost fear some of them, if not many, will suffer from the want of sufficient nourishment, and come to the harvest before they are fully ripe. New books, plain practical illustrated books, just what the people want, also abound, and evince that the cultivators of the land not only increase, but that to be successful they must inform themselves thoroughly of their pursuit. May all this continue and increase, for of a truth, notwithstanding the increase of rural laborers, that of the non-producing classes has, during the past three years, far outnumbered them.

But to my notes.

REMARKS ON FLOWER-GARDENING, ETC.
—A plain, practical article, full of hints and directions for the unpracticed cultivator. It may well be doubted whether the use of fancy forms for flower-beds has not marred rather than beautified many an otherwise pleasing lawn or pleasure-ground. He who without study and practice in the harmony

of forms, color, and habit of flower, etc., desires to create pleasing results in garden improvements, had best keep to the plain primitive rules as far as possible.

DESIGN FOR A VILLAGE RESIDENCE.—All good and satisfactory to me, except the dormer. To my views, that is too small. It may be it is in architectural proportion, but even on paper it does not look well; and a house which I saw built this past season, with a dormer almost identical, provoked comments of an unfavorable tenor from every one. More breadth, height, and general character are needed to tone with the thirty-three feet of frontage. With some change to obtain this breadth and height, the otherwise plan of the house is economically cheap, convenient, and conveys the idea of substance and comfort rather than outside tinsel and show.

THE DETROIT GRAPE.—Another new grape. Well, well, where are we to stop, or what are we to do, who attempt growing one or more of each *named* kind? Shall we buy out our neighbor and move him West, or shall we take up a section or township in New Jersey? By-the-by, is not this furor for bringing out new grapes, without any extended knowledge of their behavior beyond one original location, getting to be rather an evil than a benefit? Is there any possible way by which we can induce those who have new grapes to introduce, and who *profess* to have great confidence in their value, to put one or more vines into the hands of vine-growers in different parts of our country, for trial, and report four years, and meantime decline to sell? It is said one "can not have too much of a good thing," but in this grape matter I think we are a little like the man with a very fleshy woman for wife, who, when the remark was made to him and applied to his wife as the good thing, replied that it might be so, but he had wife enough.

BEURRE BACHELIER AND COMPTE DE FLANDRES PEARS.—Not especially new, but, as you say, valuable. For general, or rather for market growing, we do not require too many sorts, but for the amateur grower one or two trees of a kind is enough, no matter how good they may be. There is a charm in variety, and there is in pear-growing a trait not perhaps applicable to all fruits, in that the orchard made up of a number of varieties will in every season produce some really superior fruit. Climatic changes, according as they affect the pear in its varieties, are, I think, less understood than almost any other one point in fruit culture, unless it be that of blight.

MAJOR APPLE.—I think that zealous horticulturist Dr. Brinckle introduced and first described this fruit in his record of life's labors, and I am glad to see it again brought to notice. Amid the numbers of new fruits yearly introduced, there are few that ever get beyond their first introduction, and mainly, I think, because they do not deserve it; but there is an occasional variety heralded that deserves full and fair trial, and from what I have seen of it the Major is one of them.

SHORT NOTES OF A TRIP EAST.—In these notes the records of what some of our leading pomologists are doing is the valuable feature. I think we do not enough value those men who, sacrificing money and time, devote themselves to trace out, describe, and direct the novice in horticultural pursuits. It does appear to me that a book containing the records, in a concise manner, of the leading pomologists for the past fifty or more years, their doings, etc., would be a paying item. I have a friend in Ohio who has been collecting with this view for some years, but he says it is almost impossible, without traveling around at great expense, to get such a record as satisfies him, or as he thinks would be satisfactory to the public.

Why can not the horticultural and pomological societies gather these records through

committees. I suggest that the American Pomological Society do this gathering in of brief biographies and autobiographies for the next meeting at St. Louis. If we had a head other than a block as chief of the agricultural department of Washington, I can not believe the labors of the many men of science, enthusiasm, and zeal, who have devoted years to aid agriculture, horticulture, and kindred arts, would be so lost to history as is now the case.

NEW THEORY OF GRAPE ROT.—I have read this theory article entire, as published in the *New York Herald*, and can not bear testimony in favor. I am sure I have seen vines where weeds were abundant as much affected with disease, if disease we may call rot, etc., as those growing on vines kept clean and short-pruned. However, the man who never thinks for himself can never hope to originate or discover cause or remedy; but if he thinks, and thinking produces even most improbable assertions, these assertions sometimes induce thoughts and continuations in others, until out of deep darkness light is born.

GRAPES. OLD AND NEW VARIETIES, THEIR CONDUCT IN 1866.—I am glad to see this record. The writer gives, in his usual manner, plain statements, and in his comments on Norton's Virginia, handles the egotism of the old-fogy Cincinnatians in a sharp manner. To an outsider, the unusual attendance of a man at fruit meetings never there before, and the extreme laudation of a kind of grape of which he has thousands for sale, and his condemnation of everything else, gives the impression that money, not the advancement of the grape culture, is the object of that man's energies.

I am glad to see Rogers' No. 1 showing up so well in Missouri. In all locations where the Catawba will ripen, No. 1 will prove valuable. From this and from records of growers in southern Ohio, Indiana, etc., I am half inclined to doubt the value of the Iona as a grape, except for small special localities. There may be soils and locations

on the Lake Erie shore—possibly the mountains of East Tennessee and some sections of New Jersey, the Piedmont Valley in Virginia, etc.—that will suit the vine; but for general cultivation it does not seem to sustain the praise its originator has given it.

BUDDING THE MAGNOLIAS.—Reuben is very much obliged to Mr. Downing for this practical article. I never practiced budding, but have been pretty successful in growing the Chinese Magnolias on the *Acuminata* by means of side grafting in spring. I cut my grafts when a warm day occurs in February, lay them away in sand in the cellar, and as soon in March as the buds swell strongly on the *Acuminata*, I side graft, tie with matting, and wrap with

grafting clay. When the leaves of the graft are half grown, I cut away a part of the top of the stock, and gradually take all away in about three weeks, leaving the graft to go on rejoicing.

WHAT IS THE "RENEWAL" SYSTEM?—I think the term "renewal," in vine-pruning, one of modern introduction, but I may be in error. I have always understood it as meaning, when used, the cutting away each year of all the old two or more years' wood and leaving only the wood of the present year's growth. I do not think the term can be accurately used for any system where any portion of old wood is left, because the very meaning of the word would be robbed of half its import thereby. REUBEN.

VERY HARDY VARIETIES OF THE APPLE.

BY F. R. ELLIOTT, CLEVELAND, OHIO.

THE apple is strictly the fruit of the nation. It is planted singly in small gardens, and by thousands in large orchards. While the grape and the pear are extensively planted, the apple is everywhere. No sooner does a man build and possess land for a home, than out goes one or more apple-trees. It is therefore very important to have a knowledge of such varieties as prove most hardy and successful over the greatest extent of country. At the risk of conflicting with the views of some learned pomologists, I propose to speak of a few popular sorts, and their extent of success, and at the same time to name some varieties that are not perhaps so generally known, but that nevertheless have been grown and successfully tested in nearly every fruit-growing State.

The term "for general cultivation" covers a broad field, and yet lists have been made, and even single varieties designated, as adapted to such purpose. A glance at the transactions of State Pomological Societies

shows how futile are such lists or special designation of a variety, and hence it is that numerous varieties, almost identical in their character of fruit, yet differing very materially in the vigor and hardihood of tree, as well as requirements of soil, continue to be propagated and introduced. The Early Harvest, that, in rich, deep soils throughout the middle sections of our Eastern and Northwestern States, produces fruit of superior quality—smooth, large, and handsome to the eye—in those same locations, when planted in poor, thin soils or heavy clays, yields small, knotty fruit, and that often too acid for dessert uses, while the trees in northern Illinois, Wisconsin, Minnesota, etc., are regarded as tender and unsuited for orcharding. The Baldwin Apple, so popular and profitable in most parts of New England, northern central New York, northern Pennsylvania, and Ohio, when it reaches northern Illinois, Wisconsin, and Minnesota, proves too tender as a tree to endure the climate, while in

southern Illinois, Ohio, Missouri, and so on South and West, it drops its fruit so early in the season as to prove of little or no value. The Belmont, so popular in the Lake Shore region of Ohio, has but a limited space for occupation, for although supposed to have originated in Virginia, its fruit is not highly esteemed in the Southwest, and at the Northwest the trees prove tender. The Fall Pippin, popular on the Hudson River, and to a certain extent East and West, yet finds so little favor, that it is not often found in the lists prepared and recommended for cultivation. The Rhode Island Greening, acknowledged on all sides as one of the very best apples for all purposes, can not, however, be successfully and profitably grown in but a very limited territory; but wherever it does succeed, planters will permit me here and now to advise its adoption in preference to that of almost any other variety.

Having now named some of the leading, old, and well-known popular kinds, and shown somewhat of the territory in which they can, as a rule, be successfully or otherwise grown, let me see if I can not find varieties that from their hardihood in tree and vigorous productive habits render them desirable over a greater extent of territory, and especially a territory where fruit-growing is yet in its infancy.

The Red June, or Carolina Red June, although brought prominently before the public within the past fifteen or twenty years, has been very extensively distributed and planted, and everywhere sustained a favorable reputation as a hardy tree, good bearer, handsome fruit, and of more than medium quality. It has not been much grown in New England, but trees enough have been planted and fruited to show that it can there be made as profitable as it is throughout the Southwest, West, and Northwest.

The Duchess of Oldenburg is another that, although a foreigner, has proved everywhere, so far as I can read or have observed, a perfect success, bearing early and

abundantly a fruit of good size, handsome, and good, although not first quality.

The Tetofsky is another apple of the same origin, and although as yet it has not been extensively tested, yet where it has been grown, the same general peculiarities that belong to the Duchess are observed, and there is every reason to believe it will prove equally valuable as a market fruit.

The Red Astrachan is another variety of foreign origin, nearly allied in habit to the two preceding, but yet not identical, and while the trees seem to prove hardy, in some few sections there has been complaint of its not fruiting sufficiently to make it profitable. I think these complaints will be withdrawn as the trees obtain age in the present complainant's possession.

The Keswick Codlin is an apple of great value for cooking and market purposes, the trees proving very hardy, coming early into bearing, and fruiting abundantly a smooth and regular even fruit of good, fair size that is fit for use and market from August to October. To continue this list, and select from the hundreds of varieties described by pomologists those which have, as a rule, proved the most hardy and valuable over the largest extent of country, I will name Sweet June, Benoni, Jonathan, Bailey's Sweet, Fameuse, Willow Twig, Ben Davis or New York Pippin, Stanard, Swaar, and Nickajack. These, all, I have no doubt, will continue to do as they have done, when planted in well-drained soils, viz., grow vigorous, hardy trees, yielding good fruit East, West, South, North, and even to the far Northwest.

In connection with this list of hardy apples, it may perhaps be advisable for me to add a word in relation to the soil and situation for orchard planting. I have not room for an essay, if such paper were desirable, but the new beginner may find in a few words, perhaps, that which will as well serve his interests as if I were to write an essay.

First, then, select for your orchard location a soil as near as possible of a light

loamy nature, not rich or poor—better the latter than former, as you can supply food needed, while it is difficult to check too rank growths of trees in very rich ground. But whatever the nature of your ground, see that it be well underdrained, as no orchard will ever prove successful in wet, cold soil. As high an elevation as possible, and in our Western and Northwestern

States, a slope to the north, rather than south or east, is desirable to obtain a certain yearly product of fruit. Dig the holes for your trees no deeper than you plow the surrounding ground. Purchase the best trees without regard to price; prune, plant, and cultivate them carefully, and you will have success.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

SEASON FOR TRANSPLANTING EVERGREENS.—As in many other things, there are many and various opinions respecting the proper time of year to transplant evergreens. Some assert that the only true time is that just previous to their bursting into a new growth in the spring, say from first to the middle of May. Others, again, regard it all unsafe to move an evergreen except with a frozen ball, or at any event a ball of earth attached to the roots. Our experience of some thirty years, during which we have directed the transplanting of many thousands of evergreens, of all sizes, from six inches to thirty feet high, and of nearly every known hardy variety, is that an evergreen is no more difficult of removal than a deciduous tree, and that any time, except during their period of annual growth, is the correct time; and further, that if the roots are kept from drying, it matters not whether they have a ball of earth attached or not. Always endeavor, in digging the tree, to get as much, and break as few, of the roots as possible; protect at once from the air, as soon as dug, by wrapping the roots in a cloth; when setting, carefully spread out each root, and pack the earth among and

around them, especially at the bottom; leave the surface of the ground level; spread at once a mulch of some sort, all around as far as the limbs extend, and wet it down thoroughly, not with two quarts of water, but a barrel or more; lastly, take your shears or knife and cut back all the branches, taking off at least all of the last year's growth; and if in taking up, the roots are badly broken or destroyed, then cut back the whole of the two previous years' growth. Evergreens bear the knife much more kindly than many suppose. We have tried trees side by side, cutting one and leaving the other in its natural condition, and the clipped tree always was the best at the end of two years.

CUTTINGS of the basket-willow planted in places too wet for cultivation, or by the edge of ponds, marshes, etc., will grow rapidly, and the second year a crop may be cut for sale, that will make the planting not only ornamental but profitable. Willow cuttings also are very useful on a place for tying vines, stakes, etc., and every country place should have at least one plant from which to cut for almost every-day uses.

WOODBURY, CONN., Jan. 11, 1867.

NORTH BILLERICA, MASS., August 14, 1866.

EDITORS HORTICULTURIST—*Gents*: In a recent number of the HORTICULTURIST, a writer, while remonstrating against the introduction of English sparrows, insinuates that our little "Jenny Wren" is not above suspicion, that she possibly may attack fruit buds, etc. Well, admitting she does (which I doubt), does she not atone for it by the insects and worms she devours? In the spring of 1865, the vine-growers of Hartford and vicinity were complaining of a little white worm which was making great ravages among their vines; looking carefully over my own vines, I found they, too, were infested. But I found a family of wrens had discovered them before me, and were making short work with them—"chatter"—"chatter"—zip—zip—along the trellis, and the worms disappeared. A neighbor, who was confined to her room by illness for several weeks, had a family of wrens, close to her window, on a cherry-tree; she observed the wrens bringing these worms from the vines and feeding them to their young, all hours of the day. So much for Jenny Wren.

In your last issue, page 14, a Mr. Bennett gives us a new theory of "grape-rot and mildew." What next? I was about sending for the "Sulphur Bellows," and now I must put up "lighting rods;" no matter, give us any plan to prevent rot and mildew and we will try it—whether it be to dust the vines with sulphur, road dust, essential oils, or put up lightning rods; one writer suggests cedar posts as an antidote. I have over one hundred vines trained on these posts, and in addition used sulphur and road dust the past season to little purpose. Now, is there any sure remedy? If so, give it to us; or must we, after having tasted the sweets of Ionas and Delawares, give up their cultivation and go *down, down* to Con-cords, Northern Muscadines, and Hartfords? No—no, can't *think* of it; might as well go back to crab-apples and choke pears. So give us your remedies for mildew.

Yours truly, ELI SPERRY.

GENTLEMEN: Your excellent HORTICULTURIST comes to "Brightside" regularly, and works its way through our minds into the garden, making everything look better. I send you an article to-day, which I hope will prove acceptable.

Can you tell me what kills my winter squash vines? They grow splendidly up to a certain point, and then suddenly die. I find no worm at the root. What is it? My neighbors' vines are quite as mortal as my own. I manure with compost and then put on ashes. What ails these vines? The roots *look* well. We must stop the disease, or stop raising the article. I plant the Hubbard, Marrowfat, and Canada Crook Neck, and the latter appear the best.

Very truly, yours, ELIAS NASON.

[We do not lay claim to being a scientific and practical entomologist, and therefore shall hand over the question of "What is it?" to the capable editor of the *Practical Entomologist*. We have studied insects some, and have our belief of the insect depredation; but belief is not knowledge. We have had the same trouble with our squash vines, and particularly with the Hubbard variety, and one year lost nearly every vine. Now we practice covering the vine lightly with earth close up to the first blossom, and have generally succeeded in growing a crop of squashes. The injury to our vines has always been from the crown point to the blossom—no injury or disease ever having shown itself in the roots.]

It has been stated that the cut-worm will not attack and destroy plants, cabbage, tomato, etc., that are transplanted into a shallow trench, say three or four inches deep. We have never tried it.

YOUNG trees or limbs of trees that were budded last season should now be cut off, leaving about four inches of the stem or limb beyond the bud, which should again be cut off close to the bud about the middle of June.

VINELAND, N. J., Jan. 12, 1867.

MR. EDITOR: Having been engaged in fruit-growing for twenty-five years, and during that time planted on an average over one thousand trees annually, and furthermore, having at this time my little farm of fifteen acres (which is all the land that I have any interest in) entirely planted with fruit, I can not but feel some interest in your indorsement of a sweeping condemnation of southern New Jersey as a suitable place to raise apples and pears—the pear more especially being “upon my brain.”

I selected this portion of our country four years ago with special reference to my favorite hobby. I had given up trying to raise pears in Illinois, and if I had supposed there existed a better place than this to raise them, I should have gone there instead of coming here. My brief experience here serves to confirm my belief, that south Jersey is the very “paradise of the pear.” The thirty years that you propose to test the matter is rather long for an experiment. Before that time I hope to be cultivating the trees that bear fruit twelve times a year (an excellent treatise upon which may be found in almost every house); I can not say certainly that they will continue so long, but that they grow handsomely, come early into bearing, and produce fruit of superior size and quality, does not admit of a doubt. They are also *entirely exempt from blight*, which I believe is not the case in any heavy clay soil. My orchard has been planted three years. Last year my Bartlett Standards bore all the fruit I dare let them. My Duchesse dwarfs did pretty well. I sent samples of the fruit to the fair of the American Institute in New York last fall, and your judges awarded them the premium over all others. My soil is a *sandy loam* (there is clay enough, and extensive brick-yards, pottery, etc., in the neighborhood); I could have located on heavier land if I had wished to do so. The subsoil, twenty to thirty inches below, is a hard pan, through which water passes readily.

When brought to the surface, trees will do as well in it or better than in the top soil. It is said to contain iron, and makes excellent roads.

When I came here I was told by Jerseymen that apples were not profitable, but pears did very well, as it cost nothing to grow them, and they would sell for *half the price of potatoes*, and in fact the peddlers brought them to my door and offered them for twenty cents per basket, nice little fellows, the size of pullets' eggs, looking not unlike Seckels, very smooth and healthy, with a delicate rutabaga flavor, *melting* (if placed in a crucible), and quality *best* (for the outside row of an orchard subject to trespassers). There are many apple and pear trees that *look* one hundred years old, standing in fields that have been cropped with rye and pasture until the life was *skinned* out of them and then abandoned, and yet the trees look healthy and bear a good deal of fruit, such as it is. The apples are wormy, but the pears uniformly smooth. I took the mere existence of such trees, under such unfavorable circumstances, as proof that good fruit could be profitably raised here, and I have not been disappointed. I have planted liberally of the apple on Doucin stocks, forming the heads ten inches from the ground, and cultivating thoroughly *without cropping* the ground. These trees are not *dwarfs*, but are encouraged to grow as large as they want to, and they avail themselves of their liberty most energetically, and they are already models of beauty and fruitfulness; some of the Red Astrachans bore the handsomest fruit I ever saw.

Now, Mr. Editor, you, *being an editor*, of course know better than anybody else, but I will make you this proposition: Come and look at Vineland next fall, and if we don't feed you with *better* pears than you can get *anywhere else*, you being the judge, and show you both pears and apples doing *better* than any you can find out of south Jersey, I will pay the expense of the trip.

PYRUS.

NORTH HEMPSTEAD, L. I., January 17, 1867.

MESSRS. EDITORS: AS our friend Reuben requests a more explicit account of the Hicks' Apple and Dorsoris Pear, I will comply. I well know from the losses we have sustained that there are far too many inferior varieties of fruit before the public, and we should be careful not to increase the difficulty. The Hicks' Apple I have observed, and part of the time had in bearing twenty years. It is a very fine grower and early bearer, but is so productive as to materially check its growth. It is of large size, red stripes, or shaded with red or russet on a light green ground. Flesh white, spicy, sweet, and tender; form, oblong. Its value with us is its earliness, ripening a little earlier than the Summer Bough; its excellent quality, many preferring it to the Summer Bough as a dessert fruit, and its great productiveness. It sells very well as a market variety. Its faults are, it will not keep long, and it bears too many. Even then the tree gives more good apples than the Bough, as we have two trees, each grafted with both kinds, as a trial. We have no means as yet of knowing if it is adapted to another soil and climate than Long Island.

The Dorsoris is a new pear, and promises to be a superior market fruit. It ripens with the Osband's Summer; is, when ripe, of a beautiful yellow with a red cheek, and thus far has kept a longer time after gathering than most early summer pears. Its form resembles the French Jargonelle, and is sweet, juicy, and agreeable, but, like the Osband's Summer, is deficient in a high, rich flavor. Tree, a fine grower, hardy and productive. Its owner discovered in a remote field that a number of crows were very busily engaged at something, and on going to gratify his curiosity, found they were eating pears from this hitherto unnoticed pear-tree. Since that time he, preferring to gather the fruit himself, removed it near his house.

I must make an exception to the remarks in the January number of the HORTICUL-

TURIST, "that from three to five kinds each of our well-established favorites of the various sorts of fruit will secure this end; that is, fresh fruit for the table every day of the year." We wish it were so, but our experience is different. Because some of us amateurs go to the extreme of hundreds of varieties, is no reason why any should go to the other extreme, of having too few sorts. Every housekeeper wants a succession of sweet and sour apples through the seasons and no five nor ten varieties will furnish the supply. But few if any varieties with us will last longer than three weeks in the autumn, and some are far more profitable and desirable for the culinary department than for the dessert. The cook will tell you to bring her large fine specimens in preference to the Early Joe, Summer Rose, or the Summer Pearmain. So will the remarks apply to pears, as early summer and autumn sorts of pears will scarce keep as long as apples in good eating condition.

When we planted our apple and pear orchard, we found it very difficult to ascertain, either from experience or observation, what kinds were best adapted to our soil and climate, for those amateur fruit-growers and rich gentlemen-farmers had not experimented and proved the new kinds near us, and we apprehend there are many that are similarly circumstanced. Reliable fruit-growers are far from plenty, and as the varieties of fruit are continually increasing in number, it is perhaps as difficult to procure *the best*, as every one wishes to, as ever it was.

ISAAC HICKS.

WE would recommend as among the desirable second-class trees, the Halesia, or Silver Bell. It blooms when quite small, and when covered with its white bell-shaped flowers is very ornamental, and its seed-vessels give it an attractive appearance in autumn.

I. H.

ONE pound of potash to six gallons of water is a good wash to apply to trees on whose bodies or limbs are insects, moss, etc.

PRUNING WHEN TRANSPLANTING.—We consider it important to shorten back all fruit-trees, shrubs, and vines when transplanting. It lessens, by reducing the number of buds, the demand for supply on the roots as soon as that laid up in the bud is exhausted, and it gives increased vitality and vigor to the remaining buds, by giving to them the supply that would have been devoted to those removed, had they been left to remain. There is, however, room for study in the practice of heading-in, because of the vigor of growth and power of producing strong new shoots being much greater in some sorts than others. The peach, for instance, may be cut back to within two feet of the crown, leaving not a limb or twig, and yet the tree in the ensuing fall will be found, under good cultivation, to have made four or five strong shoots, each as many feet long, and with abundant lateral branches. Pursue the same course with the apple, and nine times out of ten the result will be only a few feeble shoots of four to six inches, with a dead tree the following spring. The pear when worked on the quince will bear much more severe pruning back than when on the pear stock; and further, some varieties will endure more severe pruning than others. The grape, when cut back to two or three buds, grows vigorously; but if left unpruned, it struggles a year or two, produces a few imperfect bunches, and is dead. These are some of the many variations that an observing horticulturist will notice on short practice, and which will soon cause him to feel confidence in the transplanting of trees at any age, provided he be allowed to prune them back according to their age and habits.

REMOVE WINTER COVERING as soon as the frost has left the ground, otherwise there is liability of many leaves and buds becoming injured from too close confinement by the packing of the mulch.

Mounds of earth that have been built around the trees to protect them from mice, should be leveled down.

THE BEST WATERMELON.—Mr. J. R. Comstock writes us that he has been growing watermelons yearly for fifteen years, having during that time tried many varieties, but that one called the "Strawberry" he has always found "*best*."

McAVOY'S SUPERIOR STRAWBERRY.—A correspondent writes that he has grown the McAvoy's Superior Strawberry steadily now for fifteen years, and side by side with numberless others; it has always been best "by a good deal." His plan is to make a new bed every year, as follows, viz.: "*Early* in spring prepare the ground by digging or plowing as deep as possible, then raise each plant with a ball of earth attached, set them out four feet apart, and let them run during the season."

We can not see any particular gain obtained by having a ball of earth attached to the plant in transplanting, for there is little risk of the plants not growing, even with careless handling, at this early season of the year; and if the soil is good, the increase by runners is more often likely to be too numerous rather than too few.

CLEAN up strawberry beds before they commence flowering. After that time leave them alone, as a light brush or touch when in flower will often destroy impregnation, and of course the fruit.

A MIXTURE of three parts fine charcoal, two parts bone meal, and one part plaster (gypsum), applied in quantity of about two to four quarts to the roots of a tree or vine when planting, we have found to fully repay the cost in increased vigor and growth during the season.

POULTRY manure, or guano mixed with twice its volume of plaster, causes the manure to decompose more rapidly than when unmixed, and of course allows its valuable parts to be sooner and more readily absorbed by the plants to which it is applied as a stimulant.

LAWNS.—From the nature of our climate we can not, as a rule, have as perfect lawns, green, velvety, and fresh, as they do in England; but with due care in preparing the soil, and by using seed in abundance, we can create the foundation of a lawn equal to theirs, and that by proper care and attention to mowing, rolling, etc., will present an equally good appearance eight months out of the nine that we expect to enjoy it.

No complete lawn, no durable lawn, no lawn that will bear extremes of heat in summer and preserve the roots of grass from cold in winter, can be created without forming for it a soil of the best quality, light, loose, and friable, at least sixteen inches deep. And further, no good lawn, no perfect mat of grass can be obtained in one, two, or three years without an abundance of seed. All spaces not occupied by seeds of grass sown must and will be filled with a growth of weeds that, as they grow, absorb the elements of plant-life in the soil, and choke the young and more tender growth of grass. For an acre use two bushels of Blue Grass, two bushels of Red Top, and twenty pounds of white clover, and sow as early as possible in spring.

IMPORTANT TO RICE-GROWERS.—We have had the pleasure of examining a large collection of samples of Batavia rice-seed, just received by Mr. J. Q. A. Warren, Corresponding Member of the Royal Hawaiian Agricultural Society, to whom they were sent for distribution among the agriculturists of this coast, or, more strictly speaking, to those who will make the experiment of growing rice. The samples are thirty-four in number, and in perfect order for planting at this season of the year. Ten varieties are for dry fields, of the varieties known as *padie meera* (black husks), *mohong*, *tehrong*, *gadok*, etc. These varieties would prove an important acquisition to portions of the State where water is not always or easily available, like San Joaquin or Santa Clara counties. Twenty-

four varieties are for wet fields, known as *padie saria*, *liemar*, *nangka*, *katvambar*, *radja*, *ketan ietam glutinosa*, *ketan odeng*, etc. The names are in the East India or Hindoo language, but the varieties are all highly prized in Batavia, and ought to be experimented with, at least, in many localities, for it is an article entering largely into our home consumption, and ought in time to become one of our great staple products. The latter varieties are well adapted for our tule lands, on the San Joaquin and Sacramento rivers, and thousands of acres could be cultivated easily and profitably if the trial could only be made. An enterprise like this ought to be encouraged, as we are informed that those desiring to make a trial in rice culture will be supplied by Mr. Warren with samples, free of charge, by addressing him by mail. The rice samples can be seen at No. 427 Sansome Street. In connection with the above, we are authorized to state that those who feel disposed to make any contributions to the Royal Hawaiian Agricultural Society, in the way of seeds, plants, etc., from our own coast, can send the same to Mr. Warren at the above address, who will forward them to their destination, and receive in return products of that clime for the liberal donors.—*Alta California, San Francisco, Cal.*

PEACH-TREES IN POTS.—J. R. Comstock, Dutchess County, N. Y., writes that he "practices with success growing peach-trees in pots and tubs, and wintering them in the cellar, from whence they are taken in spring, after all danger of frosts, to the specimen orchard out doors, and there plunged in the earth to the tops of the pots or tubs."

RASPBERRIES that were left unpruned last fall should be at once attended to, and all the old wood and young, slender, weakly shoots cut out. Leave four to six good strong canes to each hill, but head off their tops about one fourth of their height.

LEAVENWORTH, KANSAS, January 7, 1867.

MESSRS. GEO. E. & F. W. WOODWARD: In HORTICULTURIST for July you put the duration of the pear on quince, with proper pruning and culture, at 100 years. "*Your opinion.*" Have been planting dwarfs for five years, and have 400 to 500. Those planted in 1861 are 8 to 12 feet high, 5 to 7 feet diameter, through top, stem at ground $3\frac{1}{2}$ to 4 inches. Showing fruit for first this season, and are making shoots 3 to 5 feet long of a single season; and Bartletts on pear have grown 6 feet. Would you cut such back severely, or "let 'em run?" I know nothing about it, scarcely—all the "*doctors*" disagreeing—but have cut back to 3 to 8 buds of previous seasons.

Respectfully, JOHN MYERS, JR.

[Judging from the growth of your trees, they have taken root upon the pear stock, but yet they may not have done so. Your soil is doubtless rich, and under good cultivation, and this we have known to cause trees supplied only from the quince root to make extra strong growths; yet, as a rule, one foot to eighteen inches is about their annual growth. We should cut back again this spring, and in July should again prune back. This will keep a healthy tone in growth, and the summer pruning will aid in forming fruit spurs more abundant and farther up on the limbs, and thus next season, and thereafter, absorb a part of the sap in production of fruit, thereby in its order regulating the extended growths.]

REPEATED STIRRING OF THE SOIL we regard as almost, if not quite, as essential to good and successful cultivation as manure. Indeed, we have known good crops taken from land that was counted as "too poor to grow beans," by merely repeated plowings and harrowings. Expend money first in draining, if you have heavy, clayey, or naturally wet soils; then plow, plow, plow, as often and as deeply as you please. The more, and oftener, and deeper the soil is stirred, the better will trees or plants grow and fruit. The mechanical

action of soil, and its permeability to atmospheric influence, is too often lost sight of, and many a piece of ground on which manures have been placed until it has got to be what is termed "fat" and unproductive, only needs repeated stirrings and opening to the action of atmospheric elements to bring it to the highest and most profitable condition.

NEVER STAKE A TREE.—A tree that is carefully and correctly planted and headed back, will never require a stake. Stakes are troublesome, unsightly, and form good excuses for carelessness in setting the earth about the roots. If the tree moves by winds after planting, immediately re-plant and head in more; better this than a stake, against which the tree is sure by after-neglect to be rubbed and bruised.

THE work of plowing orchards should be done with great care, going very shallow in depth with the plow near the trees, and gradually deepening the furrow as you increase distance from them. Trees that were not plowed up to in the fall should have the earth turned toward them at the first plowing in spring, and trees that were well plowed up to in the fall should be harrowed or cultivated first in spring.

In gearing to the plow use a short whiffle-tree, say sixteen inches, and have the traces brought round from the back side over the ends, so that the whiffle-tree can not bruise should you happen to hit the tree. Some recommend using two horses tandem, but one horse will plow as deep next the trees as should ever be done.

THE Belle Magnifique Cherry has one trait to make it desirable over many others, in that it is small and green at the period when Governor Wood, Elton, and others are decaying in abundance on the trees. The tree is quite hardy, and in all grounds it is a desirable variety to plant; especially so is it valuable for sections where the heart cherries do not succeed perfectly.

WHILE planting trees, the fruit of which when grown is expected to gratify the palate, do not forget that there is another and higher kind of taste to gratify, through the eye, and also a duty you owe your family, by seeking to make their home attractive. Plant, therefore, of ornamental trees, to furnish shade, flowers, and beauty, and by means of the evergreens, life, cheerfulness, and shelter from cold, driving storms in winter.

If you are planting trees for the purpose of marketing the fruit, select varieties in the greatest proportion of those which ripen the very earliest and the very latest. A pear, peach, apple, or grape, one week in advance of the time when the market is well supplied, affords often from one tree or vine more amount of income than a dozen whose fruit ripens during the season of abundance; and so, also, pears or apples, etc., that keep beyond the regular season of supply, command prices often quadruple in amount.

If you select for your own use in the family, then obtain as great a variety as your grounds will admit, that thereby you may never know a week during the year without some kind of ripe fruit for the table dessert.

PLANT FRUIT SEEDS.—Every cultivator of fruit can plant a few seeds yearly, and cultivate them as they grow, without even feeling the loss of time. Were each one to do so, what a multiplicity of seedlings we should soon have! and from which, doubtless, selections would be made as superior in every respect to our present collection as the present is to that of twenty-five years since. Let every one plant a few this year as a trial, and as they grow cultivate the young plants carefully.

SOME regard time spent in cultivating flowers as so much wasted, forgetting that pleasure and not profit is a quality of inspiration nearest akin to nature, and that the nearer one's tastes are to a love of all

the creations in nature, the nearer are they to those of Divine origin.

Flowers contribute to our pleasures, they add to our knowledge of nature, and unfold to us the mysteries of the beautiful. Let any one spend an hour each day engaged in the occupation of cultivating flowers and inhaling their fragrance, and however great the temptation outside, he or she can not be wholly void of virtue and the softening but deeply impressive feelings of childhood's pure, happy hours.

THE SCUPPERNONG GRAPE.—J. Van Buren, of Clarksville, Ga., a good horticulturist, thinks the South can grow the Scuppernong grape and make both wine and money. He says one hundred vines should occupy about three acres, and that from their product, wine made and sold at forty cents a gallon would pay better than ever did one hundred acres in cotton. He estimates the yield at 1,500 bushels, and these at 5,250 gallons of wine. He thinks the Scuppernong the grape for the million, and destined to exterminate every wine grape in the Northern States. He names about thirty varieties of our most popular grapes which he has tried and condemned as unfit for wine-making. He thinks no native grape will make a good wine without sugar, and even the Scuppernong requires one pound of sugar to the gallon of juice. No pruning is required according to his views—the only labor being the planting of the vines, erecting high trellises or polings, arbors, etc., for them to run on and picking the fruit.

PEACH BUDS DESTROYED.—The peach buds in Western New York, we learn, are destroyed, so that lovers of peaches in that section will have to look elsewhere than at home for their supply.

WHERE a tree of medium size, clear foliage, handsome spray and form is wanted, together with ornament in the way of sweet perfumed flowers and dark, glossy fruit, we commend the Mahaleb Cherry.

NURSERYMAN'S LABORS.—We have often thought the labors of a careful nurseryman were little appreciated, and as compared with the intelligence required for the business, less remuneratively compensated than those of any other business. It may be we are mistaken, but we know few out of the many engaged in tree growing that have ever accumulated any amount of means from their legitimate business. True, there are many who have got rich, but more, we think, from a rise of their real estate than the profits of tree growing. As a profession, those only who are engaged in it have the impression of the extent of knowledge requisite to prosecute it successfully. If the varieties of fruits may not all be known, the names of each, and habits of the trees, vines, etc., have to be studied, and a knowledge of their whereabouts in the grounds always had, or otherwise gross errors would soon occur, and the owner's reputation become sadly damaged. We wish some nurseryman would write us out a little show of what constitutes a life in that pursuit—it might give the people a better impression of the care required to supply them with trees. Twenty-three hundred and fifty-four varieties of fruits form the list embraced in one nurseryman's catalogue.

If you are about to lay down an orchard to grass, do so with grass seed alone. A crop of rye, oats, etc., will do more in one season to check the growth of trees, than can be remedied in three years thereafter under the best cultivation.

"THE pears most benefited by quince stocks appear to be summer and autumn varieties, and those of a decisively *melting* character." Such were the words of a prominent and able pomologist in 1844. How stands the record now?

INSECTS will not be as destructive in an orchard well cultivated, so much as one that is left in grass.

GROUND prepared for transplanting trees should be rich and mellow, but the hole for the tree should not be dug any deeper than the depth of the soil is worked surrounding it. In heavy clay soils, taking out the subsoil and filling with loam induces the water to settle there as in a cistern, and produces canker and gangrene in the tree. Where the plow can be used, it is always advisable to plow and subsoil the whole surface; the cost of labor is less, and any manure, like ashes, barnyard, etc., can be more evenly and generally incorporated in the whole ground for benefit of the trees in future years.

HUNTSMAN'S FAVORITE.—A new apple under the above name is described in the *Rural World* as a seedling raised on the farm of John Huntsman, Fayetteville, Mo. The description says: "Size, large; color, yellow, with a red cheek; and quality, first rate; season, from December to April; tree, a regular, heavy bearer—not having failed of producing a crop in twenty-two years."

WHEN trimming grass edgings along pathways or around flower beds and borders, be careful to do the work in such manner that, when finished, the grass will appear as it were to line the path or border, and not rise from it, staring, with a raw earthy look of one or two precipitous inches. To our eye, nothing exhibits less of landscape knowledge and true taste than a raw edge separating the grass from the road line. It is only one remove, and that a straight one, from the practice of placing a brick coping.

MULCH all newly-planted trees. If none other is at hand, take that away from trees planted last year, as they are now partially established and better able to bear drought, heat, dry, cracked soil, etc., than the newly-planted tree. It is best, however, to provide new mulch for all the newly-planted trees.

As a root crop for feeding to all kinds of stock, the carrot is unquestionably the best. Those who have spare ground, not required for other purposes, will do well to prepare it for growing this root. Repeated plowings, commencing early in spring, and at each successive turning of the ground deepening the furrow an inch, making the last plowing about the last of May, and sowing immediately, we have found to give us a good crop with comparatively few weeds.

AMONG trees to be grafted, the cherry demands first attention, next the plum, finishing with pears and apples.

BE careful to remove all suckers that appear around the roots of trees—cut clean with a sharp knife.

REMEMBER that the earlier all kinds of trees and shrubs, except evergreens, are transplanted, the greater is their chance of growth and success, because of the necessity of the broken roots being healed and new ones formed, before warm suns and showers burst the buds and cause the leaves to draw nourishment from them.

ALL the good old June Roses, like George the Fourth, Tourterelle, etc., make better growths and give more and finer blooms to have one half of the length of last year's wood cut off. Dig around them, and apply liberally well-rotted manure.

HYBRID PERPETUAL ROSES we always cut down to two or three buds from the ground, depending on the new growth to give us flowers, commencing just as the June Roses are done, and continuing on until December.

MARECHAL NIEL.—This new Rose is just now receiving great attention from rose-growers, and being sold at high prices. It is claimed to be perfect in form, of a beautiful yellow, and a free bloomer.

The original plant was grown by an amateur named Pradel, and afterward propagated and sent out by M. Eugene Verdier, France.

SOIL FOR GLADIOLUS.—“I am a great lover of the Gladiolus. They are so easily grown, and the varieties now so numerous, furnishing almost every shade and arrangement of color, that I can not see how any one who has a love of flowers can avoid having one or more beds of this beautiful bulb. I have tried them in many different soils, and they grow and flower freely in all, so that one need not fear for want of the right soil. In rich, deep loams the flower stalk is much stronger, and the flowers somewhat larger, but I do not think they are as abundant, or the colors any more brilliant than when grown in poor soil. I make my beds very rich in the center, letting the soil become poorer and poorer, until the outer edge is reached; the result is that by so doing my flower-stems rise one above the other, forming a cone by which all are in plain view, even at a distance.”—*John Robbins, Ohio.*

IN pruning currant bushes, remember that while the red and white varieties produce their fruit on spurs or small snags upon the old wood as well as upon the growth of last season, the Black Currant produces most of its fruit upon the wood of the preceding year, and that while it will answer to shorten back the growth on the red and white varieties, it is better to prune the black by simply thinning out the weak shoots.

CATALOGUES RECEIVED.

PETER HENDERSON, South Bergen, N. J., and 67 Nassau Street, New York. New plants, with illustrations of many of the new and desirable kinds.

Henderson & Fleming, 67 Nassau Street, New York. Flower and vegetable seeds.

James Vick, Rochester, N. Y. Illus-

trated catalogue and floral guide, containing full directions for seed sowing and cultivation of the flower garden.

A. M. Purdy, South Bend, Indiana. Small fruits.

Samuel T. Thorburn, Albany, N. Y. Vegetable and agricultural seeds.

Husmann & Manwaring, Hermann, Mo. Nursery stock.

James J. H. Gregory, Marblehead, Mass. Catalogue of garden vegetables.

E. Williams, Mont Clair, N. J. Small fruits, and description of the Kittatiny Blackberry.

F. K. Phœnix, Bloomington, Ill. Wholesale price list of desirable nursery stock.

R. Halliday & Sons, Baltimore city, Md. Trade list of bedding plants.

A. Wells, Ithaca, Tompkins Co., N. Y. Grape catalogue.

E. Y. Teas & Brother, Richmond, Ind. Trade catalogue.

William Parry, Cinnaminson, N. J. Price list of Raspberries and Blackberries.

Lewis Ellsworth & Co., Naperville, Ill. Wholesale price list of Roses, Dahlias, and bedding plants.

Frederick W. Wendel, Erfurt, Prussia. Trade catalogue of Flower-seeds for sale by T. C. Wendel, 518 Washington Street, Boston, Mass.

Holton & Zundel, Haverstraw, N. Y. Price list of Grapevines.

Dr. H. Schroder, Bloomington, Ill. Price list of Grapevines.

Henry R. Robey, Fredericksburg, Va. General nursery stock.

C. J. May, Warsaw, Ill. Grapevines.

M. H. Lewis & Co., Sandusky, Ohio. Grapevines.

BOOK NOTICES.

THE AMERICAN HORTICULTURAL ANNUAL FOR 1867—Price 50 cents.—The above is the title of a book of 152 pages, published by Orange Judd & Co., New York, commencing with a calendar for monthly operations in the orchard and

garden. The pages embody valuable tables and articles upon various horticultural subjects, many of them profusely illustrated. Occupying an entire new field, its editor has had an opportunity to gather matter covering a wide range of items, and embracing some of the best writers in the country. Most of these writers have performed their work admirably, but some have gone back to record as new, varieties and practices that have been many years before the public; especially is this apparent in the chapter, "New Apples of 1866," where some kinds figured and described fifteen, or more, years since, are brought forward as of late introduction, while sorts introduced and newly figured the past year are omitted. The list and brief description of grapes is good, and of great interest at this present time; so also is the chapter on pears, which bears evidence of judgment and decision, formed only on the merits of the fruit from personal observation. The chapter on "Rarer Evergreens," that on bedding out plants, and that on garden vegetables, will prove of great interest to all, and especially to those just commencing new places; while to the older pomologist or florist the index to the published illustrations of new fruits, flowers, or plants will be of great value.

THE AMERICAN AGRICULTURAL ANNUAL. Orange Judd & Co., publishers, 41 Park Row, New York. This is a companion to the "Horticultural Annual," and although designed particularly for the farmer, there is much in it of value to all engaged in labors of the garden or orchard. The article on Drainage is especially valuable to the orchardist; and every man who grows wheat should read what is here written upon that subject. The construction of Barns, Breaking and Training Horses, Feeding Poultry, Varieties of Potatoes, etc., are among other valuable articles embraced in its pages, and valuable to every resident of the country

GARDENING FOR PROFIT. By Peter Henderson. Published by Orange Judd & Co., New York. Price \$1 50. The author of this work is a practical and successful market gardener near New York. His work is written in a plain, brief, comprehensive manner, and may be commended as of value, to be read not only by the market gardener, but also by all who attempt vegetable growing on the smallest scale. The estimates of the amount of one's man's labor, the amount of capital required, and the prospect of success will doubtless be regarded by the inexperienced as too strongly put, but such persons will only need one season of experience to learn their truth. We hope the publishers will find for the book a ready sale, as it is one of really great practical value.

THE ILLUSTRATED HORTICULTURIST ALMANAC FOR 1867 contains a calendar of operations in the Orchard, Vineyard, Farm, Garden, and Green-house for every month in the year. Printed on fine paper, post-paid, ten cents; per dozen, sixty cents. Published at this office.

We shall publish about the 25th March, **WOODWARD'S RECORD OF HORTICULTURE FOR 1866**, edited by Andrew S. Fuller, author of "The Forest Tree and Grape Culturist." This work will be entirely original, and with original illustrations prepared expressly for it. It will be printed on fine calendered paper, and published in the best style. Morocco cloth, deep gold title, and beveled edges, price one dollar, post-paid. It will contain articles upon the following subjects: New Books on Horticulture; Review of Horticulture; Women in Horticulture; Men in Horticulture; Grape Culture; Small Fruit Culture; Ornamental Plants (illustrated); The Lily, description of, with method of culture and propagation (illustrated); Gladiolus, cultivation and propagation (illustrated); Annuals, cultivation of; Hardy

Herbaceous Plants (illustrated); Hardy Deciduous Shrubs; The Dahlia (illustrated); The Clematis (illustrated); Curious-leaved Plants (illustrated); Ornamental Gardening (illustrated), etc., etc.

ACKNOWLEDGMENTS.

SURDA MELON.—George O. Barnes, Esq., of Stanford, Ky., will please accept our thanks for seeds of the Surda Melon. He writes us that he "brought these seeds from Afghanistan, India, and that they are grown in the elevated region about Cabul, and brought down in hampers upon camels to the plains of India, where they are esteemed as a great delicacy, and far superior to the cantaloupe and nutmeg." Mr. Barnes says he has a "few more seeds to distribute among careful amateurs in different latitudes." We suggest that he send a few to Charles Downing, Newburg, N. Y.; John M. Ives, Salem, Mass.; Peter Henderson, New York; Robert Buchanan, Cincinnati; Prof. I. P. Kirtland, Cleveland, O.; Dr. L. D. Morse, St. Louis, Mo.; J. D. G. Nelson, Fort Wayne, Ind.; and Charles Bragdon, Chicago, Ill.

TOMATO.—We are indebted to Messrs. Hovey & Co., Boston, Mass., seedsmen, for "Keyes' Early," a variety of great reputed excellence; and to W. A. Eliason, Esq., of Statesville, N. C., for "Roseboro," described as "above medium in size, dark purplish red, firm and solid, with a large branching vine, bearing until frost comes." To us this is a new variety. Also, to C. L. Janney, Waynesville, O., for "Apple," which it is said was formerly the Pear tomato, but has been cultivated for several seasons in the immediate vicinity of the Fegee and large purple varieties, and becoming thus hybridized, has been entirely changed from the original. Described as medium early, smooth, good size, solid flesh with few seeds.

We have passed all over to our amateur friend, and hope to hear good accounts thereof in due time.

THE
HORTICULTURIST.

VOL. XXII.....APRIL, 1867.NO. CCL.

POPULAR EVERGREEN TREES.

THE use of evergreens is becoming yearly more and more appreciated, both as effective in ornamental planting and as an item of practical economy in the matter of hedges and screens for protection of half hardy plants, orchards, or buildings from cold and harsh winds and storms.

In ornamental planting their use is often very imperfectly understood, and many places are rendered gloomy and dark from their too free use in the foreground, or immediately about the house. There is a great deal of beauty in evergreens, but as a class for effective scenery creative of varied beauty, they have not the qualities that are embraced in the changing character from month to month of deciduous trees. For perfect scenery, however, covering the entire year, it would be impossible to dispense with evergreens. If used judiciously in arrangement, sparingly in the foreground, and using those of the lightest and most vivid shades of green in foliage, grouping them at the same time with mountain ash, euonymus or strawberry tree, etc., with their red clusters of fruit in winter, and massing the background with varieties of dark foliage, great effect may be produced, and a pleasant life-like character given to grounds

that otherwise in the winter season would be barren and dreary.

Some few years since, many regarded the transplanting of evergreens as one of the difficult items in arboriculture, requiring the skill and experience of a practical gardener. It was also counted unsafe to move them except at particular seasons of the year, or with balls of earth attached, and a few planters yet hold to these early views; but those of more practice find that it is no more difficult to transplant an evergreen when taken from the nursery than to perform the same operation with any deciduous tree. It is true there are exceptions among evergreens, some proving more difficult than others, but the instances or kinds are not more numerous than with deciduous trees.

In transplanting, it is only requisite to remember that the tree has its leaves on, and that there is consequently a constant demand upon the roots for evaporation, and therefore it will not do to permit them to get dry. With small-sized trees, a root nearly corresponding with the top is generally procured when the trees have been rightly grown in the nursery, and cutting in the top is unnecessary; but in the case of removal of trees six feet or more in

height, unless extraordinary care is taken, a great reduction of root is the result, and then it is advisable always to shorten in the length of the branches corresponding with the apparent loss of roots the tree has sustained.

A very great variety of evergreens have been introduced during the past fifteen or twenty years, but of them few have proved of a hardihood or beauty to command

notice as trees for popular use, and as in these pages we write for the general public rather than for a few amateurs, we shall only describe such as may be safely depended upon in all locations.

THE WHITE PINE. *Pinus strobus*.—The White or Weymouth Pine is common in various parts of the Union, and deserving of a first place in every collection. It is of rapid growth, beautiful in every stage,



FIG. 47.—*The White Pine.*

from a small plant of one foot high to that of a stately tree towering one hundred or more feet in the air, and swaying its horizontal tiers of branches and tufts of airy light-green foliage to the breeze. When grown in strong soil it acquires a thick, compact form; but in soils of a gravelly or sandy nature, somewhat dry and poor, its shoots and trunk harmonize in their length and openness to the airy light east

of its foliage, and it there becomes one of the most beautiful of evergreens in its graceful tapering form and easy broken outline. For grouping with the larch, birch, etc., it is one of the most appropriate among evergreens; and for planting in close proximity to buildings or points toward which it desired to direct attention, it is particularly well suited. As a hedge or screen plant it bears the shears well, and

forms a wall second only to the hemlock or Norway spruce.

THE BHOTAN PINE. *Pinus exelsa*.—This variety resembles the white pine, except that its foliage is longer and its branches somewhat pendulous, but in our Northern States it can not be regarded as perfectly hardy. In the southern Middle States it is one of the finest among evergreens, and should be freely planted.

THE SWISS STONE PINE. *Pinus cembra*.—The Cembrian or Swiss Stone Pine is a very compact and somewhat slow-growing variety, resembling the white pine, except that its foliage is shorter and more stiff. It is well suited to the foreground of groups of that variety, and for positions requiring a tree of less size. It is perfectly hardy, and really very handsome.

THE YELLOW PINE. *Pinus mitis*.—This



FIG. 48.—*The Austrian Pine.*

is a very handsome variety when well grown, but while young its growth is quite slow, and on that account it is rarely grown or planted. Its foliage is a dark rich green, long and flexible.

THE PITCH PINE. *Pinus rigida*.—For the purpose of creating a wild and somewhat romantic effect upon some rocky hillside, or in the formation of a broken group,

the pitch pine may be used with good effect; but as a tree for general use in ornamental planting, the dark rich green of its foliage, and the facility with which it can be grown in any soil, are its only claims to notice.

THE NORWAY PINE. *Pinus resinosa*.—The Red or Norway Pine is of rapid growth, quite handsome while young, its

foliage being a dark rich green; but as it acquires age it becomes sometimes too open and sparse of foliage to render it specially desirable, except in large grounds. Where there is room for several trees of a like habit and color of foliage in the formation of masses, we should use one or more of this variety.

THE AUSTRIAN PINE. *Pinus Austriaca*.—The Austrian Pine in rich deep soils forms one of the most dense trees of the

whole pine family. It is of rapid growth, with rich deep blue-green foliage, that for backgrounds or masses is admirably created. As a single tree, also, upon a lawn, it is always beautiful; and, when the scenery will admit, groups of this pine with the tulip tree, mountain ash, dogwood, etc., are exceedingly effective.

There is a Southern Pine—*Pinus Australis*—native of our Southern States, that has leaves much longer than the *Austriaca*,



FIG. 49.—*The Russian Pine.*

and of a lighter more yellow green. It, however, is not hardy in the middle Northern States unless shielded, or surrounded, in fact, with other evergreens. South, where it is hardy, few varieties surpass it in beauty.

THE RUSSIAN PINE. *Pinus rigensis*.—This is a variety claimed by some writers to be so like unto the Scotch Pine—*P. sylvestris*—as not to be worthy of rank as a species. Trees, however, that we have

imported and grown are so entirely different from that variety, that we must claim it deserving a special rank. The tree is of about as rapid growth as the Austrian, with its limbs and branches more loose and open or longer spaced, while its foliage is more in tufts, much longer than the Austrian, and of a lighter more yellowish green, very bright and clear. It is nearer to *Benthamiana* than any other variety with which we have had oppor-

tunity to compare it. In groups or masses with the Scotch, Corsican, and Austrian, it forms yet another shade, and we have found its use a valuable addition in producing effect.

THE BANKSIAN PINE. *Pinus Banksiana*.—This variety is classed as a scrub pine of low slow growth and little value, and so we regarded it twenty-five years ago, when

we procured specimens of it in the barren sands of islands in Lake Michigan. Those same plants, however, are now some of them trees forty feet high and extremely beautiful. It has a swayed drooping habit as it grows, but makes a conical and very graceful tree. The foliage is short, light yellowish green, and so unlike any other variety that it is extremely valuable even

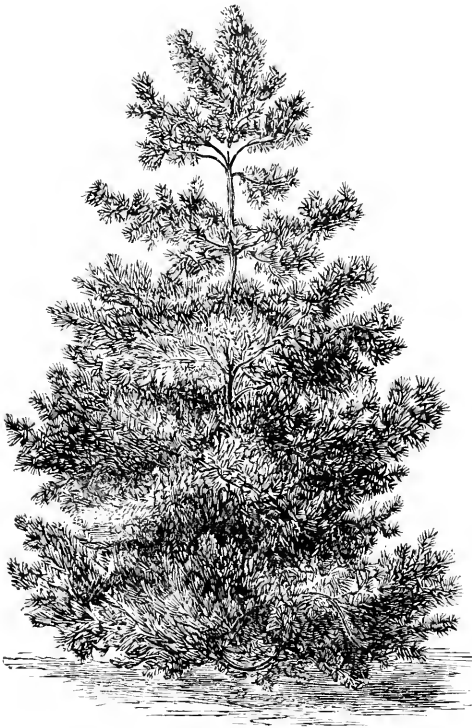


FIG. 50.—The Scotch Pine.

in grounds of quite limited extent. It is perfectly hardy.

THE SCOTCH PINE. *Pinus sylvestris*.—The Scotch Pine is perhaps one of the most rapid growers among pines, and is also very easy of management transplanting, with rarely a failure, and growing freely in almost any soil or situation. While young it forms a pretty compact tree, but

as it acquires age the lower limbs sway toward the ground, giving it rather a picturesque than beautiful appearance. The low price at which trees of it have been sold, together with its easy and rapid growth, have induced its planting, until we confess to its having become to us wearisome. It may be sparingly introduced in the formation of groups or masses,

and for picturesque distant views, and for belts or masses for breaking the force of storms and wind it is very desirable; but as a single tree, or for groups in small grounds, we prefer to leave it out.

THE CORSICAN PINE. *Pinus laricio*.—The Corsican Pine is a variety between the Scotch and Austrian—with the general habit of growth of the Scotch, perhaps not as much sway to its branches as it grows old—leaves somewhat longer than the Scotch, but not as long or as dark a green

as the Austrian, more yellowish. It transplants and grows with the same facility as the Scotch, and is desirable as a variety and to form groups or masses with that or other varieties.

THE BENTHAM PINE. *Pinus Benthamiana*.—The Bentham Pine is comparatively of recent introduction, and where spreading stateliness of character is wanted either in a single tree or group, that or the Heavy Wooded Pine—*Pinus ponderosa*—promise to supply the object. It is of rapid

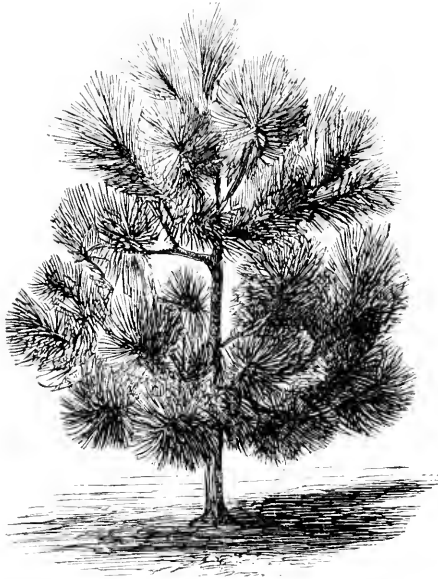


FIG. 51.—*The Ponderous Pine.*

growth, with dark green foliage, long leaves in tufts, but instead of being compact, it is open, and stately and majestic in form. We should group it with the European sycamore, the tulip or magnolia trees.

THE HEAVY WOODED PINE. *Pinus ponderosa*.—The Ponderous or Heavy Wooded Pine is another variety like the last-named, of comparatively recent introduction. It is also of a stately habit, with long leaves

of a rich yellow green color. This as well as Bentham's Pine attain a very large size when fully grown, and are therefore adapted only to positions where room can be given them in future years. We do not know how well they may bear pinching or rubbing back to reduce their size and increase their compactness, but judging from their habit, doubt the value of such practice with them.

[TO BE CONTINUED.]

DESIGNS IN RURAL ARCHITECTURE.—No. 21.

GEO. E. HARNEY, ARCHITECT, COLD SPRING, N. Y.

The square, or nearly square, house, with especially appropriate for the narrow lots the French or Mansard roof, seems to be in the suburbs and in larger country towns.

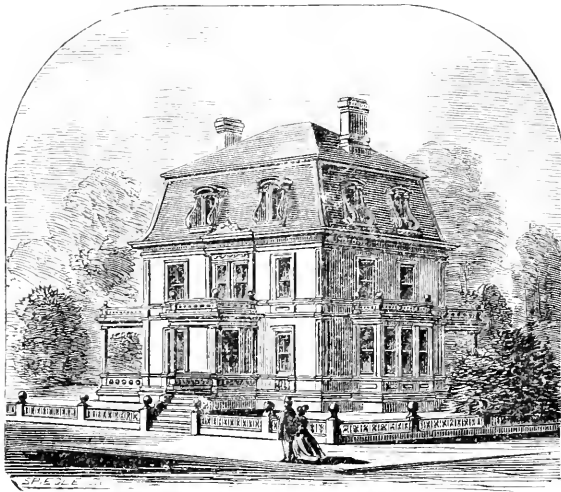


FIG. 52.—A French Roof House.

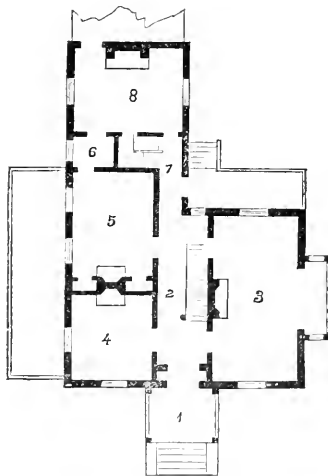


FIG. 53.—Ground Plan.

Of late years this style has become extremely popular, and, we think, deservedly so, since it undoubtedly gives a greater amount of available room than any of the

other modes, and is always in good keeping with the somewhat formal surroundings, in a thickly settled neighborhood.

From the peculiar construction of the roof, the attics of such houses may contain as many, and nearly as good chambers, as the second floor, and, on that account, a house requiring a certain amount of accommodation may be smaller than if it were in any of the other styles.

The plan, too, providing a hall in the middle with rooms on either side, has always been a favorite, particularly with practical, matter-of-fact people, who like to see every inch accounted for, and who have a horror of twists and turns, and out-of-the-way corners.

In the design here given will be found accommodation for quite a large family, with considerable economy of space, united, we think, to a respectable appearance of exterior. The house is supposed to be situated on the corner of the street, the entrance portico being on one front and a large bay window on the other.

The entrance hall, containing the staircase, is eight feet wide; it opens into the parlor on the right hand, and into the library and dining-room on the left; and, at the extreme end into another hall containing the private stairways, to the cellar and the chambers.

The parlor is sixteen feet by twenty-four, exclusive of a roomy bay window opening from its longest side, and overlooking the street.

The library is sixteen feet square, and the dining-room sixteen feet by eighteen. Connecting the dining-room and kitchen is a large pantry fitted up with shelves and cupboards, and other conveniences usually found in such places.

The kitchen is sixteen feet by eighteen, and is provided with a range, hot and cold water fixtures complete, dressers, etc., and has attached a pantry or sink room, through which we pass to the yard.

The basement contains a laundry, two large store-rooms, and an open cellar with a cemented floor and a plastered ceiling. There are also provided a furnace, coal-bins, ash-box, wine-closet, etc., etc.

The second floor contains four chambers in the main body of the house, two of which have large dressing-rooms attached, and two smaller chambers in the kitchen wing, besides a bathing-room and several closets.

The attic has four chambers, each of which is provided with a large closet, and another room which may be used as a store-room.

The ceilings measure ten and a half, ten, and nine feet high in the several stories.



ROOTS FOR PRODUCING SEED.—In the breeding of stock the pedigree of parentage is regarded as a great point, and he who desires to rear a really valuable animal must look to obtain parents as near perfect as may be possible. In vegetable life we believe this same principle is equally important to be considered, and he who would produce seeds giving promise of advanced value in their growth-product should carefully examine every beet, carrot, or parsnep root, every cab-

bage, etc., looking back to the seed from which it was grown, as well as to the fact of the present root being as near perfection as possible. Good seeds can not be grown from imperfect or unhealthy roots or plants, no more than good stock can be produced from unhealthy animals. Blood will tell in vegetable as well as animal life, and the best seeds and plants will be grown by those who regard the thousands of facts that have been published in support of this truth.

PROPAGATION OF PLANTS.—No. 1.

BY A. S. FULLER.

THE different modes of propagating plants may be classed as follows, namely:

- Propagating by seeds.
- “ “ cuttings.
- “ “ layers.
- “ “ suckers and division of the roots.
- “ “ budding and grafting.

These methods may be subdivided into

- Cuttings of ripe wood.
- “ “ green wood.
- “ “ the leaves.
- “ “ the roots.
- By layers of ripe wood.
- “ “ green wood.
- Grafting with ripe wood.
- “ “ green wood.
- “ by inarching and approach.

All the known species and varieties of plants may be multiplied by some one of these methods, and some can be readily propagated by each and every one of them. But there are certain principles which serve as a guide to the propagator in the different modes of operation that it is well to understand before proceeding to the more practical part of the subject. Although when the great diversity of character as well as the vitality of plants is considered, it can not be expected that any general rule can be given that will be applicable to every case or altogether faultless, yet for the purpose of dispelling that mystery with which the novice often supposes the various modes of propagation to be surrounded, I shall give a brief synopsis of the general principles connected therewith, together with some of the more common methods of their application.

PROPAGATION BY SEEDS.

The perpetuation of the greater portion of the known species of plants is directly by their seeds, which in their wild state they perfect with great uniformity; but when cultivated, the vital forces are often disturbed, and a portion is directed into other than the natural channels. The effect of this we see in the double flower, and the increased size of many of our fruits. The seeds of so-called improved plants in a great measure become abortive,

and we can no longer depend upon them as a means of reproduction, not only because of the want of vitality which naturally belonged to them, but in the course of cultivation there has been such an intermingling of species, as well as variations, that scarcely any variety of cultivated fruit will reproduce an exact counterpart of itself from seed. Therefore we have to resort to other modes of propagation to perpetuate any particular variety. But this disposition among cultivated plants to change from their normal character is often turned to valuable account, for to this variableness we are indebted for many of the estimable fruits and flowers now in cultivation. It is therefore of the highest importance that the propagation from seed of those plants which are so variable when multiplied in this manner should not be overlooked.

Seeds when perfect contain the rudiments of a plant, together with a peculiar substance which is accumulated at the time of their formation, and designed as food for the embryo plant during its germination; consequently when seeds are to be preserved for any length of time, it is important that they be not exposed to any conditions that will destroy either the germ or that food which is stored up with it for its future use. Under what particular circumstances seeds will preserve their vitality the longest, it is very difficult to determine, as some varieties will remain sound for years, while with others a few days is sufficient for their destruction. This diversity in the vitality of seeds is not wholly confined to any particular genus, but is observable in different species of the same. For instance, the seeds of the sugar maple (*Acer saccharinum*) may be preserved in a cool, dry place for one or two years, and then be made to grow; while the seeds of the silver

maple (*Acer dasycarpum*), if subjected to the same exposure, would lose their vitality in a few weeks. But there are other things that serve as a guide in the propagation of these two species; by observation we learn that the seeds of most of those trees, like the silver maple, which ripen in the early part of the season, if placed in the soil so soon as ripe, will make sufficient growth to withstand the cold of the ensuing winter; while the seeds of the sugar maple, which ripens late in the season, do not germinate until the following spring, even when planted in the autumn. So far as relates to plants indigenous to any locality, it may be taken as a rule, that the proper time for planting the seeds is as soon as they are fully matured.

A cool and moderately dry atmosphere is the best in which to keep most kinds of vegetable or tree seeds, although some will retain their vitality for a long time if immersed in water, provided it is kept at an even and low temperature. This is doubtless owing to the peculiar structure of the seeds, and the exclusion of air and heat therefrom. Those varieties of seeds that are covered with a hard silicious or horn-like covering may be preserved in air-tight cases made of glass or metal, and a similar plan may be adopted with some of those kinds that are naturally dry and are covered with a thin porous covering like the seed of the common onion. But seeds that are of a watery nature, if entirely excluded from the air and exposed to a temperature much above 32°, will soon decay. I am confident that a cool and regular temperature is of more importance than anything that may happen to them hygrometrically; for we find seeds that have been buried deeply in the earth remaining unchanged for many years, yet so soon as they are brought to the surface, where air, moisture, and heat act together upon them, they immediately germinate. If supplied with the requisite moisture, all seeds grow more readily when near the surface of the soil than when buried deep-

ly, for the reasons just given; therefore we should endeavor to so place them in the soil that the air and heat can reach them, but at the same time exclude the light, for seeds do not require light to assist them in germination.

In aquatic plants the case is reversed to some extent, for they usually sink to the bottom and become buried in the mud, from which they germinate, sending their stems and leaves to the surface, their seeds obtaining the requisite amount of heat from the soil below. But here we again meet with variations from any general rule, because the seeds of some aquatic plants are light and float on the surface, and germinate in this position, the roots descending to the soil, if the water is not too deep. Usually, however, light seeds are thrown upon the shore, and there take root, and their under-ground stems stretch out into deep water.

The proper depth to cover seeds depends very much upon their size and power of throwing up their stems. It has often been observed that seeds should be covered with a depth of soil equal to their diameter; that is, if a seed is one half inch in diameter it should be covered with one half inch of soil, and without doubt this would be the proper depth, provided the requisite amount of moisture could be always maintained; but as it is difficult to do this, especially when seeds are sown in the open ground, this rule is not of general application.

Neither can there be any rule given as to temperature, for some seeds will germinate at two or three degrees above the freezing-point, while others require a heat from 80 to 100°. When seeds have once started to grow, they can not be again reduced to a dormant state without causing their destruction; this should be always borne in mind, for from this cause alone more seeds are annually destroyed than from any other; as they are hidden in the soil, we are apt to neglect giving them an ample supply of moisture at the time of

their greatest need. The soil in which seeds are sown should be made fine and permeable, not only to admit air and heat and to retain moisture, but so that the radicle or young root may penetrate the earth without hindrance, and allow the stem to grow upright unimpeded. The soil should be made deep, and of such a nature that the young plant will receive a constant and regular supply of moisture. Nature serves as a guide to us in many of the operations connected with the art of propagation, yet it should be remembered that the sowing of seeds and the planting of trees by man is an artificial operation instead of a natural one; and we follow nature only when it serves our purpose, or as we are compelled to by natural laws. For nature is so plastic that she allows us to mold her gifts into forms that suit our wants and tastes, confining us only within certain limits, which it is difficult for man to determine. Nature perfects and likewise destroys, and thus that equilibrium is preserved which is observable throughout the vegetable kingdom. If we scatter

seeds in every instance exactly as is done by nature, we should not make more than one in ten thousand grow. The wild apple-tree that perfects its thousands of seeds, drops them upon the earth inclosed in a covering that soon decays, and the peculiar acid which it contains, or which is generated while undergoing this decay, destroys the seeds within; not a seed grows unless it is freed from its prison either by its fall or by the aid of insect or animal. This shows the wisdom of nature, for if every seed should grow, the struggle that would be constantly going on between offspring and parent would be such as to prevent the full development of either. This lesson which we learn by observing the apple may serve to guide us in our operations when we come to propagate it and other species of like nature. For it shows that although nature may fully develop and perfect her fruits, yet she leaves it to us to encourage those varieties which we desire, and by the assistance of art we may multiply these with such rapidity that all our wants may be fully supplied.

[TO BE CONTINUED.]

CHEAP ADVICE TO NURSERYMEN.

BY E. FERRAND, DETROIT, MICH.

I HAVE had many inquiries concerning the treatment of pear seed, several complaining that notwithstanding the good quality of our seed, it did not come up the first year, necessitating two years' care and labor, leaving all the while the seed exposed to the depredations of insects, and at the same time making it very difficult to keep the ground clear of weeds. I will venture to give a few hints on the subject. Pear seed sown in the fall will not fail to grow in spring if of good quality; but there are many objections to sowing it at that time, the chief one being the difficulty of getting fresh seed soon enough, therefore the best method is the following: Get the

seed at any time in April, wash it well in three or four waters, rubbing it between the hands in order to wash out the mucilage that sticks to the seed and makes a waterproof envelope to it; then mix up your seed with fine gravel or sand, put in boxes, and place them in a cellar until the time of sowing, which must be done as early as possible in order to obtain fine and large stocks; the sand in the boxes should be soaked through with water once, which is enough. We bore some holes in the bottom to let out excess of water. If you get your seed late, and only at sowing time, wash it as above, then sow it—it will come up, even if sown so late as the 15th of May.

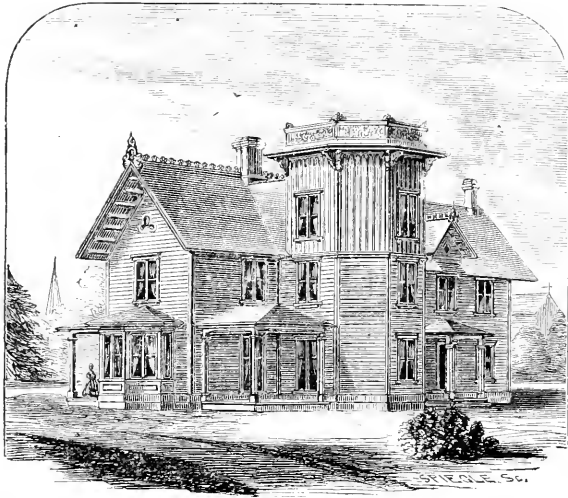


FIG. 54.—Country House—Perspective View.

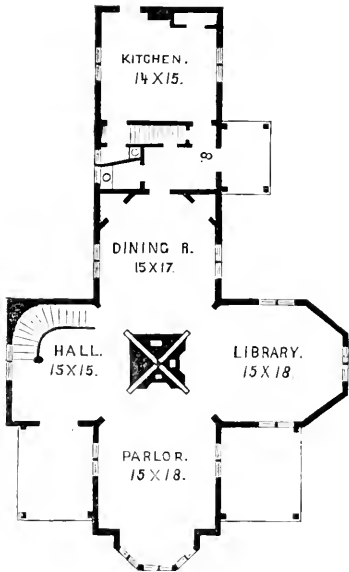


FIG. 55.—First Floor.

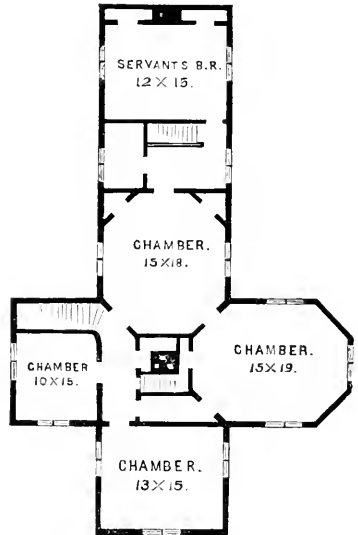


FIG. 56.—Second Floor.

A COUNTRY HOUSE.

THE design of this house was made for the purpose of giving each room a sunny southern exposure, and out of ten rooms nine have at least one lookout to the south-east, and one, the small room over the hall, has a southwest window. There is a fine cellar under the whole house, the rear of which can be finished for a laundry, and has an outside cellar door.

The principal floor is so managed that the spacious hall with winding staircase presents an attractive feature on entering. The chimney is in the center of the house, and sliding doors connect each of the principal rooms, so that when occasion requires, hall, parlor, library, and dining-room may be thrown together, the octagon form of these rooms adding much to their beauty; back of the dining-room is a side hall, closets, side door, and back stairway, and back of these the kitchen, provided with sink and force pump, connecting with a thoroughly constructed cistern of 8,000 gallons capacity, which receives all the water from a slate roof. Rain water from a slate roof is pure and clean, free from color, and used with ice in summer is better and healthier than well water.

The kitchen is well ventilated, windows both sides, and doors so arranged as to secure all comfort; an independent chimney, etc.

The second floor has large and well-ventilated bedrooms, ceilings are square and of good height, abundant closet room, etc.

Above this, in the tower, is a fine octagon room of fifteen feet radius, that can be used for a bedroom, smoking-room, or any other purpose; a good garret also for storage, etc.

The house to be heated with a furnace. In the parlor and library are marble mantles, and each is fitted with Dixon's low-down Philadelphia polished steel grates

for burning wood or coal—the best open fire known.

All the wood-work about the house is of selected stuff, and handsomely stained and varnished—the best and most effective interior finish. The walls and cornices are hard finished in the best manner.

The frame is substantial, and lined throughout with unworked lumber, and covered with narrow-lapped siding, making a stiff, warm house.

All the work has been done by the day, in the best and most substantial manner.

The house is located on the high dividing ridge between the Hackensack and Passaic rivers, one hundred feet above tide-water; ten miles from Broadway, and five eighths of a mile from the first station on the Erie Railway; from thirty-three to forty minutes is the running time from New York to the station, and twelve trains each way daily afford the most ample accommodation. A New Yorker living above Thirty-eighth Street has no such facilities for getting to and from his business if below Chambers Street; he must spend more time, accept the poorest class of cars or coaches, pay more for his ride, and in stormy weather hang up or go a-foot; he can not get home with the same reliance and promptness as he could if he lived out on the Erie Railway. The fact exists beyond all contrary proof, that business men can and do every day go ten miles out into the broad, beautiful, and healthy country that lies beyond the west bank of the Hudson in less time and with greater comfort and certainty than they can go from Chambers Street to any point above Thirty-eighth Street in New York. They can, if necessary, be at their business at 7 A.M., and leave it as late as 11 P.M.; enjoy the amusements of the city, and, if preferred, attend church there on Sundays;

live in the country and enjoy every luxury of city life, and all those luxuries unknown to city residents.

The city of New York is now, in point of population, which is the measure of size, rapidly falling behindhand in comparison with its suburbs; draw a circle of twenty miles radius, with its center at Union Park, and it would inclose a population not varying much from 2,000,000, of which more than one half are outside the city limits of New York; this suburban population is growing at a rate, per cent., nearly two and a half times faster than the population of the city.

Without some rapid method of reaching up town, or annexation of territory beyond city limits, in ten years New York becomes the second city in the country. In the same period, the comparatively unknown city of Newark swallows its suburbs, and becomes a competitor for the fourth position on the list. In accordance with the rate of growth for the last fifty years, this circle of twenty miles radius will contain in fifteen years more a population of 4,000,000, and the value of property will be enhanced enormously.

It does not vary much from twenty years since commutation rates on steam railroads were generally introduced; in fact, many of the principal roads have been built since then. No railroad company that we know of has ever advertised commutation fares or trains, and it is safe to say that a large majority of the citizens of New York are unaware of their existence. The time is now at hand when business men will ascertain their bearing, and even this present spring will see a growth of suburban population hitherto unparalleled.

At the head of the list, in all the requirements for steam suburban travel for business men who must under all circumstances be carried promptly, stands the Erie Railway. It is not only the best, but has peculiarities of its own which no other road enjoys. It is the largest railroad corporation running out of the city—

its resources in engines and cars are of the most extensive kind. The cars are wider, larger, longer, and more elegantly fitted up than any other. It has full telegraphic communication and a broad gauge double track, a consideration of the utmost importance to a daily traveler. Its commutation rates are lower than any other road, and free from all petty restrictions and annoyances. In punctuality, ease, comfort, safety, freedom from dust and noise it takes the lead, and can always keep it. It is managed on broad-gauge principles, and is the first road that is adopting the finished nicety of construction and grade that characterizes the suburban roads of London.

This matter of going home daily by steam will bear considerable ventilation; it is difficult to say what is the best medium of time one can devote to it. Some parties we know ride sixty miles in and out daily—an hour and one half is very common. But to find every desirable advantage, there is no necessity of exceeding sixty minutes from place of business to place of residence. In New Jersey, within fifty minutes of the City Hall, New York, including the time required to walk to the ferry, the time in crossing, taking the train, and the walk or ride home from the station, are thousands of acres of building sites of the very best class, in superior, noted health localities that are now undeveloped and unknown to the great world that is clustering thicker and thicker in the limited space of this busy hive; but considerations of time, of money, and, last thought of, but not least, health, must add to the throng now setting toward the elegant suburbs of this city.

New York capitalists have during the last winter purchased about eight hundred acres of land lying about the first depot of the Erie Railway, ten miles from New York, which is now being divided into country seats of from one to five acres. A large number of dwellings are to be put up, a first-class hotel opened the first of May, and schools and other public improvements carried out.

BEAUTY OF AMERICA—(APPLE).

BY F. R. ELLIOTT, CLEVELAND, OHIO.

FRUIT, from medium to large size; *form*, low when fully ripe, with irregular, broken globular, flattened, broader than long; *stem*, short and slender; *cavity*, narrow, deep, and regular; *calyx*, small, closed; *basin*, shallow, with a slight, knobby, uneven surface; *color*, a ground-work of greenish yellow, becoming a rich pale yellow when fully ripe, with irregular, broken stripes of a dull crimson red; surface often a little appearance of russety, with numerous small, star-like specks of russet, and with russet covering the cavity around the stem; *flesh*, yellowish, and, in full-ripe specimens, occasionally has a tinge of pink

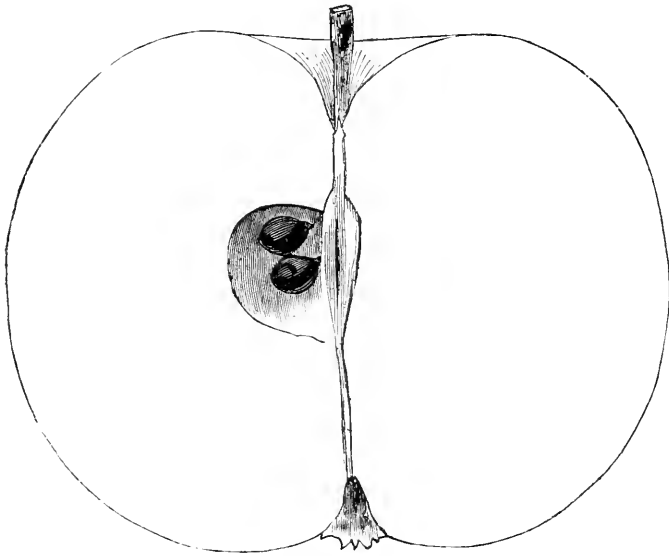


FIG. 57.—*Beauty of America*—(*Apple*).

upon the side or end that has been most exposed to the sun in ripening—tender, breaking, rich, very mild, sub-acid, nearly best; *core*, small; *seeds*, very plump and round, slightly ovate and pointed: *season*, January to March; *tree*, a good fair grower, rather spreading than upright, and a good, regular bearer.

I do not know where this variety originated, and from once having received an impression that it was a *poor bearer*, I discarded it. Subsequent acquaintance with old bearing trees of it convinces me that it is a good bearer, and an apple deserving more extended cultivation.

GRAPE CUTTINGS FROM MODERN HISTORY.

BY JOHN S. REID.

NUMEROUS are the theories of naturalists as to the origin and creation of the vegetable kingdom, some asserting while others deny the Biblical account as related by Moses; but be this as it may, no one who has observed and studied the method and arrangement of the flora of the world, will hesitate to acknowledge and admit that the distribution of the various plants, trees, shrubs, vines, etc., are not the result of chance; but that a wise and well-directed superintendence is over them all.

Take, for example, the flora of Europe and compare it with that of America, and a marked difference will be at once perceived by the most casual observer, although many plants of the same species are found in both hemispheres.

Thus the vegetable kingdom of North America presents more variety than that of any region of similar correspondence or climate in the Old World, although those found on the northern shores of this continent are somewhat in character and resemblance to that found in Europe within the arctic circle, the change and diversity being chiefly within the temperate zones, where plants that are indigenous to America, and grow wild in her forests or on her prairies, require the aid of cultivation and labor in the other countries.

Again, why is it that certain grains are the productions of the European continent, while Indian corn, tobacco, and other great staples are natives of this, we can not say, although we know that the physical conditions of the vegetable kingdom in their regulation and distribution, although much diversified, are mostly included under the idea of climate, among the agencies of which are understood to stand pre-eminent, heat, light, dryness, humidity, rain, frost, snow, etc.

Now the art and science of the agriculturist enable him to modify all of these causes, and to adapt the soil to the several kinds of plants which he wishes to naturalize into the climate of this country from that of Europe, or from some different locality of his own land.

We do not intend going into a scientific discussion of the numerous causes that compel the distribution of plants over the world, but only to intimate that there are causes geographical as well as creative; and that while the eyes of the horticulturist are roaming over the land to discover *the* grape for the million, we wish to guard the novice in grape culture, and inform him that some things *only* can be done, notwithstanding the assertion of some learned Vignerons, who deem themselves the *hub* of Vineland, if we may coin a word for the occasion.

For ourselves, we do not pretend to decide why the wine grape of Europe will not flourish in similar latitudes in America to what it does in Europe; nor why the mild climate of England refuses to perfect its fruit in the open air, when under almost the same parallel in Germany, on the Rhine, it produces the finest of wines.

Our official duties the past year prevented us from being so constant a contributor to the *HORTICULTURIST* as we should have wished, but although we did not write much, we read the contributions of others with much care and some profit, and approve of the hints thrown out at random by many of them in classifying those grapevines which appear to suit the various localities from which they write. We can not but admire, too, the warmth and animation with which some of them advocate their favorite variety, especially the friends of the Adirondac, a grape

which appears somewhat a myth, for few seem to have seen it in all its glory, away from its native mountains. There was a time, too, when Cincinnati had but one grape of value, the Catawba; now, this old variety has run out, and the Delaware and Ives' seedling are the rage; while under the nursing care of the committee, headed by Dr. Warder, the Concord has obtained the prize as *the* grape of the present hour.

We do not know what Dr. Grant and others may say to this, but we shall accept the award as the last announcement of vine wisdom from the bench, as orthodox authority, although we prefer a well-ripened Delaware, Catawba, or Diana to a bushel of Concords, without any disparagement to the Iona, Israella, or Adirondac grapes, which although we have the vines of, have been so unfortunate not to have fruited.

This past season my vineyard has again been a complete failure, although several varieties, which had been covered during the winter, and somewhat protected by walls and fences, ripened a few grapes, among which were the Delaware, Clinton, and Concord, with my own seedling white grape, Anna Harriet, which fruited some dozen of bunches.

Perhaps your readers may remember that we stated having planted side by side our Delaware, our Iona, and our Adirondac, by way of experiment, which should all have fruited the past season. They stood equally exposed, on one line, six feet apart, supported by a wire trellis; the result was, the Delaware bore two bunches and made good wood, while the Iona showed, but did not ripen its fruit, and the Adirondac wholly failed in wood and fruit. This is the record of *our* experience.

The seedling black grape of which we wrote to you last year did not set but one bunch, and this was picked off before it was ripe by some truant bird or boy; but to all appearance it looks like a grape of

some promise, perfectly hardy and of good size. We will report this fall its true merits, should it survive all misfortunes and ripen its fruit.

But let us return to the vine-clad hills of France; let us talk a little of Bingen on the Rhine; let us romance with Don Quixote and Gil Blas on the glorious sherry of Spain; drink of the sweet malaga of Granada, of the fragrant Pedro Ximenes; or enjoy the pure juice of Andalusia, and learn something of that climate which produces these luscious wines, and with what culture the Spanish peasant produces them.

Behold that lazy, lounging Spaniard singing under his vine, as if it was too much trouble to rise from the green, pleasant bank on which he is reclining. With the smallest amount of labor he raises the most luscious of fruits—the grape, almond, fig, orange, pomegranate, and others equally delicious are his—with agricultural instruments after the fashion of the Noachian era, and a mode of culture not many removes above the savage of our wilds; the mountain slopes of Spain and her beautiful valleys are laden with the richness of nature. Here, then, it is not to the man who cultivates the soil, nor to the articles of husbandry, nor to the mode of culture, but chiefly to the selection of the grape for the country, and the climate suitable for its production; and so it is in all the countries where the cultivation of the vine has become a success.

But in these, the utmost regard is paid to the selection of varieties adapted to the soil and climate, well knowing that one variety which may do well in one district may be wholly worthless in another.

Thus the *Der Kleine Reissling*, or little Reissling of the Rhine, which produces the famous *Johannisberg*, loses its odor and bouquet on the shores of the Douro, while the richest grapes of France, such as the *Frontignac*, the *Luñel*, and *Muscatel*, wholly fail on the Rhine.

In Spain, on the chalk cliffs of Andalusia, the *Ximenes*, the *Malaga*, and *Black Alicant*

flourish in most unbounded profusion, yielding bountiful harvests of the richest of grapes, producing wine of the greatest strength.

So along the volcanic slopes of Italy and the mountain ranges of Naples, the wine grape grows unequaled, climbing up the hillsides and creeping among the cinders and lava of Vesuvius, fairly luxuriating among the hot volcanic ashes of that famous mountain.

Should we not, then, endeavor to learn wisdom even from the indolent and ignorant peasant, to find out the suitable grape for *our* section of the country? may we not become convinced that as it is in Europe so it will be in America, and that certain kinds are adapted to certain districts of country? so that instead of forcing the Catawba or Norton's Virginia, and other similar kinds to blossom and fruit in the cold, bleak regions of the North, we select such as suits *the* locality, and in the mode and manner of cultivation make up for the *want* of climate found along the shores of the great sea.

One of the first principles of vegetable physiology is, that we must combine the values of temperature and time, and that heat acts in proportion as it regards its duration and force; and another is, that each species (of plants) requires for each one of its physiological functions certain minimum of temperature at which it will vegetate. Take the grapevine for example, and we find that it requires different temperatures for its several stages of growth and perfect fruition; thus one temperature is required for its germination, and another for its ripening of its fruit; and that as each species can bear a definite range of temperature, and requires a certain amount of heat or time to enable it to perform its functions properly, therefore to arrive at a proper knowledge of the availability of any *one* kind of grapevine that will suit any one special locality, we must study and discover these several temperatures, noting especially the time of flower-

ing, the ripening of the seeds, and the elaboration of the saccharine matter.

The limits of the successful cultivation of the wine grape in Europe are generally fixed where the mean annual temperature is from 50 to 52°, and the summer is not less than from 65 to 66°, and no country whose annual mean temperature falls below these averages can produce wine of a superior quality, or whose vineyards can mature superior grapes.

But in addition to these, the summer and autumn must not only be sufficiently hot, but it is indispensable at a given time, say that which follows the appearance of the seeds, and there should be at least one month of warm dry weather, the mean of which is equal to 66°. Thus, for example, London and Cherbourg, whose annual mean is equal to 50°, but whose summer does not exceed 62°, hence the wine grape there does not succeed; while in Naples, Marseilles, Lisbon, Dijon, Cadiz, and Vienna the summer mean is equal to 70 and 76°. Yet each of these cities has its own peculiar wine and grape, each and all ripening its fruit, and elaborating its juices for superior wine.

Instead of forcing our finer varieties on New England, or even the middle States, let us give them to a latitude and climate whose temperature and soil will develop all the latent richness of their nature; while the Concord, Clinton, and Delaware, with several new varieties, may be successfully cultivated in these States.

We rejoice at the healthy tone which the HORTICULTURIST is giving to the cultivation of the Grape, and esteem every writer who gives his experience unbiased of the several varieties as they each appear before him in his respective region. Some seven years ago our vineyard produced Catawbas equal to those of Kelly's Island at the present day, and our wine ranked second only to Mottier's best; now, for these three years, the Catawaba has completely failed, while the Delaware and Concord are coming into favor, the former

being superior in quality and hardiness, although smaller in bunch and berry, and the Concord larger in the latter two, but inferior in quality in its juices and aroma.

But it is not for the want of a mean temperature similar to some regions of Europe, that many of our grapevines do not succeed in almost every State of our Union east of the Rocky Mountains, but to the want of a proper climate at the critical period of the fruiting of the vine—to the excess or extremes of atmospheric action—to the dryness or wetness—to the cold or heat at these periods. For example, the summer months of June, July, and August in France and Italy range from 66°, 70°, 71°, to 70°, 73°, and 76°, while the same apparent temperature is found from Missouri to New York, but during these months sometimes we have an excess of heat, sending the thermometer up to 100° in the shade, and anon, down it comes to 50°, with rain and excessive moisture, and mildew and rot follow rapidly, and destruction of the grape crop is certain.

We are a firm believer in the successful cultivation of the American grapevine in

America; and when we have understood more fully the true nature of our several varieties, and found the proper grapevine for the proper region, then we will make grape-growing productive and profitable; and whether the Delaware and its species may succeed better on the banks of the Hudson than on the banks of the Missouri matters not, the day is fast coming when all along our mighty rivers, from the Rio Grande to the Aroostook, the culture of the grape will become a source of profit and industry, while the production of pure wine from its luscious juices will tend to banish the use, as a beverage, of spirituous liquors, tending to make our people an independent, frugal, industrious, temperate, agricultural nation; for we assert as an uncontrovertible truth, that whenever a nation or people become agricultural in their habits, living on the productions of their own lands, they become a frugal, temperate class, and tend to give tone and character to the whole nation by their precepts and example—a living, working temperance society, without its army of hired orators and paid lecturers, the parasites of a true and benevolent cause.

RED CEDAR AND MILDEW.

BY COL. D. S. DEWEY, HARTFORD, CONN.

IN a communication from W. C. Strong, in the October number of the *HORTICULTURIST*, these sentences occur:

“In this connection, I would ask if any vine-growers have noticed any immunity from mildew to vines trained around cedar posts? I have thought there was a perceptible difference in favor of vines on cedar posts. We might expect this result, for the aroma from the posts is known to be antiseptic, and it is quite powerful when the posts are new.”

As it is probable that no definite conclusions have yet been arrived at on this subject, owing to the absence of direct experi-

ment or comparative trial, I venture to offer my opinion on this point, which coincides with that of Mr. Strong, and, probably like his, is only based upon general observation.

All the posts in my vineyard are of red cedar. Their average height above ground is about seven feet, and they stand eight feet apart each way. In the rows, they are connected by horizontal strips of white pine. My vines have never been noticeably troubled with mildew or insects; and those which have happened to be trained nearest to the posts have surpassed the others in general healthfulness of appearance and productiveness.

One single vine, in another locality, near the house, trained entirely on and around a cedar post on which the limbs were left uncut (or partially so), is the thriftiest and most productive vine on my place, free from everything noxious.

This is but inferential testimony, to be sure, and only good so far as it goes; but not without its weight, if it be confirmed by the same kind of testimony from others. The point will undoubtedly be more fully investigated during the coming season, for, as *Viticola* says, "Mr. Strong's suggestion in regard to cedar posts may prove quite a valuable one."

In this connection I add the following, in the way of parol evidence. A neighbor, whose grapevines for a number of years have been grown and trained, with tolerable success, against a high and tight board fence, with an excellent exposure, has detached his vines for the last year or two from the fence, and caused each one to train itself on and around a cedar post, and considers it quite an improvement in every respect, including, incidentally, immunity from mildew.

The cedars are cut and prepared on the mountain; the leader is cut off so as to leave the body about ten feet long; the limbs on the upper half are shortened in somewhat, and those on the lower half are cut close to the body. When used in garden or vineyard, they are set about three feet in the ground, leaving, of course, about seven feet above the surface. The main objection—and probably the only one—to their extensive use (especially for vineyard purposes) is, that the projecting limbs occupy too much space; but this waste of room is partially offset by the gain of time in taking care of them during the growing season, as they want no tying up of any consequence.

This difficulty can also be met—and it has been done in one instance within my knowledge—by flattening the limbs, so to speak, on two sides; that is, by bending some, and by cutting off others, from two

opposite parts, to within a few inches of the body; and leaving the others partly trimmed and partly untrimmed for plashing. Prepared in this manner, and set in rows, with an occasional interweaving of the extremities of the longest branches, a serviceable and durable trellis may be formed, which may be expected to repel insects, and, perchance, mildew, from the combined influence of the wood itself and the facility for natural growth afforded by the manner of construction.

By the way, I have for a long time thought that many of the ills of vine-growth were directly traceable to the restraint which we are apt to put upon our free-growing native varieties. Are not our trellises too procrustean? and our methods of confinement too rigid? Do limb and spray have a fair chance at full natural development? I look upon *motion* as a necessary element in healthy vegetation of all kinds. More of this, perhaps, anon.

The following cut is intended to illustrate the foregoing idea of a cedar trellis.

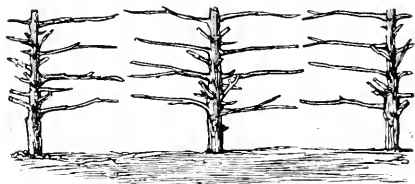


FIG. 58.

The virtue of cedar wood does not consist (as I think, without wishing to appear hypercritical) in its being strictly antiseptic. Its aroma seems to act simply as a repellent, rendering the wood—particularly that of the red cedar (*Juniperus Virginiana*)—self-defensive against the attacks of worms and insects, and, possibly, against fungi of all kinds, including mildew.

MEM.—A correspondent of the *Country Gentleman*, states, in a recent number, that red cedar twigs bound around the bodies of fruit-trees, with the butts uppermost, will effectually protect the trees from all kinds of injurious insects.

NOTES ON THE FEBRUARY NUMBER.

DECIDUOUS SHADE TREES FOR PRIVATE GROUNDS.—To the improver of a new place, unacquainted with but few of our native trees, this will prove an article of interest. You will permit me to say that it would have added to its value had you designated the extent of room required for each tree.

I should like to suggest one or two more trees, which in planting new places of any extent, and even some of limited area, are extremely desirable. One is the Bird Cherry, a rapid-growing tree, with half drooping pensive spray, glossy, clean foliage, white flowers, and long clusters of black fruit. True, it is common in many of our fields, but that does not make it anything the less a tree of merit. It should have from twenty to thirty feet of room, or, in other words, should not be nearer than ten to fifteen feet from another tree—better to have more than less of room, as in time it comes to be quite large.

Another is, the Southern Cypress—*Cupressus disticha*. Also a rapid grower on moist, rich soils, and, becoming a very large tree; but when grown in our common dry soils, it makes a tree of only, say, twenty to thirty feet high, very regular and beautiful in form, and with a delicate, yew-like foliage, always attractive.

A CHAT WITH MY NEIGHBORS.—Whoever the writer of this may be, it is evident that, although he may not be accustomed to writing, he has looked to the working of Horticulture understandingly. In quoting his neighbor, he raps some of those men who, caring more for the dollars than the advancement of fruit culture, have not hesitated to propagate and sell grapevines grown from unripe wood of unripe, stimulated, fire-heated plants, thereby creating and entailing an enfeebled habit that does not really belong to the vine, and which never is visible in

plants grown only from eyes of healthy plants. I have no objection to the green wood, but it must be taken from a plant growing in a healthy, vigorous manner, not from a thread that knows no life except one of tropical forcing heat.

HARDY PERENNIALS.—I agree with you, that perennials are, as a class, those which should make up the main portion of the flower-garden, when but little care and labor can be devoted to it. Your list is good, but why can not you prevail on Mr. Charles Downing to give the readers of the *HORTICULTURIST* a short, condensed list of some of the best varieties, adding to the name of each its color and height of flower-stem. Mr. D. I know to have one of the largest collections of herbaceous perennials in the country, and to have given their culture daily attention, as a source of personal enjoyment, for many years. The Messrs. Ellwanger and Barry, as commercial growers, have a very large collection, and one or the other of them should give us remarks and descriptions, especially of those introduced lately.

QUINN PEAR.—It may be a superior pear, but its size is a great objection, and unless better in some respect than Dana's, Hovey, or Lyeurgus, it will take a good many years to get it extensively grown. Somehow I have myself, and, I know, so have many others, very little confidence in the committee reports of the American Institute Farmers' Club. The rose-growers abroad, when a new rose is introduced, first learn the name of the introducer, and from their knowledge of that introducer's previous plants, form at once an impression of its value. If the grower's list shows varieties that for years have proved good, and that are retained and grown by cultivators generally, then they eagerly buy; but if, on the contrary, the varieties so introduced have only existed a season

or two, and then become superseded by better sorts, or thrown out because when proved they were not found equal to sorts already known, then the buyer hesitates, in purchasing. So with this Farmers' Club; and I have yet to learn of any new fruit or flower, grain or vegetable, which it has commended, that has stood the test of years.

CORDON TRAINING—BEZI DE CAEN PEAR—LUDWIG'S CHERRY—ALIDA PEACH.—All well to be figured, and valuable as records to the pomologist. The cordon practice of growing will enable every garden to have peaches and apricots, etc., every year, because when so grown the trees can be readily protected from late frosts in spring by means of mats or cloths, and from curculio by fine netting. To some such practice as this, and the extended use of orchard houses, I believe we shall have to look for any certainty of peaches to eat from year to year.

INDIGESTION.—Mr. Ellis hits pretty hard upon some theorists, and I gather from this article that he yet believes in new creations, and that from atmospheric or other invisible causes these fungoid diseases are produced.

CULTURE OF THE APPLE.—Brother Hicks, you are right; the soils of most lands at the East have lost their valuable ingredients for production of healthy trees and abundance of fruit; and the apple-grower must no longer think he can grow crops of apples and three tons of hay to the acre without supplying freely of manure. As yet, the orchards on the new lands of Indiana, Illinois, and west, produce crops of fine fruit within three or four years from planting out; but their time of failure will soon come, if they do not take heed and learn from the errors, as they are always ready to do from the intelligence, of their Eastern co-laborers in fruit-growing. REUBEN.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

DEPTH TO PLANT GRAPEVINES.—*Messrs. Editors:* I am about to plant a vineyard, and have been reading authorities for information as to the depth at which the roots should be planted, but can not find any definite instructions. Can you enlighten me? My soil is a clay, resting on a shoal rock, which in many places crops out within eighteen inches of the surface.

Yours, etc., W. B.

Avon, O., March 7, 1867.

[We do not know that we can enlighten our inquirer, but we will cheerfully give him our views, and for a better understanding of the subject will briefly re-

capitulate some practices and their results. Our earliest vineyards, of any extent, were those planted by Germans, who came to us impressed with the belief that only hill-sides exposed to the south were suited for vine-growing, and that the best vineyards could only be produced from the planting of long cuttings (each with a bit of old wood attached, and having three buds or about two feet long of new wood), in the place where the vine was permanently to stand. All the ground also was to be thoroughly trenched three feet deep; and as the vines grew, every surface root was to be cut away, leaving only the lower

roots to feed the vine. These practices have been, and we believe are yet the rule about Cincinnati and with some growers in Missouri; and cultivators who consider it erroneous to plant a tree deep or dig deep holes for the same, yet commend the planting of grapevines at a depth of eight or ten inches above the upper root. In our belief this is wrong; we think it contrary to the natural action of the plant, which, if left to itself, will be found with the larger portion of its roots near the surface. One, two, or more strong, vigorous roots corresponding with what, if left to itself, are the main vines or body of the plant, will be found running down deep into the earth; but the main support of the plant is obtained from the surface roots lying, say, at a depth of four to five or six inches. In our study of vegetable life, we have come to believe that warmth and air are as essential to the roots as the branches, and that a *healthy* plant can not be grown where the surface roots are destroyed and it be compelled to seek support from roots beyond the influence of and at a corresponding temperature with the atmosphere in which the foliage is existing. From this our inquirer can see that we think deep planting and destroying of surface roots has something to do with the diseases of vines around Cincinnati and elsewhere that it is practiced, and we add to this our theory and belief, that surface roots are essential to the *health* of the vine, because observation of many years has shown us vineyards, on level lands, with roots left nearly in their natural way, growing healthy and producing good crops of fruit.]

MESSRS. EDITORS: Please name three standard pears for profitable market-growing—one early, one late, and one winter.

F. STRONG, Ohio.

[As an early and profitable market sort, or pear root, we name Clapp's Favorite; for the medium time of ripening take Beurre d'Anjou; and for winter, Josephine

de Malines. These are all hardy, healthy, moderately rapid growers, productive, and as a rule the fruit is of good, salable market size, even and regular, and of a quality that fits them for the dessert table.]

PELONIA, NORFOLK COUNTY, VA., Feb. 8, 1867.

MESSRS. EDITORS: My attention to the article on Strawberry Growing, in your February number, induces me to inform you of a result in my garden this last season.

I have a berry sent to me from Horn-castle, England, and invoiced the Empress Eugenie, but it so much resembles the Trollop's Victoria that I think it one and the same thing. At any rate, it beats all strawberries I ever tried, and I have had every new variety that has been offered to the public as something wonderful.

I have, by correct measurement, one quarter of an acre in this kind of strawberry, which were planted six years ago where they now stand, and have been so very productive and so profitable for the last three years, that last season I kept a correct account of the proceeds, viz., 500 quarts strawberries sold to a huckster in the city of Norfolk, who resold them in New York, \$500. Cost of picking, transportation, etc., \$50; net proceeds \$450. Amount consumed by my family of twelve persons during the season, no account kept, and we did not stint ourselves.

I will say nothing as to size, only that I grow the Agriculturist, which makes a beautiful berry, but not consistent with description as to size, while the Empress Eugenie is larger in size and more productive than it. Now, sir, you say that, as a rule, these great yields do not hold good. Doctors will differ, and I have to say *it will hold good*, all things considered. For instance, one acre of strawberries properly attended will yield five times as much profit for the same labor that an acre improperly cultivated will do.

Of all the fruits I ever cultivated, the strawberry gives larger returns for kind treatment than any other.

I would like to hear what you have to say relative to a strawberry patch six years old, yielding as mine does, and which has stood this hard winter, and now that the snow has left us, is in vigorous growth, and with fair prospects of making its seventh year as profitable as the last one.

Yours, most respectfully,

F. W. LEMOSEY.

[As our correspondent says, "doctors will differ," and while he thinks he has made a case against our assertion, that large yields and high prices can not be taken as the rule of profit in fruit culture, we do not so consider it. We are much obliged for his record, and trust he will again keep one of the coming season, and report to us; but we don't think the yield he records a large one, while the price at which the fruit was sold certainly is much above the average rule of New York markets. Without referring to published statements, we take our own practical record, and looking back on varieties, their yields, etc., find that in 1847 we gathered and sold from one fourth acre 1,347 quarts, besides what were used in a family of ten grown persons, among them workmen and children who had permission to go upon the ground and eat when they pleased. In 1848, however, the same ground only gave 615 quarts for sale.]

DAHLIAS for early flowering may now be potted, or otherwise placed for heat and growth in the green-house or frame. Plants started now will give flowers in July, but those who desire to grow superior blooms will keep the tubers back a month or two. Some of the best blooms we ever saw were grown on plants not started until the middle of June.

JAPAN LILIES should be got into the ground as soon as possible, and so also gladiolus in some localities and soils; but where there is prospect of frost into the middle of May, it is better to delay planting the latter until the last of the month.

HERBACEOUS PEONIES and plants may yet be divided and planted, and the tree peonies increased by grafting on the roots of the herbaceous sorts.

ALL beds or borders for flowering plants, roses, etc., should be made deep and rich with soil. Always obtain as much fresh loam as possible, and add to it well-rotted animal manures, but not so liberally as to make it what is termed "fat" or soggy.

GET the cultivator and light plow going among your vineyards, and fruit orchards, and gardens as soon as the ground will answer. Don't work clay land while it is wet. Plow very shallow next the bodies or main stems of trees and vines, going deeper as you work from them.

IF you have neglected to prune back your hardy roses, do it now, cutting the hybrid perpetuals close to the ground, and the mosses down one half. Also, if a tree has escaped its due washing, and has upon it *coccus*—little white spots—insects, or bits of moss, etc., get some strong soapsuds, or weak lye, or potash water, and wash it all over before the buds push.

TUBEROSES and AMARYLLISES should be potted and placed where they will get a gentle heat to bring them forward for planting out in open ground, and give early flowers.

ANNUALS of many sorts should be sown now in pots or a gentle hot-bed frame, for transplanting, and thus hastening the early blooms of the flower garden. In some sections they can be sown at once in the open ground.

SPRING budding with the peach, magnolia, etc., may be performed successfully this month. Cut the buds some days, say a week or so, in advance of setting, and keep them in a cool place, letting the tree get a little advance of the cion or bud.

CHRYSANTHEMUMS may be divided and replanted now, and whenever any cuttings are ready, propagated therefrom.

FUCHSIAS should now be repotted, and headed in pretty severely. It will give them more vigorous growth, and cause them to form a better shape.

VINEYARD vines should now be tied neatly to the wires or stakes, and as the buds break, watched carefully to see if they do so evenly. Should the end buds swell strongly, while the middle buds remain dormant, bend the cane over in the form of an arch, and tying keep it there until all the buds have burst forth alike. In some sections where we are read, the buds around the crown or base will now require watching, and all that start over and above the number wanted to form canes another year should be at once rubbed out.

WALKS and ROADS require considerable care at this season to keep them smooth and level. Rake and roll frequently, for if now neglected it will require weeks to bring them again into good order; besides, a neglected walk or road always looks as though the gardener or owner had planned more than he could well accomplish, and this one error thus become an indication of imperfect judgment.

PLANTS that have been kept in pits should now be exposed to light, and air admitted freely.

LAWNS should be rolled and mown frequently at this season; by so doing the roots or crowns will tiller more abundantly, and each rolling while the ground is yet soft will aid in pressing into smooth surface any inequalities.

CUTTINGS of currants, gooseberries, flowering shrubs, etc., may yet be made and planted; but they should be carefully

mulched, else the feeble young roots which they will make in the early season will dry up on approach of heat and drought.

PITTSBURG, 7th March, 1867.

MESSRS. THE EDITORS OF THE HORTICULTURIST, NEW YORK: *Gents.*—Please insert the following.

Let me call the attention of "Reuben" to a letter written by N. Longworth, Cincinnati, 18th February, 1850, addressed to the Wine Committee of the Horticultural Society, and published in the *Western Horticultural Review*, "who being dead yet speaketh."

"I recollect some years since, when my vineyards suffered severely from the rot, some of my lazy tenants, who left half their vineyard in grass and weeds, which escaped the rot, while the clean vineyards of their neighbors adjoining, and their own portion cleaned, suffered badly from the rot, attributed their escape to their idleness in not cleaning their vineyards. I was and am unwilling to believe this. 'But facts are chieft that winna ding, and dinna be disputed.' I can scarcely believe this, for though I can not fully believe the doctrine that every act of an idle sinner is hateful in the eyes of his Creator, I am slow to believe he holds out inducements to idleness. His long forbearance and mercy to idle sinners compel me to believe he shows more mercy to them, and views their transgressions with more lenity, and makes more allowance for their bumps, natural propensities, education, and example than their more fortunate and perfect fellow-mortals. But I would still call the attention of vinedressers to the subject as worthy of note."

Perhaps Reuben thinks, with Charles Lamb in one of his ideal convolutions, it is no matter what Nicholas Longworth said, "because he is dead."

In the weedy vineyards that Reuben speaks of as having as much rot as those cleanly weeded, let me ask, Were the weeds free from rot? JOHN F. BENNETT.

THE FIRST STRAWBERRIES.—Mr. Watson, the proprietor of Rosedale Nursery, presented us yesterday with the first strawberries of the season. They were well-matured, ripe, and juicy. We think this a little ahead of any one else, which speaks loudly in favor of our county both as a fruit-growing and berry-producing section. —*Southern Banner, Brenham, Texas.*

WOODEN FLOWER-POTS.—At a recent meeting of the Chicago Horticultural Society, Mr. Pool introduced wooden flower-pots, as a probable improvement over earthen. They were turned from whitewood or poplar, were light, less liable to break, and claimed better for growing plants than earthen.

It is well known that the Chinese use wood, and are generally successful culturists. Wood is not as rapid or good conductor as earthen, and when the soil is once warmed in the pot, its temperature can perhaps be kept more even and regular than in earthen pots. For plunging purposes we should think there would be a liability to softening and decay, and perhaps an inducement to the roots to grow to the sides of the pots, and thus make repotting a difficult matter.

TRANSPLANTING.—We write line upon line relative to the subject of transplanting, because at this season it is a labor of almost daily occurrence with every horticulturist, and we feel that he can not too well consider the importance of certain principles in its practice. All removals of trees or plants, except those grown in pots, must of a necessity involve a certain amount of injury and reduction to the roots; and as roots are the important medium to support life and growth, their reduction at a season when the tree is nearly in a dormant condition causes less injury than when there is vigor of growth and demand for life-supplies by swelling buds or foliage. We know some advise late spring planting, and if the spring is

backward, or great care be taken after planting, the work may be successful; but, as a rule, the practice should not be commended. The moment that buds begin to push, that instant the roots resume active functions, and any injury by breaking, etc., is more sensibly experienced than when the same injury has been created during the perfect dormant condition of the plant, and a reasonable time been given it to callus or heal over before being called on for labor in supplying buds and foliage with food for digestion. Our advice to all who must plant in the spring is to perform the work as early as possible.

As soon as strawberries are in bloom they should be carefully looked over, and any chance seedlings or strictly staminate and unproductive flowering plant removed.

CREDIT TO WHOM CREDIT IS DUE.—We are always glad to see our Table matter items republished in our exchanges, because it satisfies us of their value; but we feel that we expend time and money in the preparation, printing, etc., and that due credit should be given for such matter as our friends choose to reprint. We hope our co-workers in editorial labors will remember this hint, and simply attach the word **HORTICULTURIST** to such items as they choose to extract from our pages.

THE best manure for all sorts of berries is undoubtedly vegetable mold, decayed leaves or straw, etc. The strawberry and raspberry particularly are great exhausters of vegetable matter in the soil, and a free application of leaf mold we have known result in giving good crops from land on which without such application the product was very unsatisfactory.

DWARF BOX EDGINGS should be planted this month; press the earth firmly around the roots or cuttings with the foot, but when finished leave the surface level and lightly raked.

GRAPEVINES in the green-house should at this season be abundantly supplied with moisture, either by syringing or freely wetting the walks, or both. Superfluous shoots springing from the base of the spurs should be rubbed off, and laterals stopped when they have made three leaves beyond the fruit-buds. Tie up carefully and keep all clean and neat about the house.

WHEN making new strawberry plantations, set the plants at distances of about eighteen inches in the row, and the rows two to two and a half feet apart, and expect to keep them afterward in hills, as by so doing a larger berry and more quantity is obtained than when grown in matted beds. Do not wait for the weeds to grow so large as to smother the strawberry vine before commencing with the hoe, but remember that it is easier and less labor to hoe over an acre three times when the weeds are only one inch high, than to hoe and weed it once after they get to be six inches, a foot, or more.

OGDENSEBURG, Feb. 12, 1867.

MESSRS EDITORS: I have a green-house (lean-to) built against the south end of my dwelling, 40 feet long by 20 feet wide, fronting south, heated by a brick furnace and flue; furnace is in north side near N. E. corner; the flue runs round east, south, and west to chimney in dwelling north. Chimney is 40 feet high, inside capacity 8 by 20 inches, inside capacity of flue 8 by 10 inches with a rise of 6 inches in 12 feet. It works well at all times, except with a blustering south wind, when the smoke beats back out at the furnace door and damper, and the fire does not burn well. I use wood for fuel. Can you, or any of the readers of the *HORTICULTURIST*, tell me a remedy, and oblige, respectfully yours,

THOS. LAWRENCE ?

[We should imagine that the defect was not in the flue, but in the chimney; should advise that you put a smoke-jack on your chimney-top.]

BLACKBERRY planting should be among the first of this month's labors, if not already completed. A deep, moderately light and rich soil suits the blackberry best, but it is a plant that can be profitably grown in any good garden soil. Plants that were grown last year from pieces of roots, and have now a good crown and roots, are the best; but strong sucker canes will give a little fruit this season. Cut the first-named back to two buds, and the latter to two feet. In planting, cover the crown only about two inches deep with soil, and then add a light mulch of some material.

MELONS, Lima beans, etc., may now be planted in pots, or on pieces of sod, and placed in a partially spent hot-bed, or a new bed made so as not to furnish too strong heat. A gentle bottom heat will bring them forward more natural and healthy than one rank and of high temperature. Give air freely when it can be done, and not chill the soil or plant.

CAMELLIAS now making growth will require free watering and syringing. An application of liquid manure once a week will assist them.

TREES that have blown partially over should be at once righted, and staked to hold them in position until they have again made growth and new roots.

IN uncovering tulip and hyacinth beds, or in working among them at this time, be very careful while loosening the soil and giving a clean and neat appearance, not to injure the buds or foliage. They are very delicate at this time, and a slight injury will be plainly perceptible in a few hours thereafter.

WHEN first stirring the soil, on seed beds, around the young growing plants, use a steel rake rather than a hoe. One trial will satisfy any one of its superiority.

IN the January number of your paper Mr. Husmann makes a liberal use of my name relative to the comparative merits of the Norton and Ives seedling grapes, and says, "in Missouri he can average 500 gallons to 600 gallons per acre easy enough with Norton's Virginia." I therefore stand corrected as to Missouri, but will say in Ohio it never has given us over 200 gallons per acre.

Mr. Husmann attributes my preference for the Ives to the "fact that the Norton is one of the hardest vines to propagate—the Ives one of the easiest," and is right in doing so. I have been taught by Nature that she does nothing in vain, "*that wherever she designs a production, she disposes a way proper for it.*"

Take the cuttings of the Ives, and let the most unskillful hand plant them in the open field, most of them will grow. Take the cuttings of the Norton, with the assistance of art and a hot-bed, you can only force a few unwilling plants.

We can follow Nature farther and make wine from the Ives at one fourth the cost making it from the Norton.

I shall continue to propagate and urge the cultivation of the Ives and Norton Virginia grapes, hoping thereby to assist in turning our barley fields into vineyards, and making malt liquors give place to native wines. When this good time shall come, having Nature for our guardian, she will invite us to use the Ives wine freely, and on account of the great strength of the Norton wine, will admonish us to use it for "medical purposes," and to draw old topers from malt and distilled liquors.

Respectfully, J. M. M. CULLOGH.

NEW PEARS.—We notice in the Gardener's Year Book, published in London, England, and edited by Robert Hogg, Esq., the pomological director of the Royal Horticultural Society, descriptions of four new varieties of pears that originated with a Rev. Mr. Huyshe, and the stock of which has been by him presented to the Royal

Horticultural Society of London. Three of these varieties have been produced from pips of the Marie Louise hybridized with Gansell's Bergamot, as follows:

HUYSHE'S VICTORIA.—Fruit of medium size; form, similar to Beurre d'Arenberg; yellowish ground, with veins of cinnamon russet; flesh, yellowish, juicy, rich, sugary, and vinous; season, December.

HUYSHE'S PRINCE OF WALES.—Fruit, large; lemon-yellow ground, veined with cinnamon-colored russet; flesh, yellow, fine-grained, very juicy, rich flavored.

HUYSHE'S PRINCESS OF WALES.—Fruit, medium size, varying in form; skin, a smooth lemon-yellow ground color, sprinkled with patches, veins, and dots of pale cinnamon-colored russet; flesh, deep yellow, melting, high flavored, rich, and juicy; November. The fourth variety is said to have been produced from a seed of Beurre d'Arenberg fertilized by Passe Colinar. It is named

HUYSHE'S PRINCE CONSORT.—Fruit, large, oblong, obovate, pyriform; skin, grass green, much covered with russet, exposing the green ground only in mottles; flesh, yellowish, coarse-grained, very juicy, melting, not buttery, with a mellow vanilla flavor, highly agreeable; early winter. In the account given, Mr. Huyshe states that in growing seedling pears, he is now careful to sow only the *round* pips, not those that are flat-sided.

GOOSEBERRIES and CURRANTS should be planted without delay, if not already done. Their pruning should also be at once performed; cut out all feeble, weakly shoots, and head back the strong ones one third to one half of last season's growth.

ALL borders or beds not yet cleaned of old haulm or other refuse should be at once attended to, and the ground around all perennials, etc., manured and lightly dug or forked over. It would have been better had this work been done last fall, but now it should not be delayed a day.

FRUITS FOR KENTUCKY.—The following lists of fruits are recommended for *general cultivation* in Kentucky by the Kentucky Horticultural Society, being selected from the hundreds of varieties exhibited on that Society's tables during each fruit season, for the last ten or fifteen years, and are recommended as the best that can be grown in the soil and climate of that State with satisfaction and profit. Any well-known and well-tried local variety, in any particular neighborhood, could be added to the list if desired, especially if it is a good winter apple.

As a general rule, an extensive practical experience has established the fact, that the most popular winter apples in the Northern States ripen prematurely in that climate, and drop from the trees early in the autumn, before the fruit is more than half developed. Of course, such imperfectly matured fruit can not be kept, as it soon decays.

Apples.—Striped Juneating, Early Harvest, Red Astrachan, Carolina Red June, Gravenstein, American Summer Pearmain, Golden Sweet, Jersey Sweet, Maiden's Blush, Porter, Fall Queen, Fall Pippin, Pennsylvania Red Streak, or Hays' Wine, Rambo, Wine Sap, Ben Davis, or New York Pippin, Moore's Sweet, Milam, Rawle's Janet, Little Romanite. The following kinds do well in some localities: Primate, Rome Beauty, Yellow Bellflower, ripens in December, but falls prematurely; Yellow Newtown Pippin, bears well on strong clay soils, and will keep till April. For preserving, the Transcendent Crab, for size, beauty, and good quality, is superior to all other kinds.

Pears.—Where there is no want of ground space, pear-trees on the quince stock, or dwarf trees are not recommended, as standard trees come almost as soon in bearing, or can be made to do so, by *shortening-in* the new shoots in the latter part of July. The following have been found the most satisfactory in regard to quality, productiveness, and comparative freedom from

disease in trees and fruit. This list will afford a succession of fruit from July to November inclusive, ripening about in the order as named: Madaleine, the best early pear; Doyenné d'Eté, small, but productive; Buerré Giffard, promises well; Osband's Summer, promises well; Bloodgood, quality best, but bearing irregular; Seckel, superior quality; Belle Lucrative, or Fondante d'Automné, very good; Buffum, best, and productive; Tyson, best quality; Bartlett, large and fine; Kirtland, highly recommended by all who have tried it; White Doyenné, fruit cracks badly in some localities; Doyenné Boussock, recommended for further trial; Lawrence, promises well; Glout Moreceau, good.

Grapes.—The Concord Grape has been widely disseminated, and has given general satisfaction. Norton's Virginia, as far as tried, seems remarkably hardy, vigorous, and productive; the fruit is good for table use, and makes a strong, rich, dark-red wine. The Clinton, if the over-productiveness of the vine is checked by thinning out the bunches, makes very handsome clusters, maturing with the Catawba, and doubtless will make a good, hardy, healthy wine grape. Taylor's Bullitt is a good, sweet, green-colored grape, that is said to make a very fine wine. It bears heavy crops wherever the blossoms are sheltered from the weather; if too much exposed during wet springs, the impregnation is imperfect, and the productiveness of the vine is consequently diminished. Many other kinds of grapes that have been tried can not be recommended for extensive planting or vineyard culture.

WHAT varieties of strawberries are best for a private garden or family? B. P.

[Our first reply to this inquiry would be Hovey's Seedling, Triomphe de Gand, and Wilson's Albany, because all are good, all are hardy, strong vines, and the latter always sure to give a crop, although its quality may not be of the highest excellence. Second thoughts, however, bring

to mind that climate and soil are known to have as much, or perhaps more, to do with the success of the strawberry as with any variety of fruit, we therefore had best say that if your soil is a good, strong, rich clay loam, then the three above-named sorts will succeed, and especially if you grow them in hills; but if your soil is of a sandy or gravelly character, then only the Wilson will prove desirable, and that only because of its productiveness. The New Jersey Scarlet, Downer's Prolific, and Green Prolific we have seen grown with great success and satisfaction in sandy or light dry soils. Jucunda, a variety now much praised by some parties, we have examined three or four years, and while under high cultivation and care it has given abundance of fine, large fruit, its vine is to a degree tender, and often grows so feebly as to kill out during winter, unless carefully protected. Ida, Mead's Seedling, and a host of other sorts are new, and each has its advocate; but after all, we think our chances for abundance of good fruit would be as favorable with the first six varieties we have named, as with those of more recent introduction.]

I HAVE a small garden, and room for three grapevines. Now, what shall I plant? Yours, S. HANSON, Iowa."

[The testimony of the Western New York Fruit Growers' Society, as well as that of all other meetings, and of most cultivators, is, that for rich garden soils there is no one grape superior to the Delaware. Not doubting the correctness of this universal judgment, we remember that our visits to gardens often bring us in those where rich soil is the exception rather than the rule, and that particularly just where the grapevines are planted. We therefore, without knowing just the soil you have, and the care you propose to bestow on your vines, would advise as three sorts, hardy in the vines, early of ripening, and of above average good quality, the Crevelling, Rogers' No. 4, and Rogers' No. 15.]

AZALEA, "HER MAJESTY."—The London *Florist* says, "Her Majesty is a sport from Madame Miellez, and one of the finest Azaleas which has yet been obtained, both as regards form and substance, while in color and marking it is quite distinct from all others. The flowers are of the full average size, and the color is a soft lilac tinted blush, more or less dense, white at the margin, thickly spotted with crimson in the upper part, and marked with variable stripes, or sometimes broadish bars of deep, rosy purple. The plant is a strong, robust grower."

IN the January number I read the notice about mice having girdled your friend's trees. But let me tell you that they have done here immense damage. For this two days of thawing weather we have been occupied in the orchard and nursery to cover the girdled parts with liquid wax. In some places hardly a tree escaped. I have just received a letter from a friend in East Hamburg, who says: "You can not imagine the amount of damage that has been made through this section by the mice."

Tramping the snow around the trees is practicable in an orchard of standard trees, but is difficult in a dwarf pear orchard of close planting and a three-foot deep snow; and entirely impracticable in a nursery where the snow-drifts are from three to five feet high. Is there no remedy of a more general and easier application? Yours, etc., G.

BUFFALO, N. Y.

ALL old strawberry beds should be thoroughly cleaned of weeds before the blossoms open. Use a fork hoe, and afterward rake clean with a steel rake.

IF coal tar is to be used around the crown of peach-trees to prevent the destructive ravages of the peach-worm, it should be applied *before* the sap is in free circulation and foliage grown.

PITTSBURG, Feb. 11, 1867.

MESSRS. THE EDITORS OF THE HORTICULTURIST, NEW YORK—*Dear Sirs*: Mr. John Ellis (Fox Meadow), White Plains, in this month's number of your magazine says that moonshine is as likely to produce "rot" in grapes as lightning, and asks, "We believe there are thunders and lightnings in California?"

Lest his ill-considered remarks should tend to mislead, I answer, as publicly as he asks, that if he will examine the meteorological reports for California for the summer months, he will find the answer to be "no."

No rain, no thunder, no lightning, no rot.

In return, let me ask Mr. Ellis—Is there moonshine in California?

He may know as much about the one as the other. I am yours truly,

J. F. BENNETT.

ABOUT ROSES.—Few who grow roses for the enjoyment of the flowers care for more than twelve to twenty varieties; but to select these few sorts out of the many hundreds catalogued and designated as "beautiful," "excellent bloomer," "large and fine," and other expletives of their values, is a task of greater magnitude than dreamed of until undertaken.

The increase of new roses has come to be rather an evil than a joy; it is a tax on our patience and our purses; for each lover of roses, upon reading the glowing accounts of new ones, is induced to buy and add to his collection until there is no room for any of the plants to fully develop themselves, and the collection is burdened with varieties without very marked distinctions of flowers. In England they have one grower who, seeing this increase, and from personal observation and association knowing the points of value belonging to each, has from time to time depicted them, and thus those who have heeded his remarks have been saved the expense and annoyance of purchasing and

caring for many varieties, only to find their want of superiority over kinds already in their grounds. As yet, we have no such man, but the exigences of the case now demand one, and we hope the capabilities of a Parsons or a Saul will soon be exhibited in giving us a true statement of the varieties now in cultivation, and hereafter commendations or condemnations of new varieties as they appear.

SOUTHSIDE, S. I., Feb. 23, 1867.

EDITORS HORTICULTURIST, NEW YORK—*Gentlemen*: Do me the favor to answer the following queries:

1. Will it injure a young orchard (planted last fall) to plant a crop of *oats* on the ground occupied by the trees?
2. Will it be injurious to plant a crop of *oats* as above, if a space of three feet clear is left around each tree?

Please answer in next number.

Very respectfully,

C. E. R.

[*Ans.* 1. Certainly it will. *Oats* or other grains exhaust the soil of the very components required by the trees. We have watched the practical working of this many times, and therefore do not speak from theory alone.

2. A space kept clear around each tree unquestionably would lessen the injurious results, because it would give just so much ground otherwise unoccupied, and for the roots of the trees to supply themselves with food. Our advice is to keep out *oats* or other grains entirely. If you wish to seed down to grass do so, without regard to the grain crop. If you must grow *oats*, then keep well hoed, three or four times during the growing season, a space not less than eight feet diameter for each tree.]

ASTERS.—Before sowing seed of the German quilled or peony-flowered *Asters*, make your bed of soil rich and deep by working into it liberally well-rotted compost manure.

WE call the attention of our readers to our new club rates; these were suspended during the war, and are now restored. THE HORTICULTURIST opens this year with the largest list of subscribers we have yet known. Satisfactory as it is, we believe it can still be increased, with mutual benefit to both readers and publishers. We hope, therefore, that all will avail themselves of the low club rates offered, which, where twenty copies are taken, reduces the cost to one dollar and twenty-five cents per copy. The present standard will be maintained except where improvements can be made.

THE double white pyrethrum and the double white milfoil are two valuable and suitable plants for placing on the graves of deceased relatives or friends.

CATALOGUES, ETC., RECEIVED.

WASHBURN & Co., Boston, Mass., Amateur Cultivator's Guide to the Flower and Kitchen Garden, 140 pages, with illustrations.

T. C. Wendel, 518 Washington Street, Boston, Mass. Flower and Garden seeds.

Bronson, Graves & Selover, Geneva, N. Y. No. 1, Descriptive catalogue, Fruit department; No. 2, Ornamental department.

Alfred Bridgeman, 876 Broadway, New York. Flower seeds.

John Saul, Washington, D. C. Descriptive catalogue of new, rare, and beautiful plants.

W. & T. Smith, Geneva, N. Y. Catalogue of Geneva nurseries.

F. C. Johnson & Co., New Albany, Ind. Fruit-trees, vines, roses, etc.

R. Halliday & Son, Baltimore, Md. Roses, verbenas, and bedding plants.

Vilmorin, Andrieux & Co., Paris, France. General Catalogue of seed.

Hubbard & Davis, Wayne, Mich. Trees, shrubs, and plants.

H. A. Graef, 14 Court Street, Brooklyn, L. I. Description of portable box for protecting trees.

J. W. Coburn, Flushing, L. I. Prince nurseries.

John Crane, Union, N. J. Price list of small fruits.

George Such, South Amboy, N. J. New and beautiful plants.

R. G. Hanford, Columbus, O. New plants.

J. W. Manning, Reading, Mass. Catalogue of Reading nursery.

W. S. Little, Rochester, N. Y. Circular of wholesale prices.

BOOK NOTICES.

THE *Riverside Magazine* for young people, published by Hurd & Houghton, New York, price \$2 50 per annum.

Three numbers of this magazine have been issued, and the promises of the publishers have been fully kept. A variety of entertaining and instructive articles for young people of both sexes appear in each number. The wood-cut illustrations and typography are in the very best style. This work deserves, and no doubt has, a wide circulation.

ACKNOWLEDGMENT.

WE are indebted to J. J. H. Gregory, the extensive seed grower and dealer of Marblehead, Mass., for a collection of garden seeds, many of them varieties of late introduction. They will all receive the best of care, and we hope to give a good report of them next fall.

Also to Messrs. Washburn & Co., Boston, for a package of seed of the new Russian sunflower.

Our thanks are due to John Saul, Esq., of Washington, D. C., for a fine collection of the new Zonale and Nosegay Geraniums; also varieties with variegated leaves, among which "Mrs. Pollock," with splendid foliage of green, crimson, and yellow; Golden Nugget, with bright yellow leaves of large size; and Scepter d'Or, with golden, yellow leaves, marked with a bronze red zone, are the most worthy of notice. We shall report upon them all in the fall.

THE
HORTICULTURIST.

VOL. XXII.....MAY, 1867NO. CCLI.

POPULAR EVERGREEN TREES.

[CONTINUED FROM APRIL NUMBER.]

THE MAMMOTH TREE OF CALIFORNIA. are extremely graceful and beautiful. With *Sequoia gigantea*.—The growth and appearance of this new California evergreen foliage between the arborvitæ and cypress, it throws out its limbs or branches



FIG. 59.—*The Lawson Cypress.*

at first horizontally; but they soon assume a gentle, graceful curve upward, that gives the tree a light, easy, attractively-pleasing form. Its hardihood is perhaps not yet perfectly tested, but there is every reason to believe, from the many exposures that trees of it have received, and their so far success, that it will prove hardy in most

locations. The tree, from the peculiar habit it has of making perpendicular rather than horizontal roots, should be transplanted while quite young, say not more than two or three years old. As a graceful lawn tree, looking forward to immense size, or as a tree in the formation of light and airy groups on new places, it should be freely planted.

THE THUJOPSIS BOREALIS is a new

evergreen, with delicate foliage, resembling somewhat the cypress, rather dark in color, of a rapid growth, hardy; and for planting where delicacy in spray and foliage is desirable, it promises of value. We have seen few specimens of any size.

THE LAWSON CYPRESS. *Cupressus Lawsoniana*.—This we consider one of the greatest acquisitions that has been made for many years to our list of hardy ever-



FIG. 60.—*The European Silver Fir.*

greens. Its foliage resembles the arbor-vitæ, but its habit is that of the hemlock. As a lawn tree, or for association and planting near water, or in cemeteries where there is room, its beauty of foliage and form renders it every way desirable. There is a variety of this called *Pyramidalis*, that is more dense and upright, but to us not as beautiful.

THE BALSAM FIR. *Picea balsamea*.—The

Balsam Fir is a very handsome, compact, erect-pointed tree while young; but as it acquires age its lower limbs die away; and as a single tree it often presents a ragged, neglected appearance. As a center tree, or for points in the formation of groups, it is desirable; and as a tree for belts, where very heavy winds are experienced, it proves admirably adapted. In light, sandy soils its beauty lasts about twelve

years, while in rich, deep clay loams it carries its foliage on the lower limbs and its beauty from twenty to thirty years. Where it can be had cheap, it is well suited for massing, using the European Silver Fir and American Spruce for outsides.

THE EUROPEAN SILVER FIR. *Picea pectinata*.—The European Silver Fir is one of our most beautiful evergreen trees. From its slow growth while young, and

often losing its leading shoot until it gains a height of six to eight feet, many persons neglect planting it. They, however, do not know its lasting beauty and permanence of form as it acquires age, or they would never leave it out of a collection. Its branches are spreading horizontally erect, while its foliage is always a rich dark green on the upper side, and silvery underneath, and, unlike many other ever-



FIG. 61.—The American White Spruce.

greens, it never looks dingy at any season of the year. A rich, deep, rather moist soil suits it best, and it groups elegantly with magnolia acuminata, the American ash, and ginko. It does not answer well as a screen plant for belts, being unable to endure exposed situations where severe winds and storms beat against it, and yet it is perfectly hardy. It should be remembered, when planting, that this tree acquires a large size, and must have plenty of room.

THE NORDMAN'S FIR. *Picea Nordmanniana*.—This is an old variety, but comparatively rare. It is of rapid growth, with rich green foliage, that attracts your attention at once. It is perfectly hardy, and should be more generally grown and planted.

THE PINSAPO FIR. *Picea Pinsapo*.—This is an elegant tree, with short, roundish, sharp-pointed leaves, set thick around all its branches and shoots, giving the

tree rather a stiff, but unique and beautiful appearance. It is quite hardy, and so distinct and regular as to make it desirable as a lawn or single tree. The Noble Silver Fir, the Mount Enos Fir, Hudson's Bay Fir, and Cephalonian Fir are all hardy, and varieties of value in large grounds. The Cephalonian is of a spreading habit, broad rather than high, and for planting in position where some ground scene is

desirable to be hidden without obstructing the upper view, is a tree for adoption.

THE AMERICAN WHITE SPRUCE. *Abies alba.*—For planting in small grounds, for the outskirts of groups and masses, for points on roadways, and for cemeteries, the American White and Red Spruces are deserving of far more general use than they have received. Pyramidal tapering,



FIG. 62.—*The American Red Spruce.*

regular and yet irregular, compact without losing its pleasing variety of regular outline, attaining only a moderate size, the White Spruce is far more suited to position on small lawns or outside masses, or borders of half-acre lots, than the Norway, which is much more commonly planted.

THE AMERICAN RED SPRUCE. *Abies rubra.*—The American Red Spruce has a half drooping habit, especially of its young branches, and its whole form while rising

to a cone is decidedly picturesque. As a tree to aid in creating a romantic effect on a rocky point, or to associate with the flowing ease and mellowness of water scenery, it is well suited; and so also from its limited size and irregular drooping yet airy form, counterbalanced by its dark and almost gloomy foliage, is it well adapted for planting in cemeteries.

THE NORWAY SPRUCE. *Abies excelsa.*—The Norway Spruce is now the popular

evergreen tree for all planting. Unfortunately, it is used without regard to appropriateness of position or space, and hence, while beautiful in itself when allowed room for development, it frequently has to be so mutilated, in order to keep it within the limit which can be granted, that it is no more a Norway Spruce, or tree of beauty. Of the thousands sold and

planted, few, comparatively, ever exhibit the character of grandeur and graceful beauty that belongs to the true Norway. Among the millions in nurseries, all grown from seed, a large number have no characteristics to ever make them trees of grandeur, while yet they may be trees of beauty. The planter in selecting should look for plants with long, pendent shoots, rather

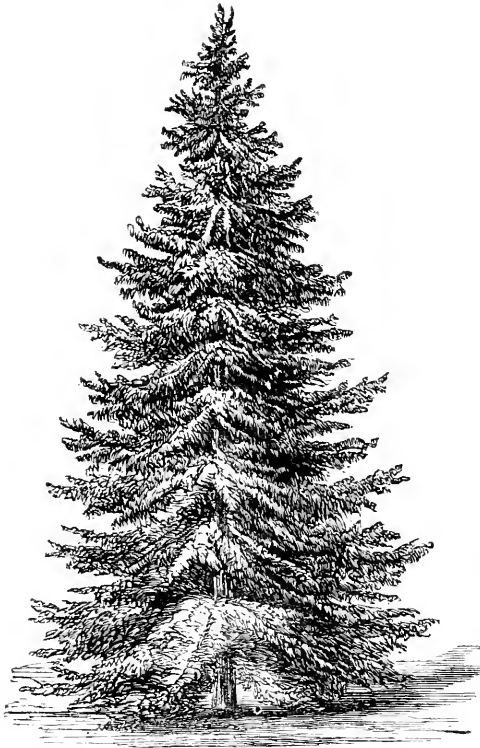


FIG. 63.—*The Norway Spruce.*

than stiff, erect, or horizontal ones, as it is only the former that will make trees of the greatest beauty. For masses or groups, this swaying, drooping, picturesquely-graceful habit is of less consequence than when the tree is to stand by itself, and for hedge or belt screen growing, to which the Norway is well adapted, the close, stiff, erect-growing plants are prob-

ably the best. The Norway bears the shears with impunity, but, except for hedges, or perhaps the shortening of an occasional irregularly extending branch, we consider the use of shears as a practice in clipping the trees as erroneous, and creating only a stiff bank or cone of green where there should be flowing lines and light and shade, varying with every breeze.

The Norway does the best in a light, rich loam, but will grow freely in any soil not wet. In positions where it develops itself fully as a single tree, or for grouping or massing, it is one of the very finest; but the planter who can give to it only an area of ten to fifteen feet diameter should substitute the American White Spruce in its place.

As we have said, there are in the seed

rows of growers many varieties, some of which are occasionally selected out and specifically named, and the experienced amateur or professional man can select from them trees to make a great diversity of form, habit of growth, and shade of foliage, by which he will add to the beauty of a park or small private grounds, and yet have all Norway Spruces.

THE HEMLOCK SPRUCE. *Abies Cana-*



FIG. 64.—*The Hemlock Spruce.*

densis.—The Hemlock, common in all portions of our Union, possesses features of elegance and beauty unlike that of any other hardy variety. When standing alone, or on the outskirts of small groups, its dark yet loose-looking foliage, hanging in pendulous tufts from its peculiarly graceful, half-curving branches, render the tree one of the most ornamental, and suited to a place in decorating the grounds of almost every residence. It is a tree that bears the

shears well, and is therefore adapted to hedge or screen planting. When grown in the nursery, it is no more difficult to transplant than other evergreens, although it has been declared very sensitive of removal—probably by those who had no experience except with its removal from the woods. It is, as we have said, a beautiful tree for the open lawn, but it lacks stateliness to adapt it for position near the main residence or buildings.

THE ARTIFICIAL FOUNTAIN.

BY D. D. SLADE, BOSTON, MASS.

WATER is an essential element in the beauty of a landscape, whether it presents itself in the form of sea, lake, river, or running brook, and no landscape gardening can be perfect without its addition in some form. Switzer says, "Even as *Paradise* itself must have been deemed an unmodeled and imperfect plan, had it not been watered by the same Omniscient hand which first made it, so our gardens and fields, the nearest epitomy and resemblance to that happy place which is to be met with here below, can not be said to be any way perfect or capable of subsisting without it."*

While we do not deny the grandeur of the ocean, or the beauties of the lake, with its ever-changing surface, for ourselves, if searching for a country home, we should give that spot our choice which combined, with other advantages, of course, a running stream in the form of river or brook. A rapid stream it should be, brawling over its pebbly bed, and noisy enough to be heard as we sit within the porch in the quiet eve of a long summer's day, with lighted pipe, and dear friends about us, and just loud enough, as we lie down upon our couch, to mingle its lulling sounds with healthful slumber.

How strong and ever present are the laws of association! Even now as we write, we hear the murmuring of the Saco, as it rushes in its headlong course over its rocky bed, behind the dwelling of the old man Crawford—a fit requiem for the soul of one whose manly nature was well known to every one who in former days visited the mountains of New Hampshire. A fit requiem also for those unhappy ones who, many summers ago, terrified by the coming

avalanche, rushed from their mountain home, only to be swept away in the cold embrace of its swollen waters. Mingled with these sounds, too, we see visions of those dark, limpid pools, overshadowed by the crumbling bank or shapeless stump, and darkened by the overhanging mountain hemlock, from which we have drawn many a struggling denizen of the stream. We see, too, as we sit in the late summer afternoon at the open windows of this same dwelling, the dark clouds that are gathering upon the mountain tops, and we hear the distant thunder as it mingles with the nearer murmur of the hurrying Saco. All this in turn brings to mind the hills of Scotland, and the rippling of the Tweed at Abbotsford, the sound that Walter Scott loved so well, and the only one, as Lockhart tells us, that on that summer's day broke the stillness of the death-scene of that whole-souled man.

Fortunate is he, then, who, with other elements of beauty about him, can combine upon his own grounds the gurgling of the river or brook, or the noise of the tumbling cascade. Even fortunate is he, who, in the absence of these, can boast in some secluded shady dell the cool, sparkling spring, bubbling up from beneath the shelving rock, forming as it runs away the tiny rivulet, and moistening in its course the graceful fern and clinging moss—safe bathing-place for the humblest bird.

How many of us, as we have stopped on a summer's day far away among the hills, to refresh ourselves and our jaded beasts, have wished that we might transport to our own domains the old wooden wayside trough before us, lined with its dark-green moss, and filled to overflowing with its flashing waters, as they come pouring into it from some rudely hollowed tree!

* Ewbank's Hydraulics.

But if we can not possess the running stream or the trickling rivulet, we may in some measure supply their place by the artificial fountain. We do not purpose to trace the history of this handiwork of man, in use from the most remote antiquity, curious as it might be; neither do we give here the details of costly works for the subterranean conveyance of waters. We do not speak of *les grandes eaux* of Versailles, or of the wonderful cascade at Chatsworth, but we shall treat of the introduction of water into the garden and conservatory in a way that may be compatible with the most moderate means.

In the construction of the artificial fountain, the first thing to be considered is the supply of water. When a brook can be commanded, this may be easily obtained by means of the hydraulic ram. In lieu of this, where no such resource is at hand, let there be constructed a tank of good sound plank, oblong in shape, and of as large a size as the place where it is to be located will admit. This should be lined with zinc, or with lead, which is more durable, although at first cost more expensive, and placed either in the loft of the stable, outshed, or in the attic of the house, in such a position that it may be supplied by the rain which falls upon the roof. Care should be taken that it is easily accessible for repairs or for cleaning. A tank made simply of plank and painted inside may be of course much more easily constructed, and might under some circumstances answer every purpose. In our northern climate, however, such a one, during a summer's drought, or during the winter, when no water could be allowed to remain in it on account of the danger of freezing, would certainly become leaky, and in a very short time perfectly worthless. Where the reservoir can not be placed so as to receive the water directly from the roof, it may be thrown into it from the common cistern, by means of the force-pump, which can now be purchased at a very reasonable price. In such a case there

would be no necessity for a new tank, but a pipe may be conducted to the fountain from the one which supplies the bathroom, etc., of the house. In the construction of a dwelling, or where water-pipes are to be introduced into one already occupied, the supply for a fountain may be taken into consideration and easily provided for by increasing the size of the tank or reservoir beyond that which would be absolutely necessary for household purposes.

The windmill is sometimes erected for the purpose of raising water from a well into a cistern for the supply of a fountain. Where this might be made available for other purposes, possibly it might compensate for the greater outlay, and for the almost constant repair which would probably be necessary to keep it in running order. We leave out of view the vexation attendant upon such contrivances.

The supply of water being provided, the next question is as to the design of the fountain and the form of the jet. When the amount of water is as limited as it must necessarily be from so artificial a source as the tank or reservoir, filled as we have described, we can only have a very small jet, and that by no means constant. Under such circumstances a much more pleasing effect may be produced where the water is allowed to trickle from a basin, as in the weeping fountain, so-called, than where it is thrown upward in a single perpendicular jet—the stream in this last case being often so small as not to be visible, except when seen in certain positions. Within doors, as in the conservatory, where this small jet is not liable to be thrown aside by the wind, it may be sometimes introduced with advantage.

The weeping fountain consists of an upper basin into which the water is brought by the conduit pipe in just sufficient quantity to overflow on every side into the larger basin below it. By carrying the pipes to a level with the outer edge of the upper basin, the water may be

thrown a foot or more, if desired, perpendicularly, or it may be allowed to simply boil up a few inches, falling into the basin and overflowing. The designs and materials for such a fountain may be extremely varied, particularly if the supply of water is more copious than in the cases which we have just been considering.

We lately suggested the following design for a gentleman's conservatory: The vase or upper basin formed from an irregularly shaped block of freestone, nearly circular, and about two feet in diameter. This was supported from the center of the lower basin, which was circular and two feet more in diameter, by three blocks of the same stone, placed, as it were, carelessly, one upon the other. These were bored for the passage of the conduit pipe. The whole was rough hammered, the intention being to present an object in harmony with the vines and plants about it. The spray of the water dripping or flowing from the upper into the lower basin is quite sufficient to moisten the ferns and aquatic plants set about its base. The entire height of this fountain was about four feet.

A rustic fountain, when in a suitable locality, can not fail to please the eye of taste. This may be constructed by concealing the pipe behind and below a well-arranged rock-work, and allowing the water to flow or trickle down from stone to stone (the supply being regulated by a stop-cock, so placed as to be easily commanded) into a stone basin below. If care is taken to select stones from the borders of a brook well covered with moss, or from an old stone wall incrustated with

lichens, the general effect is very much heightened. By filling the interstices with soil, we have a locality well adapted for the growth of ferns, vines, and climbing plants. A fountain of this description requires to be placed away from buildings, and where it will harmonize with the objects about it. If otherwise situated it is incongruous, and fails to satisfy.

A wall fountain, as it is termed, is everywhere admissible in close contiguity with the sides of buildings. A shallow arch of rough brick or unhammered stone, about five feet in height by three in breadth, is to be built. The conduit pipe being brought to the mouth of a lion, griffin, or other animal's head, placed at the upper third of the arch, is allowed to pour into the basin below. Where the supply of water is limited, we may substitute some other design, as for example, three or four shells of different sizes, placed one above the other, at certain distances, according to the size of the structure, the smallest being the uppermost, and into which the conduit pipe is brought. The water thus flows or drops from shell to shell. Hughes, in a recent English publication, depicts a fountain of similar character. About the arch may be entwined the English ivy, or, better still, our Virginia creeper.

There is no end to the designs and decorations which the ingenuity of the man of taste may devise for the artificial fountain. One point, however, is to be kept strictly in view, viz., that the water should not become secondary to the architectural display, particularly where the supply is a limited one, and the fountain is placed in the garden or grounds.

SHIRLEY HIBBARD, in an article on collecting ferns, published in the *Floral World*, says: "The lover of ferns is always in want of certain species and varieties; the cultivator of succulents, of bulbs, of hardy herbaceous plants, of choice trees and shrubs, finds that his possessions are

so many keys to the vegetable kingdom, and at every advance of knowledge accomplished by their aid, he learns how many more interesting and beautiful plants there are in the world which he has not yet obtained, and which he would rejoice to possess."

PROPAGATION OF PLANTS.

BY ANDREW S. FULLER.

FORM OF SEEDS.—Variation is the rule with seeds as well as in all other natural productions. Those which belong to a particular family or genus may have sufficient general resemblance to enable us to deter-

resemble each other very closely; still we may safely assert that no two peas are exactly alike.

In the great font of nature there is infinite wisdom, and nowhere can we find it more wonderfully manifested than in the vegetable kingdom.

No two things are created just alike, and variation to a certain extent appears to be as much a fixed principle in nature as order and uniformity.

By examining the seeds of any of the great families of plants we will find a sim-

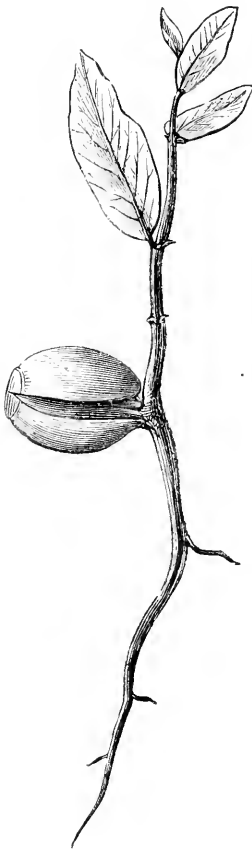


FIG. 65.



FIG. 66.

mine the group to which they belong, still they will usually vary considerably in their general form. "As near alike as two peas," is a very common expression with people when comparing any two things which

ilarity between the different members, yet they are all distinct.

The oaks produce seed which vary greatly in size and form, still they are readily recognized as belonging to one family. No one would mistake an acorn for a hickory nut or beech nut. In structure, the acorn is not particularly different from some other seeds; it has the two fleshy cotyledons, resembling very much the chestnut, or even the common garden bean; and when placed under proper conditions

for growth, the covering which incloses the seed proper, divides lengthwise, as shown in fig. 65, the root descending and the stem ascending, as shown. The bean grows in the same manner, but with this slight exception: the cotyledons are carried up and adhere to the stem, thus forming the lower or primary pair of leaves, fig 66, while in the acorn they are stationary, and usually remain within the half-opened shell until they decay.

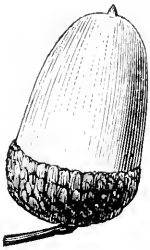


FIG. 67.

In fig. 67 is shown an acorn, natural size, of the stalked fruited oak (*Quercus pedunculata*). Fig. 68 is one of the upright oak (*Quercus pedunculata fastigiata*); and in fig. 69 is shown the form of the acorn of the Dyer's oak (*Quercus tinctoria*). These three illustrations will give a general idea of the variations to be met with in the seed of the oaks.

The horse-chestnut (*Aesculus*) produces seeds of a very similar structure to the oak, and yet they are different both in size,



FIG. 68.

in a regular manner as in the acorn, but is torn asunder by the swelling of the cotyledons, and the stem and roots shoot forth,

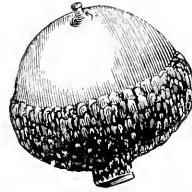


FIG. 69.

as shown in fig. 70. There are many other seeds of similar form and structure to those I have mentioned, but the number is far too great for me to attempt their enumeration here.

The hickories and similar nut-bearing

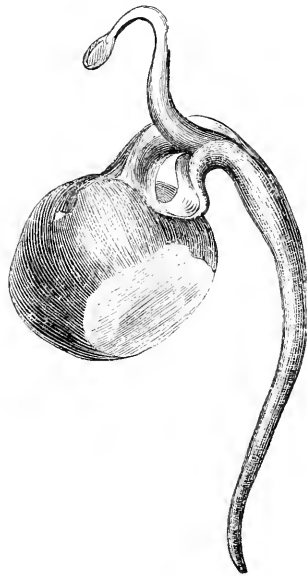


FIG. 70.

trees produce seed inclosed within two very distinct coverings. The exterior one is of a husk-like material. The second, a hard, brittle, horn-like shell, and within this a fleshy substance, which is the seed proper. The black walnut, butternut, and

form, etc. The seed envelope, when germination takes place, does not burst open

English walnut are familiar examples of this kind of seed. Fig. 71 shows an English walnut (*Juglans regia*) entire, with the exterior coat removed, and fig. 72 the seed deprived of both coverings.

If we pass from the nut-bearing trees to other families, we observe a great change in form and structure of the seeds. The maples have what is called winged or key

other form, the membrane in these passing entirely around. Fig. 76, a seed of the

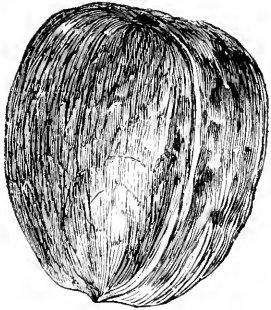


FIG. 71.

seed (Samara). They are usually produced in pairs, fig. 73, each pair being the product of one flower. The thin, membranous appendage is of no importance to the seed, except assisting in scattering them more widely when falling from the tree than they would be if they were formed without it.

The ash (*Fraxinus*) produces another form of winged seeds—fig. 74. The seeds of the ash are one or two celled, and the cotyledons are elliptical, and extend length-

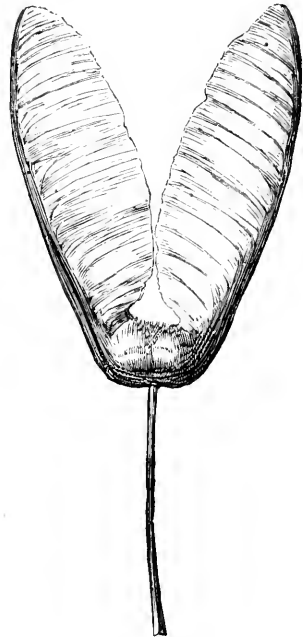


FIG. 73.

cork bark elm (*Ulmus campestris suberosa*). Fig. 77, *Ulmus campestris*; and fig. 78, the *Ulmus effusa*. Other trees produce seeds

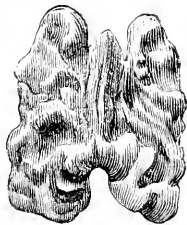


FIG. 72.

ways of the seed, not compressed into one end, as seen in the maple. A section of a seed cut across the center is shown in fig. 75. The elms have winged seeds of quite an-



FIG. 74.

covered with a thin pulp, like the common cherry or the nettle-tree. Fig. 79, *Celtis occidentalis*.

Most of our common evergreen trees,

such as the pines, spruce, arborvitas, etc., have winged seeds. Some are very small, while others are large; no true species producing seeds alike, although they are often very similar. Sometimes the chief

propagator, because should his plants become intermingled by accident or other-



FIG. 75.

difference will be in the covering, or in the manner in which they are produced. The least variation is important to the botanist in determining species and varieties, but of little consequence to the propagator so

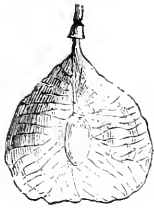


FIG. 76.

far as assisting him in multiplying the plants, although he is expected to know wherein a variety or species differs from another of the same genus. If he does not know this, he will not be a very reliable

wise, he would not be able to separate them.

In descending the scale from trees to shrubs, perennial, herbaceous, or annual plants, we will find the same variation in the form and structure of the seed. The



FIG. 77.



FIG. 78.

treatment, however, to secure growth, is not so variable as the form, although it is sufficiently so as not to allow of any general rule that will be applicable to all



FIG. 79.

kinds; therefore each great family or group requires a process particularly adapted to itself.

[TO BE CONTINUED.]

TIME OF BLOSSOMING OF TREES.—The period of blooming of fruit-trees is regarded by many as indicative of their values in sections exposed to late spring frosts. We shall be glad if any of our friends have

made records of the days on which their several varieties of fruit-trees have bloomed, to have them forward us such record, and in connection therewith the soil of the orchard, location, etc.

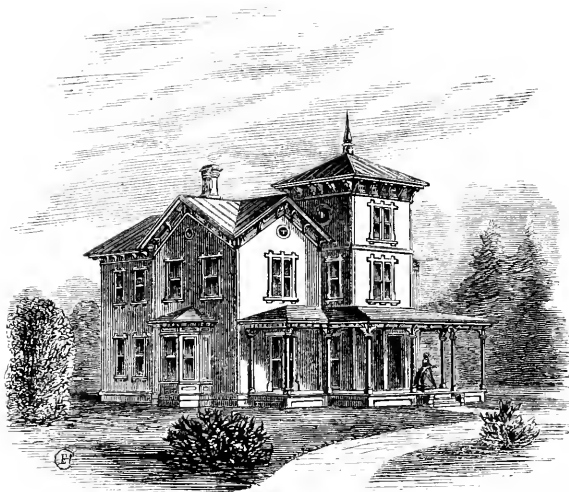


FIG. 80.—*Design for Dwelling-House—Perspective View.*

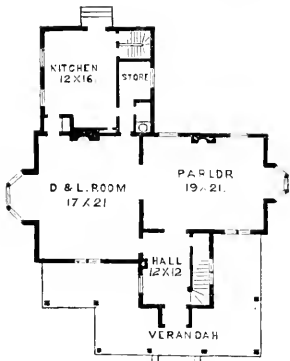


FIG. 81.—*First Floor.*

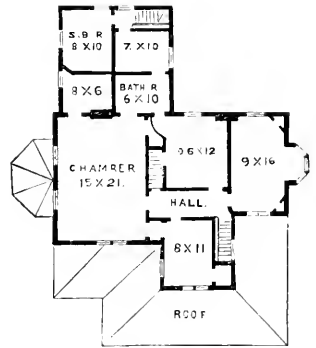


FIG. 82.—*Second Floor*

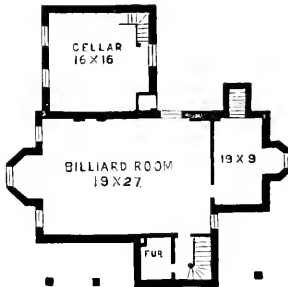


FIG. 83.—*Cellar Plan.*

DESIGN FOR DWELLING-HOUSE.—ITALIAN STYLE.

THIS design was made for erection in Rutherford Park, N. J., and is a good example of a compact, convenient, and economical country house with good commodious rooms, well connected, and easily heated and ventilated. The basement contains besides the necessary cellar and coal requisites, a fine billiard-room; and as a solid substantial foundation is thus secured, it is perhaps the best part of the house for such a purpose, occupying room not needed otherwise, and not objectionable to the most fastidious. The parlor and dining-room connect with each other, and each has independent communication with a spacious hall or vestibule, and this latter it is proposed to fit up in an imposing manner. The stairway is of easy rise and tread, with rail and newel of attractive proportions; the ceilings to be groined, walls paneled, etc.; the full arrangement of bedrooms, closets, etc., is easily seen from the plans; no space is lost—all room is made available.

The construction of the house is of wood, balloon frame, diagonally boarded outside with unworked plank, then covered with roofing felt, and weather boarded with narrow lap-siding. The work throughout to be well done, finish substantial and plain, walls hard finish, tin roof, etc.

The location of this house is such that every room commands extensive river, mountain, and inland views, and from the upper tower room is seen the whole valley of the Lower Passaic, with its fruitful farms and princely country seats, and the distant spires of its two flourishing cities, Paterson and Newark.

Rutherford Park is a magnificent estate of upward of 300 acres of handsome rolling land, superbly wooded and watered, and rising from the river bank to an elevation of upward of 100 feet above tide water. It lies three quarters of a mile from the Boiling Spring Depot, Erie Railway, and is reached by a broad and magnificent boulevard running through the entire property. An expenditure of \$10,000 makes this one of the finest drives in the country. As a home for New York business men who enjoy country life; who wish to reside within a moderate distance of their business and reach it with absolute certainty from daylight to midnight; who can not afford either the time, the expense, or the annoyance of living above Thirty-eighth Street; who prefer to ride in broad-gauge palaces instead of filthy horse cars, Rutherford Park and its surroundings present attractions of the most decided and fascinating character.

ANNUAL flower seeds may be sown after the middle of this month. Make the soil rich and finely pulverized with the spade and rake. Smooth the surface, and cover the seed by sowing over it a little clean sand. If dry weather, lay a board over it for a day or two, or until the seeds are pushing up, then place the board so as to screen from sun at noonday, until the plants get an inch or more out of ground.

Annuals that have been started in the frames should now be planted out. Open the frames for a day or two before taking the plants out, to harden them, and when setting, protect them for a day or two against cold winds.

Look out for weeds all this month; they grow in a night, and require constant care and labor to keep down.

THE ART OF INCREASING PLANTS BY CUTTINGS.

By far the greater proportion of plants that are multiplied by cuttings require artificial heat. Nevertheless, cuttings of many tender plants may be struck in the open ground, or in pots and in frames, without heat, and in every case the mode of procedure is nearly the same. The object of this paper is more particularly to put beginners in the way of spring propagation, a branch of horticultural practice which has acquired immense importance since gardening has become contracted to an almost exclusive adoption of the bedding system. Very much of what we have to say will be applicable to summer propagation without artificial heat, though our business is more directly with the propagation of plants at this time of year by means of the heat of a tank or a dung-bed. We suppose the heat to be sufficient and constant. If from fermenting material—there should be a large body of it in a nicely-tempered state—there is nothing so good as a tank, for the opera-

rule, a bottom-heat of 60° to 70° will suffice for all kinds of bedding-plants that are struck from cuttings. A temperature of



FIG. 85.



FIG. 84.

80° to 90° may be used by persons who have had much experience, but 70° should be the maximum for beginners.

HOW TO OBTAIN CUTTINGS.—As a rule, plants to be propagated from at this time of year should be in a free-growing state. We advise placing old plants of verbenas, petunias, etc., in a moist heat, in order to start them for cuttings, because the best cuttings are those of shoots newly formed, and the worst those from shoots of last year. Indeed, these latter are of no use at all, except in the hands of the professional propagator, and he would never choose them while young shoots were obtainable. If the plants are not freely growing therefore, the propagator must wait for them; and to promote free growth, the tempera-

tor has thus complete command over his work, and can enjoy the comfort of a warm house while attending to his duties. As a

ture of the house should be kept at from 60° to 70°, with a moderate amount of atmospheric moisture, and as much light as possible, so that the young shoots will be of a healthy green, and with short joints. But at this time of year, the plants the amateur intends to cut from will be for the most part full of young shoots, and the removal of a crop of these will cause

the plants to throw out more, and the question arises, how are the cuttings to be made?

Suppose we look over a lot of fuchsias now, we shall find them full of little stubby side-shoots all ready to hand, without demanding any particular skill to remove them. Select one of these plump shoots, of an inch or an inch and a half long, press



FIG. 86.

the thumb against it, and it will snap away "with a heel"—that is, with a thickened base, the separation taking place at the point where it issues out of the old wood. When you have removed it, it will probably have such an appearance as in fig. 84. All that this requires for its preparation is to remove the bud which has

just started near the base of the cutting, so as to leave a sufficient length of clear stem to insert the cutting in sand firmly. When so inserted, and kept moist, warm, and shaded, roots will soon be formed at the base; and as soon as the roots have begun to run in search of nourishment, the top of the shoot will begin to grow, which is the

sign for potting off. But suppose we have a chrysanthemum instead of a fuchsia. This will have a mass of tender shoots rising from the root, and there is no need to seek to take these off with a heel. With a knife, a pair of scissors, or the thumb-nail, remove a small shoot of not more than three inches in length—two inches will be sufficient. This will probably have some such aspect as in fig. 85. All the preparation this requires is the removal of the lower leaf, to make a sufficient length of clear stem for inserting it in silver sand. Or suppose we have a hard-wooded plant of robust growth, and which is known to be easily-rooted, then we may venture to take a still larger cutting. Here is a side-shoot of *Veronica Lindleyana* (fig. 86); it consists of four joints, is young, the wood not yet hardened, and needs no preparation at all, because there is a proper length of stem for its insertion. But in the case of plants having large fleshy leaves, it may sometimes be needful to crop off half of every leaf except those next the top bud; but, as a rule, as many leaves should be allowed to remain as possible, because the more leaves that can be kept alive while the cutting is making roots, the quicker will it become a plant. No definite rule can be given on this head to guide the inexperienced. It all depends upon how many leaves can be kept alive. If the cuttings are to enjoy a brisk heat, say 70°, with plenty of atmospheric moisture, then nearly all the leaves may be left entire, and especially if the cuttings are in a close propagating frame, or under bell-glasses. But if they are likely to be exposed to draughts, if they are placed in pots or pans in an ordinary green-house, and thus much subjected to evaporation, the leaves must be reduced in number, and all the larger ones must be cut half away.

Another matter of importance in making cuttings is to determine whether they are to be rooted from a joint or not. Most cultivators prefer to cut the shoot close under a joint, so as to obtain roots from

that joint. But there is no occasion to cut to a joint; any and every one of the plants ordinarily propagated at this time of year will root as quickly from the “internode”—that is, the portion of stem intermediate between two joints—as from the joints themselves. This is of great importance when cuttings are scarce, as a shoot will often furnish half a dozen cuttings, if taking them at a joint is of no consequence; and only one or two, perhaps, if taking them at a joint is imperative.

The size of the cuttings is a matter of great importance. As a rule, the smaller they are the better. Still, if very soft, many may damp off unless very skillfully handled, so the amateur must secure them moderately firm. Three or four joints will generally suffice of most things, or say nice plump shoots of from one to two inches long. If young side-shoots are scarce, longer shoots may be cut up in lengths of three joints; and if it is a question of raising the largest possible number of plants from the fewest cuttings, then one joint and its accompanying leaf will suffice. Suppose we have a shoot of a verbena placed in our hands to make the most of it; we should first cut it into as many lengths as there were joints, leaving each leaf untouched, and to every joint as much stem as could be got by cutting just *over* instead of just *under* the joints. Then with a sharp knife we should split each of these joints in half, so as to have one bud and leaf to each split portion, and from every one of these we should expect a good plant. We say nothing now of propagating from leaves, etc., because we are writing for beginners, and all the higher departments of propagating are from time to time dealt with in these pages as occasion renders necessary.

POTTING THE CUTTINGS.—The most convenient way of disposing of the cuttings is to dibble them into shallow pans filled with wet silver sand, as fast as they are prepared. The best way for those who may have to leave the cuttings in the pans for

any time after they have formed roots, is to prepare the pans with crocks for drainage, and over the crocks to spread an inch of chopped moss or peat torn up into small shreds, or cocoa-nut fiber dust, and then fill up to the brim with clean silver sand. The sand should be quite wet when the cuttings are inserted; and when they have been regularly dibbled in with the aid of a bit of stick, or with the fingers only, it should be placed where there is a bottom-heat of 60° to 70° . A temperature of 80° is allowable when time is an object, but at 60° better plants may be grown; in fact, there is generally too much heat used. From the time of putting the cuttings in heat till they begin to grow, the temperature must be steady, and there must be regular supplies of water. But water given carelessly will surely entail losses. Probably the sand will retain sufficient moisture for eight or ten days without needing to be wetted beyond what reaches it in the process of dewing the leaves. To dew the leaves neatly and timely is one of the most important matters. For the amateur, to whom a few minutes is no object, the best way is to dip a hard brush in water, then hold the brush beside the cuttings, and draw the hand briskly over it. This causes a fine spray to be deposited on the leaves, to prevent flagging; but if the water is given from the rose of a watering-pot, the cuttings, if small, may be washed out of their places, or may be made too wet.

MAXIMS ON PROPAGATING.—The more heat, the more moisture may be allowed, and, *vice versa*, the less heat, the less moisture. Hence, if the heat of the dung-bed declines, or if there come cold weather, at once reduce the supplies of moisture. On the other hand, give water freely if the heat is steady and the cuttings are begin-

ning to grow, which is invariably a sign that they have roots.

Pot them off as soon as possible after they have formed roots. In potting, be careful not to break the newly-formed roots. No matter what the plants are, the soil at the first potting should be fine, and with a considerable proportion of silver sand added. Generally peat and leaf-mold answer admirably as a staple for potting newly-struck cuttings.

Pot in small pots; there is nothing gained by putting the young plants in large pots at first; the soil gets sour before they can root into it. When a few cuttings are struck in common pots, place them next the side of the pot all round.

If the heat can be regulated at will (as in propagating by means of hot water), begin at 60° ; after three or four days, increase the heat 5° , in three or four days another 5° , and so on, never passing 75° or 80° , and better to stop at 70° . Too quick a growth results in weakness to the plant.

Cuttings damping off may often be saved by sprinkling silver sand or peat-dust previously dried in an oven, over the surface of the pans. If mildew appear, give air, and dust the leaves with sulphur. Whenever damp breaks out, increase the heat and give more air.

Do not keep cuttings shut up close any longer than can be helped. Give air as soon as they are able to bear it; of course, very little at first, and with great care not to chill them.

After potting, place the pots in bottom-heat, if possible, to promote the formation of fresh roots. Never shift till the pots are full of roots; then shift without delay, and use the compost proper to the plant.—*Floral World*.



CATERPILLARS, canker-worms, etc., require to be looked after this month. A sponge dipped in petroleum and applied

to them will destroy them, or they may be syringed and destroyed with whale-oil soap-suds.

THE DUCHESS OF OLDENBURG APPLE.

BY P. BARRY, ROCHESTER, N. Y.

IN the March number of the *HORTICULTURIST*, Mr. Elliot, with great propriety, gives a prominent place to the Duchess of Oldenburg among the "Very hardy varieties of the Apple." For upward of thirty years this variety has been grown in American nurseries, and it has occasionally been briefly noticed, but on the whole has received just attention enough to maintain its existence among collections.

For some years back, the people of the Northwest—Minnesota, Iowa, Wisconsin, etc.—where the climate is so rigorous that very few varieties of the apple will endure it, have been collecting varieties noted for their hardiness.

Among those which give promise of extreme hardiness, the *Duchess of Oldenburg* appears to stand at the head. At a recent meeting of the Minnesota Fruit-Growers' Association, the following facts were given:

"Truman M. Smith, of Dayton's Bluff, has three Duchess of Oldenburg, standard, planted five years ago. Fruited last and this year, and one dwarf, of same, in bearing, all perfectly hardy.

"Mr. Philo Woodruff, of Waseca County, has three Duchess of Oldenburg in bearing two years, as hardy as any of our forest trees.

"H. J. Brainard, of Ramsey County, has nine Duchess of Oldenburg planted at four years old in 1861, and have all fruited, bearing good crops since 1862; perfectly hardy, not a branch or twig on one of these trees ever injured. Has also some Red Astracan and others perfectly sound. He had lost a great many trees, because almost dead when received and planted, and some not adapted to the climate.

"Col. Robertson had some sixty Duchess of Oldenburg, planted three years ago—the year of drought—all perfectly sound.

"Mr. Smith considered the Duchess as hardy as the Siberian crab apple.

"The meeting was quite unanimous in the opinion that the Duchess of Oldenburg is beyond all question adapted to our climate."

At other meetings in the West, similar statements have been made regarding this variety, and the consequence is an extraordinary demand for the trees. Where half a dozen would formerly have sufficed to fill a season's orders, it is now called for by the hundred, and even the thousand. It is not only hardy as an oak, but the fruit is beautiful and of excellent quality; "best" for cooking, but rather too acid to rank as "best" for dessert.

It is also an early bearer, trees three or four years old being often laden with fruit in the nursery rows. The tree, though a strong grower, with large foliage, like all the Russian apples we have, does not attain a large size. We have a tree in our grounds planted twenty-four years ago, and although healthy and vigorous, is not over two thirds the size of most of the other sorts planted at the same time.

In ordering Russian varieties from the European nurseries, we have received this under a great many names—frequently as "Borovitsky." And, indeed, we have not been able to procure the latter variety, if it exists, which I doubt.

All the Borovitskys we have ever received have proved to be Duchess of Oldenburg. The colored drawing of the Borovitsky, in Lindley's *British Fruits*, appears to be identical with the Duchess of Oldenburg, and the descriptions in all the pomological works are very unsatisfactory.

The English authors say that the Borovitsky was introduced from Russia to England in 1824. I would like to know if any

of our American fruit-growers have found these varieties to be distinct beyond question. Mr. Downing, I think, has proved them to be identical, and they have been so classed in the American Pomological Society's Catalogue.

The Tetofsky is an early summer variety, from the same source, and will doubtless prove equally hardy. It is said to have been grown at Columbus, Ohio, for many years, under the name of "Fourth of July Apple," brought from Germany without a name.

The Alexander, a noble-looking Russian

apple, of medium quality, and the popular Red Astracan, belong to this class, and we shall no doubt get some good winter sorts from Russia, now that attention is directed to that quarter, and our present facilities for communication so great.

I think that at one time the Duchess of Oldenburg was placed on the rejected list at a meeting of the Pomological Society, and so I think was the Alexander, but that was before pomologists had their eyes opened to the varied wants of our extended country with its various climates.

A FEW OF THE MOST EFFECTIVE FLOWERING BEDDERS.

THERE are so many thousands of varieties of bedding plants in cultivation, that amateurs may well be perplexed in attempting to make choice among them. Having for many years past made it a practice to visit and carefully inspect all the great parks and gardens where bedding is carried out with the greatest spirit, and having several large families of bedders always under my eye, I can, perhaps, as well as anybody, direct attention to a few of the most useful bedding plants obtainable for gardens. I shall now enumerate a few of the most telling flowers.

CALCEOLARIAS.—Bird of Paradise and Canariensis are the two best in cultivation, not only for effect, but for withstanding the various assaults to which calceolarias are subjected when planted out, especially drought. Some of our readers may remember an account we have somewhere given of an experiment with calceolarias. They were planted in a mixture of one half mellow loam and the other half thoroughly rotted manure. They grew luxuriantly and flowered superbly, and continued good till far into September. This was last year (1866), when there was a general failure of the plant, and many gardens were completely spoiled in respect of coloring by the loss of yellow. The following are also

good: Aurea floribunda, dwarf and bright; Tom Thumb, gold yellow, very dwarf; Prince of Orange, brownish orange; Amplexicaulis, tall and pale yellow. This last is of great value when skillfully used; if required to be dwarfed, it may be pegged down.

DAHLIAS.—The following are the best four bedding varieties: Queen of Whites, the best white; Duke of Newcastle, yellow; Scarlet Tom Thumb, scarlet; Crimson Gem, fine crimson. It is impossible to have dahlias in flower early in the season; to do them well requires ample space, an open, sunny position, and a free but not over-rich loamy soil.

GERANIUMS.—The best scarlets are Cybister, Black Dwarf, and Kate Anderson. The best pink are Christine and Wiltshire Lass. The best red are Rebecca and Lady Middleton. The best salmon are H. W. Longfellow and Eugenie Mezard. The best crimson are Rival Stella (this has plain green leaves, and flowers very abundantly; it is every way first-rate), Le Grand, and Crimson Queen. The best white is White Perfection. The following new varieties are splendid in quality, and should be secured as quickly as possible by all cultivators of bedding plants: Duchess of Sutherland, rosy purple; Lady Constance

Grosvenor, brilliant orange scarlet; Christine Nosegay, true Christine color, and habit similar to Stella; Warrior, rich scarlet.

VARIEGATED-LEAVED GERANIUMS.—The best white-edged are Flower of Spring and Silver Chain. The best creamy-edged are Variegated Stella and United Italy. The best gold-leaved are Cloth of Gold and Luna. The last-named is richer in effect than Mrs. Pollock, and very much easier to multiply and manage. For abundant flowering, and tolerably good variegation, Variegated Nosegay is worth having; the flowers are a cheerful rose-pink color.

PETUNIAS.—Loveliness, blush with red stripes; Ariel, white with purple stripes; Chancelor, blush barred with purple; Nellie, pure white striped crimson; Purple Bedder, fine purple. Petunias require a fresh, light, rather rich soil.

VERBENAS.—Albert Tellandier, intense carmine; Fire Brigade, crimson scarlet, withstands drought, and will thrive in a poor soil; Azurea superba, cobalt blue; Junius, deep orange, a very curious variety, quite good and capable of important services; La Grande Boule de Neige, the best white; Lord Clifden, scarlet; King of Bedders, crimson red, fragrant; Lord Raglan, carmine.

TROPÆOLUMS.—The "compactum" section comprises some eminently useful va-

rieties, far in advance of all others as bedders. The best are Compactum Luteum improved, yellow, with numerous spots; King of Scarlets, Scarlet Gem, and King of Spots, yellow and amber.

CONVOLVULUS MAURITANICUS.—The habit of which closely resembles that of our little native wayside convolvulus; the flowers are a charming shade of lilac. It is not a showy plant, but intensely pretty, and a capital relief to garish colors.

GAZANIA SPLENDENS is undoubtedly the best of the Gazanias, and a truly splendid bedder. It will flower well in a poor sandy soil, but it must have a sunny position. The charming contrast between its bluish and half glaucous foliage and its splendid orange flowers is most delightful.

HELIOTROPES.—Beauty of the Boudoir and Miss Nightingale are the best of this class for beds.

LANTANAS.—These are rather tender, and require a hot season to bring them out well. On cold damp soils they are of little use. The most generally useful are Fulgens mutabilis and Crocea superba.

NIEREMBERGIA GRACILIS makes a charming mass of pretty white flowers, to tone down the effect of strong colors.

ENOTIERA PROSTRATA makes a capital yellow bedder on cold, damp soils.—*Floral World.*

NOTES ON THE MARCH NUMBER.

A TALK ABOUT PORCHES.—In his usual flowing and easy manner the writer has shown us in this article how we may beautify and embellish, without depending or calling upon the scroll-work of carpentry, and while he has put in his recommendation for the construction of porches the features of beauty and expression, I will simply add a word as to their economy. Aside from the enjoyment derivable from their use as a resting-place from sun and

storm, the very shade of the porch serves to assist in maintaining a more even temperature in the house, making it cooler in the heat of summer, and warmer from its breaking the force of wind and storm in the winter. I like the sketch of the rustic porch, but doubt the appropriateness of using rustic work in direct association with anything planed or painted. Were our cottages built of stone, with broad projecting roofs and covered with vines,

then a porch of the bodies and branches of the forest trees would be in harmony; but as attached to a white or brown painted house of one and a half or two stories, free from the association of aught but the carpenter's taste in its construction or surrounding, I think a rustic porch would be more unsuited than one of the said carpenter's own design with all its fancy scroll-work.

DROOPING DECIDUOUS TREES.—A timely article that to many will be of great interest at this season of the year. It is deeply to be regretted that while we have many deciduous drooping trees perfectly hardy, we have but a very limited number among evergreens. *Thuja filiformis*, a weeping arborvitæ, and *Juniperus oblonga pendula* and *Virginiana pendula*, two varieties of the Red Cedar class, being about the only ones which can be trusted out of doors in our Northern or Middle States. The first two named are, however, extremely well adapted to cemetery planting.

DESIGNS IN RURAL ARCHITECTURE—No. 20.—I like all of this design except the tower, and don't know just how I would go to work to change that; but as it is, there seems to me a pretension not fully borne out by the remainder of the building. Will some architect tell me when, if ever, a bay window opening on a porch is admissible in true architecture?

TWO NEW GRAPES.—And still they come. At the present rate, the variety and number of grapes will soon outrun that of pears. I have before said that I wished some course could be adopted to check this influx of varieties; but as some persons have made money from the production of new grapes, I suppose we must submit to have our pockets lightened of three to five dollars for highly-praised sorts, until their raising proves a question of doubtful pecuniary profit to the dealer.

JAMINETTE PEAR.—Glad to see this old pear brought out again. I have known it

many years grown on the pear root, and giving yearly crops of fruit that are put away in the fruit-cellar and kept until mid-winter as well as apples, and then brought out and ripened up, proving rich, juicy, and capital to eat. It should always be left to hang on the tree as late as it is possible without danger of freezing.

THE CURCULIO VS. PEACH ROT.—With the writer, I am no believer in the curculio being the cause of the rot in the peach. The fungus is the most probable present cause, and I shall be glad to read J. C.'s way of preventing the peach rot.

ANGERS AND ITS NURSERIES.—Thanks for this article, and I repeat, let no tourist, and especially no horticultural tourist, go to France without visiting Angers.

WARDIAN CASES.—A few years since everybody almost got up a Wardian Case, some small, some large, until it seemed to be a part of the regular furniture of a house, but during the past two or three years their use has been abandoned, and it is rare at this time to meet with one. Why this is so, I can only account for on the supposition that to enjoy vegetable life one wants to see it growing and changing unrestrained, and a daily contemplation of one or more plants in a confined position by degrees becomes wearisome. To no other cause can I attribute the partial abandonment of the Wardian Case, because it is well known plants of many kinds can be successfully grown therein.

VERY HARDY VARIETIES OF THE APPLE.—All these records of the whereabouts in which distinct varieties of the apple succeed or fail are valuable, and I am tempted to name the Winesap as an old sort that over the whole country will average well as a variety for cultivation. It wants good soil, but not very rich, and will not endure its roots to stand on a hard clay bottom undrained.

Grimes' Golden Pippin is a comparatively new variety that our fruit-growers should test everywhere. REUBEN.

ELMS AND MAPLES.

WE sometimes observe in horticultural works the term English Elm. This is a vague definition of a tree; about as definite as some of the descriptions of fruit given in the HORTICULTURIST recently by the writer. If a European catalogue should speak of the American Ash or American Hickory, we should certainly be ignorant of the variety for sale.

We have some noble specimens of English Elm, so called, on Long Island, some seventy years planted, which, I presume, are the same variety Reuben saw growing so finely on the grounds of our friend Charles Downing. They are the English Cork-Bark Elm (*Ulmus suberosa*). Again, there are specimens of very fine and quite distinct trees of the English Elm growing here, and they are the Broad-Leaf, or English Field Elm (*Ulmus campestris*). Then we have a hardy and desirable Elm, the Scotch, or Wych Elm. This is not as rapid a grower as the others, but it is one of the best for our climate. The Exmouth Elm is not as fast a grower as the first two, but we think it the prettiest elm we have seen. It is rather high priced, and not very plenty, owing to difficulty in propagating young trees. The Fastigiate is still more rare, and grows somewhat in the form of a feather, and the Huntington, with other varieties, and the Camperdown and common English Weeping, are English Elms. The comments we make, it should be remembered, apply only to Long Island; they may not be appropriate to other sections.

The English Field Elm and the Cork-barked English and Dutch Elms are liable to have the young growth killed back in winter, for the reason that their wood does not ripen perfectly, and often become unsightly objects, especially young trees. For this reason, these three kinds are but little planted here, and the nurseries at Flushing have nearly or quite abandoned their propagation. The two Cork-

bark Elms are very much addicted to throwing up suckers after they are about fifteen years old, and soon become a great nuisance, and many are the owners that wish they had never planted them. If there were no other desirable shade trees, we might endure them, but there are many, and if planters wish to avoid the mowing and grubbing of the suckers, they will not plant the Cork-barks. We can not have a flower bed or plant shrubbery near them before, ere long, the elm roots spread through the enriched soil, robbing them of their nourishment, and commence to throw up suckers forthwith.

Our American Elm, called the Weeping and White Elm sometimes, is a first-class tree in all respects. We do not know of a fault, if justice is only done to it. The Slippery Elm (*Ulmus fulva*) is not common here, and but few in comparison are planted, probably on account of its slower growth and small size. Neither do we see many of the Corky White Elm, or the Winged or Wahoo, as they are inferior to our noble American White Elm.

The next class of trees, the Maple, are equally as desirable shade trees, and are now the most fashionable class for planting around New York. The Sugar Maple is the finest American species, but it requires a rather moist soil to reach its perfection. On light and dry soils, the European Sycamore and Norway succeed better. The Red Flowering Maple grows plentifully in moist soils and woods, but for a shade tree it is in but little demand. It is inferior in its best estate to the Norway Sycamore and Sugar. The Silver-leaf, or White Maple, will grow more in one year with us than the Swamp, or Red Maple, will in three. Its chief beauty is in its early and brilliant bloom. We have the Striped-bark Maple, pretty when young, sometimes called Moosewood; the Mountain Maple, a shrub; Black Sugar Maple, differing but little from the Rock

Maple; the White Maple, the fastest grower of all; and the Ash-leaf Maple, Negundo, or Box Elder. The growth of this is so crooked, and it throws out so many side shoots, that but few are fit for sale in the nurseries. They look pretty, with their green bark and light-green foliage, in contrast with other trees, but they are not, and probably will never be, extensively planted.

If we were asked what tree to plant near the house for shade that would combine the elements of beauty of form, densi-

ty of shade, long continuance in foliage, pretty bloom, and fine autumnal decoration, with entire hardiness and freedom from any objection, we should select the Norway Maple. The European Sycamore Maple is a faster grower, and makes a fine bushy head, but is inferior, in some respects, to the Norway.

We may add that, with us, the American Linden, or Basswood, grows faster than the European, and its leaves do not turn brown and fall off in autumn, as the latter generally does. ISAAC HICKS.

NEW PLANTS.

WE take the following notices of new plants from our English exchanges:

CYPRIPEDIUM SCHLIMMII. *Schlimm's Lady's Slipper* (*Bot. Mag.* t. 5614).—A pretty species from New Granada, found in moist places at an elevation of 4,000 above the sea level. It is a stemless, terrestrial plant, with leathery ligulate leaves, and the flower-stem bears half a dozen flowers, sepals and petals white, richly spotted with crimson, the lip is white behind, but has a deep crimson blotch in front.

TAPEINOTES CAROLINÆ. *Empress Caroline's Tapeinotes* (*Bot. Mag.* t. 5623).—Gesneriaceæ. A superb stove plant, introduced by Mr. Bull. It was discovered during the Brazilian travels of the present Emperor of Mexico (Maximilian I.), and is named in honor of the Empress of Mexico. It is a small under shrub, the leaves opposite, four to six inches long, oblong lanceolate, bluish green above, bright red purple below. Flowers solitary, corolla an inch and a half long, white. Will be highly esteemed for its handsome foliage and elegant flowers.

ANGRÆCUM CITRATUM. *Citron-yellow Angraecum* (*Bot. Mag.* t. 5624).—Orchideæ. A curious and pretty species, the flowers are produced in a long pendulous raceme, flowers three quarters of an inch in diameter, flat, pale straw color.

IMPATIENS LATIFOLIA. *Broad-leaved Cingalese Balsam* (*Bot. Mag.* t. 5625).—Balsamineæ. A perennial Balsam, native of Ceylon and the Himalaya. It is a branching shrub, two or three feet high, with ovate leaves and rosy flowers.

CLAVIJA FULGENS. *Brilliant-flowered Clavija* (*Bot. Mag.* t. 5626).—Myrsinæ. A very beautiful plant from South America. The trunk is about four feet high, very stout, leaves ten to fourteen inches long, three to five inches broad; racemes erect, four to five inches long; the rachis entirely hidden by the densely crowded flowers, corolla half an inch in diameter, deep orange red, yellow in the disc. The rich color of the crowded flowers, and the very distinct character of the whole plant, render it a striking ornament of the stove.

WEIGELIA MIDDENDORFFIANA V. PURPURATA. *Purple-flowered variety of Weigelia Middendorffiana*. A robust-growing, hardy shrub, with handsome dark-green leaves, and large panicles of flowers, which are purplish red, shading to black at the base of the petals.

AMARYLLIS (HIPPEASTRUM) ALBERTI (*L'Illust. Hort.* t. 496).—A handsome double-flowered amaryllis, the segments of the flowers lobed and notched, the color vermilion red.

GROUPING.

BY JOHN ELLIS.

PROBABLY one of the greatest attractions of English gardens is the art displayed in combining together shrubs and trees, which give such bold relief to their noble grounds. This system, termed "grouping," generally effects two objects—grandeur in its general outline, and screens or divisions where found requisite. The classes of plants used for the purpose in England are generally evergreens, the beautiful habit of which, combined with their large and glossy foliage, adapts them admirably for this purpose. How much we miss them here in our Northern States, to add luster to our beautiful landscape! The reader, we think, is mentally asking what plants we refer to; well, we have reference to the old and charming Portugal laurel, the common laurel, the laurestina, and several others of this class. Masses of these plants are grouped together with gravel-walks which lead us away, often through not more than an acre of ground, till we begin to think there is no end to the extent of it. Such walks are "lovers' walks," for they are beloved by old and young. The gardener, too, loves them, for they yield protection to his tender plants and choice fruits, that would oftentimes be blasted by the icy winds and chilly frosts of the long spring-time of merry England. How often do we hear the moans of our fruit-culturists, in the moments of their despondency, occasioned by the blast of some petted "Duchess," or a fungoid rupture in the renowned "Delaware!" Such delicate and tender botanical organisms were never destined by Pomona to expose themselves to the hurricane blast that drives headlong and furiously across this mighty continent! No, never. We have often seen some pet of the canine species wrapped in warm clothes to ward off this inauspicious gale; but, alas, for our would-be profitable fruit-trees, they may die and

rot if they can not take care of themselves. The fine feature given to grounds in England by "grouping," we would like to see in the form of the *beautiful and practical* here. The beautiful, by the introduction of more evergreens to the grounds of our wealthy men, and grouped so that a majority of those unsightly out-buildings be shut out of view; and shelter given to the dwelling. In the practical form, by surrounding our fruit and vegetable grounds, and also intersecting the same by a selection of evergreens that will be at once useful and ornamental. What is there that so much refreshes a winter scenery as the beautiful evergreens? What gives more encouragement to the little warblers of the forest to persevere in the destruction of the vast horde of tormenting insects we have to contend with, than the warm, thickly-set leaves and branches of the evergreens? "But," says the reader, "those evergreens that grow and flourish so beautifully in England will not stand the winters of our Northern States." This is very true; but why not let us use our own? What is there more beautiful in the known world in the way of an evergreen, when properly grown, than *Abies Canadensis*? They may tell us of the beauties of "*Deodara*," but our first love is the Hemlock. As a single specimen, nothing that we know of can excel it. We wish to impress on the mind of the reader, that if our winters will not admit the planting of those varieties of evergreen shrubs so common in use in English grouping, we can produce a similar effect here with evergreens that we know are perfectly hardy. The Norway Spruce in clumps are really majestic, and so are the Austrian Pines. Then when we come to require groups smaller, according to the planned order of the ground-work, we can group the common arborvitæ. A hundred of

them together, and planted thickly, in a few years' time assume the appearance of one solid body of evergreens, looking, in fact, more like one massive plant.

Evergreens planted in this style always retain perfect their *outside line of beauty*, their external invariably appearing perfect. The Norway Spruce treated in this way is a desirable acquisition to the grounds. No one need fear the plant growing away out of bounds, for whatever size or height is desired, "topping" the plants will insure it. The Norway is equally good for a hedge, as is also the *Abies Canadensis*, and will bear the pruning-hook just as well as does the Honey Locust or Osage Orange. In speaking of this system of grouping the evergreens in newly-worked grounds, if practiced, it will be the means of adding more solidity to the general appearance of the whole, the means of cutting off unsightly objects, protection from winds, a general enlivelment to the desolation of winter, and add much warmth to those situations which are naturally open and bleak. Then, again, there is another good reason why we should plant the evergreens more extensively, and this is because of their human health-producing properties. The exhalations from the pines, spruce, cedars, etc., are so powerful, that many persons in debilitated conditions are sent by their physicians to specified localities in Europe to inhale their aroma, and then return home with new constitutions. In reference to our gar-

dens for fruit-trees and vegetables, etc., European gardens have their walls and cross walls; these are not only for the training of fruit-trees, but they are for shelter and protection. Many of us here consider any plowed-up piece of ground, and it planted with vegetables, a garden, where the weeds oftentimes are the greater crop; but such a term is only a perversion of the English language. A garden means a place of beauty and loveliness, neatness and order—a place of serene, calm grandeur, and its proprietor part and particle of the same. We think this is as it should be, for God and man first conversed in such a place. Then can we not add to the grandeur of our gardens, not by surrounding them with walls and iron work, Italian architecture in the form of solid masonry, whose incongruity becomes doubly so when contrasted with its externals and surroundings, but by the tasteful introduction of beltings of evergreens, so harmoniously arranged that they shall be both useful and ornamental? Arrange for shelter, screen the winds from our vineyards and pear orchards, spend a little more money in this and less in something else, then we shall have the grapes to ripen earlier, the pears will not *shout aloud* in their blossoms and keep *dumb* silence in their *fruit* time. Then shall gardeners and amateurs reap better rewards for labors, and our fruit-bearing plants and trees be credited with better dispositions and greater charity in their natures.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

MAY is a busy month in the vegetable garden. Peas want hoeing, and perhaps brushing; early beets, parsneps, carrots, etc., if sowed the last month, want weeding. If not sown, the sooner the task is

done the better for your chance of long, strong tubers. Make the ground deep and mellow.

Melons, cucumbers, sweet corn, squashes, beans, etc., all to be planted this month.

Keep the melons and cucumbers and squashes each a good distance apart, if possible. Tomatoes when first taken from the frame and planted should have a box around them a few days, until their roots get newly established. The same also of melons and cucumbers taken from the frame. In making melon and cucumber hills, put in plenty of well-rotted manure, and distribute it wide as well as deep. Lima beans want rich, well-manured soil, or they give but a poor return. Celery plants need to be pricked out into a gentle spent hot-bed frame. Cauliflower plants, as well as cabbages, are benefited by adding a handful of bone meal in each hill where they are to be planted.

MESSRS. EDITORS: John F. Bennett, Esq., in the April number, asks if, in the weedy vineyards where I saw as much rot as in those of clean cultivation, the "weeds were free from rot?" Truly, I can not answer him yea or nay. My recollection is, that the weeds were at the time, most of them, in what would be termed a ripened state, and hence decaying; there might have been fungoid upon them—I do not recollect of noting it. I have a great respect for the dead, but do not regard the remarks he made when alive as any more infallible than if he were still alive. The mind of man improves and changes from year to year, and many a man makes remarks at fifty which at fifty-two he would be unwilling to substantiate. REUBEN.

IF you expect to gather good fruit, or large and fragrant flowers, keep the soil frequently stirred; never let it get packed down and dried. If drought comes, the more you stir the land the better. Soil stirred after four o'clock P. M. will absorb dew almost equal to the effect of a small shower. Many years ago, we kept a large nursery fresh, green, and growing all summer, by keeping our plow and cultivator working from three P. M. to dark, and sometimes a little on moonshiny nights.

Grass fields all around us were burned out. Forests were brown, and yet our trees and plants grew on as usual, and all by means of constant stirring of the soil.

DAHLIAS may be planted out any time after the 10th of the month. Deep, moist ground gives the best growth and blooms; while as manure, we have never found anything equal to a weekly application in liberal quantity of soap-suds water and chamber lye.

WETHERSFIELD, CONN., *March 14, 1867.*

MESSRS. EDITORS: Two years ago I noticed an apple-tree in full and vigorous bearing, while those in its neighborhood had been badly eaten by the canker-worm, that great scourge of our New England orchards. Against the trunk there had been made a heap of coal ashes, the refuse of the winter's fire. Judging this to have had the effect to prevent the ascent of the insect, I last year tried the experiment on a few trees, with perfect success. The grub was kept off from trees where the ashes were applied, while trees immediately around it not thus protected were badly eaten.

Should this prove a remedy after careful trial, it will economize and divert to a new use this hitherto useless product of our coal stoves.

I applied it to several plum-trees which had previously borne sparingly, and the result was an enormous yield the following season. J. W. GRISWOLD.

STIR the soil carefully around Japan lilies or other bulbs that are now coming strong out of the ground.

PEACH-TREES.—This is the best month to prune peach-trees. Take out all dead wood; shorten back the last year's growths one third to one half; take away entire most of the puny little twigs, and shorten others back into spurs for bearing another year. Clear away all borers from the roots.

"PENNY WISE, POUND FOOLISH."—Many, very many, in their improvements of grounds, arranging of trees, positions of roads, etc., can yearly have this old adage safely applied to them. Reader, we hope you are not among the number. It is a common thing for a new beginner, a man of wealth, to suppose that in arrangement of his grounds, the position of trees, etc., he knows as much as any one, or that his gardener, to whom he pays a good salary, is quite competent, and under this view his planting and the arrangement of his place is made. This same man would consider it bad policy to employ a cheap hand to make him a coat, for although the tailor might sew strong, yet there would be in the shape and set a feature that wherever he wore the coat would betray the maker. And just so it is in arrangement of grounds, positions and curves of roads, arrangement of trees, etc.; the gardener may be a perfect workman, very often a much better practical hand with tree and plant than the landscapist, but from want of study and an innate expanded taste, he can no more arrange trees on a lawn or around the buildings to the best effect than the cheap tailor can give to his coat the style of the day. Every one who prepares a new place should call in for consultation, at least once, a competent landscape gardener, a man whose mind is and has been attuned to the subject, who may not perhaps be half as good a tree planter as many gardeners, but who has studied light and shade, harmony and color of foliage, breadth, form, and height of tree, until, at a glance over a place, he can see where and what will create upon it features of beauty and grandeur.

This "penny wise, pound foolish" system is often practiced by men under the impress that they can not afford to pay ten or twenty dollars a day for a man just to look about. If they would think one moment how this looking about, sticking a stick here, another there, and noting the tree to be planted, is going to increase in

permanent beauty their property, they would not hesitate. Without this staking by an artist, many a man has in a few years to take up and remove many trees. Some are too near the paths; others that are in the center of a group do not grow as fast as the outside ones, and consequently can not be seen, and so on, keeping his place for years in a constant state of removal and renewal, with a face of garish newness, never of quiet peace and repose.

FRUIT-TREES may yet be pruned; indeed, it is better to do it now than in mid-winter. Pruning now will be for the purpose of creating form and more vigorous growth. Trees that are already growing thriftily had better be left until the last of July or early August, when the pruning will have a tendency to check extended growths and increase the number of fruit-buds.

VINEYARD vines now require constant care. Very much of the success of the summer may be said to rest in the early starting. Leave now only just the number of buds you wish to grow from the main stem or arms for next year's fruiting, rubbing out all others. In many sections this should have been done last month, but in some cold ranges the buds do not push much until this time. As the laterals grow, do not pinch them until they have made at least two leaves; and as the fruiting shoots grow, do not pinch back to leave less than three leaves beyond the fruit.

PELARGONIUMS will now be flowering freely. Water liberally and often, with liquid manure. Keep the plants as near the glass as possible, and shade them at noonday.

PLANT *Gladiolus* bulbs this month. Select your colors, and plant the most brilliant in the center of the bed.

THIS is a good month to propagate all green-house plants.

LANCASTER, O., *February 17, 1867.*

MESSRS. EDITORS: In February number HORTICULTURIST, under Editor's Department, the following item occurs:

"Experiments of years in succession have shown that well-ripened but medium-sized tubers planted whole, result in giving the most vigorous character of plant and most even-sized tubers as the crop; large potatoes planted whole give a few extra large potatoes each hill, while cut pieces of one and two eyes each do not give strong plants, and too often have too many small valueless tubers."

Now, perhaps, this is good advice in New York, but in Ohio we would consider it a decided waste of material to plant whole tubers. Last year I planted three bushel Garnet Chil  potatoes.

Cut from one to two eyes, and dropped two pieces six inches apart every eighteen inches, covering with earth from one to two inches, and then spread bagasse all over the ground, six to eight inches. Without any further attention, I gathered from that lot one hundred bushels large, even-sized potatoes, that will sell in any market. My Garnet Chil , not affected with rot, while all other varieties that I had planted were. I. A. FETTERS.

N. B.—I send, by express, sample, so that you may judge as to size and quality.

I. A. F., V. P. Hocking Valley Hort. Soc.

[We are obliged to our correspondent for the record of his experiment in potato growing; but one season's result is only an experiment, indicative of what may be in after seasons, and not illustrative or exemplifying any fixed fact. We have ourselves practiced the system of growing potatoes under a covering of straw, bagasse, etc., and while we have obtained good quantity of crop three years out of four in our practice, the tubers when cooked were not dry and mealy.

Our statement, to which I. A. F. takes exception, was made from records of many experiments gathered from all quarters of the Union; and it is a little singular that

some of the strongest records in favor of what we gave as results of practice, came from growers in Ohio. To show our correspondent that one or two experiments are no guide, we will tell him that some years since we grew one of the very finest crops, both in size of tuber, quality, and yield, from planting simply the eyes cut from potatoes. Again we practiced it, and with only moderate results. Last year we experimented again, and obtained a very meager return. It is our pleasure to continue experiments, and we shall try various ways of planting this season, and hope I. A. F. will do so also, and report us his record of results. The potatoes were duly received, and are fine specimens.]

NEW GRAPES—SEE MARCH NUMBER.—Dr. J. A. Warder, of Cincinnati, writes us that in our notice of the Longworth and Lyman grapes we committed an error, and refers us to the Pomological Transactions of 1866 for correction. We took our item from the report of that Society's Secretary, as published in the *Ohio Farmer*; but referring to the Transactions, page 46, we find nothing to convince us that we committed any error in our remarks. He also refers us to the *Horticultural Annual*, which we have also looked up, but can not find what he evidently would wish us to see, viz., that we, not Dr. Warder and the Secretary of the Ohio Pomological Society, have been hasty. The report, in noting them, says they were "*found* in the garden of the late N. Longworth, Esq.," etc. We have great respect for the memory of the departed, and shall be rejoiced if seedling vines left behind him produce fruit which shall gladden and cheer every beholder.

LAWNS require frequent mowing and rolling at this season. If left to grow so as to send up the seed stem at this time, it will be difficult to get the grass again into good shape this season. As the hot weather approaches, mowings will not require to be as frequent.

AMERICAN POMOLOGICAL SOCIETY.—The undersigned give notice that the eleventh session of this Society will commence in the city of St. Louis, Mo., on Wednesday, Sept. 11, 1867, at eleven o'clock A.M., at Mercantile Library Hall, and will continue several days. All Horticultural, Pomological, Agricultural, and other kindred institutions in the United States and British Provinces are invited to send delegations as large as they may deem expedient; and all other persons interested in the cultivation of fruits are invited to be present and take seats in the Convention.

Among the prominent subjects which will come before the Society at this session will be that of the revision of the Society's Catalogue of Fruits. The special Committee appointed for this purpose are now, with the various State and Local Committees, actively engaged in collecting such information as will aid in determining what varieties are best adapted to the different sections and districts of our country; and this information, in the form of reports, will be submitted to the action of the Convention. In compliance with a resolution passed at the last session of the Society, the several State Pomological and Horticultural Associations are requested to compile lists for their own States or Districts, and forward them, at as early a day as possible, to P. Barry, of Rochester, N. Y., Chairman of the Committee on the Revision of the Catalogue.

Members and delegates are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of American Pomology; and as the fruits of the South and Southwest will then have attained their size, it is especially desirable that a grand display from these sections be made.

Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his fruits, that a report of all the varieties

entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with Transactions of the Society. Life membership, ten dollars; biennial, two dollars.

Packages of fruits, with the name of the contributor, may be addressed as follows: "American Pomological Society," care of C. M. Saxton, corner Fifth and Walnut streets, St. Louis, Mo.

MARSHALL P. WILDER, *President*.
JAMES VICK, *Secretary*.

BEDDING PLANTS.—About the 10th of this month all bedding plants may be planted out. It is always best to harden them off, as it were, for a few days after being received from the green-house, by placing them in an open frame and shading them slightly. If planted out in the border immediately when received from the forcing frames or green-houses, they often flag and die. It is also always best to head them back one third to one half in planting, thus taking away the most succulent and unripe parts, leaving the supplies from the roots to fill more perfectly and push forward with new vigor the remaining buds.

IVES AND DELAWARE WINES.—Mr. J. M. McCulloch, of Cincinnati, will please accept our thanks for samples of the above-named wines. With Mr. McCulloch, we should be glad to see more vineyards, but we should also like to see more pure wine, simply fermented grape-juice. Mr. M. says he has sold for the raiser Ives wine at \$4 25 per gallon, and Delaware at \$4, to the Longworth Wine House. Certainly they must have a peculiar market for wine at Cincinnati, when even at our present tariff and gold rates, superior Rhine wines are sold in New York market at \$3 to \$4 per gallon.

As strawberry plants come into bloom, look them over, and eradicate at once any chance seedling or incorrect plant that may have happened to get among them.

BOOK NOTICES.

NOW READY—WOODWARD'S RECORD OF HORTICULTURE FOR 1866, edited by A. S. Fuller, a writer well known to our readers as the author of "The Forest Tree Culturist," "Grape Culturist," "Strawberry Culturist," and from his numerous contributions to the pages of the HORTICULTURIST.

Mr. Fuller, in his preface, thus states the purpose of the work: "We propose to publish in January of each year, a volume in which we shall endeavor to show the actual state of horticulture at that time; the principal horticultural events of the preceding year, and any new developments that may have been discovered in regard to the more common fruits and flowers in cultivation. We do not propose to record the advent of every new fruit or flower, but only to give their merits or demerits after they are fully known. We shall endeavor to gather information from all parts of the country, and keep our readers informed as to which particular fruits and flowers are best suited for particular locations."

Among the numerous excellent articles in this work, those chapters which treat of the Lily, its propagation and varieties; the Gladiolus; the Clematis, small fruits, etc., are each alone worth the price of the volume. Sent post-paid from this office for \$1.

THE AMERICAN FRUIT CULTURIST, containing Practical Directions for the Propagation and Culture of Fruit Trees in the Nursery, Orchard, and Garden. With descriptions of the principal American and Foreign Varieties cultivated in the United States. By John J. Thomas. Illustrated with four hundred and eighty accurate figures. New York: William Wood &

Co. Price \$3. Something over twenty years since, John J. Thomas issued his first edition of the "American Fruit Culturist," which for conciseness and order of arrangement, plain, practical teachings of how to grow and cultivate trees and fruits, was regarded of such value as to make its possession almost a necessity by every fruit-grower. Since that time the author has twice revised his work, and now gives it to us almost entirely re-written, and exhibiting in its order and system all that method so peculiar to its author, while at the same time its teachings are extended and varied in accordance with the great improvements and progress made in fruit culture. As a book to guide in the practical working of the nursery or orchard, it is now one of the best, if not *the* best, published; and as a guide to the value of fruits and descriptions of varieties, while it has not a complete list, yet enough are described to meet all practical wants. Sent from this office, post-paid, on receipt of price.

ACKNOWLEDGMENTS.

JOHN EDGERTON, Esq., of Vinewood Nursery, Coal Creek, Iowa, sends us tomato seeds, which he describes as having spotted markings, and therefore a curiosity. They are in our amateur friend's hands, and will be duly reported upon.

Jas. Littlehale, Esq., Stockton, Cal., sends us several varieties of melon seeds and one of tomato, for which he has our thanks. These also we have passed over for our friend to grow and report upon.

We are indebted to J. S. Downer, Esq., of Fairview, Todd County, Ky., for seeds of the Downer water-melon. In speaking of it, Mr. D. says he received the variety thirty-two years since from Louisiana, and has since kept it pure. It has a remarkably thin rind, a rich and sweet flesh, and weighing fifty pounds and upward each. We have passed the seed into careful hands, and hope in due time to hear how it succeeds at the North.

THE
HORTICULTURIST.

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PROPAGATING PLANTS BY CUTTINGS OF RIPE WOOD.

BY ANDREW S. FULLER.

MANY kinds of plants whose stems and branches are composed of what is called ligneous fiber, are readily propagated by cuttings of the ripened wood. Sometimes wood of two or more years old is used for that purpose; but, as a general rule, that of one season's growth produces roots the most readily. The cuttings are usually taken from the parent plants in the fall of the year, as soon as vegetation has received a check in its growth, or as soon as the leaves of deciduous plants will part from the stem without injury to the buds adjacent.

Autumn is also a proper time to make cuttings of many kinds of evergreen plants, more particularly those of hardy trees and shrubs.

A branch, when it ceases to grow in summer or fall, contains a large amount of matter which has not assumed any particular form or structure, and it is in a proper condition either to produce roots or branches. With some kinds of plants it can be made to produce the former very readily; with others it is quite difficult—simply because we have not learned the proper conditions necessary for their development; and it is just here that we come

upon the great secret in the propagation of plants—*i. e.*, under what conditions should a particular plant or cuttings of it be placed to insure growth? Cuttings of the willow, currant, and many other woody plants will grow quite readily, even if taken from the parent plant at almost any time of the year, while a branch from the hickory would be difficult to make produce roots under the most favorable conditions, although it is not among the impossibilities to grow hickory cuttings. The gardener, however, does not seek the most difficult methods in multiplying plants, but the easiest, consequently we have many ways of producing the same results.

It requires more or less time for a cutting to produce roots; and as it is apparent that it is better to give an abundance than too little, we usually make the cuttings of all woody plants in, autumn, because by doing so, we secure several months in which to produce the change, or, in other words, for roots to form. Roots are produced more readily at a low temperature than leaves—also in the dark—and these conditions are easily secured, even in the coldest weather, for the earth, although

frozen on the surface, is always warm enough below to afford a proper heat to produce roots on most kinds of woody plants native of a similar climate.

We avail ourselves of the knowledge of this fact, and make the cuttings of hardy plants in the fall, and either plant them immediately where they are to grow, protecting them from the frost, or covering with moist soil, in some convenient place, where the temperature which surrounds them will be above the freezing-point, but not so warm as to excite the leaves into growth.

In such a situation the process of forming roots will go on; and some kinds will become so well rooted by the time the regular growing season commences in the spring, that the roots will be able to supply the leaves with nutriment as soon as they are expanded; consequently a rapid growth early in the season will be produced. Although the roots of some kinds of plants will form at a very low temperature, still, if a higher one can be obtained, while at the same time the buds which are to form leaves can be kept in a cool atmosphere, a great point is gained, because roots must be produced before anything like rapid or permanent growth can be secured. These conditions are produced naturally in the open ground, for the temperature of the soil in the spring is generally warmer than the atmosphere, and the lower end of a cutting, from which point it is always desirable to have the roots produced, receives more heat than that portion which is exposed to the air. In latitudes where the ground freezes to a considerable depth, every one who has ever taken the trouble to examine the soil at the time of its thawing in spring, must have observed how much more rapidly it thaws from below upward than from the surface downward. Heat descends very slowly, but cold rapidly, and just as soon as the weather becomes so warm that the surface does not freeze, the heat from below will rise to the surface.

The hot-bed used by the gardener is formed on the same principle. His object is to secure heat for the roots, while the branches or upper portion of the plant are kept comparatively cool. Thus plants are grown with what is usually termed bottom heat.

Nearly all plants emit roots more readily at or near their buds than elsewhere; therefore in making cuttings it is always best to sever them just below the bud, leaving it on the cutting, thereby exposing the wood



FIG. 87.

at a point from which roots appear to be produced naturally. Some species of plants, like the willow and quince, emit roots very readily from every portion of the stem, and with these it is not necessary that they should be cut off at a bud; yet even these grow more rapidly if made in this manner. With some of the hollow-stem plants, like the common *Deutzia*, the orifice is usually entirely closed, or nearly so, at the point where the bud is situated; and it must be apparent that there will be less liability of water lodging within the stem and causing its decay if severed just below the bud than if at any other point.

Figure 88 shows a section of a stem of *Deutzia scabra*: A is the hollow in the stem; at B the orifice is closed by the wood growing completely across, thus prevent-



FIG. 88.

ing water from passing beyond the bud, even if it should enter the cutting from below. In other plants the hollow in the center of the stem is continuous; but in many others it is closed, as shown, or filled with a pith, as in the common elder, grapevine, weigela, etc.

There are some plants that do not emit roots readily from any other point except near their buds, and therefore it is evident that they should be cut at this point, so as to expose that peculiar substance (cambium) from which roots are produced where it is most abundant. Cuttings should always be made with a sharp instrument, for the fibers should be cut off smooth, and not broken or crushed.

The roots produced on a cutting are supposed to be formed from the sap or juices of the plant that have been assimilated by the leaves from the ascending liquid absorbed by the roots. After assimilation has taken place, the sap descends mainly between the bark and wood, but a portion through the bark; and it is from this substance that roots are formed. I am aware that the young branches of some kinds of woody plants having a large pith or hollow stems will produce roots from the inner portion, but this is not sufficient cause to disapprove the general

theory of circulation of the sap, or that roots emanate only from the elaborated sap or nascent matter, because it is not impossible nor contrary to the general principles of vegetable physiology that a portion of the true sap of exogenous plants may not pass from the outer to the inner surface of the stems of young one-year-old wood, at least when it is placed under artificial conditions.

There are some authors who contend that a bud, either latent or developed, is essential on a branch to enable it to produce roots—in other words, that roots always proceed directly from a bud; and if a cutting is severed at a distance below a bud, the roots start from the lowermost one, and push their way down under the bark and out at the end, establishing a communication with the source from which they are to derive their future nourishment. It was also once supposed that in the same manner all the buds below the surface of the soil which do not grow upright and form branches, produce roots by going down, overlapping and intermingling with those produced from the upper bud. A similar theory is sometimes advanced in regard to the manner in which a bud or graft unites with the stock upon which it is inserted. Both theories, however, are founded upon error, as can be readily proved by any one who will investigate the subject for the purpose of learning the truth.

The erroneous theory of roots emanating only from buds, doubtless originated from the fact, that many kinds of plants grow more readily from cuttings if they are taken off close to the base of a bud, as before stated, thereby strengthening the belief that at this point only existed the nucleus from which all the roots were formed. To ascertain whether buds must exist on or within a cutting, to enable it to produce roots, it is only necessary to take a section of the stem between the buds (called the internode) of some kind of plant that has no latent buds—for in-

stance, a young shoot of the grapevine, or any similar plant—then make such a cutting produce roots, which it will readily do in the ordinary method. No buds will appear, yet roots will be formed, produced more or less in proportion to the natural vitality of the plant and the amount of available material which it contains. Of course the roots can not grow for any great length of time, nor to any considerable size, without the assistance of buds and leaves to prepare the food which they absorb.

That roots will exist, and continue to grow, feeding upon the food stored up in the plant, and upon that which they absorb, without the assistance of leaves or buds, a much longer period than leaves will without roots, is well known. The tubers of the herbaceous paeonia, for instance, will live and grow for a year or two without a bud or leaf, and its seeds, if sown in the open ground, will generally emit roots and grow the entire season before the leaves even escape from the seed covering.

The only analogy that I could ever discover between a cutting producing roots and a graft or bud uniting with the stock is, that the substance that produces both is the same, unless the grafting of some of the succulent plants which do actually produce roots from the grafts which feed upon the substance of the stock be called proper grafting, which it is not, but is only rooting cuttings in the stems of another plant instead of the soil.

Why one kind of plant will produce roots more readily than another is certainly, at the present time, unknown. Neither is the origin of buds sufficiently understood to allow of any rule being given that would be satisfactory to the practical horticulturist. We know that some plants produce buds from every portion of the stem and roots, which leads us to the conclusion, that every cell is capable, under proper conditions, of producing a plant similar to the original one.

Plants are called compound because they

are composed of many buds, each of which may be taken from the parent and compelled to sustain itself as a separately organized structure. The extent to which this subdivision may be carried appears to depend entirely upon the skill of the propagator.

The soil in which cuttings are planted in the open ground should be deep, of a porous nature, and composed of ingredients that will absorb and retain a regular supply of moisture. The variations of climate should be attended with a corresponding variation in soil, which, in warm latitudes, should contain powerful absorbents, so that it will not become too dry in summer; while a soil for the same purpose in the more northern latitudes would be better without these absorbents. In this latitude a loamy soil of fine texture is perhaps the best—one that is not so fine as to break and crack after a shower, or so loose that it will not retain moisture sufficient to supply the wants of the cuttings.

The amount of moisture required by cuttings varies greatly in different species, some requiring little, while others a very large amount. The poplar, willow, and many other kinds of trees will grow more readily if the lower ends of the cuttings are immersed in water containing but very little organized matter. But, as a general rule, cuttings do not require more moisture than is held in suspension in well-drained and friable soil.

Rank substances, such as undecayed vegetable or animal matter, should never be allowed near cuttings; and where it may be necessary to use manure, it should always be old, well decomposed, and thoroughly incorporated with the soil at least six months before the cuttings are planted.

Some propagators plant their cuttings and then cover the surface of the soil with manure. The juices of this will percolate the soil at every shower, and furnish food in solution to the cuttings. I have found this to answer remarkably well in some

seasons, while in others a fungus (mush-room) would spread itself through the manure, and when it came in contact with the young wood, it was very likely to destroy it. This, however, can be easily prevented by frequently stirring the manure; and I may here remark that from many years' experience I have never found any other mulching necessary (if the soil was previously rich) than that of frequently stirring the surface. Planting the cuttings too deep should also be avoided, as the farther from the surface they are, the less solar heat they will receive, and this is necessary to insure rapid growth after they have become rooted. If the cuttings are short, plant perpendicular; if long, they may be put in at an angle. In growing cuttings of the ripe wood of evergreen plants, the same plan should be adopted as with deciduous plants, except that the cuttings must not be entirely excluded from the light or wholly buried in the soil, for in making them, the leaves are left on that part of the cutting which remains above ground. If they were covered entirely with earth they would soon decay. The leaves of our hardy evergreen plants are covered with a very compact epidermis, which does not allow them to exhale or inhale moisture very rapidly when in a dormant state.

This peculiarity in their structure admits of their being placed in such a position that roots will form while their leaves do

not suffer. They should be placed in what are termed cold frames, and covered with glass that has been dimmed either with whitewash or white paint, so as to prevent the direct rays of the sun from reaching them, as that might give them too much heat and excite them into growth before roots were formed; or the frames may be covered with a screen made of lath, as shown in figure 89. This may be covered

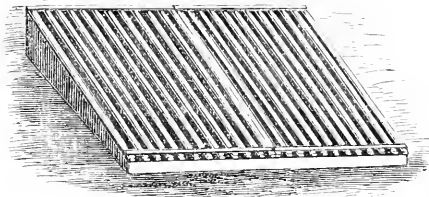


FIG. 89.

with straw or mats in winter to keep out the cold. The soil in which they are planted should be more porous than that in which cuttings of deciduous plants are grown, as the stems are not quite so firm, and are more liable to be affected by moisture. One third old decomposed weeds or leaf-mold and two thirds sand make a good material for the purpose. Keep the bed constantly moist, but never wet. The same care as to temperature must be observed as with other ripe-wood cuttings, never allowing the heat above ground to go below 35° or above 50°, if it can be avoided, until roots are formed.



WALKS and garden paths should be kept clean and free from weeds or grass, as much of the comfort and appearance of a place depends on their condition. In the making of walks, the refuse of iron or copper works forms a good base, upon which weeds rarely grow. Loose gravel is very objectionable to tread upon, and we have often cemented a plain gravel path by merely adding wood ashes, raking it well, then

wet down and roll. A short time will cause it to set and become firm. Once a walk is formed, it should not be disturbed with the hoe, but the weeds while young should be hand-pulled, or, better yet, dosed with salt to destruction.

Gas tar, coal ashes, and gravel also make a good path, but the odor from the tar, which continues a long time, is to many objectionable.

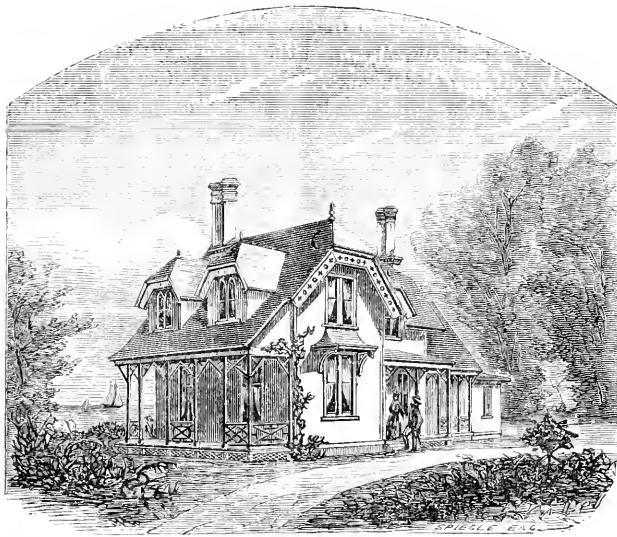


FIG. 90.—*Sea-Side Cottage—Perspective View.*

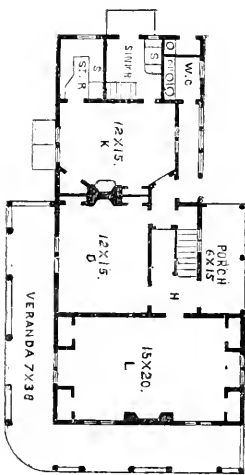


FIG. 91.—*First Floor.*

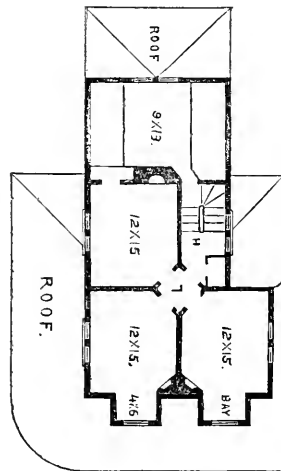


FIG. 92.—*Second Floor.*

SEA-SIDE COTTAGE.

DESIGNED BY F. S. COPLEY, ARTIST, TOMPKINSVILLE, STATEN ISLAND, N. Y.

THIS cottage was intended for a summer resort on the sea-side, for a small family keeping but one servant. It will be seen to combine with a picturesque exterior convenience of arrangement and economy of construction.

It was intended to be built of wood (balloon framed), filled in with brick, and roofed with shingles cut in patterns, and finished throughout in a plain cottage-like but substantial manner—the posts, rail, etc., of the veranda to be formed of the trunks and branches of the red cedar tree, left rough, with the bark on.

The engraving is a perspective view of the entrance front, and the east or garden side, as seen from the gate.

The accommodation consists of seven good rooms, a cellar, and all other necessary conveniences, and are arranged as follows. (See fig. 91, principal plan.)

H, the hall, entered from the porch by double doors, with swinging sash panels, which pleasantly light and ventilate it. On the left, as you enter, is the living-room, lighted by four windows, each commanding fine views of the sea and surrounding country. The one in front is finished with a seat; the other three are French casements, opening to the floor, to give access to the veranda. Four closets for books, etc., are so arranged at the ends of the room as to give the pretty effect of bay-windows. The fire-place is made for burning wood on the hearth, in the old style. This is quite a large and handsome apartment for so small a cottage, being twenty by fifteen feet, and ten feet high.

The door opposite the entrance leads into a cheerful little dining-room, possessing the same fine view of the sea from its casement window, and access to the veranda, as the parlor. Closets for glass and china (with a pass in the latter) are fitted up on each side of the fire-place.

By this is a door to the lobby, which communicates with the hall, kitchen, hat and cloak closet (under the stairs), and outside, etc. The outer door is lighted in the panel and protected by a rustic veranda, intended to be covered with vines.

The kitchen is well lighted, and arranged for the especial convenience of the housekeeper, with everything needful at hand—closets, dresser, and range (with hot and cold water), store-room and scullery (with sink, water, and fuel in an adjoining lean-to). The cellar is under the kitchen, and entered from the scullery—there is no leaving shelter for anything.

Ascending the stairs to the second story (see fig. 92, chamber plan), on the landing to the right is the servant's room, thirteen feet by nine, made in the roof of the wing over the kitchen. This room is well lighted in the gable, and ventilated by a valve in the chimney, like all the rest, and has large stow-away rubbish closets on each side. A few steps more to the left is the upper hall, lighted by the front dormer, and fitted with a clothes-press and linen-closet. By this is a small lobby, with sky-light and ventilator above, communicating with three light and airy family chambers, each fifteen feet by twelve, and nine feet high, with closets, fire-places, etc.

The bays in the two rooms over the living-room, if fitted up with curtains, would make excellent dressing-closets—a degree of luxury and refinement never provided for in a cottage of this class. It will be seen by reference to the plans, that the rooms are all placed on the side of the sun and views, well lighted and ventilated, with direct and easy access from one to another, fitting it as well for a permanent home as a summer resort. The exterior is most picturesquely broken, each side presenting a bold and different design.

PURE NATIVE WINES—WHAT AND WHERE ARE THEY ?

DURING the past two or more years every journal, agricultural, horticultural, political, literary, and religious, throughout the length and breadth of the States, has had more or less to say in regard to the cultivation of the grape and its conversion into wine. The grape and its ultimates have been the great items of discussion in all horticultural associations; numerous new books have been published, and altogether our people have appeared as one whole, ambitious to exhibit the United States as equal to, if not surpassing, the best wine-producing districts of the world. This is all laudable, provided we exhibit the product to sustain our assertions. To see how far we have done, and are doing so, is the object of our present writing.

Some six or seven years since we set about a close observation and examination of our native wines, and wherever we could hear of a maker of wine who had even a shadow of credit, we sent for a sample. We have visited many wine cellars, have attended exhibitions, and although not always "ye committee man," yet have always obtained an opportunity to examine the wines exhibited.

And now, first, what is wine? Is it the pure juice of the grape fermented? or is it a little grape-juice and sugar-water—or such other substances as the maker deems will make a pleasant drink and sell?

For the credit and reputation of ourselves and our country, we must take the first stand-point. Pure wine is entirely the expressed juice of the grape fermented and void of addition of anything whatever. The moment we drop this, we open the passway for every style of preparation and addition. He who tells us that there can be no harm in adding sugar and water before fermentation, in order to bring up its grade alcoholic to a keeping point, or

that by such addition he has increased the volume of his measure, and reduced the acid that would otherwise have made his product objectionable, certainly can not tell us that he has with his addition increased the healthful tonic qualities that lie in the fermented juice of the grape alone, and for which it alone is prized. Chemically there may be found no injurious matter in such preparation, but it is strictly a preparation, and not pure wine.

If we were to allow as wine this preparation of sugar and water addition, then we would be ready for the next process of adding sugar only, which is the more common practice among those who make only small quantities, and of various qualities and alcoholic strength, according as they increase or decrease the quantities of sugar to the gallon of must. Next we go on to the maker who with one third grape-juice, one third cider, sugar-water, acetate of lead, oil of rose, etc., makes us drinks from the same cask; and one he gives us with a slight pink shade, which he calls his pink wine; the other he gives us clear and white as water, and both, if we drink freely, give us an intolerable headache, from which we do not recover in three or four days.

So much for this opening of the gap to admit as wine anything but the grape-juice fermented alone. "Oh, but," says one, "my grape-juice won't keep unless I add sugar or spirit or something!" Very well, then, add it, and offer it for sale as grape cordial, stating on your brand the amount of sugar or alcohol that has been added to each gallon of must, but don't brand our country any longer with offering a preparation as wine which is a lie to the knowledge of every intelligent wine-taster! Do this with the product of such grapes as you now have, but go to work and plant and cultivate such varieties as will enable you to make from their must

alone a wine creditable to yourself, and to assist in exhibiting our soil and climate as truly capable of growing grapes that of themselves will make the best of pure wine.

With these remarks on "What is wine?" we will next take, "Where is it?" And as we have said our examinations of samples have been, during the past two years especially, rather extensive, but with one or two exceptions we can not answer the question. Delaware has been sent us from Cincinnati that evidently had been sugared; from Missouri we have had it of several makers, and not one pure; from Illinois we have had it, and all doctored. The only pure Delaware we have ever met that was wine, has been some of John E. Mottier's make, and some made by Lewis Harnes, Put-in-Bay, Ohio. Now we do not believe there is any reason for ever making any other than pure wine from the Delaware grape, because the grape has in itself all the qualities to make a good wine, and it has the character of fully ripening its fruit in nearly all sections.

Concord we have had from many sources. All through the eastern and northern sections its must is too light in sugar and too strong in acids to make a pleasant wine, or even one that will keep, except in the temperature of wine cellars. And hence all our samples have had sugar added, under the too common impression that such was wine. In south Illinois and Missouri the Concord can be grown to make a pleasant, light claret wine, with, as we think, however, too much acid, but nevertheless very good, and as such we have drunk of it; but, in nine cases out of ten, when received from that region of the Concord's best success, it has there been increased and toned down into a drink by addition of sugar-water.

The Diana, from all sources that we have received it, with one single exception, has been a sweetened preparation. That one was an exhibit on a small scale of a few hundred gallons, where the fruit was al-

lowed to hang until fully ripe, then laid out and exposed on tables for a few days, pressed, and resulting in a very fine wine of delicate, rich, aromatic character and flavor.

Isabella, although ranking higher in weight of must than Concord throughout the East, North, and Western States, yet has so much acid that it does not, except in some one or two localities, make a wine that will keep well or be pleasant to drink, and as a consequence, everywhere almost that we have drunk of it, we have found in it an addition of sweetening material.

The Catawba is the grape on which the reputation of the country so far stands as a wine-producing country, and it is to be regretted wine pressers have not as a whole better understood its capabilities and given us thereby a grade even higher than we now have for a pure and pleasant yet sufficiently strong dry white wine. Most vignerons gather and press it before it is ripe; others sell all the best bunches from their vineyards for table use and then press the remainder; very few leave all the fruit to ripen as long as it is possible for it to remain on the vine, and then gather and select, so as to make two, aye, even four classes of wine from one vineyard, viz., the first and second runnings of the selected grapes, two, and the first and second runnings of the culls—four.

A very large number of those who make wine even from this grape, owing to their want of care, find the must with too heavy a percentage of acid, and add sugar; but nevertheless there are many thousands of gallons of really pure Catawba wine made at the West, and among these good ones, the very best we have ever drunk we received last fall from George Leick, Esq., of Cleveland, Ohio.

The Iona is said by its originator to make a superior wine, and we shall be glad to see it prove so; but the statements he makes of its weight of must, percentage of sugar, etc., do not compare well with the record of a test from specimen fruits

presented by him at Cleveland last fall, and which fruits before the test were declared as over-ripe, and with difficulty kept until the exhibition. That test gave 79° as the weight of must, by Oecshle's scale, which reduced would give us $18\frac{1}{10}$ of sugar, which again brought to spirit would give 9 per cent., which, if there was not too much acid, would make a pleasant light wine; but when we find this same test giving $9\frac{3}{10}$ of acid, we have some reason to doubt its great value as a wine grape.

Wine claimed to be made from the Ives seedling has recently been sent around the country, in sample bottles, and some of our most able journals have given place to records of its superior value and the high prices at which large quantities of it have been sold, viz., \$4 25 per gallon. We have tasted now—we have done so before of it, and our conviction then was and is now, that grapes which only yield 64° to 65° of must, by Oecshle's scale, when converted into wine, in order to reach the condition we see it in, must have had sugar added to it. In two cases where we have drank of it, as specimen bottles, there was to us every evidence of a mixture of Norton's Virginia, and with which Ives may be made into a good wine. And this, by the way, is the great secret and valuable knowledge of an honest wine dealer, for in mixing pure wine he deteriorates nothing, but only

raises the character of one and reduces the other to a uniform grade. This, however, is no child's play, and there are few men of fine taste enough to practice it successfully. We lately saw a good judge of wine quite deceived by what he supposed a Delaware, that in fact was only a mixture of some Rhine wines.

Wine from the Norton's Virginia grape we have generally found nearly pure; it is so rich in itself of all the qualities that make up a good red wine, that there is no necessity of adding anything thereto; but its volume may be, and sometimes is, increased by dealers, by means of sugar-water before fermentation, reducing its richness and lessening its bouquet, although not destroying it.

There is a class of mixtures called California Wines put up, neatly and prettily labeled, and sold by almost every druggist throughout the States. We never enter a drug shop and see one or more of these labels and placards, but that we feel almost like accusing the proprietor of doing willful injury to his fellow-men. It is well known hundreds go to the druggist for liquors for medicinal purposes, there expecting to get only a pure article, and these so-called California Wines are so great impositions on the name as already to supply a source of laughter and amusement wherever they are spoken of among knowing wine men.

NEW MODE OF GRAFTING THE VINE.

(From the Gardener's Magazine.)

THE uncertainty and inconvenience of the customary mode of cleft-grafting the grapevine are known to all who have practiced it, and the only course of practice that has been discovered tending to increase certainty is that which consists in cutting the stock close over the ground, and covering the work with earth.

M. Auguste Boisselot, arboriculteur of

Nantes, has sought a remedy for these inconveniences, and after many years of experiment has attained complete success.

Here is the method. He cleaves the stock between two bifurcations. It is no matter at what height of the stock this is done. Into the cleft he introduces the graft, cut as for ordinary cleft-grafting. It is then bound up with a strong ligature and

grafting wax. He next binds the two branches of the bifurcation at two or three eyes above the cleft; and in the spring, as the sap rises, he pinches back the young shoots, causing thereby a flow of sap into the graft. He does not cut off the two stumps of the stock until the autumn following the insertion, by which time the graft is well developed.

The experiences of M. Boisselot have sufficiently demonstrated that this mode of grafting is nearly infallible. It offers the utmost advantages to the cultivator, especially as a graft can be inserted wherever there is a bifurcation, hence affording the power to place a number of grafts on the same stock. The sudden suppression by means of the knife of the whole of the vine above ground is always prejudicial to the root action, and the "Greffé Boisselot" is free from this objection. Another important advantage attending it is, that if the graft does not prosper, nothing is lost, for the branches of the bifurcation will produce their fruit the same, and the stock will not suffer more than from the check to which it is subjected by the ordinary process of cutting down.

The horticultural journals of France have given publicity to this invention, and rendered justice to its inventor. The Imperial and Central Society of Horticulture of France has been occupied at several of its meetings in the consideration of the subject, and M. Ducharte, the secretary-general, testified, at one of its recent meetings, that he had practiced this new mode of grafting with success.

The "Greffé Boisselot" may be practiced at every season of the year, but its inven-

tor recommends—and with reason—that the autumn should be preferred, the best time of all being when the leaves of the vine begin to turn yellow.



FIG. 93.

We consider this invention as of immense service rendered to the culture of the vine. A diagram explanatory of the process is subjoined. It represents a graft made on the 6th of October, 1864, and which commenced to grow in June, 1865.

JEAN SISLEY,

RUE ST. MAURICE, MONPLAISIR, LYONS.

It is a good plan in every garden to have a reserve bed, in which may be placed the "odds and ends," or the surplus of spring propagation of bedding plants. This bed may be planted without any regard to order, its purpose being merely to furnish

a source of supply to replenish any plants that may have failed in the regular flower garden. This bed may be in the kitchen garden, or in any other favorable location, as it is not designed to be an object of beauty in itself.

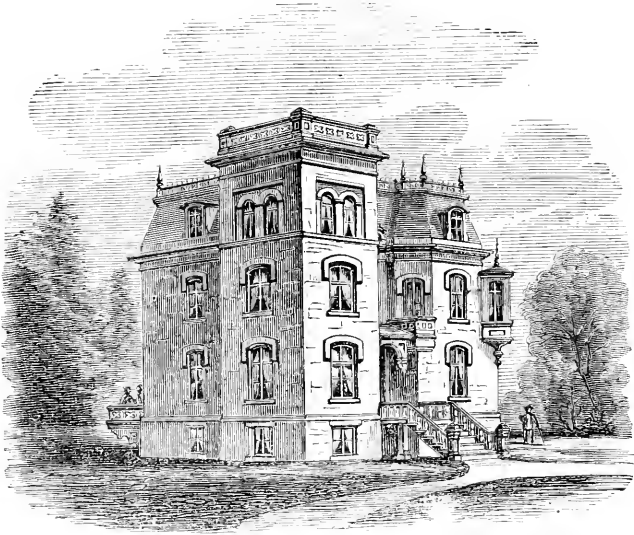


FIG. 94.—*A Suburban Residence—Perspective View.*

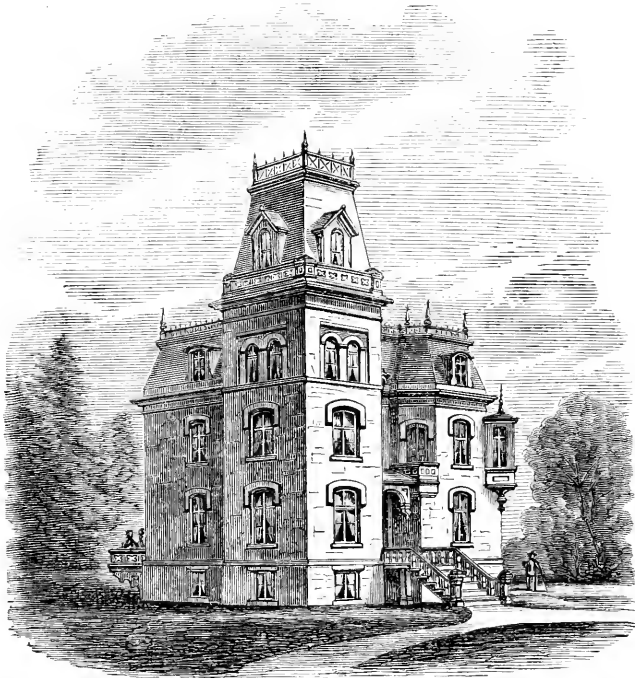


FIG. 95.—*The Same, showing Mansard Roof to Tower.*

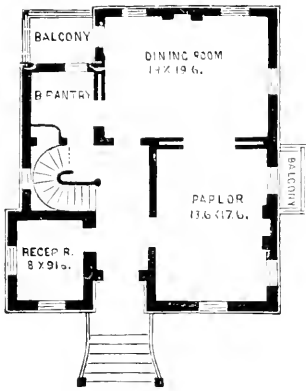


FIG. 96.—First Floor.

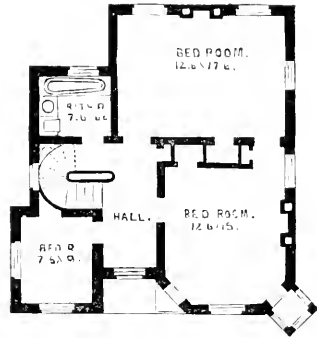


FIG. 97.—Second Floor.

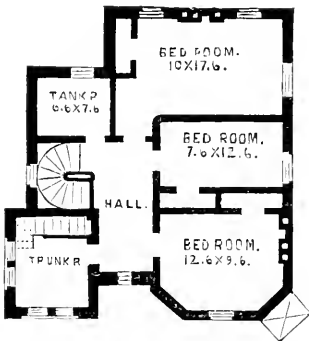


FIG. 98.—Third Floor.

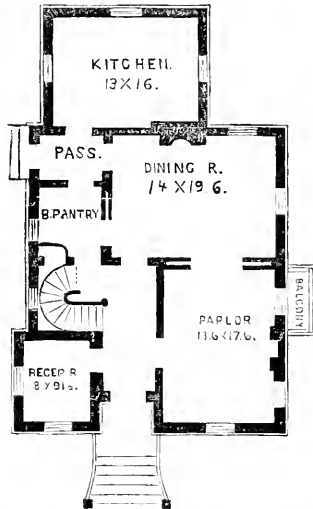


FIG. 99.—First Floor, showing Kitchen connected.

A SUBURBAN RESIDENCE.

BY CARL PFEIFFER, ARCHITECT, 4 BROAD STREET, NEW YORK.

THE accompanying design is one of twelve houses built on Staten Island about three years ago. It is of brick, with brown stone trimmings, and faced with Philadelphia front brick, and has a slate roof. Having fine views in all directions, it was thought more desirable to have the kitchen, laundry, and servants' rooms in the basement; but should it be preferred to have the

kitchen on a level with the ground floor, a wing could be added, as indicated by fig. 99. For reasons of economy, the Mansard roof of the tower was omitted; what the effect of it would be, can be seen by referring to the perspective fig. 95. The ground floor contains a reception-room or library, parlor, dining-room, butler's pantry, and hall closets. In the principal front to the

right of the tower, it will be seen that the rectangular form of the lower story was not continued in the second, but given a semi-octagon appearance to the second story front, affording a balcony at one angle and a convenient entrance to an oriel window at the other angle.

This oriel window has proved a desirable feature, especially to the ladies of the house, to read, to write, or sew in, affording a fine view in several directions; it also forms a pleasing feature of the exterior.

The house was built by days' work, but it is estimated to cost \$8,000.

WOMEN IN HORTICULTURE.

Is Horticulture a suitable occupation for women? Is there anything degrading in the cultivation of fruits and flowers? We are told in sacred history that the first gardener had a woman given him for a helpmate and partner; then why should we not only admit, but encourage women to assist in producing those blessings that our Creator in his beneficence has given to *mankind*? We have some excuse for not urging women to engage in general agriculture, for besides needing strength in that position, she would come in contact with many things repugnant to the finer feelings of her nature. But in Horticulture she would seldom meet with anything distasteful. True, we would not ask or expect her to do the coarse drudgery of the business, leaving that for such men as seem to have been created to be hewers of wood and drawers of water, and whose tastes and aspirations are but little above those of animals. But what could be more agreeable to refined tastes than to cultivate and handle our ordinary fruits, especially the smaller kinds? Is it less noble than sitting idle, or waiting upon customers in some close, half-stifling shop in a city, or plying the needle for sixteen hours a day, for scarcely enough to keep soul and body as partners for a few years, with no time for relaxation from toil or to enjoy the exhilarating pleasure of breathing the free air of the country?

Fashion, the tyrant, and the near relative of Want, has excluded woman from many channels of usefulness, and often compelled her to walk the downward road to degra-

dition. Shall these influences continue to exist when her labor and society are needed in many positions of life where at present she is seldom admitted? Would not the very presence of women in horticultural society be a benefit to the profession? for *out of respect for the ladies* some of us would be more gentlemanly in our deportment, and more civil in all of our dealings with each other. We think that it would have this desirable effect, at least it is well worthy of a trial.

This is no insignificant subject, nor one that should be passed over with indifference. We do not wish to harp upon the already much abused subject of women's rights or wrongs, but we respectfully submit these remarks in behalf of the general welfare and progress of Horticulture. If our mothers and sisters are so fortunate as to have been born in or raised to a position of comparative freedom from manual labor, we should not forget those who are not so well situated, but endeavor to find or make employments that while they furnish the means of subsistence will be the less arduous because of their congeniality.

Our government has liberally endowed the prospective agricultural colleges of our country for the education of men; would it not have been well to give a portion to the endowment of horticultural departments for the education of both sexes? Must the mothers of great men, yes, of nations, be circumscribed in their usefulness, and be compelled to walk in channels unsuitable to their proper development because of fashion or false education of both

their own and the ruling sex? Thousands of women, old and young, are now crowded into our cities who would gladly seek employment in the fruitful fields of the country if they could be assured that the finger of scorn would not be pointed at them.

We all honor a Mrs. Loudon who did not think it beneath her dignity to prosecute the work her much lamented husband had begun. There are a few such noble examples in Horticulture, and we have to regret that the record contains so small a number. At the time Mr. Loudon published his "Encyclopedia of Gardening," there had been about four hundred authors of works on gardening in England; out of this number only five were women. We do not doubt they had given assistance in many instances in which they have received no credit.

We are glad to record the fact, that within the past year one lady has announced herself a member of the horticultural profession. We refer to Miss J. L. Waring, of Amenia, Dutchess County, N. Y.

Miss Waring has built four large propagating-houses, which cost nearly \$10,000, besides purchasing ample grounds for carrying on an extensive business. The propagation of grapes has been the main business the past season, and we believe her success has been excellent. From a very slight personal acquaintance with this lady, we do not hesitate, in behalf of horticulturists in general, to welcome her among us, believing that she will be an honor to the profession and of benefit to the country at large.—From "*Woodward's Record of Horticulture*," by A. S. FULLER.

ABOUT PEAR-TREES.

EVERY one knows that when a man's head is set, it is very difficult to turn it—that when an idea or opinion has once possessed a brain, it is not easy to dislodge it, even if it is a poor tenant who never pays.

"What has that to do with pear-trees?"

Everything, Rowley, everything—for that is the introduction. Now, see how ingeniously I shall spin from it.

Many people hold, that pear-trees are to be desired because they bear pears, and that pears are to be valued for the palate, because they are rich, juicy, and delicious—for so they certainly are. That is the notion which has possessed some brains, and I can not deny that it is plausible; yet it is mainly a mistaken one—a narrow and carnal view.

"But," said my familiar, "when the professor brings me down one 'Duchess,' and two 'Flemish Beauties' (I am speaking of pears), and my lips kiss their cheeks, and their juices flow along my tongue, to

gladden the sense, then I hold to that view, and I bless God—"

Now wait, Rowley, wait, I said; for I was afraid he would say something foolish. So he sat in my porch, and, with his cigar (which I condemn mildly), disputed the fragrance of the honeysuckles, and listened to the wisdom of age.

Whoever, I continued, whoever prizes simply his existence—who thinks highly of his presence, values his deportment, and is content with "being"—in other words, whoever believes life is an end rather than a means, and, therefore, is content to *be*, rather than to *do*—he may think himself happy; but he is mistaken. You shake your head, Rowley; but it is so.

So it is with pears—they, too, are a means, not an end.

Whoever, having grown a fine pear, is elated, and lays much stress upon the tempting fruit, is in danger of sorrow and disappointment—he may be laying up for himself a future grief. Yet I must allow,

that, if the fruit had been nipped by an untimely boy, or arrested by a summer blight, before its juicy flesh had been ripened to perfection, my own sense of propriety would have been shocked; for all things work toward completeness, and thus minister to our satisfaction. Satisfaction, my dear friend—not happiness—is the end and aim of a true existence. Consider what it is which satisfies, when we look upon a daisy or violet blooming in the shelter of a rugged rock; upon the cedar, the oak, or the beech, spreading its broad branches over the shadowy plain; upon the field of grain, waving in the light of the golden sun; upon the succulent asparagus, pushing through the dark, damp earth—these all come to the fullness of perfection, and we are satisfied with them, for they are complete. It is so with the wood-duck, diving and sporting in the still waters of an inland lake; with the robin, that sings out his soul to his mate brooding on the sky-blue eggs; with the slow and stalwart ox, who drags the plow along the fertile furrow; with the hound who courses the wily fox, and with the fox who outwits the chasing hound—these all satisfy us, for they are complete; they do *well* what they are made to do. Is it not so with men, my friend? We find no fault with a man, or a woman, who does a thing well—but are satisfied; and he who makes a perfect pair of shoes, does as complete a thing as he who sits well on a king's throne, or decides justly on a judge's bench.

It is the same in art: for the completeness of Menét's Ragpicker (two inches high), or his Cat Suckling her Kittens (done in clay), is equal in perfection to the Dying Gladiator, or Angelo's Moses, done in marble. In literature, also, we find this is so, and we are satisfied with Burns's verses to a Mouse, with Leigh Hunt's Abou-ben-Adhem, with Lowell's

"John P.,
Robinson, he"—

because they are, in themselves, as perfect and complete as is a Hamlet, or a House

of Seven Gables. It is therefore desirable that men and women should do that well which they can do, and find out as soon as possible what they can do best, and not waste too much time in tears or complaints because they can not do something else. The man who raises good potatoes is eminently worthy, as is he who makes good verses, busts, or coaches, and either of them may be a complete man (and so great), and satisfactory to himself and to his fellow-men. It is not the thing done, but the spirit of the man who does it, that God loves.

Now it will be clear, therefore, that, to the pear-tree, it is necessary to bear pears, for that is its vocation, its purpose. It was for that, that the brown seed was dropped into the earth; that when the warm, bursting spring came, it sent down its delicate root, and pushed up its tender top, and unfolded its leaves, and stretched forth its branches, and, when the time came, elaborated its juices into buds enfolding blossoms—fragrant promises of future fruit.

It is right, therefore, for the pear-tree to bear pears.

But, for a man, his duty is to furnish the tree with every possible facility and convenience necessary for it to perfect its purpose; for the tree can not do this for itself. He is to see that there is good soil, and that it is in good heart (not made over rich), and well dug and broken, so that the rays of the fructifying sun can enter it, and the gentle dews sink into it; then he is to plant the tree in it. And let him do that well—for trees are grateful; they like not to have their roots crowded into a small hole dug in a hard soil—no well-bred pear-tree will submit to such indignity, and many will die if so treated—but rather into the mellow earth; spread out the roots, and press among them the genial mold, so that they kiss one another; and plant not too deep, but so as to cover, with an inch of earth, the neck whence the roots branch; then sustain the stem with

a slender stake, and the first work is done. Whoever has done this, will value the warm April sunshine and the soft April showers, and he will watch in the last of the month, till he shall see the unfolding buds; and then the expanding leaves, and the lusty shoots, wagging in the wind, will give him hope. In another year, he will wait for blossoms, and, when they come, he will be thankful. He will see to it that no marauding caterpillars fatten there, that no curculio whets his tooth in that first fruit; for he will walk in his garden in the fresh morning, in the shimmering noontide, and at the shady evening, and will feel that he has something to live for. He will be the providence of his pear-tree, and a worthy man.

I shall always remember S. G. P., who at last found peace among his pear-trees—a Salem and repose. He was early driven forth, Ishmael-like, into the wilderness, as other men are, and was in danger of perishing; for, was it not necessary, indispensable, to have much wealth, to be a merchant prince, and send forth ventures in ships? To other men, older men, it seemed so, and his rapid energies grappled with these weapons with which to fight the world; for other men and merchant princes were struggling to get what all could not have, and there were many obstacles to be overcome, and much competition. For years he worked like a lion, and knew no rest; he visited many lands and braved many seas, and for what? That he might secure, in his own hand, a larger share of the world's wealth, and so be pointed at as the man who owned much gold. But ships were lost, and fires ravaged, and agents were dishonest, that they, too, might have wealth; and the end saw S. G. P. a ruined man. When he was too old to reform his life, so as to work and not waste his energies, he remembered his father's garden and his pear-trees, and there he went, with a small income, to pass the evening of his days; and there he did pass it, in company with his two good daughters, and in com-

munion with his "Louise Bonnes" and "St. Michaels."

To me it was a satisfaction to enjoy his satisfaction; for he was in harmony with his pear-trees, and they, knowing what he wanted, and knowing that he was right, tried to do as he wished, and grew well—as espaliers, pyramids, dwarfs, balloons, or standards. They resisted blights and frosts, blossomed timely, set well, and bore their fruits. It was a delight to see little fellows of three feet high bearing up bravely their load of half a dozen Duchesses or Wurtemburgs, while stately standards stood and ripened their bushels of Urbanistes and Boses through all the long summer suns.

It seemed to me that they leaned to the old man as he walked among them, trimming a little here, praising there—and I do not doubt they had as much satisfaction in him as he had in them; for he fully appreciated their virtues.

Do not think the old man did this because he wanted pears. He could have bought one for a sixpence any day, and have sat down in the shade and swallowed it; would that have sufficed? I trow not. No; he raised pears, as I said, because the trees must bear them, and it was his pleasure to give them every opportunity, which having done, the trees produced abundantly; and then the pears were eaten, because they had been created, not *vice versa*. Ah! many think it is a small thing to grow a good pear-tree, but it is *one* thing well done; and I know richer men than S. G. P., who, so far as I am aware, have never been accused of doing even one.

The Dutch doctor, Van Mons, was a creator of pears; and in his hand nature became a prolific inventor. It was his habit to sow the seed, to select from the young those which promised well, to graft them at once into bearing trees whose juices were rich, where they would make blossoms and fruit within three years from sowing the seed; for it is a curious fact, that the juices of the tree which really produce the fruit, have almost no influence upon the

little graft upon which the fruit grows. From the fruits so produced, many good pears were given to the world by Dr. Van Mons.

Now the doctor did this, not because he wanted pears, but because he wished nature to do all she could do, and he found a satisfaction in helping her toward completeness.

One crowning use of pear-trees and pears is, that they furnish topics for talk, and are, in my opinion, fully equal to a "Bourbon," had we one among us. I have known many virtuous men who grew pear-trees (I am proud to say it), and I never knew one who enjoyed scandal or backbit his intimate friends; the reason is plain—he had something better to talk about, in capacity quite infinite; for are there not Beurrés by the score? But no pursuit is perfectly safe from misfortunes, and pear-growing is not quite secure. Judge Buel once had a package of valuable pear-grafts sent to him from Paris, every one of which was choice and was labeled; but, sad to say, rats had eaten or damp had rotted the strings which bound them, and Beurrés were mixed confusedly with Bergamots. To my friend J. T. the judge gave some of these grafts, and J. T. took them, as a man might a young elephant or a fine horse, not counting the cost. He grafted them into his trees, and in due time they bore delicious pears—but—

"What were they?"

No mortal man could tell their names, and many of them were new to us. From that day J. T.'s peace of mind was gone, and, it seemed, hopelessly gone; for no nomenclature could be certainly right. It was well for Judge Buel that he was snatched away before these grafts bore fruit, and, perhaps, J. T. was happier in soon following him.

I alone remained, and, in the language of Mr. Samuel Weller, I may say:

"I eats my melting pears without any names, and gets along werry well indeed."

I would have my money-making friends, and my political friends, and my verse-making friends, and my women-friends, consider of this thing, and then plant pear-trees, and grow pears, that so it may be well with them. And I would have those wise men who *know* what a little care and kind treatment will do with a pear-tree, and how it comes to strength, and beauty, and fruitfulness, when external circumstances are made favorable by them, I would have them consider what grand results might come from a little of such judicious care and attention, if applied by them to a poor boy or girl now and then, or to a man or woman struggling, in an uncultivated soil, with crowded roots and bruised top. I would have them remember that the most capable and wonderful of all God's creations is MAN; and then I would have them not only cultivate pear-trees, but also cultivate men.—*Putnam's Monthly.*



SUMMER PRUNING or pinching in of dwarf pears, apples, etc., should be mainly performed during this month. Watch the trees from day to day, and by means of the thumb and finger take out the end bud of a too strong and vigorous shoot, thus compelling it to force its elongated growth into the side buds, and spread and increase the breadth and form of the tree, rather than add to its height. Weak shoots, not wanted for keeping the form, may be

pinched back and made to form fruit spurs; but such weak shoots as are wanted to fill up and keep the form regular and perfect, will require mainly to be let alone. A little daily attention in forming trees by means of pinching out buds at this season will obviate any necessity for after severe pruning, and many a tree can be formed into a true and regular shape by means of one season's pinching better than would result from two or three spring or winter prunings.

GRAPES.

BY E. H.

As it is sometimes amusing, and oftener perplexing, to the readers of the *HORTICULTURIST* to determine whose experience is worth the most, I am willing to take my share of criticism on observations made over a wide extent of territory, as I have eaten grapes and tasted wine from Palestine to America. In Palestine the vine grows almost without care. The time has been when it might have received care, but at the present time, being filled with Moslems, to whom the use of wine is forbidden, the vine is neglected, and the art of wine-making slighted. The fruit is fair, and the wine is excellent. The vine is planted mostly on the hillsides, and mildew is almost unknown.

In Persia the grapes grow to a great size, are good eating, but, for some reason, do not make first-rate wine. The vine receives no care after planting, which is done mostly on the hillsides, of which there are many, and I never saw or heard of mildew in Persia.

The splendid grapes I ate in Turkey are pleasant memories. They receive no care, and, when planted on the hillsides, do not mildew. As they are superior without care, they would well reward labor and enterprise.

In Greece the vine receives some care, and, although they have no extra variety, are passable, and make a fair wine. No mildew on the hillsides, and but little elsewhere.

In Spain they make a good wine of almost any grape. I did not have time to experiment, but was told that almost every grape brought into this country changes its nature to an astonishing degree—some better, and some worse. No mildew, except when planted on low, flat land.

France grows good grapes and makes

some good wine, and some that is no better than English wine. The vine is well cared for, and mildew sometimes makes its appearance on low land, but not on the hillsides. The French reason is, that as there is a greater circulation of air on the hills, the superfluous moisture is carried away before it can injure the vine. These remarks are appropriate to Germany, except that most flat land is of the same soil as the hills, and there are more grapes on the levels than in France. No mildew to speak of.

There are some excellent grapes in Switzerland, but the wine is not the best, as wine-making is overdone by adding too much water and sugar. No mildew on hillsides, or anywhere else, except when carelessly planted where the soil is damp or springy.

England is on the same line with America, and everybody knows how they do here—set poor vines in a poor place, give them poor care, if any (I speak of a class), and finish by saying “we can't raise grapes.” With a good soil and good climate—with a greater variety than any other country, allowing six tenths to be worthless, leaves us kinds enough, which, if selected with judgment and cared for with the energy that characterizes the American people, will make America as good a wine country as any on the globe.

The rush for new kinds is a great waste of time, and is keeping us a hundred years behind the times. We are foolishly waiting for perfection, as every candid man knows that a thousand years from this date people will disagree in regard to the merits of some certain grape. If you plant a good kind, and give it the right care, you will be satisfied with the result, even though you be an American.

NOTES ON THE APRIL NUMBER.

POPULAR EVERGREEN TREES.—A timely article; I am glad to see you favor our noble White Pine. That and the Hemlock, because common, have been almost discarded by fancy planters of late years, and yet they are two trees without which no extensive place can really be called complete. Your remarks on the use of evergreens in the foreground are correct, but not half strong enough. I have in mind now several places where large growing dark evergreens fill up the foreground, destroying its openness of character, while the rear of the house is a level flat, devoid of everything ornamental except a woodshed! Half the number of trees taken from the front and placed in situation at distances not less than fifty feet from the house, in the rear, would lighten up the front, and give breadth, extent, and character to the whole.

DESIGNS IN RURAL ARCHITECTURE, No. 21.—Yes, the French or Mansard roof I suppose is and will be fashionable; but for houses on town lots, or in the country, I don't like it. True, it is economical, because the higher you go under one roof the less proportionate cost. It is the rage of the day, and of course I must submit; but to me the adaptation of this roof tones well only when applied to a one-and-a-half-story cottage or long city block. The architectural decoration is plain, and all good, to my mind, except the entablature above the center window, and that may be right, but does not please me.

PROPAGATION OF PLANTS, No. 1.—Good. I am glad to see Mr. Fuller's pen engaged in a series of articles on this subject, for he is practically capable, and while he will be minute, he will not give us words for the sake of writing. Readers of the *HORTICULTURIST* have reason to rejoice at this promise for their improvement.

CHEAP ADVICE TO NURSERYMEN.—To this good advice for preparing pear seed I will only add, I have once or twice practiced swelling my seeds a little more rapidly than they would otherwise, by placing the shallow boxes in a spent hot-bed for a short time, just before sowing, and that when I sow I take care to have the ground plowed several times, to warm it; and especially do I have it plowed afresh just when planting the seed.

A COUNTRY HOUSE.—I like this house, all except the little cockscomb ridge board finish. All the rest is plain, substantial, and characteristic of comfort, while it is of a sufficiently high range of architecture to be agreeable, if not beautiful. But, leaving the house, I am particularly interested in what you say about the position of the country on the Jersey side of New York. It is a pretty startling statement, that New York should be outdone by "mean little New Jersey;" but people must live somewhere, and when old prejudices are cast aside, New Jersey is found to have as many pleasant sites for residences as any other State. I must come and take a look at that new place on the Erie Railway, for I like New York city to do business in, but I must live in the country. Couldn't live without my trees, etc.

BEAUTY OF AMERICA APPLE.—From the description, this must be a good apple for the orchardist. By-the-by, I hear Mr. Elliot is about to revise his Fruit Book this present year. How is it?

GRAPE CUTTINGS FROM MODERN HISTORY.—I am glad once again to see this writer; but of a truth he no more feels disposed to swallow committees than some of the rest of us. Every man who studies the Old Country teachings comes at once to the conclusion that no one grape is suited to all localities, or if it grow, prove hardy,

and fruit, it may not give quality equal to varieties that may be selected for special localities. I hope if he have a spare bunch of his Anna Harriet he will forward it me through the HORTICULTURIST publishers.

RED CEDAR AND MILDEW.—This is a practical, straightforward statement, and the red cedar grape-stakes are undoubtedly good; but I have seen the Isabella grape mildew badly, in New Haven county, when trained on cedar trellis, not stakes. It is possible there may be a pungency exhale from new wood that for a year or two will repel sporida, and I am glad to read this record, and hope its suggestions will be

acted upon. As a boy, I worked on the Sound shore, and there we grew the White Chassclas each year, by laying it down in winter. We grew our Isabellas on trellis, and clambering as they would upon the old pear-trees, and those on the trees were always the most free from mildew.

Mr. Dewey's inductions here show that we are fast getting out of the tight-laced system of tying grapes to stiff rails, as well as reducing our barbarous practices of cutting away every twig and branch because it does not happen to harmonize with our preconceived views or leanings of grape pruning, or our ideas of system and order.

REUBEN.



THE AMERICAN JOURNAL OF HORTICULTURE.

This new competitor for public favor is now in its fifth month. We have received the four numbers already out, and have carefully perused their contents before we should venture to speak our opinion as to the merits or demerits of the magazine. It were an ungracious act to play the critic over the opening number of a magazine, and we have accordingly deferred our notice until we should see further numbers.

The publishers in their prospectus say, "That for a long time the demand has been felt for a journal in this department (Horticultural) of high tone and liberal ideas, employing not only the best talent in America, but the selection of all that is good from the English, French, German, and other foreign works. This demand we design to supply."

Language such as this would seem to imply that there was no Horticultural journal "of high tone and liberal ideas" in the country, an inference which we by no means consider the publishers as warranted in making. Without, however, caviling with the publishers for words rather of bad taste than bad intent, we express the hope, that

if this desideratum does really exist, the *American Journal* may have the good fortune to fill it.

A new journal of Horticulture ought not to be criticised as a purely literary magazine, nor as a work on science. It has to follow pretty much in the same beaten track in which its predecessors have gone, and with the same subjects and opportunities as its cotemporaries. It has no novelties to unfold—few new subjects to discourse upon. It is rather to be judged by the manner in which it handles old themes, and the degree of intelligence manifested in the work. So far as the list of contributors is concerned, the *American Journal* gives a very goodly promise; and it must be confessed that in the several divisions of Horticulture, Pomology, Botany, Landscape Gardening, Natural History, etc., they have a very fine array. The next question is, will all these gentlemen do their part to keep up the standard of the *Journal* for which their names are responsible?

The January number is a very creditable specimen. So far as the accidents of good paper and elegant typography go, it stands

A No. 1. The embellishments of this number are chiefly borrowed. The architectural structure at the head of the article on Garden Architecture is taken from Hughes' Garden Architecture, very slightly altered, not improved, without giving any credit to the author from whom it is borrowed. So also in the continuation of the same article in the February number, the illustrations are taken bodily from this beautiful work of Hughes, and the unlearned reader given to understand that these are all the drawings of the very original writer of the article in question. Against this we enter our protest, for it is nothing more nor less than what is usually called piracy. We would recommend to this writer hereafter, when he has occasion to borrow so extensively, if he chooses to claim all that he writes as his own original matter, to at least give credit to the poor author for the illustrations. The April number of the *Journal* continues the subject with an article of nearly six pages, which it acknowledges as "adapted from 'Garden Architecture and Landscape Gardening,' by John Arthur Hughes." Adapted! we charitably suppose that this is a misprint, and that *adopted* is the word intended; for the article is copied word for word, and with the illustrations corresponds exactly in *words* and *figures* with the original.

We confess to having our bile a little disturbed by this beginning; it is bad enough in an old journal, when short of matter, to crib a little, but for a new journal starting fresh in the race, it is, to say the least, very bad policy. Its leading number should be original, and give evidence of the fact that the *Journal* can rely upon its own resources. In other respects the January number is a good one. The leader on Spring Flowers is well written and timely, full of tasteful and beautiful instruction on an always welcome subject. There is also a very sensible correspondent on pear culture: his ideas we like very much, but can't say we admire his wood-cut illustrations. We have grown all the varieties he

speaks of, and have had many pets among them, but, sad to say, we don't recognize them in the cuts. Better forbear the cuts until the artist can have a chance to see the fruit, cut it, and draw the outlines from the sections.

The February number opens with a portrait and memoir of Marshall P. Wilder. We find a portrait of the same distinguished gentleman, and a memoir by P. Barry, in the March number, 1855, of the *HORTICULTURIST*. This number also contains the continuation of the Spring Flowers—a very valuable paper entitled May Flowers. It is refreshing to meet such a writer, and we tender him the warm hand of welcome, with our distinguished consideration. Blessed be the May Flowers, flowers of the month sacred to the blessed mother honored above all women! welcome the writer who discourses so eloquently on the flowers of this month of months.

Thanks also to the author of the article on Field Mice. The *Journal* is happy in such a correspondent. We have had this subject at heart for a long time, and been big with an article thereupon. Very few are aware of the importance of this subject, and of the incalculable loss which every year ensues from so small a cause. The writer has by no means exaggerated his theme. In the March number we have a leader from the "Sage of the Tribune"—a long talk about Dirt. The writer is evidently not much of an ephluist, or he had not chosen such a title. The article itself would make a most capital leader for the *Young Folks Magazine*; but as the readers of the *American Journal* are not supposed to be Solon's grandchildren, the article is hardly worthy the place of a leader. The writer's question, "What is dirt?" is pretty well answered by the article itself, for it is all over dirt; it remindeth us of Trinculo's burst of indignation uttered to the monster Caliban on emerging from the filthy pool into which Ariel's mischief had beguiled him—he has put our nose in indignation. Walter Scott has put the

same idea into better words as uttered by the gipsy Hayraddin, when asked what were his expectations on meeting death, "To be resolved into the elements." Said he, "My hope, trust, and expectation is, that this mysterious frame of humanity shall melt into the general mass of nature, to be re-compounded in the other forms with which she daily supplies those which daily disappear and return under different forms: the watery particles to the streams and showers, the earthly part to enrich their mother earth, the airy portions to wanton in the breeze, and those of fire to supply the blaze of Aldebaran and his brethren"—and this was written some forty years ago.

What a journal of this kind most needs is correspondents composed of plain practical men who write simple, unvarnished, useful articles full of information, the result of their own experience. Publishers of these journals are too apt to think it necessary

to engage reputed names, at large prices, to write, as often happens, articles in which they take no interest, and without a particle of inspiration. They will discourse brilliantly through several pages of glittering generalities without any apparent aim or definite object. Such writing is well described by the familiar expression of "penny-a-lining." We could point out precisely such writing by a reputed name in one of these four numbers, but as we have no malice to gratify, we refrain from being more explicit. If any one thinks the cap fits, he is welcome to wear it. But our space will not permit our going into further detail. We welcome this new magazine to the field; there is room enough for it, and more besides. It comes forth in very handsome attire, and we wish it success. Only let it bear in mind what is due to others when it quotes or copies, otherwise we shall be down on it like a thousand of brick.

RAISING AND FRUITING POT VINES AS PRACTICED IN ENGLAND.

BY M. A. PAVARD,

(Member of the Imperial and Central Horticultural Society of Paris.)

DURING the course of November, when the wood of the vines from which cuttings are to be taken is sufficiently ripe, they are cut so that each shall contain an eye. They are planted in pots of about two inches in diameter, care being taken that the pots are well drained, and filled with good field earth rather light than strong. These slips are planted at such a depth that the top of the eye or knot is almost level with the earth in the pot. Some persons proceed as for ordinary slips—that is to say, they plant slips that are furnished with two buds. After this the pots are buried in a tan-bed formed in a green-house, heated little by little up to 70° or 75° Fahrenheit. The humidity of the atmosphere is main-

tained by frequently watering the flues, the walls, and the paths. As soon as the young plants begin to develop themselves, air is admitted on fine days; the humid heat is at the same time kept up, that they may receive no check.

When the roots touch the sides of the pots, the slips are placed in new ones about nine inches in diameter, care being taken, as in the first instance, that the pots are well drained. In the repotting, a more substantial soil is employed than before: this is often mixed with fine sand of a white pulverized kind, which, by facilitating the passage of the water, prevents its remaining to stagnate about the roots.

After repotting, the pots are buried in a

bed of tan, placed in a green-house of sufficient height to prevent its being necessary to bend the young stems, which must be allowed to grow up without the least obstacle to their straightness. To avoid placing a prop to each plant, which, besides being liable to hurt the roots, is a somewhat tedious operation, iron rods are placed about nine inches above each row of pots the whole length of the green-house, and as the stems attain the requisite height they are fastened to them. Their leaves and the flues are constantly wetted; they are watered when they require it, and more and more air is admitted as the season advances. Only a humidity agreeing with the elevation of the temperature must be carefully kept up—this being most essential to the thorough well-doing of the plant.

Toward the end of August the young plants will be about from one yard and a half to two yards in height, their diameter varying according to the species. Their vegetation now becomes slower, and the quantity of air is increased even during the night; then when the leaves begin to fall, all the plants are buried to a depth covering the pots in beds prepared for them. Laths are fixed to stakes buried in the beds, to which the branches are attached, so that the wind can neither agitate nor break them. On this plan the wood becomes completely ripened, and the plants are then ready for sale. They are usually sold to persons who force them during the following winter in such a manner that these slips bear fruit eighteen months after having been planted.

A few words upon the method most generally employed in forcing these young plants will support what I advanced above—that the slips produce fruit at the period mentioned. The green-houses commonly used for the purpose are of such a slope—the back wall so much higher than the front one—that the frame presents its incline to the full power of the sun. These kinds of green-houses are so much beneath

the level of the ground, that the higher wall does not rise above it more than from twenty-four inches to about a yard.

The flues circulate in front of these houses. A shelf placed about six inches above the principal flue serves to support the pots. These preparations finished, the place is gradually heated up to about 60° or 70° Fahrenheit. The pots and flues are frequently wetted, and the upper flue is also often provided with a gutter kept constantly full of water, so as to disengage a vapor which, applied to the sides of the pots, excites vegetation. When the plants begin to bud, a little air is admitted in suitable weather. Openings made in the back and front walls, and closed by shutters, permit the entrance of air, while cold winds are excluded. When the shoots become long enough, they are trained upon the iron rods running along the sides of the frame. The remaining cares consist in nipping off buds, if required, and the necessary waterings, using water as much as possible of the temperature of the forcing-house, which must be kept some degrees higher in the day than at night.

After five or six months of this culture well carried out, the grapes, according to the variety and the period at which their forcing commenced, begin to ripen. The wetting of the flues, etc., is then diminished, and more air given up to the time of gathering the fruit. Once this is over, many persons do not retain the vines, which, to their ideas, are then entirely exhausted.

Vines thus reared frequently produce, notwithstanding the smallness of the pots, grapes of good size, bunches weighing a pound or more being not uncommon. It is true that liquid manures, which need so much care in their successful employment, are much used in this culture.

These facts explain why this mode of cultivation is in such great repute among our neighbors, for it is not rare to meet in England with establishments that each year obtain from two to three thousand plants for the purpose of forcing.—*Floral World.*

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

TO CURE SMOKY CHIMNEYS—as desired in your number for April (p. 123)—place on the top a sheet-iron fixture as large as the flue, expanding as it rises, in the proportion of three at the bottom, four at the top, and fifteen high (say twelve inches bottom, sixteen inches top, and five feet high), and if the flue be about twelve inches, cut out triangles six inches deep and three inches wide at the top, forming a crown of saw-teeth.

These proportions were given to me in 1837, by Mr. Oldham, the engineer in charge of the mechanical department of the Bank of England, when he called my attention to the draught of the flues in the press-room, and then to the fixture on a neighboring chimney, and said that these rooms were almost uninhabitable when he came there, until he applied the same fixtures that he had previously used on the Bank of Ireland, and that had cost that bank about fifteen hundred pounds in experiments.

But if the top of the chimney be not above all neighboring objects, then take the same proportions in a curve, and place the adjutage on a swivel. This was done about 1842, on the flue of the House of Representatives, at Washington. The difficulty there arose from the dome. The cure was complete, as long as the experiment was tried. But in a short time a patentee obtained a contract for several flues, and his arrangement was substituted.

Again: a well-known patentee of cooking-stoves said: "I never have less than twelve feet height of pipe above the stove. If I can not get it in the room, I put the

pipe inside the chimney, and I never fail in getting a good draught."

The Venetians generally use bell-muzzle flues, but they spread more rapidly than Mr. Oldham's proportions. B. A.

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SWEET POTATOES.—Although sweet-potato-growing may be regarded as a crop for the South, yet their culture is simple, and the crop in many sections of the Northern States a very remunerative one. Sandy soils are best suited to their growth, but any good loam, well drained, will answer. The ground should be well manured with old, rotten manure, and plowed three or four times before planting. The sprouts may be grown by placing the potatoes in a hot-bed having only a gentle heat, and covering them about two inches deep. When the sprouts have grown from four to six inches, pull them from the potato by slipping the thumb and finger down between the tube and sprout. About the 20th of May or 1st of June is the best time to plant out, previous to doing which the ground should be thrown up into ridges or hills, about eighteen inches high, and the plants set, if in hills, two plants in a hill, and if in ridges, one plant about every two feet on the line.

Covering the ridges or hills with finely-pulverized charcoal, we once saw practiced with the greatest success. It increased the heat in the soil, and at the same time appeared to retain steady moisture.

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KEEP the hoe and rake going: well-stirred soil absorbs dew and retains moisture longer than that left hard and unstirred.

INTERNATIONAL FLORA.—J. Q. A. Warren, corresponding member of the Royal Hawaiian Agricultural Society, at the request of members of that Society, is striving to inaugurate a system of exchange of the flora of this State for that of the Islands, the object being to propagate California trees and plants in the Islands, and the Islands' products in this State. If this movement is faithfully seconded, it will result in benefit to both countries. Most of the green-house plants of this State will doubtless thrive in the open air at the Islands, while our coniferous trees will flourish in the mountains of Hawaii, and, if cultivated, will eventually furnish that country with much-needed fencing and building material. Beyond question, many of the native ornamental and other plants and trees of the Islands can be cultivated profitably in this State. As an experiment, Warren forwarded, by the Ethan Allen, from our green-houses, Irish yew, chrysanthemums, arbutus, agapanthus, salvias, brugmansia, plumbago, lobelias, roses, choice bulbs, and seeds. These are the first lot of hot-house plants sent from here, are in good order, and are put up in a manner to insure their safe transportation. Island plants will be forwarded here in return. Parties in this State who will furnish Warren (at Kellogg's seed store, Sansome Street, near Clay) with native plants and bulbs for shipment to the Islands, will in turn be supplied with such specimens of the Island flora as may be received. This subject of international exchange of flora is one which will doubtless engage the attention of all those in the State engaged in horticulture and floriculture.—*Morning Daily Call*, San Francisco, Cal.

WESTERN HORTICULTURAL SOCIETIES.—We notice that throughout all the Western States numerous Horticultural Societies are being formed, while the attendance and discussions at the meetings of the older associations are such as to exhibit a widespread and increasing interest in the

knowledge of fruit and floriculture. We have occasionally glanced at important remarks made at these meetings, and hereafter propose to give more or less of the doings of each association, provided the secretaries will favor us with early copies of their transactions from meeting to meeting.

To produce an elegant effect in the flower garden in October and November, sow now seeds of the double white wallflower leaved stock. As soon as the plants are large enough to be transplanted, put each one separately into a seven-inch pot, and plunge the pots to the rims in any out-of-the-way place. They will need no care until September, when they will commence to bloom. Reject those with single flowers as soon as they are discovered. If the seed is good, nearly all the plants will prove double. Early frosts, which destroy many other bedding plants, do not have the slightest effect upon this stock. In October, they may be turned out into any of the beds where the plants have been killed, and their masses of double white flowers will attract attention from every one. In our own garden we had a fine show until the 10th of December, last year, long after every other bedding plant was destroyed. This stock grows to the height of but nine inches, and the same in diameter across the plant.

WILMINGTON, DEL., May 18, 1867.

MESSRS. GEO. E. & F. W. WOODWARD: *Gentlemen*—Will you please direct me to some of the nurserymen or florists from whom I may purchase some of the grapevines and plants or flowers named in your "Record of Horticulture," and oblige,

Truly yours, H. C. McLEAR.

[By reference to our advertising pages, the names of many of our best and most reliable nurserymen may be found, some of whom, no doubt, have the plants you mention.]

CLEMATIS.—A few of these elegant climbing plants should be in every garden. Mr. Fuller, in his excellent article on the subject, in the "Record of Horticulture," says: "It is best to protect all of the varieties in winter, as they will bloom much more abundantly than if left exposed. A simple and very efficient method is as follows: In the fall, and just before the ground freezes, take the plants down and coil them around the base of the stakes, then throw on three or four inches in depth of coarse litter, such as straw or leaves, and over the whole place a few shovelfuls of soil. The plants should be uncovered in spring, soon after the frost is entirely out of the ground. It is but a few hours' work to protect in this manner a large number of plants, and the increase in the number of flowers will amply repay one for their trouble. To produce the best effect, the Clematis should always be planted in groups, placing a stake at each plant. The soil should be deep and moderately rich, one composed of equal parts of rich loam and leaf mold will be found to answer very well for these plants.

AZALEAS.—It is the prevailing opinion that these plants should have shade in their summer quarters. Our experience of several years with them is, that they bloom much better if placed out of doors in the full sun. If kept in pots, the pots should be plunged; care being taken to raise them up a little, as often as once a month, to break off any roots that may have grown through the bottom of the pots. Young plants will grow with much vigor, and soon make fine specimens, if they are turned out of their pots into the ground as soon as the frosts are over in the spring. A mulching of short grass from the lawn mowings will keep the ground moist, and prevent injury to the roots from dry weather in July or August. One of our best growers of the Azalea informs us, that it has been his practice to turn out into beds all his plants, both large and small. When

lifted in the fall, they came up with large balls of earth completely filled with roots, and suffered not a particle by being again put into pots. The soil should be well mixed with leaf mold from the woods, if possible. There is no plant grown that will give more satisfaction, either for culture in rooms or the green-house; and if well cared for, its beauty increases with its age.

LAWNS all during this month should be frequently mown and rolled; but as the regular period of seed-forming and comparative rest to the grass approaches, the lawn should be mown only when it is apparent the roots are about to send up flower or seed stems. Too frequent mowing in dry hot weather in our climate has rendered many a lawn bare in spots, or brought us false coarse grasses.

JUDGING from the large lists of new plants and flowers to be sent out, this season will be a busy one for all amateur and professional gardeners. Floricultural committees will have to keep themselves well posted, or they may find their knowledge of little value on days of exhibition.

HARDHOOD OF PLANTS AND TREES.—It has long been our impression, that many trees and plants introduced from abroad, as well as grown by skillful American growers, would be hardy were they not over-stimulated in their growths either by artificial heat or rich manures, or both, to an extent that softens and expands the tissues beyond their natural order. Our attention has now been drawn to this point again, and we therefore write this paragraph, from reading an account where the grower succeeded in growing fine plants of a certain variety, but could not keep them long, or make them endure changes of temperature, while a plant which by chance had got neglected and left to grow in a poor soil and position continued to grow and flower abundantly and apparently

healthy, but with not so fine an appearance or large size of foliage or bloom.

Sincerely, we wish some inducement could be offered for experiments with many of our rare evergreens, etc., by placing them in positions and soils where moderate growth could be secured while they ripened their tissues as they grew.

We have no doubt that many reports from different sections, of a new variety of grape or tree proving tender, arises from the over-exertion the plant has made while young, as well as by the extra care and stimulus of rich soil, etc., given it by the receiver.

“CRYING THEIR EYES OUT.”—This term we have frequently heard used by Germans when speaking of the bleeding of vines from pruning at the wrong time. Lately, we paid a visit to a vineyard of Concord vines about four years out, when the application came at once home to our mind. The vines were strong canes well grown, and the canes laid in very handsomely upon the wires, leaving from three to five buds upon a cane. They had wintered perfectly; but being pruned late in the spring, nearly every cane had lost two or three of its last or extended buds by reason, as we fancied, from bleeding, literally having “cried their eyes out.”

THIN THE FRUIT.—If large and choice well-flavored fruit is wanted of any kind, it must be thinned out, removing a few at a time from every part of the tree, so as to leave the residue pretty evenly distributed. The work can not be all performed at once, and it therefore should be commenced early in the season, the operator going over his trees, bushes, or vines from time to time, removing now one here, now one there, as the eye meets it, and the evidence appears of the advantage obtained by its removal. Early thinning, before the strength of the tree or vine is taxed in the stoning or seeding, will avail much more than the same course afterward.

CAMELLIAS should remain in the greenhouse until growth ceases and the wood becomes brown. Give air plentifully, and less moisture, to avoid a second growth, which is likely to occur if the plants are kept in a close, warm, moist atmosphere. As soon as the wood is mature, the plants may be put out of doors, in a partially shaded place, where they will not receive the full sun after ten o'clock A. M. Those who have large collections will find it to their advantage to construct a sort of a shed with the sides and roof of lath placed about an inch and a half apart. This will admit sufficient light and air on all sides, as well as the rain. Some of our large florists and nurserymen have used such structures much to their advantage for the summer protection of many varieties of greenhouse plants.

NEWLY PLANTED trees or shrubs are much benefited by a mulching a couple of inches thick placed around them at this season. We have found the newly mown grass from the lawn an admirable material. If put in place while green, it wilts down, keeps its place, and is not liable to be blown about by winds, as is the case if leaves or straw litter are used. The grass at this time has no seeds that will germinate, and when decayed in the fall may be dug in with advantage to the future growth of the tree.

NEW ORCHID.—An orchid has lately flowered which is pronounced by Professor Reichenbach to be an entirely new species of *Epidendrum*. Herr Reichenbach proposes that it be called *Epidendrum eburneum*, in consequence of the ivory-like appearance of the flower.—*Cottage Gardener*.

SOFT WATER for watering plants and other uses is not always at hand. Caustic lime in proportion of one to five—that is, one gallon of lime water to five gallons of hard water—will change it to the condition of boiled water.

DAHLIAS, as they grow, should occasionally have the leader stopped by pinching off; and as the side branches extend, either bend them down and peg them to the ground, or occasionally pinch them back, and thus make the plant when it comes into flower a mass of foliage and flowers rather than a tall stem supported by a stake, which, however ornamental it may be made, is yet not a part and parcel of floral beauty. Water once a week or more with soapsuds waste.

SUMMER PRUNING OF THE GRAPE.—Very much has been written on this subject, the pith of all being that it is desirable to have as little extra wood as possible, and yet maintain a healthy growth of vine and maturation of fruit. In our May number we drew the attention of our readers to the first point, viz., that of rubbing out or destroying all superfluous buds; but at this season the vines are vigorous, and growing so rapidly that an almost daily attention is necessary. If from neglect the shoots have got two or more leaves beyond what they should have, it is better to stop them back with the thumb and finger, leaving an extra leaf, rather than hereafter to go through and cut and slash in order to get breathing room for the foliage. Let the canes for next year's fruiting grow as strong as they may, laterals and all, without any pinching; especially is this to be heeded with Clinton, Norton's Virginia, and other sorts, which it is fast coming to be learned produce the most and best fruit on the laterals of this year, and therefore need, in fall pruning, to be left with long canes. On the fruit canes some advise stopping at one leaf beyond the last bunch of fruit. We prefer to let it make two to three leaves before stopping, believing that the more expanse of perfect leaf we can get on that cane or extension the better will be our fruit.

Another point in grape culture we must urge, and that is a judicious and careful thinning of the fruit. Too much fruit not

only exhausts the vine and enfeebles it so as to induce disease, but the quality of the fruit is so much impaired, that he who buys for the market or wine will reduce the price accordingly. Two pounds of really large and perfect bunches will bring nearly if not quite as much as three pounds of imperfect ones, and the grower will find for the first a ready sale, while for the second the buyer will hesitate and haggle about the price.

CUCUMBER AND MELON VINES, as well as tomato plants, will mature earlier and better fruit by stopping the ends of the vines or shoots about one joint beyond the blossom or young fruit. The laterals or side branches should be stopped in just the same as the leaders.

ARRANGEMENT OF SUMMER FLOWERS.—Although some of our readers will have planted out their summer bedding plants ere this number reaches them, yet many will not have done so, and even to those who have, we wish to suggest a word by which perhaps they may improve. It has been and yet is with most who group, to think only of colors; but they should go one step farther, and adopt in a measure the system by which practical bouquet makers give such effect to the arrangement of a few flowers, and that is, "use filling in." To this end, as we now have a large number of variegated and colored foliaged plants, we suggest their use as a filling in among the plants whose great beauty is their blooms; by this means a more satisfactory and less monotonous tone is given to the group; and if then we add a few more whose beauty is in their form and grace as well as color of foliage, we shall have created a mass closely resembling, but more artistic and scarcely less graceful than nature in her wildest and most harmonious moods.

HONEYDEW may be eradicated by dusting the parts affected with flour of sulphur or fresh slaked lime.

ROSE GERANIUMS are generally cultivated for their leaves, which are useful in making bouquets. The plants are generally planted out during the summer into the ground; they grow vigorously, and furnish abundant foliage during the summer months. In the fall they are lifted, put into pots, and placed in the green-house. By this process they lose their leaves, and are useless until February or March. To have them in perfection during the winter, young plants should be propagated, and in May put into eight-inch pots; plunge the pots in the border an inch below the rims; they will need no further care until fall, when the plants can be taken up in full foliage, and not a leaf need be lost.

MONTHLY CARNATIONS.—Cuttings made in March, and now well rooted, may be turned out of the pots into a well-prepared border. If designed for winter blooming, pinch off the flower shoots as soon as they make their appearance. They may need a second pinching in July, but generally once is enough. If bloom is desired in the open ground, allow the flower stalks to grow, and keep them carefully tied up to stakes. Those to be removed into the dwelling or green-house should be carefully taken up early in October, with a ball of earth, placed in seven or eight inch pots, and well watered and shaded for a few days—the flower stalks to be tied up as they grow.

Plants so treated by the writer last season, commenced to bloom the latter part of December; and now, May 15, have some buds yet to open. We give a short list of some of the best varieties: La Purité, Flat-bush, De Fontana, Madame Vernay, Unique, Brightness, Astoria, President Degraw.

SALT UPON LAWNS.—The use of salt spread upon lawns in early spring, and washed in by the rains, has, in our observation, been productive of the best results; and should a lawn show flagging of vitality, even in the month of June, we would

not hesitate to sow at the rate of one pound to a square rod, scattering it broadcast just before a warm rain.

STOCKS—TO DISTINGUISH SINGLE AND DOUBLE.—A writer in the *Gardener's Magazine* says that when transplanting his stocks he examines the roots, discarding all which have roots like the carrot, as they only produce single flowers, while those which have a tuft at the root invariably produce double flowers.

ROSES do best in a strong soil, not a stiff clay, but a rich, firm, clay loam. If your roses cast their buds before blooming freely, it is probably because of a too stiff and cold wet soil. It should be removed and replaced with light rich loam.

LILIUM AURATUM, it is said, is not the only fine and showy variety of its class; but there are those of pure white, those with shades of color, and with a rich red stripe down the center of each petal instead of the golden one, from which the auratum derives its name.

OIDIUM OR VINE MILDEW.—A writer in the "London Journal of Horticulture" says "that a complete cure for the above disease may be found by taking one pound of flour of sulphur, one pound of slaked lime, and one gallon of rain water; mix well together, and boil twenty minutes; take off and strain; add one gallon more of water, and again boil twenty minutes, when the liquid will be a fine amber color; put in a jar and cork tight. When used, take one pint to sixteen gallons of rain water and syringe the vines, and it will not injure fruit or leaves."

HOE frequently around newly planted trees. It is better than mulching with any material, as the fresh-stirred soil admits air and light, and absorbs the dew of every night. If you have no time to hoe, then mulch.

SHRUBS that have done blooming should be at once headed back, in order to have them form a vigorous growth and prepare their flower buds for another season. Cut severely the strong growing shoots, lightly those more slender, and take out entirely all very small spray, leaving the plant in a cone or round-headed form, as your fancy may dictate.

SPECIAL NOTICE.—Any subscriber to the HORTICULTURIST sending us two dollars and fifty cents for two copies of the HORTICULTURIST, for new subscribers, in addition to his own, shall have sent him, post free, a copy of "Woodward's Record of Horticulture for 1866," edited by Andrew S. Fuller. The matter and illustrations are original. It is handsomely bound in extra cloth, beveled edges. Or any new club sending five dollars for three copies, shall be entitled to same premium.

WE shall feel obliged to any of our readers who will furnish us with notes of the results of their experience the coming season with the various small fruits as they ripen. We wish to collect all the information possible on the strawberry for our July number, and the raspberry, blackberry, etc., for the August number.

IMPORTATION OF SPARROWS.—We notice that two or three hundred sparrows were imported from England this last March into New York, but do not know by whom. Can any one tell us where they are.

BOOK NOTICES.

WOODWARD'S RECORD OF HORTICULTURE FOR 1866, edited by Andrew S. Fuller, author of "The Grape Culturist," "Strawberry Culturist," "Forest Tree Culturist," and "Small Fruit Culturist." 127 pages, beveled boards, post-paid, ONE DOLLAR.

This work contains a review of all the Horticultural books published in 1866, and records all Horticultural facts of interest for that year. The matter has

been written expressly for the work—is not copied or quoted. It is purely practical and original, written by a successful author of very successful books. We recommend it to our readers as a repository of facts and information not to be obtained in any other form. The work will be published annually. This is the initial number.

In this work, the new edition of "Bridgeman's American Gardener's Assistant" is criticised in a manner not approved of by the revisory editor, who represents himself to be the agricultural editor of the *New York Times*, *Observer*, *Independent*, and *Working Farmer*. Copies of the book were solicited by him for each paper, and the following retaliatory notices published.

The explanation of the *New York Times* is, that this was written by another editor. But "that those who live in glass houses should not throw stones"—

THE RECORD OF HORTICULTURE FOR 1866 is a work edited by Andrew S. Fuller, and published by George E. & F. W. Woodward. It bears the marks of having been hastily prepared, in an excessively careless and ungrammatical style, and in a frequent superficial treatment of the subjects discussed. The publishers have done their best for the work by printing it neatly and illustrating it with a few well-executed engravings.—*N. Y. Times*, May 19.

WOODWARD'S RECORD OF HORTICULTURE FOR 1866, edited by Andrew S. Fuller, and published by George E. & F. W. Woodward, has little that is new, and appears to be rather an advertisement of the publishers' other books than a repository of facts and information.—*N. Y. Observer*.

One object of the "Record of Horticulture" is to record and review all books on Horticulture published during the year. The editor of the *New York Observer* supposes this to be the publisher's advertising list.

We extract the following from a three-quarter column notice in the *New York Independent*, merely correcting the price of the book.

The most ridiculous thing in the whole book is the relentless spite manifested against the reviser of "Bridgeman's Gardener's Assistant," for revising, enlarging, and illustrating a book that everybody—even Mr. Fuller—acknowledges to be the authority among Horticultural writers. As he has made some false statements, in which our integrity is assailed, it is proper to explain the matter in this place.

The publisher of "Bridgeman's Gardener" brought the wood-cuts, ready made, to the reviser, before he commenced the task. A portion of the illustrations were purchased by the publisher of other publishers. The reviser had nothing whatever to do with the illustrations, only to insert them in the proper places. In a few instances the compositors failed to make the typographical corrections designated by the reviser. Therefore the first edition of a few dozen books of "Bridgeman" was issued with typographical errors. Before the next edition is printed, all such errors will be corrected.

Who has one dollar to pay for a book purporting to be a "Record of Horticulture," when, in fact, it is a record of slanders?

To corroborate what we have penned, one paragraph is herewith copied from that wonderful "Record of Horticulture." The author says, "We fear, however, that some of our publishers, in their eagerness to have a long list of their *own* publications, employ men to write books who have no practical knowledge of the subject on which they discourse. * * * The two classes of writers most to be feared are those who have much to say, theoretically, but nothing practically; but think it their duty or privilege to make a book, if they can get a publisher to pay them for that which they purloin from others."

When it comes to this, that an author must write a second book to extol his own former work, and then give his book a false title, to induce honest men to purchase a treatise on *horticulture*, when the pages are filled with matters which are of no interest except to the author, the swindle ought to be exposed.

The second edition will be ready June 15.

MESSRS. A. WILLIAMS & Co., of Boston, have in press, and will shortly publish, CHEMISTRY OF THE FARM AND THE SEA. By Jas. R. Nichols, M.D., Editor "Boston Journal of Chemistry and Pharmacy." In one vol. 12mo., elegantly bound in cloth. Price \$1 25. GEVELIN POULTRY BREEDING IN A COMMERCIAL POINT OF VIEW. With an introduction by Charles L. Flint, Secretary Mass. State Board of Agriculture. One vol. 12mo., with twenty-seven illustrations. Price \$1 25.

BEE-ROOT SUGAR AND CULTIVATION OF THE BEE. By E. B. Grant. Boston: Lee & Shepard, publishers. The cultivation of the beet root for manufacture into sugar has long been practiced in France; but so cheaply did we for years obtain sugar from the cane grown in our Southern States, that our people North would give the subject little thought or attention. The rebellion,

or civil war, however, in a measure compelled our Northern farmers to take up some crop for the purpose of obtaining a sweet to meet their wants. Sorghum and the beet have, therefore, during the past few years, received at the North, and especially in our Western States, pretty extensive cultivation—millions of gallons of sirup and thousands of pounds of sugar having been made from the sorghum; and one Illinois establishment has alone during the past season manufactured over 100,000 pounds of beet-root sugar, exhibiting fully the practicality and profit of beet-root growing. The work now before us has evidently been compiled with care; and in its history of the beet, tabular statements of the crop as produced on land, soils adapted to, seed and manures for, methods of cultivating, harvesting, etc., etc., contains valuable information in a neat comprehensive form that should commend its sale to every farmer in the country.

DIAMOND EDITION OF THACKERAY.—Published by M. Doolady, New York. The reading public are under obligations to the publishers of the works of standard authors in this cheap and elegant form. The volume before us, "The History of Pendennis," is the first of the series. The other works of the author will be issued as rapidly as they can be prepared for the press. This edition is published under the supervision of W. L. Alden.

NEW BOOK LISTS.—We call the attention of our readers to our new and revised book lists, containing all the new agricultural and architectural books published. We are particular in executing orders to procure the latest editions and best bound copies, and pack them to carry safely to any part of the country. We also supply the books of all the leading publishing houses in this and other cities. Our readers can thus procure at their own post-office all the publications of the day at the same price as by a personal visit to the city.

THE
HORTICULTURIST.

VOL. XXII..... JULY, 1867.....NO. CCLIII

STRAWBERRIES—SOIL, CULTURE, AND VARIETIES.

AFTER so complete a record of Strawberries as Mr. Fuller has given in his "Small Fruit Culturist," just published, it may be counted as presumption to write another word; but we have two reasons for so doing. One is, that all our readers may not buy and read Mr. Fuller's book; the other, that it is a duty devolving on us, as editors and publishers of a leading, or we may say *the* leading and oldest, horticultural journal, with one exception, in the States, to record from time to time our views of progress, and assert any ideas we may entertain, even although they run counter to some of our best writers.

An observation and practice of over thirty years convinces us that Mr. Fuller is right when he says: "No one kind of soil is equally well adapted to every variety;" but we may go further, and say that while this is correct, yet due preparation of a soil will adapt it to more varieties than perhaps would otherwise be accredited to it. And while a deep rich sandy loam may be called "the best soil, all things considered," we have our doubts if it be so, when stronger and more clayey soils have been perfectly prepared. With Mr. Fuller again we agree, that not one acre in a thousand in this country is properly prepared. We

know of and have recently been over perhaps one hundred acres of vines, and not an acre among them had anything more in the way of preparing the ground than is given by our most slovenly farmers in preparing land for corn. And again, field after field that we have visited had received but one partial cultivation and hoeing this spring, and as the berries commenced ripening, grass, sorrel, and weeds were the leading features of growth that at a first glance met the eye. One little patch of ground, of about one-quarter acre, which we visited, had last fall been thoroughly prepared, first by deep plowing and subsoiling, and at the same time covering under a good dressing of manure. Then when planting came, the ground was furrowed out by a one-horse plow, run twice in the furrow, turning it each way, and as deep as the horse could draw it; then in the bottom was spread a layer of half-rotted stable manure, the soil turned back again, raked down smooth, and the plants set out, some the last of July, and some the last of August, all runners kept off; and as winter came on, say about the 20th November, the ground was mulched two inches deep with tan-bark. Up to the time of blooming this spring, the bed was

gone over, and every runner that showed was pinched back. The result is, that a show of fruit and a perfect ripening thereof greeted the owner, fully repaying and overpaying for all care and labor. The proprietor proposes, as soon as the fruiting time is over, to rake off his tan-bark, mulch, and then run a subsoil-plow between his rows as deep as he can; then let runners be guided into the intervening distance, but only just enough to re-form his bed, and as soon as they are established, put spades and Paddies to turning under the old plants—then rake down the whole smooth, keep it hoed, and again in November put on his mulch.

With such preparation of ground we believe many kinds of strawberries that now only receive rough culture, and still rougher comments on their values, might be shown to be almost as desirable as their originators deemed them. At any rate, we must urge on all who are about to make new strawberry beds, a remembrance that soil, provided it is not a stiff, hard, yellow clay, is not so absolutely important as the preparation thereof, and that while we have recorded a case where manure was used, and profitably, it is not always a requisite, as many of our rich, deep loamy prairie grounds and river bottom lands would be rather injured than benefited thereby, or, in other words, the manure would be a useless expense and trouble. Understanding the general principles, or that the strawberry roots deep, good common sense must then guide as to the condition of the soil, and its want of manure or otherwise.

And now one word about plants, and the time of setting. While we prefer the spring, because naturally that is the growing season, there is no difficulty in forming good beds or plantations of strawberries in August or September, provided the ground is thoroughly prepared and the plants come to hand in good order. If the plants are in your own grounds, and you have only to remove two hundred feet or so, then, of course, you can keep the roots

from drying, and prevent exhaustion thereof, as you should do by clipping off all the fully developed leaves; but if you are to obtain your plants from a distance, bargain first that the dealer shall either take them up early in the morning, or on a cloudy day, that he shall clip away all the fully developed foliage, and finally, that every root shall be packed with moss next it—not a bundle put up and a little moss and grass or hay on the outside. We have had plants by mail, in packages, and in many ways, and when one understands just how to manage them, most can be saved; but when plants are received and then turned over to a common laborer to plant out, the buyer had better pay double price for his plants packed as we have described, than receive them gratis in the ordinary manner. Nurserymen and plant-growers have run the price of plants down to a nominal sum, hardly paying for the labor of digging. Let them now either charge for the packing or else add to the price of plants.

Having received the plants, the careful cultivator will take each plant singly, and with a pair of shears clip all brown, or dead, or broken roots back to fresh, clean fiber. Mr. Fuller advises taking a bunch in hand and cutting all at one clip; but while this may do for large plantations, or varieties of little cost, whoever has a choice plant had best examine its roots and cut away only such as are brown or injured.

When planting, after the ground is all ready, a horse and light one-horse plow run along the line and opening a furrow will much facilitate the work, and enable the planter to spread his roots well and rapidly. The iron rake afterward passed along will rapidly level in the furrow.

System—Hills or Rows.—On this point we do not think cultivators or writers differ much in reality, although they occasionally write pretty strongly in favor of their own views; but after all, as the strawberry of all sorts, except some of the Alpines, propagates by runners, if new plants can be established in the ground to pro-

duce well the next season, and the ground be well prepared and cultivated, it seems a little of tweedledum and tweedledee whether they are grown one plant to every six or ten inches in a row, and the rows three feet apart, or grown three or four offshoots or suckers from the old plant, in a stool or circle, each circle being two and a half or three feet each way apart.

If a new variety is on hand, from which

you wish to obtain as many plants by runners as possible, let us say that pegging down and covering with earth is not as good as laying the runner just a trifle in the ground, and over it, at the junction where the plant bud is to burst, laying a flat stone. The stone retains a moisture and cool temperature to the root better than any mulching or shading in any other way which we have tried.

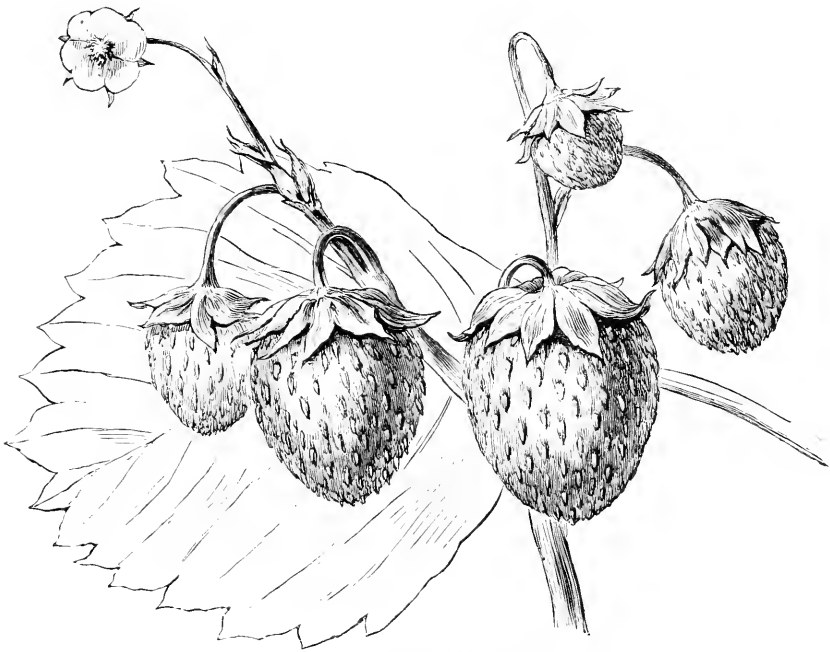


FIG. 100.—*Mead's Seedling.*

Having said so much on soils and cultivation, let us, before describing some of our leading and most desirable established varieties, say one word about sexuality. Many years since the subject was pretty thoroughly ventilated in the pages of this journal, and we who now write then wrote. It was then contended by some that all native or wild plants were self-impregnating or hermaphrodite, and that staminate blossoms would give no fruit alone, and versa pistillate. Others, of course, took opposite

grounds. Having looked at and studied the subject, as we think, pretty thoroughly, we incline to the belief that nature ordered the form about right, and that while she has given to most of her wild plants a double sexuality, she has at times produced plants deficient in the double organs, but so constituted that they produce fruit in an imperfect form, but only a semblance of seeds; or, in other words, berries from a strictly pistillate plant, grown by itself, will not produce perfect seeds that will

mature and grow again. We have tested those counted as strictly pistillate and staminate, and have procured fruit from both, but in the first never the quantity obtainable, or in perfection as when associated with plants having stamens, and in the latter never to regard a staminate as of any value except as an impregnator. The varieties of the strawberry have now become so numerous that, as Mr. Fuller says, to describe them all would make a book too large for any one publisher who expected ever to receive back the amount expended on its publication. We therefore choose here only to figure and describe some of the more recently introduced sorts that have shown favorably in our own grounds, and are spoken well of by other growers.

MEAD'S SEEDLING.—Although some years before the public, this variety has not received much favor, and perhaps in light soil it is deficient; but under high culture it is a good grower, with a quite handsome berry, firm and good for market. The flowers are pistillate, leaf roundish and scoriated, as see our outline; the fruit stems are strong, and some plants we had filled well with fruit, which was of good size, conical rounded, bright scarlet in color, and the seeds prominent.

McAVOY'S SUPERIOR.—This old berry, the prize plant of the Cincinnati Horticultural Society some years since, yet keeps, with us, of the highest flavor, our soil in which it is grown being a strong clay. It is pistillate, and rarely do we get perfect form or regular fruit. We have the same variety received as Buffalo, and in the garden of one of our friends it is growing under the name of General McClellan.

MONITOR, with us, is so poor a grower that we fear it must be an error, although in other respects it corresponds with the description of its originator.

METCALF'S EARLY, of which so much has been said West, we have growing, but the plants came so late, and not having grown quite strong, we do not desire to speak, as yet, in its favor.

TRIOMPHE DE GAND is with us, as yet, one of the most hardy plants and best fruiterers of the foreign varieties. In deep strong soil, and with good cultivation, it certainly is a most desirable variety for the private garden, notwithstanding its peculiar flavor, by some admired, by others disliked. The leaf is broad and thick, quite rounded in form, with round serratures, as see our outline. The trusses of fruit are abundant, with strong stems, bearing fruit not quite uniform in shape, large, bright crimson, glossy, appearing almost as if varnished. It is hermaphrodite, or a self-impregnator.

LA CONSTANTE, which yet receives the favor of Mr. Hovey, at Boston, is with us a fine flavored fruit, but the vines require great care to retain in good health and vigor. If we neglect to cover them in winter, or cover them a little too deep, we lose them.

EMMA is a plant of good habit, and the few we have of it promise so well that we shall cultivate it another season. The fruit is bright scarlet, good form, a self-impregnator.

VICTORIA we have occasionally grown large, but it has again quite disappointed us, and unless we were going to try for a show berry of half a dozen specimens, we do not now think we would grow it.

JUCUNDA.—Although in high culture a good bearer, under ordinary care this is a variety that will fail to meet the expectations of many growers who have bought and planted it upon the reputation given it by some writers. It is a good-sized berry, and of fine color, pretty firm, and of good (not high) quality. The vines, however, are liable to suffer, and, like La Constante, only not so bad, die away and are gone.

VICOMTESSE HERCART DE THURY we have seen several years, but until this year have not ourselves grown it. It is a large berry, of fine flavor, and growers who have tested it, and with whom we have examined it, speak highly of it as one of the best of the foreign sorts.

LADIES' FINGER, or *Lady Finger*, is one of the best among the early ripening hardy varieties, a self-impregnator, producing abundantly fruit variable in form and size, but all smooth and regular, firm

enough to carry well to market, of a bright dark scarlet color, and quality good. It has been a long time grown in New Jersey, but is not much known at the West, where, in fact, no sort but Wilson has received

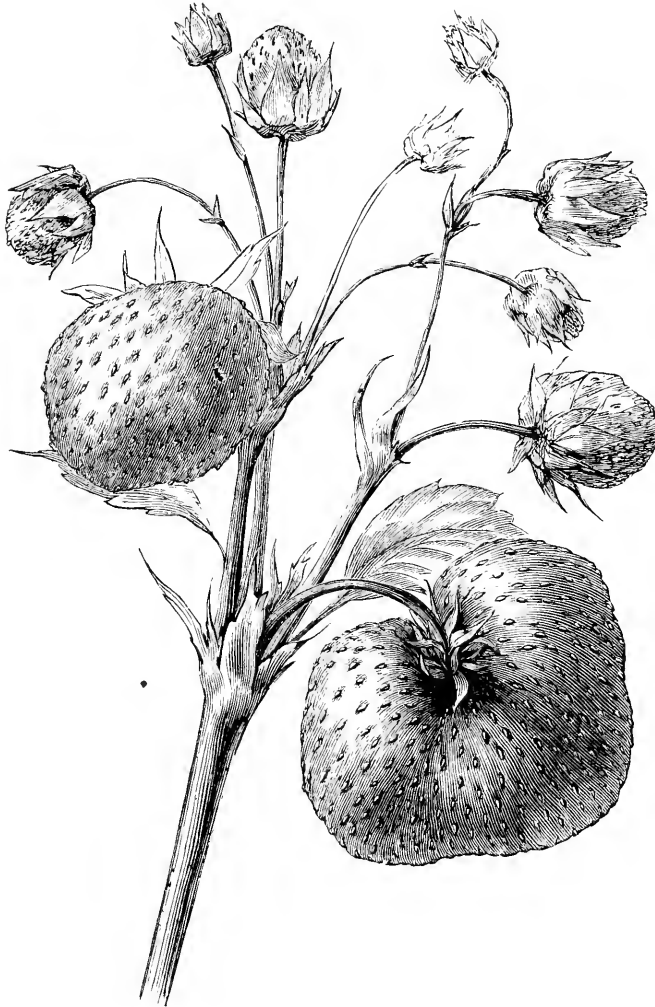


FIG. 101.—*Triomphe de Gand*.

much favor for some years from any but a few amateurs. The footstalks of the Lady Finger are tall and strong, so that its fruit is well up out of dirt.

FRENCH'S SEEDLING is another good sort, ripening early, and of good size, quality, and color, and quite productive, but too soft for a market berry.

GOLDEN SEEDED, with us, has not given a yield of value sufficient to induce us to continue growing it. The fruit, however, is extremely good.

COLONEL ELLSWORTH is another which

we have no further desire to cultivate—to which we will add PROGRESS and CHILLIAN.

HOVEY continues with us, under good treatment, one of our best but not most prolific berries. When we say best, we



FIG. 102.—*Ladies' Finger.*

would not intend to say that it is of the finest quality, but the berries are so large, fair, even, bright, and handsome that we can not do without it.

HOOKER is high flavored and delicious,

but the plant with us is so poor a grower, that we only keep a little bed of it, just to see and taste it.

LONGWORTH'S PROLIFIC is a variety we have often said, and now write, that should

have received the Cincinnati prize instead of McAvoy's Superior, for the vine is hardy, healthy, a self-impreguator, and productive of a handsome, large, light crimson fruit of a sprightly character, that is fine for the table, and especially valuable over all others for canning.

IDA.—Among the new varieties, none

present to us better promise than this one. It is pistillate in flower, but planted adjacent, as our bed was this year, to Downer's Prolific, it set every fruit perfect in form. Its footstalks were strong, holding the fruit well up from the earth, while the fruit is large, slightly conical, bright scarlet, and quite above medium quality. The



FIG. 103.—*Ida.*

plants are very hardy, and strong growers, leaf sharply serrated, and altogether one of so much promise that we shall test it pretty freely another season.

BROOKLYN SCARLET we have not succeeded as favorably in fruiting as we could have wished, out of compliment to its originator, and without saying more, will try it another season.

NEW JERSEY SCARLET is with us a strong grower, but as we have it, a strictly pistillate plant. The fruit corresponds with descriptions made, and we have no reason to think it has been overpraised.

RUSSELL'S PROLIFIC is really a fine berry. It is a little too soft for market, but is of a rich, good color, good form and size, and quite productive.

AGRICULTURIST has, with us, not proved a very strong grower, but in some light sandy soil we have seen it growing, it has shown very handsome and large fruit, besides being quite productive. Altogether it is probably an acquisition to the collection of strawberries. The fruit is large, not at all regular in form, with a long neck,



FIG. 104.—*Downer's Prolific.*

of light reddish crimson, not quite as firm as is desirable for a popular market berry, in which, by-the-by, *Lovey* surpasses any other sort.

GREEN: PROLIFIC.—This, as with the last

named, was originated by Mr. Seth Boyden, of Newark, N. J., and in many if not most places where tested, has proved one of the desirable late maturing sorts. It is a strong, vigorous growing plant, pistillated, really

requiring an associate for complete fertilization, but then very productive, of large, even, and regular size, and formed fruit of good color, that, where the market is near, will prove a profitable sort to grow.

WILSON'S ALBANY needs no remark—all know it, and now from Maine to Louisiana, nearly all who grow for market plant and grow it, and that, too, profitably.

DOWNER'S PROLIFIC.—With this variety we will close our notes on varieties for this season, although many more than here named have been under our care and ob-

servation. Comparatively little known, the Downer is nevertheless a variety of very considerable value, in its hardiness of vine, great productiveness, almost if not quite equaling the Wilson, and its maturing its fruit very early, among the very earliest, and continuing it until the last. Too soft for market, where transportation by cars is necessary, and if picked before fully ripe a little acid, yet in the garden of the amateur, where it can fully ripen, there is hardly any one early sort its superior, all things considered.



PROPAGATION OF PLANTS BY CUTTINGS OF THE GREEN WOOD.

BY ANDREW S. FULLER.

WHEN propagating from the young growing wood or succulent stems of herbaceous plants, it should be borne in mind that we are operating with an active vegetation instead of one that is dormant.

In the cuttings made from ripe wood there is a supply of organized material from which roots are produced; but in those made from young growing wood, this is only in a state of transmutation, and the object is to accelerate this change, if possible.

To accomplish this, it is generally necessary to surround the cutting with a warm, moist, and somewhat confined atmosphere,

by the leaves is greater than that absorbed, then they will surely droop, and an artificial application of water to revive them will often hasten their destruction.

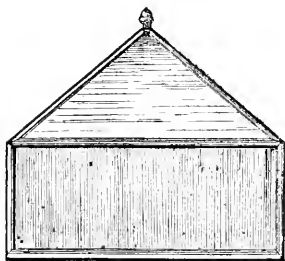


FIG. 105.

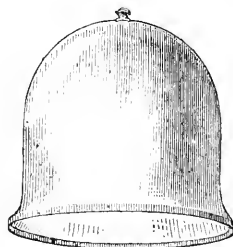


FIG. 106.

Various are the devices employed by propagators to produce that peculiar state of the atmosphere most suitable to the growth of different kinds of plants. Glass is the principal material used in erecting propagating-houses, because it is the most durable, and through it the plants receive light, which is indispensable to growth, while at the same time heat and moisture are under control of the operator.

While the professional gardener depends mainly upon the propagating-house to multiply those plants requiring artificial heat, the amateur produces the same results, although not so extensively, nor with so

so that the exhalation, which is very rapid in an open situation, can be controlled. For if the quantity of moisture given off

great a variety of plants, with the aid of the common hot-bed, or with the hand-glass, fig. 105, or bell-glass, fig. 106.

Many kinds of plants can be readily



FIG. 107.

propagated from green cuttings planted in the open ground, if covered with a common hand or bell glass. The soil in which the cuttings are planted should be composed in great part of pure sand, with very little vegetable matter, so that it shall not become sodden or heavy though watered ever so frequently. Some kinds of plants will grow readily from the green cuttings planted in pure sand and water, or in the latter without the addition of any earthy matter. The common oleander, grape, etc., are well-known examples that produce roots quite readily under these conditions, although no very extended growth can take place without the addition of mineral substances. Although water is one of the best materials known in which to strike cuttings, still the great difficulty is in transferring them from it to the soil without checking the growth. In a confined atmosphere it can be done quite readily, but in an open one it is a very uncertain operation.

In preparing green wood cuttings, a large portion of the leaves should be

allowed to remain, for the purpose of assisting in the preparation of the material required to produce roots.

In selecting the cuttings, it is generally best to slip them off close to the more mature wood, leaving the hip or ring of half ripened wood attached to its base; for as we stated in the chapter on "Ripe Wood Cuttings" there is always a concentration of buds at this point; and more available organized matter at this place than elsewhere. A few of the lower leaves may then be removed, as shown in fig. 107.

This slipping off the young shoot is not always practicable, because some plants produce few or no lateral branches; in such cases the terminal shoots are usually selected, although with many kinds the entire stems may be divided into sections leaving only two buds upon each, one being placed below the surface and the other above.

No general rule can be given as to the exact time for separating the cuttings from the parent plant; with some it is better to

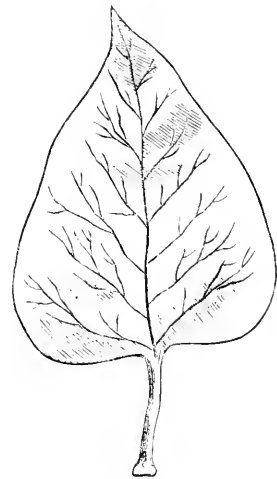


FIG. 108.

take them off while the wood is very young, even when it first starts, while with others the wood should be almost

nature. In some of the succulent plants, like the cactuses, stapelias, and others of similar structure, they are benefited by being dried somewhat before planting.



FIG. 109.

All the variations in structure, form of growth, the great difference in tenacity of life in plants, show us that practical experience is required to produce the best results, even by those who may have carefully studied all the theories ever advanced upon the subject.

Cuttings of the rose, currant, willow, and hundreds of other species of plants, grow readily with very ordinary care, either from the green or ripe wood, while the hickories, oaks, and many others are among the most difficult to propagate in this manner; the cause may or may not be known.

CUTTINGS OF THE LEAVES.

Cuttings of the leaves are seldom used in propagating hardy plants. They are

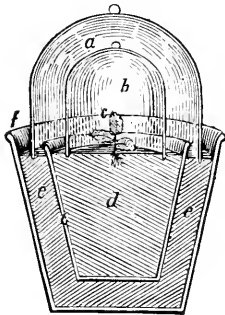


FIG. 110.

sometimes employed merely for the purpose of showing what may be done, although

there are usually other methods which are attended with less trouble and are far more certain. When it is desirable to propagate from cuttings of the leaves of woody plants, they are usually taken off entire, with the petiole or leaf-stalk attached, as shown in fig. 108; the petiole in this case representing the stem of a cutting of green wood.

The leaf shown in fig. 108 is that of the common lilac. If carefully separated from the branch, when fully expanded, but not mature, and placed under proper conditions, roots will be emitted from the lower



FIG. 111.

end of the petiole; afterward a bud will be produced near the junction, showing conclusively that buds, or the power of producing them in woody plants, do not belong exclusively to the stems, branches, or roots, as some vegetable physiologists assert, but that even the leaves are capable of becoming individual plants. The rose has often been propagated from its leaves; in fig. 109 is shown a rooted leaf with the small bud at the base of petiole as it appears when first starting to form a new stem. The usual method employed in making experiments with such delicate subjects is to use two bell-glasses, placing one over the other, as shown in fig. 110, the

leaf cutting being planted in pure sand in the center of the pot. Also two pots are sometimes used, as shown; *d*, the center one, being filled with pure sand, and the space between the two, *e*, filled with moss or tan; *f*, the outside pot; *a*, the large bell-glass; *b*, the smaller one; *c*, the leaf cutting.

As I have previously stated, propagating woody plants in this manner is of no practical use, but it merely shows us that it can be done; besides, it furnishes positive proof that many theories heretofore advanced in regard to the origin of buds and structure of leaves are wholly untenable. In propagating succulent plants, many of which have no true leaves, the stems answering the place of both, we are obliged to use the leaves or stems, whichever we may choose to call them; but there are other plants, like the gloxinias, begonias, portulaccas, lilies, some of the ferns, in fact, a host of exotic plants, as well as a number of indigenous ones, of which it is often quite convenient to use the leaves for the purpose of propagation. With what are usually called herbaceous plants, that can readily be propagated in this manner, it is

not necessary to plant the leaf entire, but it may be divided into a number of cuttings, and each will produce one or more plants. Fig. 111 shows a section of a begonia leaf with roots and the new plant as they are first formed.

With these leaf cuttings a warm humid atmosphere is very essential as well as with green wood cuttings and leaves of woody plants. Various materials are sometimes used in which to grow the green as well as ripe wood cuttings—sand, clay, peat, pulverized brick, moss, tan-bark, spent hops, etc., etc., each of which have had their advocates and day of popularity; yet the most skillful propagators of plants at the present time depend mainly upon sand, for in addition to its porous nature, which admits of such perfect drainage, it contains less noxious materials which often combine with the juices of the plants when exposed, and thereby cause their destruction. The amount of plant food required by cuttings while producing roots is so exceedingly small, that the air and water which surround them will generally furnish a full supply.

NEW SEEDLING TREE PEONIAS.

AMONG all of our showy early blooming hardy shrubs, perhaps none are more to be prized than Tree Peonias. The price of them, as compared with other shrubs, has undoubtedly prevented many a person from buying as buyers often do, on the representation of their beauty by the dealer; but the want of colors and distinctiveness has also been an objection and drawback to their more general introduction to the grounds of amateurs and others who desire the most of beauty with hardihood. To remedy this, Professor J. P. Kirtland, of Cleveland, well known as a zealous horticulturist and the originator of many rare fruits, cherries, pears, etc., at the suggestion and indication of Hon. Marshall P. Wilder,

some fifteen or sixteen years since set about a course of practice by hybridizing and raising seedlings in order to test what advance and improvement could be made. Mr. Wilder forwarded the Professor a plant of the peonia with single flowers, the petals of which were a dark rosy purple, deepest in color at the base, and from this, but how, hybridized or otherwise improved in the seed, our friend who gives us these items does not write, some thousand or more seedlings have been grown, and this season a few of them have shown flowers of so much beauty and distinctiveness in color that the Professor has decided to name two of them.

The first named he calls after Hon. Mar-

shall P. Wilder, as the instigator toward the production and as a due tribute to the man; while to every hearer of the name the association with all that is beautiful and good in horticulture or floriculture will ever be identified. This plant has a strong and vigorous habit, its blooms being of the largest size, from eight to ten inches in diameter, petals revolute, irregular, deep scarlet at base shading out to a clear light peach pink on edge, altogether one of the most strikingly attractive of the whole collection, and entirely distinct in its shade from any other.

The other one to which the Professor chooses at this time to attach a name is also large in size of flower, and a vigorous grower and free bloomer, its blooms being a dark rich carmine at base of petals shading out to a peach-blow pink, not white, as is the case with the *Papaveræca*; but standing within ten feet of a *Papaveræca*, its character and distinctness are so plain as to at once attract the eye. This variety is named after Edward S. Rand, Jr., of Boston.

But the Professor has others yet unnamed, and our friend, who writes us a glowing account of their unprecedented beauty and variety, goes on to describe some as follows:

"One, an immense flower, seven inches deep and about eight inches across, broad revolute petals of a delicate, rich, deep rosy pink shading, and lined out to the

edge into a peach-blow white, and full clear to the center. This, to my taste (writes our friend), is the gem of the collection, but it would not please the hundreds as well as Colonel Wilder. Another seedling, with large and full flowers, has the colors of Empress Eugenie (?) but the petals are more regular, round, and broadly flat like a rose, yet the margins are deeply serrated. Another has broad revolute petals, somewhat crimped on edge, of a pure white, shading into the base with shades of peach-blow violet. Another is with petals of a dark rosy purple, deepest at base, like the original single plant from which seed was obtained; but it is, if anything, a larger and more perfect-formed flower than the old *Papaveræca*. Another has flowers of the very largest size, some of them measuring nine by ten inches in diameter, with very large, broad, revolute petals of a rich, rosy, violet pink, deepening into carmine at base, and without a show of stamens, etc., in the center."

When we consider how perfectly hardy are the Tree Peonias, enduring all our temperatures as well as the oak tree, and the fact that a well-grown plant will give from sixty to one hundred and fifty blooms of most gorgeous flowers in a season, we can well appreciate the great item of floricultural beauty Professor Kirtland has now inaugurated, and which will doubtless soon become disseminated.

STRAWBERRY BEDS, as soon as they have done fruiting, should be dug over deeply between the rows, in order to have new plants from the runners take freely. It is well, as soon as the ground is dug, to go over and train out the runners from the main or old plants just to the point wanted, and sprinkle a little earth over each starting bud. Repeat this from time to time, and early in fall you can dig under the old vines, and thus help to increase the vigor of the young or new rows. Plants in hills

should also be dug deeply around, because they now send out new roots and make new plants, as it were, from all around the mother or parent plant. Later in the season it may be well to cut out the old plant, thus leaving the hill a circle of plants rather than a mass. Plants in hills must have all runners taken off, and so also should those to be grown in rows have the runners destroyed just as soon as plants sufficient to reset the rows have formed.

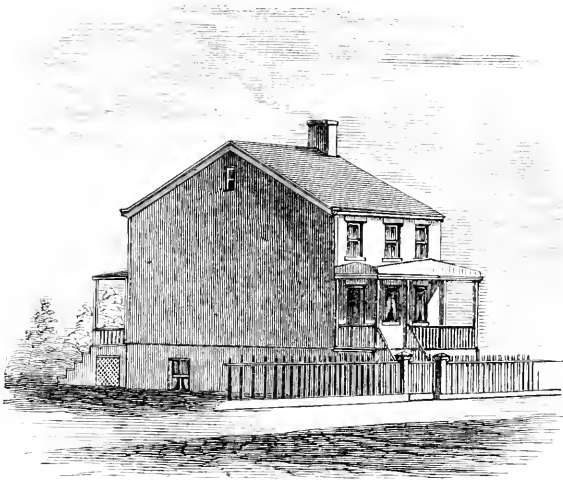


FIG. 112.—*The Old House.*

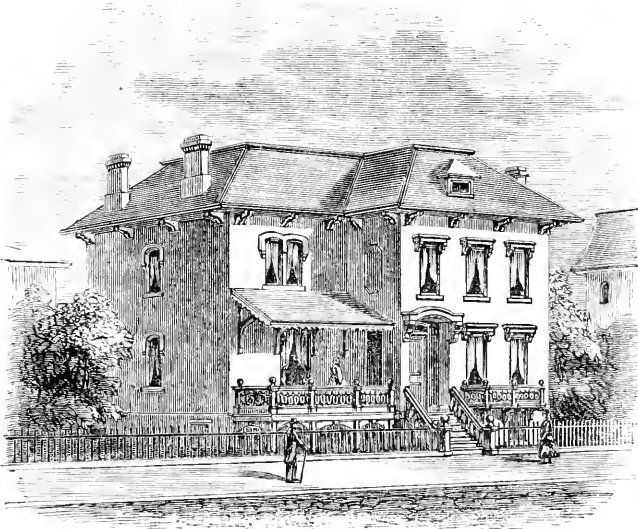


FIG. 113.—*The same Remodelled.*

DESIGNS IN RURAL ARCHITECTURE—No. 22.

BY GEORGE E. HARNEY, ARCHITECT, COLD SPRING, N. Y.

THE accompanying sketches will convey a good idea of some alterations and additions made to an old house in this neighborhood, under our direction, during the past winter.

Though it is always an exceedingly interesting task, it is not always a very easy one, to make a new and comely house out of an old and ugly one; there are so many stubborn points to contend with—so much has to be undone before anything satisfactory can be done, and this was no exception to the rule. The house was very small, very ugly, and situated very close to the sidewalk; but the walls were in good condition, the foundations were solid, the partitions were right, and, for other good reasons, it was not deemed desirable to destroy it. Accordingly the work of remodeling was undertaken.

The results, which we here give, we have reason to believe to be quite satisfactory, and we place them before the reader as an answer to a number of inquiries which have lately been made of us on this subject.

The house, at the time of its purchase by the present proprietor, was a plain, two-story brick building, measuring twenty-two feet by twenty-four, with a narrow veranda extending along the front, and close to the sidewalk, as represented in fig. 112.

It had a hall five and a half feet wide, extending through from front to rear, with a door at each end, and in this hall was the staircase, which occupied so much space that there was barely room to pass around it. On the right was a room about fifteen feet square, and directly back of that were two other rooms, formerly used, we presume, as bedrooms, each about seven feet square. The kitchen was in the basement, and there were three cham-

bers on the second floor. (The original plan is shown by the darker lines in the engraving.)

The alterations were somewhat as follows: In order to throw the front as far away from the street as possible, the veranda was taken entirely away and its place supplied by a narrow balcony, opening from the rooms by French windows.

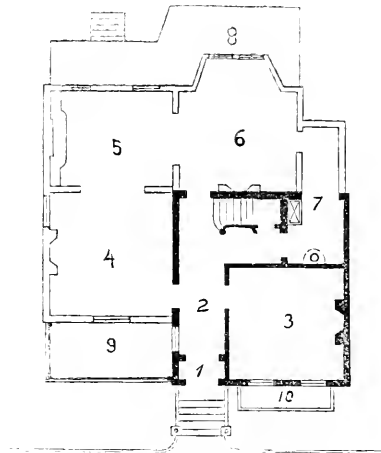


FIG. 114.—*Ground Plan.*

To carry out this idea still further, the entrance was recessed about three feet, so that the front doors were about thirteen feet from the fence.

The staircases were taken away and new ones put up, farther back, taking up the space before occupied by one of the little bedrooms, so that the hall was left free and clear of obstructions. These stairways were made winding, and the hall, extending through both the principal stories and the attic, was surmounted by a large skylight and ventilator, the whole height being about twenty-six feet.

The old roof was taken off and the walls

carried up about three feet higher, in order to get a large servants' room in the old part; and as the rooms of the old part were lower than was desirable in the new, the three tiers of rooms there made up a height equal to the two stories of the addition. A hipped roof, with a bracketed cornice, then covered the whole building.

Six rooms were added, three on each floor (see the lighter portions of the plan), and the whole accommodation of the house as it now stands is as follows:

1. The front door recess, opening into No. 2, the hall, which, with No. 3, the sitting-room, and a portion of the pantry, No. 7, make up the whole of the original house.

No. 4. Parlor, sixteen feet by twenty, connected by folding doors with the library, No. 5, ten feet by sixteen, which, in its turn, opens, by folding doors, into No. 6, the dining room, a pleasant apartment, sixteen feet by twenty. This dining-room also opens directly into the main hall, at the foot of the staircase. The parlor has a large French window in the front, opening directly out upon the veranda, No. 9, seen also in the engraving, fig. 113, and both library and dining-room open out upon a gallery, No. 8, which extends along the rear of the house.

The library is fitted up with stationary low bookcases, and the rooms have all open fire-places.

The pantry, No. 7, is seven feet wide by about fifteen feet long, and has shelves and cupboards for china, etc., a large dumb-

waiter from the kitchen, and a wash bowl with hot and cold water fixtures. The stairs to the kitchen are under the main flight, and are shut off from the principal hall. The kitchen occupies all of the basement of the old house except that portion taken up by the staircase, and is unusually large and complete in its arrangements for a house of this extent. It is about twenty feet wide and twenty-two feet long; it has one of Quimby's large ranges, with all the fixtures complete, including a sixty-gallon copper boiler and plumbing arrangements; a cast-iron sink, with slab and dripping boards; a dresser occupying the whole of one side; and, in a closet, a dumb-waiter rising to the pantry above.

Under the dining-room is a laundry, fitted up with three stationary wash trays, and a cast-iron wash sink; and under the parlor and library is the open cellar, which has a cemented floor and a plastered ceiling; two coal-bins and a wine-closet are here provided. In the chamber story there are four chambers, three of which have large closets, and the fourth a dressing-room attached. There is a bath-room on this floor, directly over the pantry.

The attic provides servants' rooms and an open garret.

Gas and hot and cold water are provided throughout, and the house is very satisfactorily heated by a furnace. The finish is plain throughout, but the workmanship is of good quality; the walls are all finished rough, and are tinted in a variety of shades, suited to the different uses of the rooms.



LAYERING ROSES.—Hybrid, perpetual, and other roses may be layered this month, or as soon as they have completed their first flowering. All works on roses or fruit trees give directions as to how the work should be done, and therefore we will not repeat. We will, however, say that earlier writers told us to make the cut on the under side—recent writers say cut on the up-

per side—while our experience has been to cut a sliver out entirely from the upper side, giving us success, and preventing any possibility of anything but new roots forming where the cut is made. Moss from the woods is the best material for mulching or covering the soil where the layer is made, but if that is not readily obtainable, fresh-mown grass is good.

FLAVOR OF PLANTS AS AFFECTED BY SOIL AND CULTURE.

ONE day, at table, I offered some radishes to a friend from the other side of the Atlantic, who refused them with the remark that he never ate radishes in this country. Now, my friend is a liberal man, although he is a Scotchman, and therefore I felt that it could not be altogether prejudice that influenced him, so the ready question rose to my lips—Why?

“Your summers are too hot and bright to grow good radishes,” was his answer. “Fight against it as you may, your radishes will elaborate in too great abundance their peculiar flavoring matter, and instead of being mild and delicate, will become hot and high flavored. At least, after having been in your country for more than a dozen years, and having tasted the best samples to be found on the tables of your hotels and in many private families, such has been the conclusion at which I have arrived. You can not equal Scotch oats or radishes.”

I suspect my Scotch friend is more than half right, and am inclined to believe we do not consider sufficiently the influence which climate and culture have upon the flavor and other qualities of our fruits and vegetables.

The vast differences produced by these agencies are well known to botanists. Thus the Turkey rhubarb when transplanted to England flourishes with a most luxuriant growth; but the peculiar constituent which confers its medicinal value upon rhubarb is not secreted in anything like the proportions in which it is produced in the East.

So, too, the plant which produces the famous hasheesh is believed by all botanists to be identical with our common hemp, and yet hasheesh is not produced in Europe. Even very narrow limits sometimes circumscribe a locality within which plants present marked differences from plants

grown outside of these boundaries. Thus Dr. Christison tells us that the poisonous hemlock loses nearly all its virulence when grown in the neighborhood of Edinburgh.

With these special facts before us, and in view of others of a more general nature which are better known, it is impossible to doubt the wondrous influence of soil and climate upon the flavor and chemical constitution of vegetable productions.

How far can art modify and change these influences?

We know that pine-apples grown under the murky skies of England by the aid of glass and artificial heat have a flavor fully equal to that of the native productions of the tropics. The Catawba grapes grown under glass in New England successfully rival clusters from the vine-clad banks of the Ohio; and if the profit would counter-balance the cost, we doubt not but hasheesh could be grown in England.

The great agents which influence the production of flavor and of those organic compounds which confer upon plants their chemical and medicinal peculiarities are light, heat, and moisture.

The general influence of light upon plants is too well known to require elaborate discussion. We all know that it is the light falling upon the tender leaves, and aiding by its chemical powers the vital forces of the plant, that builds up every vegetable structure. The leaves of the forest flutter in the breeze and drink in from the air the material of their growth; but the sun is the true alchemist, working wonders more strange than those of Geber and all his tribe, and converting this crude material into heart of oak to battle with ocean storms, or into costly and odoriferous woods to adorn the habitation of man. And in few countries does this magician exert greater power than in our own. He descends into the ateliers of our photog-

raphers, and their productions eclipse those of the world beside; we leave our peach-trees exposed to all the vicissitudes of a severe climate, and yet he confers upon their fruit a flavor equal to the highly nurtured trees of less favored countries. And when in our ignorance we build long rows of vineries and green-houses, and expose the plants therein to his unobstructed rays, we learn that while in England all the sunlight that is obtainable is scarcely too much, in our country we must carefully guard against giving him full sway.

Now the tendency of light is to heighten the flavor of all fruit borne by the plant upon which it acts, and further to promote the secretion of any essential oil which gives flavor to the plant itself. Take, for example, the plant in which all this is most commonly illustrated—celery. The flavor of the etiolated portion of a well-blanchéd plant of celery is exceedingly delicate, but I am not aware that it is owing to the presence of any substance different from that which gives flavor to the ranker leaves. Indeed, it is well known to cooks, that for flavoring soups, the tops of celery are quite as good and far more efficient than the blanchéd stalks. So, too, when turnip bulbs in a growing state are exposed to the light, their surface becomes green and leaf-like, and in this condition it is well known by stock feeders that they are exceedingly irritant to the digestive organs of cattle, and have frequently produced serious difficulty. All this is no doubt familiar to our readers, and I have collected these things, not as examples of "things not generally known," but as mere illustrations tending to place the best methods of practice in a clear light.

The agency of heat is not so well understood as that of light. It is yet a question how far heat may be substituted for light in the production of flavor. The results occasionally obtained under glass would lead us to believe that well-regulated heat can often affect the results usually obtained by the action of light. Of course, in or-

inary culture, heat and light are practically synonymous, as they are almost always coexistent; a hot summer is always a bright one.

Moisture, when accompanied with heat, always promotes a rapid development of cellular tissue. Now the rapid growth of cellular tissue does not necessarily imply a correspondingly rapid increase of the other constituents of the plant. Indeed, cellular tissue is often found to be largely developed under circumstances most unfavorable to general growth, as in the case of potatoes sprouting in a dark cellar. To enable a plant to make a healthy growth, light also is necessary.

Let us now consider what will be the effect of increasing or diminishing the action of any one of these agents.

We have seen that the great agents in the development of cellular tissue, that is to say size, are heat and moisture. This is well understood by the Lancashire goose-berry-growers, who "suckle" their gooseberries to make them attain enormous size. The process of "suckling" consists in supporting a saucer under each berry, the saucer being so far filled with water that about one fourth of the berry is covered. At the same time very rich soil and abundance of liquid manure are used, and the plants are somewhat shaded from the light to prevent the tissues of the fruit from hardening, and consequently ceasing to grow. In this way berries weighing nearly two ounces *avoirdupois* have been obtained. But such fruit is almost destitute of flavor; and although large prizes have been awarded to such berries, they can only be regarded as monstrosities.

On the other hand, we find that the highest-flavored grapes in the world are grown on dry and rocky hillsides, where the soil is scant and the growth of the plant comparatively slow. In such cases the berries are small, but the proportion of flavoring matter to the other components of the fruit is large.

The presence of light and heat produce

high flavor; heat and moisture produce large size with deficient flavor.

In the light of these facts and laws it will not be difficult so to regulate our practice as to attain a measurable degree of success in modifying soil and climate and securing such flavor as we desire. Do we require high flavor and abundant sweetness in our fruits? We must see that our soil is thoroughly drained and rendered open and porous. We must eschew all rank manures, and we will prune judiciously, that is, neither to weaken on the one hand, nor to force into luxuriance on the other. Our fruit will not then be of the monstrous size we sometimes see at fruit shows, but it will more than make up in quality what it lacks in quantity. It is true that some will always be found to prefer the large fruit, and so we presume some will always be found who prefer a Concord grape to a Delaware, and a Bartlett pear to a Seckel. There are men who prefer pork and beans to canvas-back ducks.

But in some of the productions of the garden, flavor may be too high, or, rather, perhaps we should say, too strong. Ever since the day our Scotch friend refused our radishes, we have adopted what Downing has well called "that practice founded on principle which has been most beneficially introduced into our horticulture"—*mulch-*

ing. A couple of inches of clean mulch (such as straw or coarse hay) not only blanches the upper portion of the stem, but keeps the ground constantly moist, open, and porous. Moreover, the leaf-stems are etiolated, and the whole plant forced into delicate succulence.

The operation should be performed at the time the plants begin to swell. If performed earlier, they are apt to draw up and become spindling; if deferred too long, the required effect is not produced. Others, however, besides my Scotch friend, have objected to radishes as ordinarily grown. That close observer and skillful gardener, McMahon, in his "American Gardener's Calendar," directs us to be very careful about our radishes, and recommends very frequent waterings, lest the plants should "grow hot and sticky." Moreover, he tells us "a thin sprinkling of radish-seed may be sown among other general crops, which will grow freely, and being detached will form large, crisp roots." The "general crops" prevented the free access of light, and served the same purpose as our mulching.

Other applications of this principle will occur to the reader, and although he, no doubt, *knew* it all before, perhaps we have not lost our time if we have succeeded in causing him to think of it. VITICOLA.

NOTES ON THE MAY NUMBER.

POPULAR EVERGREEN TREES, *Continued*.—As I said in my notes of April, this is a timely article, and shows that the editors and publishers of the HORTICULTURIST intend and do keep up with the wants of the people and the labors of the season.

The Lawson Cypress is certainly one of our most beautiful evergreens of recent introduction, but I may be excused if I suggest to planters the policy of screening it from the south and west suns during winter, at least until the plants become well

grown and established. While we concede to the Norway Spruce beauty and grandeur, let us, as you here hint, remember that however popular it may be, it nevertheless is not so well suited to small grounds as our American Spruces. I am glad to see you give due credit to our common but beautiful yet neglected Hemlock. Some call it a slow grower, but such assertions only show the caller one who knows nothing of its culture. Had we to seek trees of it from China or Japan, there is not an

evergreen in the whole collection that would be as much prized; but we shall learn after a time, in arboriculture, that the United States produces much of material unsurpassed if equaled by any other nation.

THE ARTIFICIAL FOUNTAIN.—The writer says, "How strong and ever present are the laws of association!" and thus prefers the bubbling brook which tinkles night and day to the ear, in preference to the sweeping expanse of lake or river, with its clouds of white sails or curling eddies of vapor as they show the position of vessels or steamers floating on in grandeur or in graceful beauty.

Fortunate indeed is he who can hear the bubbling stream of pure water in connection with the spread of waters and the passing life thereon; but if but one, give me the broad expanse into whose liquid element the sun nightly passes from view amid a gorgeous golden sheen of yellow gold and crimson. The dell and rivulet are all right in a midsummer day at noon, but the broad waters are a constant scene of beauty, grand in storm, soothing in midday, and hallowing at evening. But the writer and I will agree in the beauty and enjoyment obtainable from a fountain, and especially from a weeping or trickling one, rather than a bold jet, and more especially as applicable to conservatories. In the open grounds few places have space or extent sufficient to warrant the introduction of water, except as it may be to come through and over some little rock-work or group of wild plants, in an apparently neglected corner, not brought out prominently to the eye, and detracting rather than adding to the dignity or character of the grounds. Wall fountains, as the writer says, are admissible in close contiguity to buildings; but as he did not, I will, censure the basins of mason work, with a little half-inch jet in center, as utterly inadmissible, and making just what this writer censures, viz., the water a secondary effort to the masonry. Where the flow of water is from a griffin's head, a lion's mouth, etc., and the basin

merely a receptacle for it, all right; but away with circular stone fountains and little jets so small that one has need of spectacles to see them!

PROPAGATION OF PLANTS.—Mr. Fuller is perfectly at home in this article, and what he writes may be counted on as the record of practice, and a safe guide for all who choose to follow.

DESIGN FOR DWELLING-HOUSE, ITALIAN STYLE.—I like this all through; there is a continuity and character in the design that is pleasing to the eye, depicting comfort and taste, with no straining or intermingling of orders. The only objection I should make were I building, would be that there is too little ground covered, an objection easily remedied, as the style will readily admit of more expanse. Of the many good designs published in the *HORTICULTURIST*, this certainly is one of the best.

THE ART OF INCREASING PLANTS BY CUTTINGS.—An extremely valuable article; but why did you not adopt the practice of one of your competitors by saying "*adapted*" from the *Floral World*, and thus try to make your readers imagine you knew more than the author whose actual words only were used?

DUCHESS OF OLDENBURGH APPLE.—I am glad to see Mr. Barry out so plainly in remarks on this and others of our apples, which, although of not the highest rank in quality as table fruits, nevertheless meet the wants of an immense territory and people who must and will have fruits, and who, if the best can not be grown, adapt themselves to their location and enjoy a Duchess of Oldenburgh, grown in their own grounds, just as much as Mr. Barry would an Early Joe or Garden Royal. It is singular that a recent work on Apples alone, should ignore the identity of Borovitsky and Duchess of Oldenburgh, but so it is.

A FEW OF THE MOST EFFECTIVE FLOWERING BEDDERS.—To those who were bedding out and sought new things as well as old, this must have been a valuable record,

and I only want to add, that when this reaches your readers there will yet be time for planting out of Geraniums, Lantanas, etc., to make gay the autumn. Where there is room, no plant gives more of show than the Lantana, and I plant freely of it in its different varieties.

ELMS AND MAPLES.—My good friend Hicks thinks English Elm not a true, but indefinite name, because some people in speaking of it mean the Cork-Bark. All are English Elms, and when speaking in general terms of them, the name I think is correct, as showing the distinction between them and our American Elm. They are all Elms—one species a native of Europe and one of America, and unless we particularize, the term is all right; but, again, the term English Elm will, I think, hold good over the country as conveying to the mind the variety (*Ulmus campestris*).

I must differ with friend Hicks in his values of comparisons of the Maple; and while I concede the Silver-Leaf Maple a more rapid grower than the Red-flowering, I can not allow that it is as perfect a tree, and I must claim that it is frequently liable

to break away in its branches and thus spoil its symmetry; and again, my experience has not been favorable to the Norway Maple for dry soil.

GROUPING.—In advocating shelter by means of masses and belts of Evergreens, all will agree with the writer, that its benefits are as yet but little understood or appreciated by our fruit-growing people. We need shelter, especially to our small and high-flavored fruits, and so also to many varieties of pears and cherries; while whoever grows peaches knows full well the benefit of just a little protection from harsh, cold winds. In advising the Norway Spruce and Hemlock for main belts, doubtless the writer is correct, but among the smaller Evergreens for the protection of our strawberries, raspberries, etc., we have the Savin and many varieties of the Juniper, and last, not least, our hardy Kalmias and Rhododendrons, which are just as easily grown as any other class of shrubs. I saw, a few days since, a little piece of hedge made with Irish Juniper, that for neatness and effect can not be surpassed.

REUBEN.

HAVE WE ANY BOTANISTS AMONG US?

IN looking over the last Report of the Department of Agriculture, nothing was so encouraging as the progress in scientific *phraseology* visible over the entire volume. Whether the information itself is reliable, it is not now my purpose to inquire. On the regular staff of the department there is a chemist and entomologist, but we see no record of a botanist. Is botanical science, then, of third-rate importance toward the development of the agricultural resources of this wide continent?

The chemist, however, does up the botanical matter in addition to his chemical labors, for we have a chapter on the "Grape Disease in Europe." He states that the literature of the grape disease is

meager, and enumerates several sources from which he has collected material, but we fear he has not been very assiduous in his search; we could point him to many much more prolific sources of information.

The deductions respecting the probable identity of several distinct forms of parasitic fungi may do very well coming from an amateur in botany, but they will appear absurd to those who give some attention to the study of cryptogamic plants. In three separate parts of the Report the subject of fungi is treated with the same absence of scientific knowledge. Can no botanist be found to contribute to the Report?

R. R. S.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

CHESTERTOWN, KENT CO., MD., *June 11, 1867.*

MESSRS. EDITORS: We have been having a very cold, backward spring, and everything in the garden is behind its season. Speak a good word for McLean's Little Gem Pea; we have been eating it now several days, and I find it the most delicious pea I ever tasted. The vines are about fourteen inches high, and are a complete mass of peas, which in flavor are fully equal to the Champion of England, and without the tough skin of that variety. Keyes' Early Prolific Tomato, from seed received from Hovey & Co., promises well. The vines are remarkably stocky and vigorous, and seem to form a stout, low bush rather than vine; leaves as broad as one's hand; no fruit ripe yet, but well set with large clusters. The Dwarf Erfurt Cauliflower promises exceedingly well. Strawberries nearly done; Agriculturist and Russell's Prolific ahead of anything tried.

The peach crop is the staple in this section, and the prospect is good for a fair, though not large crop. One gentleman in this county sold last year over \$30,000 worth of peaches from six thousand trees, at a profit of \$27,000. Many persons have orchards of from ten to twenty thousand trees, and several of thirty thousand; also one or two eighty thousand. More peach trees have been planted this spring than for some years. One nursery agent informs me that he sold \$11,000 worth of peach-trees alone in this county, and he is but one of many. Grapes and pears are being largely planted.

We have a fine soil and good climate, and ought to be able to compete with any

section. Some time, when business presses less, I may write you more from this section, as the Eastern Shore of Maryland seems to be almost a *terra incognita* at the North. Yours, etc., W. F. MASSEY.

ALVORD'S HYBRID MELON.—We are indebted to Mr. D. W. Alvord, Greenfield, Mass., for seeds of his new Hybrid Melon, a cross, as he writes, of the White Japan and Long Persian, made in 1863. The seeds were handed our amateur friend, who, in acknowledging their receipt, says, "The season has been so wet and cold, that up to this time, June 4th, I have been unable to plant successfully any melons, etc. Some seeds of well-known old sorts that I did plant have rotted, and I am glad I kept back my choice kinds for experiment, or trial, rather."

THE ad-interim Committee of the Illinois State Horticultural Society will hold a meeting at the house of W. C. Flagg, Esq., Alton, Ill., August 1, for the purpose of examining peaches. We shall feel obliged for notes of the observations then and there made, and hope some of our friends will remember us.

THE Green and Black Aphis, often abundant on the end of young shoots, may be easily destroyed by dipping them in a strong solution of tobacco and water.

PERPETUAL ROSES should be mulched during the midsummer months if possible. New-mown grass is one of the best materials we have ever used. In September remove it, and stir well the soil.

TRIMMING HEDGES.—Early in this month it is desirable to cut in, a second time, hedges formed of Osage Orange or other deciduous plants. The cutting or shortening of the shoots serves to cause the remaining buds to break again and throw out side shoots, thickening up the hedge more than if left until next spring, when the cutting would only be a stimulus to the last or leading bud left.

SUMMER ROOT PRUNING.—A correspondent says "he has a large pear tree on pear roots standing in deep, loamy clay soil, and that while it grows freely, it does not set any fruit," and "asks about root pruning it, how and when."

With Mr. Rivers, whose valuable little work on pears should be in every one's possession, we think there is very much yet to be known about root pruning, and perhaps the advice we now give would not be sustained were we to see the tree. But as it is, we shall recommend that as soon as the terminal buds of this season's growth have formed or are forming, a trench be dug around the tree, two thirds in circumference the diameter of the branches. Dig down deep, so deep that you can, by opening a trench toward the body of the tree, get in a position to cut the tap root off about eighteen inches under ground, then with a sharp knife trim each end of the roots around the inner side of the trench, and again fill in the soil. Make sure that no strong lateral roots or duplicate tap roots are left uncut.

BROCCOLI and cauliflower can be grown almost as easily as cabbage. Dig the ground deep and supply it freely with well-rotted manure, and keep setting out young plants all along until early in August. The heads will come in freely and to your taste for the table, same as peas, along in order.

FOLIAGE IN TREES or plants bearing fruit we believe to be quite as great an

item in detecting and deciding varieties as any item connected with the science of pomology. Looking over our currants a few

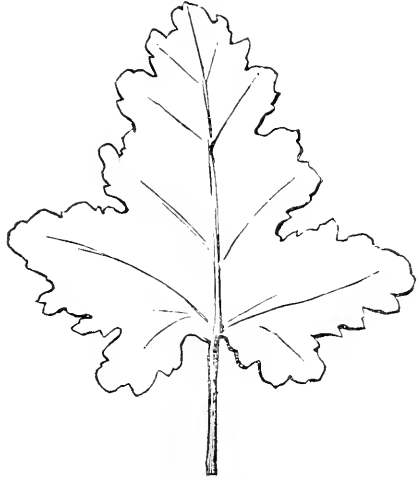


FIG. 115.—Leaf of Cherry Currant.

days since when pointing this item out to one of our young friends in horticultural studies, he at once drew our notice to the peculiar shades of color in the foliage as

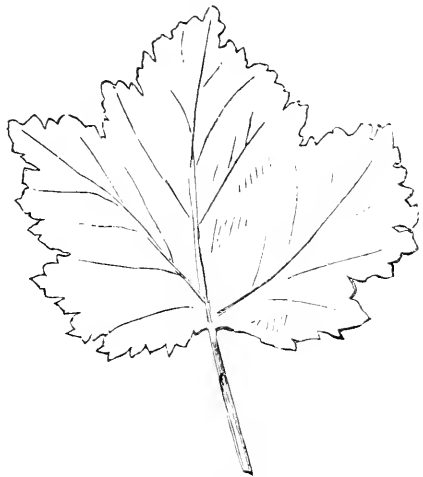


FIG. 116.—Leaf of Red Dutch Currant.

well as the form of leaf of the currants, and at his request we have roughly drawn out these two, Cherry and Red Dutch.

EARLY PEAS.—Last year our experience with early peas was given in favor of Carter's First Crop. This year again we planted Carter's First Crop, McLean's Advancer, and Tom Thumb, all the same day, and covered them all the same depth. As we write, Carter has bloomed and is setting its pods, while the other two are just commencing to bloom.

THE SLUG on cherry and pear trees may be easily destroyed by simply dusting over with fine slaked lime or dry dust. Where cultivation is pursued and the ground kept light and loose, a tin cup tied to the end of a stick, by which the dust can be scooped up and scattered over the tree, is a rapid and easy way of doing the work.

SUCKERS around the crowns of apple and other fruit trees can now be removed, with little prospect of their ever again sprouting. If removed in early spring, the buds remaining start and grow again, rather increasing than lessening the difficulty; but at this time, just as the lengthening growth is closed, nearly all the vitality is laid up in the leaves and stem, and if removed now, no further trouble will be likely to occur from their sprouting.

PAXTON'S STRAWBERRY CRINOLINE made of wire, in circular form, and supported by bending three ends of the wire down as legs or standards of support, and leaving the center open for the plant to exhibit itself, we have seen used in one or two instances, and with success, but for any but amateur gardeners or those preparing new sorts for exhibition, we do not think it will ever come into use.

PELARGONIUMS should be struck from cuttings this month, to produce the best blooming plant for next spring. Old plants should be headed in, but be careful not to cut too close, as often plants are thus destroyed. Keep the old plants rather dry for two or three weeks after heading

in. The cuttings, if planted in a half-spent hot-bed, will root readily and freely; and if each cutting is inserted in a very small pot, and the whole of it plunged, giving to the pot good free drainage, it will afterward be little work to re-pot. As the plants grow, they should be occasionally stopped in, to make them form bushes rather than single stems.

SWEEDISH and other upright junipers that occasionally become too open, may be induced to grow more compact by winding them up with a fine wire at this season of the year, so that as the branches and stems harden and mature, they will more readily retain the upright habit.

VERBENAS to cause continuous flowering should never be permitted to seed. As soon as a bloom begins to fade, pick it off, pinching the shoot back two buds from the flower.

KNOWLEDGE in fruit culture, as in other matters, we do not think is all in the Old Country; and although we frequently make quotations from works there published, occasionally we come across a writer admitted into their journals without comments, whose teachings belie the practice of older men so much that we wonder at its admission. However, it is done perhaps as a Western writer once told us he wrote, viz., for the purpose of drawing others out. In a recent number of the *Cottage Gardener*, a writer asserts, that to get pears early, they must be grown on quince stock, ignoring the root pruning which may be practiced on pear stocks, as well as the fact of some varieties fruiting early, no matter on what stock they are grown.

EAST BETHLEHEM, PENN., June 10, 1867.

MESSRS. WOODWARD: In response to your request for notes on the ripening of strawberries, I cheerfully give a few for this section. The season being backward, the fruit is ripening a week later than

usual; yet it has been peculiarly favorable for the production of this delicious fruit almost to perfection. Copious showers of rain every few days have caused the fruit, generally, to grow to an enormous size. The yield will be large, the flowers of most varieties having miraculously escaped the effects of severe frosts.

The following account of ripening, etc., I give only for this section: The first to ripen was a variety I received under the name of "Philadelphia Scarlet;" ripened June 6th, bears well, but is purely pistillate, and on that account is not worth cultivating. Next to this, and three days later, came "Wilson's Albany" and "Knox's 700;" of the merits of the former I need not speak—they are all well known. I will only say that it is a wonderful bearer of beautiful berries with entirely too much acidity. "Knox's 700;" ah! here is the prince among strawberries. If it succeeds with you and elsewhere as it does here, then I may safely say *perfection* is reached. Such berries it were a pleasure to look upon—much greater to feast upon. If I could have but one variety for market or for family use, "700" would stand far, far in advance of all others within my knowledge for these purposes. The fruit

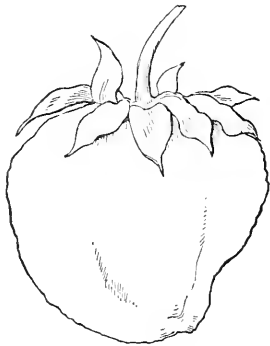


FIG. 117.

is enormously large, and the plant wonderfully productive. Fruit is very solid, and is the richest and most highly flavored of any strawberry I ever tast-

ed. The large number of monster berries to the plant appears to be one of the most prominent features of the variety. Advise every friend and reader of



FIG. 118.

the HORTICULTURIST to plant a few. If they succeed, they will soon neglect or discard all others. That Jucunda is not 700, and 700 not Jucunda, is a settled fact here.

Triomphe de Gand is now ripening its second crop of flowers. It blooms too early for us. Frost always takes the first crop. The fruit is very fine.

Agriculturist will be ripe in one or two days. From present appearances this variety is going to give a good account of itself. Plant not very vigorous; fruit stalk very short; a good bearer of very large, handsome, and uniform berries.

Russell will not rank high here. Is purely a pistillate variety, but easily fruited. Not more than half as prolific as Wilson's Albany, and at least eight days later.

I have seen and tasted the fruit of many other varieties, but for good points in every respect give me "Knox's 700." I can not commend it too highly.

I have sketched one of "Knox's 700" berries (fig. 117), about the average size, and I assure you it is correct. They are generally wedge-shaped or conical, never round. Fig. 118 is the shape of many of the conical ones.

Very truly yours,

JOHN H. JENKINS.

THE SQUASH BUG.—We wish to remind our friends who are growing squashes, and are troubled with the bug destroying the vines, that we have been for two years successful in keeping their injury within decent bounds by simply covering the vines with earth up to near the first flowers.

NURSERY TREES, with the buds of last year's setting now grown one or more feet, should have the old wood above the junction cut of the bed cleanly away, in order to have it heal over with new bark by the close of the season.

RIPE PEACHES.—A correspondent writes us from Cleveland, O., giving an account of the ripening of peaches on the 23d May, in the fruit-house of W. J. Gordon, Esq. Mr. Gordon is, and has been, absent traveling in Europe the last year, but his gardener, Mr. Harding, is perhaps one of the most skillful and experienced in the United States, and it is to his knowledge that, so far as we know, the first crop of orchard-house peaches ripe in May, have been grown in any of our Western cities.

GRAPEVINES which have been permitted to set all their fruit freely and to grow without care, may be now gone over, and the error of neglect in a measure remedied. If three bunches have got on a cane, pinch that cane back to three or four leaves from the last bunch; then act your good common-sense judgment as to which of the three bunches promises the least results, and with your vine scissors cut it away. Stop the laterals now, except upon the canes you design for next year's fruiting, by pinching them off as far back as can be done by the nails of your thumb and finger meeting; don't break and tear them away, or use a knife, but the tender, immature wood which your thumb and finger will remove by pinching will prove a benefit to the vine, while cutting and slashing will create injury. If you want really nice bunches, and even, well-ma-

tured fruit for your own table or market, we believe you will gain even on a large scale by now thinning out the small and surplus berries on each bunch by means of vine scissors. In small grounds there is no doubt of the value of this practice for the table, and we incline to a belief that the same practice will pay in market by the extra price obtained for the grapes.

GLASS tinted green, for hot or green houses in summer, we should like to hear if it has ever been used in this country, and what were the results. We have so many rainy days, so many days of cold, raw winds, that we favor of more in-door gardening, summer and winter, than has heretofore been practiced, and incline to the belief that an extra sash tinted green will supply a better shade, and yet give sufficient light, than the usual course of awnings.

GREEN TURF FOR CAMELIAS.—In the *Cottage Gardener* additional testimony is given in favor of fresh turf for camellias. The writer says he places it on the flue and dries it just sufficiently to kill insects, but not to dry or char the soil.

SALSIFY, OR OYSTER PLANT.—Among vegetables of the kitchen garden, few know the value of the Salsify, or Oyster Plant. It is too late to sow it now; but those who have beds of it should remember that if the plants stand too thickly, they will be small, and only fit to pull the tops from next spring as early greens; but if well thinned out, and the ground kept loose, the roots furnish a dish for the table in late winter that is unequaled by any root crop.

LILIUM HEMATOCHROMUM (*Hybridum*) is described "as a remarkable hybrid from Japan, of a stately habit, and with immense flowers of a somber chocolate color, deepening occasionally to black, or brightening to blood red."

COLEUS GIBSONII was sent home by Mr. John G. Veitch from New Caledonia, where it was discovered growing in vast quantities, its highly colored foliage forming a most striking feature. It is one of the results of the tour made by him in the South Pacific, which we have only to regret, in the cause of science and floriculture, was not more prolonged, and for various causes could not be as effective as he had himself wished or hoped it would be. Sufficient, however, has been done to entitle him to the gratitude of all lovers of plants, and perhaps to encourage some one to ransack those islands for their treasures.

In habit, *C. Gibsonii* is quite equal to *C. Verschaffeltii*, being dwarf and very bushy; the leaves are large, often exceeding five inches in length, and are of a light green color, distinctly veined and blotched with dark crimson purple. Mr. Veitch says of it, "that it is a most ornamental plant for pot culture, and can be recommended as an excellent companion to the other varieties for summer flower garden decoration, where, from its novel and distinct coloring, it can not fail to prove an acquisition.

If persons expect from it so brilliant an effect as from *C. Verschaffeltii*, of course they must needs be disappointed; but if they are contented that it shall occupy a place of interest in the many-colored parterre, they will find it suitable, and we think, moreover, that it will form an excellent plant for table decoration.—*Floral Magazine*.

ALTON (ILL.) HORTICULTURAL SOCIETY.—This Society embraces some of the most intelligent fruit and plant growers of the Western States, whose observation extends over a country rich in fruits of all kinds and soils of almost every description. We read their transactions with pleasure, and here and hereafter propose to extract more or less from them. In reporting on the hardihood of varieties of the peach to

withstand frost without injury to the bud, the Large Early York was first, Oldmixon free next among the white-fleshed sorts, while of the yellow-fleshed varieties the old red-cheeked Melocoton and Smock were the winners.

In remarks on cultivation of orchards, Mr. W. C. Flagg said that a healthful growth was necessary to insure good fruit, but that no cultivation should be given after July, as late cultivation induced late growths and rendered the trees less hardy and capable of enduring the extreme changes of temperature in winter. He objected to planting potatoes in orchards, on account of the late stirring of the soil.

CINCINNATI HORTICULTURAL SOCIETY.—This old-established, and once, Western Society, we notice, continues to hold its regular weekly meetings. At the meeting May 18, Mr. Williams said he had destroyed numbers of curculio on the 4th instant.

Hooper's Seedling Strawberry was exhibited by Mr. Jackson, it being a variety imported from France last autumn—flowers pistillate, fruit large, good flavor.

EVERGREENS, that it is desired to keep down to a certain height or to make a close, symmetrical head, should be clipped as soon as they have made their terminal buds of this season, and before the wood is well ripened.

ARTIFICIAL GUANO.—Dr. Valentine, of Richmond, Va., gives the following receipt for making artificial guano: No. 1, dry peat,* 20 bushels; No. 2, wood ashes, 3 bushels; No. 3, fine bone dust, 3 bushels; No. 4, calcined plaster, 3 bushels; No. 5, nitrate of soda, 40 pounds; No. 6, sal. ammoniac, 22 pounds; No. 7, carb. ammonia, 11 pounds; No. 8, sulph. sodae, 20 pounds; No. 9, sulph. magnesia, 10 pounds; No. 10, common salt, 10 pounds.

* If peat can not be obtained, use garden mold or clean virgin soil instead.

SEEDS of many of our hardy shrubs, if gathered as soon as ripened, and sown in light, sandy loam or leaf-mold, in a cold frame slightly protected by means of an old strip of cloth, can be grown into plants of from six to eighteen inches this season, and suitable for planting out in nursery-rows or hedges next spring.

CATTLEYSAS.—Tropical plants, it is supposed, must have tropical heat to grow them finely, and hence many who have green, not hot, houses have avoided orchids and other tropical plants. A writer in the *Florist* says, that “the Cattleyas grow and thrive beautifully in cool houses,” hence they can be readily grown in any ordinary green-house.”

THE DODECATHÉON.—We must call the attention of our amateur florists to the Dodecathéon as one of the most beautiful flowering plants in the month of May with which we are acquainted. The leaves of the plant die away soon after flowering, when it may be removed and transplanted. A moist, cool, and light loamy soil suits it best; but if shaded during the heat of summer by foliage of other plants it may be grown in any good garden loam.

TO PROTECT YOUNG TREES AGAINST MICE.—A correspondent of the *Country Gentleman* says he protects young trees from mice in the following manner:

“Every farmer has plenty of old tins—such as boilers, tin pails, tin pans, etc.,—which can be put to most excellent use. I take a large pair of shears and cut the old tin into strips in the shape of a parallelogram—the shorter side equal to the circumference of the young trees; the longer the other side is the better. I then bend the tin so cut around the young tree near the root, and my word for it, no mice will excoriate the trees so treated.”

SORGHUM BAGASSE, as a mulch, says a correspondent of the *Country Gentleman*, induces a disease in the leaves like small

blisters. He says his experience covers two years, and he thinks bagasse should be used with caution about pear-trees. We confess we can see no good reason for this, and can hardly believe the acid of a fruit fermentation or change of bagasse to vegetable loam can be the cause. We wish this experimenter had tried mulching with other materials at the same time, and given the comparative values and results; meantime we give this record, and shall be pleased to hear from any of our subscribers who have tried bagasse as a mulch.

CHRYSANTHEMUMS should be, from time to time, looked over and topped in to make them form bushy, rather than tall straggling plants. There is no plant which will give as much satisfaction late in autumn or early winter as the Chrysanthemum, and we must remember that in September we are to pot off a number of them for our indoor enjoyment.

PINCHING in of currant and gooseberry bushes is equally applicable as to the pear or grape. In our June number we noticed the requisites, and although many trees may, ere this, meet the reader's eye, be passed the growth for the most successful operations, there are others that will yet need attention. At the same time, gooseberries and currants can now be stopped in profitably.

TRANSPLANTING RASPBERRIES AND BLACKBERRIES.—For the past two years we have annually planted out Raspberry and Blackberry plants in this month, July. We prepare our ground, and then go to the rows from which to remove the plants, having a tub or pail with a little muddy water in it, dig our plants, they being the half-grown ones of this year, pinch off the ends about two inches, set the roots into our pail of muddy water, and from that to their permanent position. We do not often lose a plant, and next season we get a fair crop of fruit.

DRAINING.—There is, undoubtedly, an advantage gained from perfect drainage in all soils, but those of a close, retentive character are the most benefited. Where the land is rolling, and surface-draining can be easily had, the necessity for under-draining is not so great as where the land lays nearly level. In our experience with trees, raspberries, etc, however, we have found surface-draining during winter and spring essential, even on the best of under-drained ground. This we do by plowing or earthing up ridges toward our trees and plants, and we do not plow them down again until near the month of June, or not until all prospect of heavy spring rains are over. Many persons desire to drain, but under the impression that tile is requisite; and as tile costs more than they feel able to expend, the work of improvement is postponed from year to year. For many years we have laid more or less yearly of drains, and have tried many materials, using tile, stones, both flat and round, brush, and bricks; and while all have worked well, we are strongly disposed to favor brush drains, and especially where the land is quite level or in any way of a mucky nature, or where quicksand is reached in the deepening of the ditch for the laying of material. We have found a deep drain, with brush laid in, always with the butts of the brush resting on the bottom, even if there is but a slight fall for the water to run off, to prove more satisfactory than one of tile. The flow of water over the whole surface of the ground, even though it rest there twenty-four hours in spring, we have found no injury, but rather a benefit. Grapes, strawberries, raspberries, etc., we have had flooded in open spells of weather in winter and again in early spring, and while some of our friends have regarded the plants as lost, we have lost none, but rather have gained in vigor of growth afterward. Our object in writing this is, that during this and the coming two months, time can almost always be found for putting in

more or less of drains, and while many men may not have command of tile, nearly all can obtain brush from the forest for the hauling. Open ditches for taking the water from the under-drains are not as objectionable as some writers would have us believe. If they are made wide, say six or seven feet at top, and the sides sloped evenly, then sown with grass-seed so as to hold them firmly, they can easily be mown, and so kept clean and free; and if trees are planted along on the bank each side at appropriate distances, no ground need be lost. In making brush drains, trample the brush firm before filling on the soil, and at the outlets secure three or four feet with stones.

HIPPOPIAE RHAMNOIDES.—This shrub, common on the south shores of Lake Erie, is highly praised by a correspondent of the *Gardener's Chronicle*. He speaks of it as having, when in fruit, "spikes of berries six to nine inches in length, the berries of a primrose color underneath and rose color next the sun, oval in shape and about the size of holly berries." We have often advised our amateur friends to plant this shrub, because of the silvery character to the underside of the leaves, making it one of the most ornamental agents in forming a shrubbery. It is perfectly hardy, and easily transplanted.

WANTED—A HORTICULTURAL SOCIETY.—Under the above heading the June number of the *Agriculturist* makes some very just comments upon the fact of New York city, the great emporium to and from which nearly all items of progress flow, having no horticultural society or association of accredited repute over the country. While we write and issue our journal mainly for the country, and give record of societies in different sections, we confess we have often deeply regretted that New York had not a society where from time to time fruits and flowers could be shown and reported upon without any undue influence

except the actual merits of the plants or fruits. We also wish we had such an association where we could take our friends from East and West as they visit us, and by their comments learn many an item of horticultural knowledge. With the abundance of horticultural knowledge now acknowledged as in and around our city, there is no reason why we should not equal if not surpass every other society, and we are ready at any time to give our aid so far as possible toward the formation of an association.

FRUITS FOR MARKET.—Around and in New York and Philadelphia, fruits for market are prepared, and put up neatly and in small packages; but one of our correspondents from the West writes us respecting the general practice there with dealers, which he denounces, and describes as destructive to the beauty and quality of the fruit. He says: "The retailers, as a rule, shovel the berries from one of their half-bushel draws, sometimes with a wooden spatula, and sometimes by dipping in the tin measure and scooping them up, mashing and bruising them out of all shape and comeliness." We can only utter our protest against such procedure, and advise all fruit men to make it a point, if possible, with their factor, that the fruit shall be handled in a way to keep its form and beauty. The small basket or box manner, selling box or basket with the fruit, is the best way; then having the same returned in good order and a certain sum repaid.

FINE PEARS.—*Messrs. Editors:* I was somewhat surprised recently, on reading the *American Journal of Horticulture*, to find the "Edgewood farmer," a man who writes freely, if not always correctly, assert that our finer pears can not be grown with the same facility and success as the coarser and less high-flavored sorts. Without a word as to such doctrine being consonant with the *Journal* in which it appears, for

the editor has not even a comment, or even a word, as to its intuitive teachings backward, I will simply say that, in my experience with over five hundred different varieties of pears, and covering over twenty years of practice, the statement has no foundation in fact. I have grown Seckels in poor soil and without cultivation, as high flavored as any ever grown by the best pomologists. I have grown Jalousie de Fontenay, Buerre d'Anjou, Buerre Superfin, Buerre Gris, Madelaine, Rostiezer, and many other sorts under high cultivation, on quince, and the same season on pear roots, and have had equally as fine-flavored fruits on one as the other. There are some men who write well, but all do not practice, and few have really thoughts connected with horticulture beyond the dollar-and-cent view. If the *Journal of Horticulture* can not advance any better views in pomology than this writer has given, it should, not have countenance of any fruit-grower. Yours, HENRY F.

HARDY AZALEAS.—Few know the beauty of Azaleas except as they have occasionally seen them in a green-house or conservatory; once in a while we meet a man who remembers in early youth the beautiful flowers of his New England rocky dells, where and from which he gathered and eat as a boy excrescences under the name of Swamp Apples. Recently we visited a gentleman, originally from Connecticut, but now a resident in one of our Western States, where we saw a collection of Azaleas that, although not rivaling New England dells in numbers, yet excelled them all in beauty, because of the great variety of shades in color, from a light pink, almost white, to a rich red, and from a straw color to the deep yellow of *pontica*, all hardy, all growing in open ground and in no other than good light loamy garden soil. It is one of the most beautiful shrubs we have, and we hope our notice will draw attention of planters to its more general introduction.

MILDEW ON PEAS.—The London *Gardener's Magazine* says that peas can be grown free from mildew even in the hot dry weather of summer, provided trenches be made two feet deep, then a layer of manure, filled up and sown.

BOOK NOTICES.

RURAL STUDIES. By Donald G. Mitchell. New York: C. Scribner & Co., Publishers. Price \$1 75.

We have received a copy of the above book from the author. It is written in his usual pleasing style, and gives many useful hints to those contemplating a residence in the country. Some of the articles contained in the work were written for and have appeared in the *HORTICULTURIST* from time to time. Our readers will be glad to welcome them in a collected form, together with much other matter that we believe has not before appeared in print.

APPLETON'S HAND-BOOK OF NORTHERN TRAVEL; being a guide through the Eastern, Northern, and Western States and Territories, with descriptive sketches of the principal cities and towns, and objects of interest and importance.

ANNUAL REPORT OF THE CHAMBER OF COMMERCE, NEW YORK, being a record of their proceedings for the year 1866, and containing much useful statistical information.

THE SMALL FRUIT CULTURIST. By Andrew S. Fuller. New York: Orange Judd & Co., Publishers.

To the readers of the *HORTICULTURIST* Mr. Fuller is well known, and in the language of one of our Western journals, it is also well known that "he writes every word from a practical knowledge of his subject." In this book we have just what we have long been wanting, a plain record of instruction in relation not only to the

cultivation of small fruits, but also as to the varieties, and a record nowhere else obtainable, because all in advance of other books and up with the times. The bold sifting of varieties of the currant and raspberry show the writer working from a daily observation and culture, not from office knowledge.

AMERICAN POMOLOGY—APPLES. By Dr. John A. Warder. New York: Orange Judd & Co., Publishers. Price, \$3.

The country West and East know Dr. John A. Warder, and also that for many years he has made fruits his particular study. In this work he has given us Apples only, and has performed a laborious task in a very superior manner, and made up a classification new to our fruit men, and which to pomologists may prove valuable. We have but one regret to make in his work, and that is the leaving out of synonyms or local names; but as the work swelled to over 700 pages, it perhaps was not possible to incorporate them and keep within bounds which the publisher must respect or lose money. The Apple is the great first fruit of our country, and every farmer grows them, however much he may think "pears for his heirs," or strawberries too small an affair for his time. Therefore the author has done wisely in taking for his commencement of American Pomology that fruit which is part and parcel of every household, and we trust the sale will be such as to induce him to continue in the work of well-doing, and hereafter give us pears, cherries, etc., etc.

(From the "Working Farmer," by S. Edwards Todd, revisory editor of "Bridgeman's Am. Gardener's Ass't.")

WOODWARD'S RECORD OF HORTICULTURE. By A. S. Fuller. New York: Geo. E. & F. W. Woodward.

Twenty years ago, almost every religious society in the country was required to purchase new singing books almost every winter, "in order to keep up with the improvements of the age." Well, what pro-

gress did singers or composers make? In the first edition they had the good old stand-by tunes—Old Hundred, Mear, Wind, and Wells. In the next, appeared Wells, Mear, Windham, and Old Hundred. And the only improvement was that Old Hundred was written, first in the key of A, and then in the key of G. This is exactly the case with "Fuller's Record of Horticulture." There is nothing strictly horticultural that has not been published over and over again in the *Working Farmer* for the past ten years.

S. E. T.

[That is it; buy the "Record," and you will not need the last ten volumes of the *Working Farmer*, and so far as horticulture is concerned, the next ten either.]

RECORD OF HORTICULTURE AND "INDEPENDENT" CRITICISM.—Messrs. Woodward, of the HORTICULTURIST, have put out a neat volume of 125 pages (price \$1 00), called the RECORD OF HORTICULTURE. The editor is Mr. A. S. Fuller, who gives his notes on horticultural progress, reviews books, and contributes several valuable articles. The book is strongly individual, and as Mr. Fuller is a known enemy to all shams, many authors and pretenders of various kinds will feel that their toes are trodden upon. Mr. Fuller is a genuine horticultural iconoclast, and we are glad that we have at least one horticulturist who has the courage to strip off the borrowed plumes from over-rated writers and over-praised fruits. He may not always be right, but he evidently means to be, and for that we honor him, and always welcome any contribution from his pen, as we are sure that it will be practical and vigorous. One of the most useful portions of this RECORD is the chapter on the propagation of Bulbs. Mr. Rand's work on Bulbs is singularly deficient in directions to the novice on the subject of propagation, and this RECORD is an almost indispensable supplement to that work. . . . The *Independent* of May 2d contains a most remarkable article on this RECORD. We do not call it criticism, out of respect to critics. The *Independent* has the reputation of being a religious paper. We occasionally read its Farmer's column—upon the principle that the deacon always read the theater bills, that he might keep posted as to what the devil was doing. After we have read the Farmer's column, we are satisfied—just as Mrs. Squeers' boy didn't want any breakfast after their brimstone and molasses—and have no desire to see what the rest of the paper may contain. The *Independent's* notice of the RECORD OF HORTICULTURE is too long, or we would reproduce it, in order that our readers might see what stuff a "religious" paper can publish, and the number of direct and inferential—what-you-may-call-'ems, that can be put into a column. Half of the article is devoted to showing that

this is not a fit book for a farmer, and gives the *Independent's* views on farmers' books in general. Now, Mr. Fuller did not write this book for farmers, but for horticulturists. If he did write a book for farmers, it would not be of that character that would have to lie over a year before he could find a publisher so regardless of the good of the community as to publish it. The *Independent* says: "Well, what do we find within these pretty covers, costing \$1 50 of the farmer's hard-earned money?" The price "\$1 50" is within one third of the truth, which is pretty good for the *Independent*. Farther along in the article we get a clue to "what's the matter." Mr. Fuller, in his RECORD, gives a justly severe castigation to the "Reviser" of "Bridgeman's Gardener's Assistant." The *Independent* says: "As he has made some false statements in which our integrity is assailed, it is proper to explain the matter in this place." We, for the first time, learn that that book was revised by the *Independent*. We supposed it was done by a chap who took it as a job. Was it done by Mr. Henry C. Bowen, the "responsible man," by Theodore Tilton, or some subordinate? No clue is given in the article—the editorial "our" leaving us quite in the dark. We read: "The publisher of 'Bridgeman's Gardener' brought the wood cuts, ready made, to the reviser, before he commenced his task; a portion of the illustrations were purchased by the publisher of other publishers. The reviser had nothing to do with the illustrations, only to insert them in their proper places." Now, here is a direct statement, which must be either true or false. The publishers, Messrs. William Wood & Co., say that they know nothing of the source of at least twenty of the illustrations of "Bridgeman's Gardener." We believe Messrs. Wood tell the truth, but then the *Independent* is a "religious" newspaper, and what does it tell? Certain cuts which appear in Bridgeman's book were originally drawn and engraved for the *Agriculturist*. We never sold, gave away, or loaned them to Messrs. Wood, who knew nothing of them until they saw them in the book, and these, certainly, were not the illustrations "purchased by the publisher of other publishers." We do not know how these cuts transferred themselves from the engraving-room of the *Agriculturist* to the pages of Bridgeman's book. The *Independent* calls it "purchasing;" other people have a different name for it. Mr. Fuller's statements in regard to this book are none too severe, except in the fact that they are true; but this case would show that the way to get abuse from the *Independent* is to tell the truth. The *Independent* may be gratified to learn that the publishers of "Bridgeman's Gardener's Assistant," finding that its revision of that originally excellent and useful work has been quite as severely criticised by the horticultural and agricultural press, as it has been by Mr. Fuller, in his RECORD OF HORTICULTURE, have concluded to have the work done over again. The *Independent* calls Mr. Fuller's book a book of "slanders." We have no name to apply to the paper that can so unfairly treat a valuable contribution to our horticultural literature. But then, what does the *Independent* know about horticulture?—*American Agriculturist*.

THE
HORTICULTURIST.

VOL. XXII..... AUGUST, 1867.....NO. CCLIV.

RASPBERRIES—SOIL, CULTURE, AND VARIETIES.

THE growing of small fruits as productive and remunerating crops, not only to the market gardener, but to almost every family owning a small garden plot, has become so general and so well appreciated, that we feel we can do no better at this time than to make a record of our notes on Raspberries, as we did last month on strawberries. Following in rotation after the strawberry, and before peaches or other stone fruits, except cherries, have become abundant, the Raspberry seems to supply a vacancy without which we could hardly furnish our tables or minister to the wants, tastes, and health of the human frame. In a commercial view, as a crop to be grown for profit, one year with another, we believe the Raspberry superior in its net returns to that of the strawberry; but its cultivation is not nearly as extended and general. Why it is so we can only account for by supposing the masses to have obtained an impression that the canes of Raspberries must be laid down and covered each winter in order to insure a crop, and again by supposing the mass of fruit-growers averse to anything like unto what may be termed extra labor. That this laying down was a requisite with most varieties known and grown some fifteen

or more years since, we acknowledge; but at this time there are many varieties with large fruit and hardy canes profitable for market or private gardens that may be grown without any labor and care in covering. As a fruit for the table, no one among the small kinds possesses the richness and aroma of the Raspberry; and while there are some people who can not eat strawberries, we never knew one who did not relish and enjoy a dish of ripe Raspberries. Economically considered, they are also superior to strawberries, because of their less acidity, and therefore not requiring as much sugar to gratify the palate. For canning or preserving, the superiority of the Raspberry over other small fruits is such, that while many housekeepers do not put up strawberries, all do can or preserve Raspberries when they can be obtained.

Soil and Preparation.—It is said by some writers that the Red or Antwerp class of Raspberries must have a good rich clay loam soil in order to succeed; but while we concede that as the best, we have grown them in light dry sandy soil, equally vigorous in cane and productive of fruit, by simply spreading over the ground, early in June, a deep mulch of straw or old litter, and letting it remain until the commencement

of fall rains, when we remove it, to be replaced again the next June. By this method we have avoided that burning of foliage and drying away of the fruit too often complained of. The Black Raspberry seems more hardy and capable of enduring

varied soils and climates, and hence it has for the past few years been more extensively planted than the Antwerp, although as a table fruit few, if any, of the varieties now in cultivation compare at all favorably.



FIG. 119.—*Mrs. Wood.*

As with the strawberry, the preparation of the soil, making it deep and finely pulverized, is a great requisite to success and profitable returns. In heavy clay lands, without this thorough preparation and cultivation the first year, the plants grow fee-

bly or die out entirely, and the crop of one or two years is lost; and in light sandy soils we have found that the deeper we plowed the better, and that the application of mulch at midsummer was a necessary requisite.

Time of Planting.—Although early spring is generally advised as the best time to plant at the North, or where the ground freezes deeply, we have found fall planting, and then plowing up to the roots and covering them, quite as successful; and in clay lands the soil works easier and better. But we have practiced for some years taking the plants in July, and even into August, when the young canes are about half grown, placing the roots as we raise them into a

bucket of muddy water and planting them, without any after watering, with perfect success, and had a good crop of fruit the following season.

Distance Apart.—The old rule of growing in hills, three by four or four by six feet, two or three canes in a hill, we consider very much like the advice to grow strawberries in hills, as only an inducement for the cultivator to work among his plants and keep them clean. We have for some



FIG. 120.—*Philadelphia.*

years grown our Raspberries in rows, our canes standing along in the row sometimes two in a foot, sometimes one; and when we new plant we set a cane once in about sixteen to eighteen inches in the row, and the rows four feet apart, if of the Antwerp class; but for the Black Cap, or that class, we would give a plant two feet distance and make our rows six feet apart, that we might run our cultivator freely between the rows without injuring the lateral or side branches and fruit.

Cultivating.—In spring, early, we run a light plow, say four inches deep, all through between the rows, turning the earth from the plants and leaving our line of plants with about six to eight inches wide of unstirred soil. This we afterward work up with a pronged hoe, or with the spading fork, according as our hired men are Dutch or Irish. Afterward we run through the ground, from time to time, with the cultivator, until the time for putting on our mulch, which although not absolutely

requisite on clay loam soil, yet there we find its benefit in a saving in stirring the soil, provided it is a dry time.

Pruning, Tying, etc.—The training of plants to wires, stakes, inside of hoops, etc., although generally advised, and when well done presenting very satisfactory results and appearance, we have for some years discontinued, and confined ourselves to shortening back our canes and inducing thereby stronger and better laterals, with stiff stout canes that require no tying to stakes or wires.

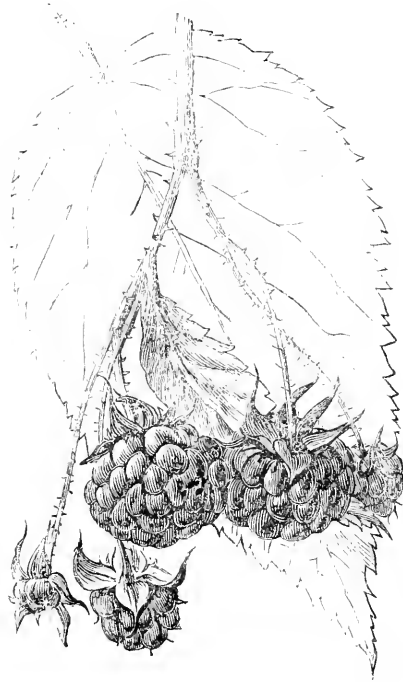


FIG. 121.—*False Red Antwerp.*

Varieties.—We shall not attempt to go over all the varieties of Raspberries that are now in cultivation, but will touch upon a few of the leading popular sorts, and note some new kinds which have come before us in fruit this year. Of the Black Cap varieties, the AMERICAN IMPROVED, or more generally known at the West as Doo-

little's Improved, has been perhaps more extensively planted than any other. In good rich soils it is desirable, but in light or thin soils we can not see much improvement. It is a profitable sort, however, for market growing, as it bears shipment long distances and always in good order.

The SENECA BLACK CAP and WATER-LOO are two new seedlings announced by Mr. Doolittle as possessing valuable qualities, both in size of their berries and in a longer period of ripening. We have been unable to meet with the fruit.

The MIAMI BLACK CAP may be a distinct sort, but we have, in gathering wild plants, obtained many that so closely resemble it as to lead us to doubt. It is a good berry, however.

OHIO EVERBEARING.—With us this has never given results satisfactory, but there are many growers with whom it has done admirably, and who would be unwilling to part with it. While we have always obtained fruit from the young canes in autumn, the quantity at that time, as well as in the spring, has not satisfied us that there was any profit in it.

WOODSIDE.—This variety is figured beautifully in Mr. Fuller's work on small fruits, and if it sustains one half the character there represented, must be a valuable sort. The cluster there shown has upon it some eight or nine fruits, all large and apparently grown, so that, like some varieties of peas, one picking would gather the whole crop. * We have not seen the plant or fruit, but hope to do so.

Mrs. WOOD.—This is a new variety, for description and drawing of which we are indebted to Mr. Elliott, of Cleveland, forwarded at our request. He describes it as of the Black Cap family, with very strong canes, dark brown red when mature; laterals abundant, stiff, and strong; producing clusters of numerous fruit, with a broad, roundish, oval, sharp-pointed leaf, rich dark green. Fruit large, double the size of the common Black Cap, of a purplish black color with a bloom, firm, rich, and

sweet; canes with spines. He says it is more prolific than anything of its class which he has ever met. Originated by Mrs. Wood, formerly of Rockport, Ohio, now of San Francisco, California.

PHILADELPHIA.—The productiveness and hardihood of this variety are so well known that we need to make no remarks. As a market sort, for light soils, it is undeniably a profitable variety. It will be seen from the illustration which we give of this variety, that the berry and length of fruit stem, with the spine on the fruit stems, bear a close resemblance to the drawing we give of one sent us by Mr. Elliott as the False Red Antwerp. Another year we hope to grow them side by side, and detect whatever difference there may be between them.

CLARKE.—This variety we have now grown some four years. It is a fine grower and a good fruit, the canes perfectly hardy. Mr. Elliott, of Cleveland, writes us that the plants he has of it so much resemble, in general appearance of the canes and fruit, that of the Kirtland, that he would like to gather the history of the Clarke. Perhaps Mr. Clark, of New Haven, will write it out for us. The Kirtland is supposed to be an old variety, not yet identified. It did not originate with Dr. Kirtland, but his name was attached to it by H. B. Lum, Esq., simply because plants he obtained came from the Doctor's grounds and were unknown by Mr. Lum. The variety was on the Doctor's place, so he tells us, when he purchased the property, and the old original bed is there yet. It is certainly one of the very best hardy old sorts, of good flavor and productiveness, but not quite firm enough for market transportation long distances.

SCARLET.—One of our neighbors last spring procured a dozen plants under this name from Mr. Carpenter, of New York. On examining them we find the two Raspberries originally sent out by Mr. Allen under his name, and which made such confusion for a time, by one being productive of fruit and the other of suckers. Both, we

believe, were originally from a market gardener's grounds at Cleveland, Ohio. We think whoever claims to be a horticulturist, and to send out plants, should be certain, first, that the variety is distinct, and second, that there should not be two sorts where only one was desired.

BELLE DE FONTENAY.—This variety has with us this season proved really superior. It is not quite as early as some other sorts,



FIG. 122.—Orange.

but if most of the suckers, of which it has too many, are kept down, the stems become strong and stiff and bear abundantly; a really good, firm, although perhaps a little too acid, fruit.

HORNET—has with us, this year, done admirably well, giving large fruit and abundantly; and so also may we say of FRAN-



FIG. 123.—*Naomi*.

COXIA; but both of these varieties, like the Red Antwerp, require to have the canes

protected in winter to produce a good crop.

BRINKLE'S ORANGE, or Orange as it is now more generally termed, is unquestionably our best light-colored berry—large, rich, and sweet; and while the canes are the better for being laid down and protected, we have grown good crops from it without any protection.

DURING, with us killed all down last winter, and we have no fruit. Had it not come to us as hardy, we should have protected it. While, however, we have so many good and profitable sorts that are hardy, we can see no advantage in growing, except for amateur or pomological use, any new tender variety.

NAOMI.—Two years since we published a drawing and description of this variety, sent us by Mr. Elliott, who now writes us that with him, on stiff hard clay land, the plants have stood perfectly uninjured for two winters without any protection, and in their original grounds have never been injured in the least. The fruit is of the largest size—firm, but rich, juicy, and sweet; canes strong and productive. Mr. Elliott says it is by far the best hardy Raspberry of the Antwerp class with which he is acquainted.

CUSHING, COL. WILDER, FRENCH, and many others we have fruited and again and again examined, but we have nothing new to say of them, and at the same time consider that we have named the best varieties, and a sufficient number for any amateur, and perhaps too many for market growing.

DECAY OF THE CHERRY.—A friend writes us from Cleveland, Ohio, saying that "all the cherries in that section have again, almost without exception, rotted before getting fully ripe." He also says, "Heretofore much of this disposition to decay has been regarded as coming from rain and wet, foggy weather, and mainly has it been confined to the light-colored varieties;

this year, however, the weather during the whole of June was dry, and the disease extended itself to Black Tartarian, Black Eagle, and some others of the dark-colored soils. The Osceola, Pontiac, Red Jacket, Rockport, and Monstreuse de Mezel have been about the only varieties of sweet cherries that have escaped, and they only partially."

PROPAGATING PLANTS BY LAYERS.

BY ANDREW S. FULLET.

THE same principles given for propagating plants by cuttings are also applicable to layers. In fact, a layer is only a cutting that is allowed to remain attached to the parent plant until it has produced roots through which it may collect sustenance for self-support.

Various methods are employed to produce this result, such as wringing, twisting, tonguing, or partially dividing that portion of the stem on which it is desired that roots shall be formed.

All these distortions of the stem or branches of the plant layered are for one object, that is, to check the downward flow of sap. Roots then become necessary for supplying sustenance to the cutting or layer, and are formed.

The most common method of preparing layers is that of making a tongue on the underside of the branch. The operation is performed thus: make an incision in the branch to be layered, just below a bud, cutting through the bark and into the wood to the depth of one quarter to one half its

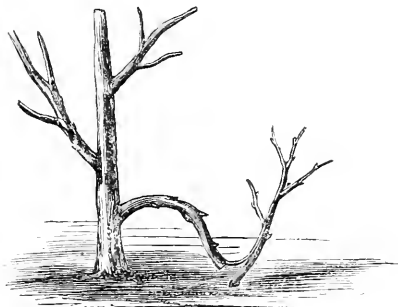


FIG. 124.

diameter, then pass the knife upward for an inch or more, splitting the stem lengthways, forming the tongue, as shown in fig. 124. The branch is then bent down and

fastened in its place with a hooked peg, and that portion on which the incision is made is covered with soil or other material which shall exclude it from light and air, while at the same time keeping it moist, thus aiding the development of roots.

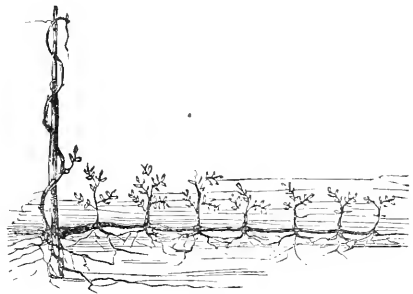


FIG. 125.

Twisting, coiling, or notching the branch, so as to partially separate the fibers, will often answer the purpose equally well as tonguing. Sometimes a ring of bark is taken off, partially if not entirely cutting off the downward flow of sap. Bending the branch at a very acute angle will often answer the same purpose, as the main object in all these distortions is to check, but not wholly prevent, the downward flow of sap, the layer receiving only a partial supply of nutriment from the parent plant.

Several branches may be layered from one plant, and it matters not whether it be herbaceous or woody, the general principles to be followed are the same. There is certainly a great difference in plants relative to the facility with which they produce roots; but it is equally as great in the herbaceous as in the woody. Some woody plants will produce roots in a few days by merely placing the branches on

the surface of the soil and covering with any material that will keep them moist; while others with the most careful manipulation will not produce roots in less than two or three years.

In preparing layers of those plants which produce very slowly, it is best to distort that portion which is buried as much as possible with safety, but with many kinds no disturbance of the natural condition is necessary. With nearly all species of trailing plants, such as wistarias, tecomas, clematis, etc., it is only necessary to lay the stems in a shallow trench, and when the buds push into growth, draw the soil back into place, each shoot producing a plant.

Roots will usually be produced in abundance the entire length of the old stem, as shown in fig. 125.

When roots are not produced as rapidly as desired, then the layered branch may be bent, as shown in fig. 126, which is a method usually practiced with the wistarias. Should the bending of the stem not prove to be a sufficient check to the flow of sap, a notch or tongue may be made on that portion which is covered with soil.

In preparing shrubs and trees for the

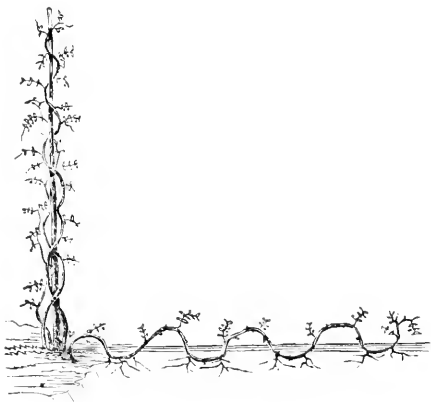


FIG. 126.

purpose of producing layers therefrom, it is often necessary to head them back quite severely the year previous, so that a large number of shoots shall start from near the

ground. Plants thus prepared are technically called stools; and if all the shoots are layered in any one season, then none should be layered the next, but all allowed

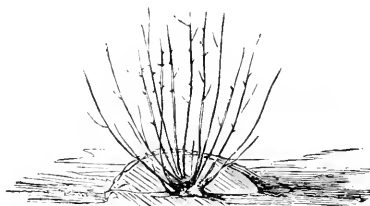


FIG. 127.

to grow unchecked, so that the parent plant may regain that strength of which it has been deprived by excessive layering.

Sometimes the shoots are not bent down, but the stool is banked with earth, as shown in fig. 127; and when the shoots have emitted roots from their base, they are slipped off from the main stock and planted out separately. The quince, hibiscus, paradise apple, and many other kinds of plants that produce roots readily, are extensively propagated in this manner.

It is more convenient for the purpose of layering if the branch is near the ground, yet it is not positively necessary, because soil or other material which will answer the same purpose may be elevated to the branch to be layered. A platform may be made upon which to place the soil, or boxes or pots filled with it may be hung among the branches of a tree and the shoots layered therein. But when this is done, it will require more care to keep the soil moist around the layer than if the operation is performed in the usual manner.

The proper time for making layers is as variable as that of cuttings. With some plants it is best to layer the young growing wood, while with others they may be put down at almost any time. But, as a rule, layers should be made while the plant is growing the most rapidly, because roots are produced at that time more readily than at any other. It is not always advisable to wait until growth has commenced

before making them, but the branch should be in position to produce roots when the proper time arrives.

With some plants it is better to make the layers in the autumn, for the same reason given for making cuttings at that time; but with others it would result in certain failure, consequently each species or family may require different treatment to insure success.

The particular advantages to be gained in propagating plants by layers are:

First. That it is a very simple process of multiplying plants, by which the merest tyro may propagate those species and

varieties which require great skill by other methods.

Second. It is a certain method, as the parent plant sustains the layer until it has produced roots through which it may derive sustenance for self-support. Thus particular varieties of the oak, hickory, tulip, and similar trees which are usually called difficult to propagate, may be multiplied by those who are but slightly skilled in these matters.

Third. With many kinds of plants, much larger specimens can be obtained in less time than it is possible to produce them from cuttings.

HENSEL'S EARLY SEEDLING CHERRY.

I inclose a few specimens of a seedling cherry which I believe will prove valuable. The original tree, of some age, stands on the property of Mr. G. W. Zahm, in the city of Lancaster, Pa.; the property was

ordinary seasons this cherry begins to ripen about the 5th of June, or a few days before Knight's Early Black. The tree is of moderate growth, but very hardy, a constant and great bearer; had a full crop this year when nearly all other kinds to a great extent failed, in consequence of the unfavorable weather just at the time of blooming. It is not disposed to rot. Mr. Zahm thinks it worthy of extensive cultivation, and if you think so also from this description, a notice of it in your journal may make it known. Mr. Zahm, who is a zealous amateur fruit-grower, will cheerfully furnish grafts to such as wish to try it. I inclose Mr. Zahm's note to me.

Very respectfully yours,

W. L. DIFFENDERFFER.

NEW HOLLAND, PENN., June 23, 1867.

LANCASTER, June 24, 1867.

DR. DIFFENDERFFER—*Sir*: The cherries I send you are not a fair specimen of the fruit at all, they are from the inside of the tree—all others are gone. I have taken fruit off the same tree three inches in circumference. The tree is a moderate grower and very prolific—an accidental seedling named Hensel's Early Seedling.

Yours, G. W. ZAHM.

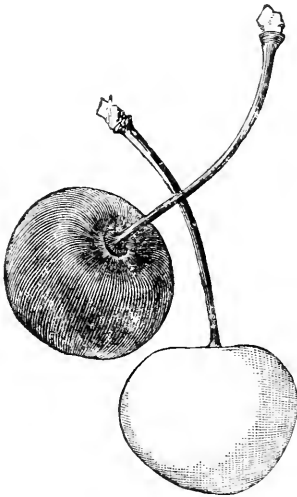


FIG. 128.

formerly owned by Mr. Hensel, and hence the name of "Hensel's Early" has been given to it. Mr. Zahm informs me that in

RASPBERRIES.

BY A. S. FULLER.

GRAPES and strawberries have, during the past few years, received so much attention, that we fear other small fruits have in a great measure been neglected.

This is particularly true of the Raspberry, a fruit whose merits entitle it to a prominent position among the *very best* productions of our gardens. It is certainly no more trouble to cultivate an acre of Raspberries than the same quantity of grapes or strawberries, and it is doubtful if upon an average they are any more profitable.



FIG. 129.—*American Improved.*

Raspberries have commanded from twenty-five to seventy-five cents per quart in many of our Eastern markets for several

years past, a fact that has awakened a few of our fruit-growers to the importance of fully supplying the demand. One cause of the great scarcity of this fruit is probably owing to the want of practical information upon the best modes of cultivation, and the adaptability of different varieties to the various locations and soils. Very few people appear to know that the different varieties of the Raspberry are as variable in their character as regards their adaptation to soils and climate as other fruits, there being very few which are suitable for general cultivation.

We have probably depended too much upon the advice and recommendation of those cultivators who are located in situations favorable for growing the very choicest kinds. It is all very well for those who can produce the best, to talk of delicate flavors and delicious perfumes, but they should know that although this world may be a *nut-shell*, still it is a very large one, and that there is a great diversity of soils and climate as well as tastes among its inhabitants. The world is certainly too large, or the minds of some of its inhabitants too small, to comprehend its vastness. As a general thing, the experience of fruit-growers is mainly local, and it is to be feared in many instances their thoughts are equally so, or they would not, as they often do, extol or condemn a fruit from mere personal experience.

Every cultivator must have observed the great difference in soils even on a place of very limited extent, and if the proprietor is an observing man, he will select plants best suited to each. If this is true in regard to a few acres, how much greater must be the difference when we pass over several degrees of latitude, or from the rich bottom lands along our Northern

rivers, watered by copious showers through- long drought which occur in some portions
out the summer, to the drifting sands and of the Middle and Southern States.



FIG. 130.—*Purple Cane.*

A man who prefers a Fastolff or Brine- taste; but he commits an error when he
kle's Orange to the wild Black Raspberry denounces others, who, as they can not pro-
certainly shows that he possesses a good duce the former, and can the latter, conse-



FIG. 131.—*Downing Red.*

quently accept it in preference to none. accuse those who do grow and appreciate
Because we can not grow the banana is it of being devoid of taste.
no reason for neglecting the apple, or The whole war of words causing the

estrangement of horticulturists in years past, and making enemies of those who should have been friends, should cease, and the question of, What *shall* we grow? changed to, What *can* we grow? There are a favored few who have the means at command of overcoming all the obstacles which soil or climate may offer, but the masses must seek both sustenance and pleasure without such artificial aid.

Striving to produce the best is certainly a very commendable action, but to ignore all other because the really superior kinds

fail, is a weakness with which too many are afflicted. Experience has taught us that some of our best fruits will only succeed in few, and often very prescribed locations.

Although this has been the case heretofore with many kinds, yet with the increase in the numbers of varieties, some have been produced that appear to be as well adapted to as wide range of latitude and to different soils as those which are inferior. But with the newer kinds more experience is needed, before it can be positively decided which



FIG. 132.—*Hornet*.

are worthy of being recommended as varieties for general cultivation over a wide extent of country.

Among the few which have become decided favorites in the past few years, we may name the different varieties of the Black Cap Raspberry.

The American Improved (fig. 129) is probably more extensively cultivated than any other, although at the West the Miami and Ohio Everbearing are grown in considerable quantities. The hardy character of this class thus early ripening, and firm-

ness of the fruit, make them very desirable market varieties.

Although the fruit is naturally rather dry and the seeds quite numerous and large, still there are many people who prefer them to other varieties of Raspberries. Of this class the following new ones promise to be valuable: Gardiner, Surprise, Thornless, Summit, Seneca, and probably two or three others.

The great merit of this class of Raspberries is their adaptation to different kinds of soil and climate, succeeding in

many portions of the country where the Antwerp family as well as our native Red Raspberry (*Rubus strigosus*) entirely fail, although given the best of care.

PURPLE CANE RASPBERRIES.

These are classed by botanists as varieties of the Black Cap species (*Rubus occidentalis*), and they succeed with few exceptions over as wide a range of country, and in as great a variety of soils. The old

Purple Cane Raspberry (fig. 130) has long been one of the standard varieties for home use, and in some sections it has been quite extensively grown for market. The plant is very hardy, a rampant grower, producing few suckers, being mainly propagated from the tips of the young canes.

The fruit is rather small and brittle, but of good quality, and is produced in great abundance.



FIG. 133.—*Souchetti*.

PHILADELPHIA.

This is certainly a very remarkable variety, which is rapidly gaining favor in localities where the Antwerps fail. Fruit medium to large, globular, dark reddish purple, moderately firm, subacid, and second rate in quality.

The above may appear to be a poor recommend to a variety which we have called remarkable, and it certainly would be if it possessed no other merit except

that of size and quality of the fruit. But the excellence of the Philadelphia consists in its great productiveness, hardiness of the plant, vigorous growth, tough and enduring leaves, rendering it capable of withstanding the hot, scorching weather of August even in the Middle and Southern States, where many other kinds utterly fail.

Those who plant the Philadelphia Raspberry are very sure of getting a bountiful

crop, even if it is not so exquisite in flavor as the Orange or Fastloff. It is a good fruit, and one that will please the million. The Ellisdale is a very promising variety of this class found in Iowa, but it has not been sufficiently tested at the East to determine its true value. The Hildreth is another variety; the fruit is of most excellent quality, but rather soft for transportation.

ANTWERP FAMILY.

The Hudson River Antwerp probably has the greatest reputation as a market berry; still, its cultivation is confined to a few localities.



FIG. 134.—*Clarke*.

Where it does succeed, it is certainly one of the most profitable and best varieties known. The plant is tender, and requires protection in winter; it also requires a rather heavy soil, and fails in seasons of drought. It is but little cultivated south of New York city, and the same remark may be applied to a majority of this class.

There are certain gardens and farms where they are grown, but they are so few in number, that in truth it may be said they are not generally successful.

One of the best varieties ever produced

in this or any other country was raised in Philadelphia. I refer to Brinckle's Orange, which has probably a greater reputation and is more extensively grown near other cities than that of its nativity. The Orange Raspberry should be the amateur's pet, for it will repay him for extra care and culture, and careful protection in winter, with large beautiful fruit of the very best quality.

There are many varieties belonging to the Antwerp family that are really superb, but they require particular care, such as protection in winter, and a rich heavy soil in locations where long droughts are not common.

Among the best known we will name the Downing, French, Franconia, Fastloff, Fillbasket, Hornet, Souchetti, Wilder, and others, nearly if not equally as good.

Among the newer varieties, the Clarke (fig. 134) promises to be an acquisition. The fruit is large, bright crimson, and of the best quality. It is very productive, a strong and vigorous grower, retaining its foliage until very late in the season. This variety was raised in Connecticut about ten years ago, and the originator says that he has never protected his plants, and that they have not been injured by the cold in winter or heat of summer. I have allowed my plants to remain unprotected for the past three winters, and they have received no injury, which appears to be quite remarkable, as others of apparently the same class are invariably winter killed unless protected.

To give winter protection to Raspberry plants is in itself not a very expensive operation, particularly with those kinds that have long flexible stems, that can be easily bent down and covered with soil. Still, it adds expense to cultivation, and most people would avoid it if possible.

Whether we have as yet obtained really first-rate varieties that are perfectly hardy in our Northern States, may not be fully determined, but from present indications we are led to believe that such kinds have

been produced. The Belle Fontenay and Marvel of the Four Seasons are really hardy varieties; and when the immense quantity of suckers which they produce is restricted

to a half dozen to each stool, they bear a fair crop of large and good-flavored fruit.

These last two varieties with the Yellow Marvel of the Four Seasons, offer us a four-



FIG. 135.—*Arnold, No. 1.*

dation from which to produce excellent hardy sorts. Mr. Charles Arnold, who has been so successful in hybridizing the grape, has already made some experiments in hybridizing these last-named varieties with the native White Cap Raspberry.

His seedling No. 1 is a pale yellow variety of good quality, and the plant is very stocky and apparently very prolific. No. 2 is also a very promising variety of the same color. No. 3 is a beautiful orange-colored variety, of most excellent flavor.



FIG. 136.—*Arnold, No. 2.*

Among the red varieties, No. 2 is a very firm berry, of good size and quality. There are several more of Mr. Arnold's seedlings, which we have not fruited, but

judging from those we have, we are disposed to think that some of these varieties will be decided acquisitions, as all are hardy even in Canada.

BEST SOIL FOR VINEYARDS.

LOOKING over the pages of the new *Journal of Horticulture*, whose claims have been so prominently placed before the American public, our attention was caught by an article from the pen of the Hon. E. W. Bull, entitled "Field Culture of the Grape in Massachusetts." This article is mainly occupied with a discussion of the kinds of soil best adapted to bring the grape to perfection, and after a few flings at the "popular treatises" and their authors, Mr. Bull lays down the rule, that for high-flavored grapes the soil ought not to be rich and heavy, but light and warm. Now in this there is certainly nothing new. Most "popular treatises" that we have been able to consult tell us the same thing, but at the same time they assert that if the conditions of dryness and high temperature can be combined with rich soil, the fruit will attain its highest perfection. Hence in borders designed for grapes to be grown under glass, the soil is of the richest character, and complete success is to be attained only when the vine is supplied with abundance of food.

So far we agree perfectly with Mr. Bull, although we confess that certain reports which have reached us from vineyards at the West have shaken our faith in *light* soils, at least under all circumstances.

In the *HORTICULTURIST* for May, 1866, F. R. Elliott writes as follows: "In my immediate section, on the south shore of Lake Erie, we have grapes growing in almost every variety of soil; and so well is the matter now understood by our best wine-makers, that they make a decided variation in the prices paid for grapes. Vineyards of Catawba, growing on sandy or loamy soils, find sale at a very low price, to the wine-makers. Some refuse to use them at any price, while they pay from seven to ten cents per pound for the same variety upon limestones and clays. Indeed, we have men who claim they can detect the

soil in which the grape was grown by seeing the bunch."

But Mr. Bull fortifies his position with an extract from Haraszthy, which contains an analysis of the soil of the famous vineyard, Chateau Margaux. We are not of those who utterly despise and condemn chemical analyses in application to soils. It is true we have little faith in most five-dollar, or even twenty-five dollar analyses, but at the same time we think that a good deal of the outcry that has been made against the analysis of soils has been done for "buncombe," and we have reason to believe that, with one or two exceptions, the fiercest denunciations have come from men who could not make an analysis if they were to try, and could not discriminate between a valuable and a worthless analysis when both were presented to them.

The analysis noted by Mr. Bull is obviously very imperfect, but at the same time it does afford us certain data which may lead to a just appreciation of the character of the soil. It is as follows:

Oxide of iron.....	3.341
Alumina.....	1.590
Magnesia.....	0.263
Soluble silicates.....	0.380
Phosphoric acid.....	0.147
Potash (?).....	1.291
Carbonate of lime.....	0.891
Organic matter.....	6.670
Insoluble residue.....	85.427

Mr. Bull adds the following comments: "This analysis shows the large proportion of more than three and one quarter per cent. of oxide of iron, about one and a half per cent. of clay, one and one quarter per cent. of potash, with phosphoric acid and carbonate of lime in small quantities, and only six and one half per cent. of organic matter; the rest, 85.427 per cent., being insoluble remainder. Not a very rich soil, one would say; yet this vineyard produces the finest grapes of the district."

Let us consider the subject a little further. This analysis is quoted by Haraszthy from the French work of Rendu—*Ampelographie Francaise*—where it will be found, page 431. It was made by a certain "Professeur" Peplowski, of whom it is improbable that any of our readers have ever before heard. It gives us little or no clue to the physical character of the soil—no man could tell from it whether the soil is light or heavy. The iron, magnesia, soluble silicates, etc., form but 14.573 per cent. of the entire bulk of the soil. Of what does the 85.427 per cent. insoluble matter consist? Is it clay or sand, or a mixture of both? and if the latter, then in what proportion? It is true that Mr. Bull *infers* that the soil contains but one and a half per cent. of clay, but then Mr. Bull evidently does not know that clay is not alumina, or, rather, that alumina is not clay. It is a disputed point among chemists whether or not alumina ever occurs *free* in the soil. Some maintain that free alumina is only found in the ruby and a few other precious stones. However this may be, it is very certain that alumina is not clay—meaning by that term the chemical compound to which heavy soils owe their peculiar characteristics. This substance is *hydrated silicate of alumina*. Now the term *insoluble* is merely a comparative term. Sand is usually regarded as insoluble, and we venture to say that if Professor Peplowski found any sand in the soil of the vineyard of the Chateau Margaux he entered it among the "insoluble" substances. But sand is not insoluble, even by the ordinary means used by chemists in making analyses. It is soluble in hydrofluoric acid, and when fused with carbonate of soda and some other substances it is very readily soluble. In the sense, however, in which sand is insoluble, clay is insoluble too; and therefore as the menstruum is not specified, we are left totally in the dark as to the character of this insoluble portion, and, as we before remarked, we can not tell whether the soil is light or heavy. We must therefore content our-

selves with a consideration of the character of the soil as regards its richness in plant food. Mr. Bull says it is not very rich. So far as this analysis is concerned, we beg leave to differ from him.

First, then, as regards organic matter. This soil contains 6.67 per cent. of organic matter. Mr. Bull thought he was making a liberal addition to his soil when he added forty loads of muck, which is probably equal to forty tons per acre. The soil under consideration if eighteen inches deep contains one hundred tons of such matter. Professor Voelcker says that any soil containing over six per cent. of organic matter should be classed with the vegetable molds. The soil of Chateau Margaux is evidently a vegetable mold.

The percentage of iron is, as Mr. Bull says, very large. We do not know what the influence of this ingredient may be. It is worth investigation, however.

In regard to potash we have no data. It is true that Haraszthy gives potash 1.291 per cent., but this is entirely unwarranted by the original. Rendu gives it "potasse de soude, 1.291." We confess that our knowledge of French is too limited to enable us to understand this as it stands, and we suspect that a typographical error has crept in, changing "et" into "de," and that it should read "potasse *et* soude"—that is to say, potash *and* soda, instead of potash *of* soda. We do not insist upon this translation, for we know that ridiculous mistakes have arisen from verbal interpretations.* Mr. Haraszthy could evi-

* One of the most amusing instances of an author being led astray by verbal criticism occurs in Ik Marvel's "Wet Days at Edgewood." The author, in attempting to show that Sir Walter Scott had no knowledge of farming, says: "Again (and I count this a surer indication), he puts in the mouth of Cromwell (Woodstock) a mixed metaphor of which no apt farmer could have been guilty. The Puritan general is speaking of the arch-loyalist Dr. Rochecliffe, and says, 'I know his stiffneckedness of old, though I have made him plow in my *furrow* when he thought he was turning up his own swathe.'" We are satisfied that the word *swathe* is a misprint for *seard*. Scott's knowledge of English was pretty thorough, whatever his

dently make nothing of the statement, and preferred to cut the Gordian knot by stating what was absolutely incorrect.*

Potassa and Soda.—Soda is generally considered of little value, and if the reader will consider the position of the vineyard under consideration, he will see that the soil is very probably highly impregnated with soda from the sea. Rendu describes its location thus: "Under the name of Medoc is comprised that tongue of land which lies between the Gironde and the ocean." A reference to any map of France will show that the west winds from the Atlantic will no doubt carry over the surface of the country sufficient spray to impregnate the soil thoroughly with salt, probably with more than is absolutely required for successful vine culture.

But how about the potash? If the soil contained 1.291 per cent., then it would contain nearly twenty tons of potash—rather more than Mr. Bull would undertake to add per acre.

Of phosphoric acid the soil contains .147 or 2.2 tons per acre. This is equal to about eight or ten tons per acre of common bone dust.

Of carbonate of lime there is enough for all the wants of the plant.

We think, therefore, that a careful consideration, even of the above imperfect analy-

sis, will convince any one that the soil of the vineyard of Chateau Margaux is in reality very rich—rich in the ordinary sense, and rich in all the constituents required by the vine.

I regret that I have been obliged to occupy so much space, but the subject is an important one. The proper soil for vineyards is a point that demands the most careful attention on the part of all interested in vine culture. The man that will thoroughly investigate this subject will deserve the thanks of every grape-grower, and I think that carefully considered observations on the character of the soil of our different vineyards would afford much sound data upon which to base such an investigation. We therefore hope to have numerous reports from different parts of the country. Perhaps, if your readers have not been wearied with what I have presented, I may hereafter give you a resumé of what Rendu, Odart, Julien, Franck, Ladrey, and others say of the soil and management of the famous vineyard Chateau Margaux, of which Rendu says, "La fitte and Latour themselves pale by the side of this incomparable nectar;" and Biarnez says, in form little more poetical,

"Idole des gourmets, c'est le plus grand des trois,
Il est seul sur son trône, il est le roi des rois."

VITICOLA.

SILVER-LEAVED MOUNTAIN ASH.—A friend writes us that recently, at the gardens of Messrs. Ellwanger & Barry, Rochester, N. Y., he saw a seedling mountain ash of their growing, with leaves of a sil-

knowledge of farming may have been, although it would be strange if a boy brought up as Scott was in the south of Scotland could have been ignorant of farming. On the whole we are satisfied that the criticism which we have quoted is one "of which no apt farmer could have been guilty."

* Strong, in his work on Grape Culture, quotes Harszthy's translation without acknowledgment, and falls into the error of stating the *potash* at 1.291 per cent. Authors that copy at second-hand are very apt to fall into mistakes of this kind.

very character on their edges and occasionally mottled over and through them, a novelty of great beauty and attraction. Messrs. Ellwanger & Barry have been long known as propagators of rare and choice trees, and as originators of many new ones. During the past two years, we believe Mr. Ellwanger passed most of his time in the gardens of the Old Country, examining and purchasing everything desirable. We wish he would write us a little account of the many new things he saw and procured, especially those trees of variegated and colored foliage.

NOTES ON THE JUNE NUMBER.

PROPAGATING PLANTS BY CUTTINGS OF RIPE WOOD.—Like most of Mr. Fuller's writings, this contains full explanation of the why and wherefore cuttings should be made at certain seasons, and also why a particular way of making them is more desirable, although, perhaps, not essential to success. I have practiced for many years putting cuttings in the ground where they are designed to grow, the next coming summer, in the fall, and I have found that with gooseberries, currants, etc., etc., as soon as the main or terminal bud has fully formed and matured, I can commence making my cuttings without reference to the fall of the leaf. The same also with the grape; as soon as the fruit may be said to be fully ripened—I don't mean colored, but thoroughly matured—I can cut and put in my grape cuttings and grow them without having to resort to any patent process. And, by-the-by, many a grape cutting is lost, as all the shoots, which are often rubbed off when a vineyard has not been early gone over, if preserved, will grow readily and make good plants the following year.

SEA-SIDE COTTAGE.—Truly one of the prettiest designs, although not specially new, which has been figured. Will not the designer write out somewhat of specifications as to cost, naming the price to be paid for lumber, brick, mason, and carpenter work?

PURE NATIVE WINES, WHAT AND WHERE ARE THEY?—I have read this with considerable interest, as just at this time great attention is being paid to the making of wines from our native grapes, and while every originator of a new grape or vendor of a special variety makes his statements relative to their values, I find very conflicting views thereon among grape men.

Reading, recently, a writer in the *Country Gentleman*, I notice he does not any more

accord full credit to the statements made by the originator of the Iona than yourself. That writer takes up a record of grape musts from varied native grapes by scale of Oeschle, among them Iona, and compares the record with some of the best foreign vintages, in which comparison the Iona is exhibited so much ahead of the foreign varieties as to give one, at least, a reason for doubting its correctness. Your remarks on the Concord may, perhaps, in some sections be qualified, although the result of value would be about the same. You say it has "too much acid;" now, in some sections this may not be perfectly true, but as it has not sugar enough in its compound, the result of its value for wine is in no way affected. Again, in speaking of its comparison as allied to *claret* wine, you may have been in error, as perhaps it has not tannin sufficient to be there classed; but probably you wrote more to give the idea of its being a light wine, and therefore used a name which generally is known to designate light thin wines. It is possible, and I believe the fact, that there is wine by some known as *Italian* wine, which would more perfectly correspond to it, but as it is rarely known or spoken of, your term was perhaps the correct one.

NEW MODE OF GRAFTING THE VINE.—I had read this before in the magazine from which you copied the article, and rejoiced that you gave it to the readers of the *HORTICULTURIST*, as everything pertaining to grape growing is of great interest at this time to a very large portion of the horticultural world.

A SUBURBAN RESIDENCE.—Plain and massive, and for a city block or houses closely contiguous, doubtless very good. I confess, however, to a love of open porches, or verandas, rather, as part and parcel of what I consider a suburban residence—that is, a house situated on a good-

sized lot or plot of ground in which are growing trees, flowers, fruit, etc. So many days occur when it is pleasant to sit in the open air, and yet be protected by a wall from currents of wind, or the sun; and so heavy are our dews at seasons of the year, rendering it unsafe to sit exposed to the sky, that a porch or portico seems to me to belong to a residence where the object is pure open air, and the association with and study of tree, fruit, and flower, as much or more than a parlor.

WOMEN IN HORTICULTURE.—Mr. Fuller, in this record, has given credit only to one woman in this country as connected with horticulture. Why could he forget such women as Mrs. Wood, of Ohio, who originated several new raspberries; or Mrs. Haskell, long prominent as the president of a horticultural society in Michigan, and who has given great attention to fruits as well as flowers; or the many, many women whose names are yearly associated and identified with themselves in all our Western horticultural exhibitions. While I accord to woman a place in her own garden, to rear new varieties of fruits and flowers and to cultivate those known, I do not think any special credit due to one who leaves her own sphere to become absorbed in a legitimate business, which requires an immense amount of physical labor and association with the ruder portions of men.

ABOUT PEAR-TREES.—Pleasant reading, but really without any practical point, except it be to ignore the use of names as applied to fruits. What would the writer have done had he grown the pears he ate, and finding one among the dozen kinds that pleased him more than all the others, desired to plant more trees of it? I trow he would have had to find some one more skilled than himself, or else been compelled

to make a hap-hazard guess, that after his young trees came into a bearing state would have resulted in disappointment.

GRAPES.—I wish this writer would import a little of the climate of Persia, Turkey, and Greece, and distribute it among our vine growers, so as to enable them to avoid mildew, etc., which unfortunately is too much a disease and trouble in this country.

The writer says, "We have kinds enough, throwing aside six tenths as worthless, that selected with judgment and cared for with the energy of American people, will make America as good a wine country as any on the globe." Please, Mr. E. H., select us out those four tenths, and tell us the right care, and I will guarantee to have the labor performed.

THE AMERICAN JOURNAL OF HORTICULTURE.—Are you not a little severe on this journal? Because its editor East is young, and its editor West writes long articles that grasp but little, should you censure the one for supposing the horticultural world have never before read anything, or the latter for being voluminous? Why grumble because that journal chooses to re-stereotype a record of one of the best and most worthy men in horticulture, as if the thing had never been, or that that man's record was not better known over the Union and abroad than by those who prepared the matter or published the magazine? But aside from these old re-hashes of matter and copyings from abroad without credit, there is in the magazine a great deal that is good, and I advise every reader of the *HORTICULTURIST* to take and read it. They will then find that they can not get along any way without the *HORTICULTURIST* and the *Gardener's Monthly*, even if those journals do not profess to absorb all the talent of the country. **REUBEN.**

SILVER-LEAVED OAK.—Among the many trees with ornamental foliage, there is none, perhaps, more truly beautiful, or that would

attract attention on a lawn, than the silver-leaved oak. It needs only to be seen to be admired.

EXHIBITION OF STRAWBERRIES AT THE WESTERN NEW YORK
HORTICULTURAL FRUIT-GROWERS' SOCIETY,

AND NOTES ON VARIETIES IN THE GROUNDS OF MESSRS. ELLWANGER & BARRY.

MR. F. R. ELLIOTT sends us the following notes on the Strawberries shown at the Rochester (N. Y.) Exhibition, June 27th, and also his notes of varieties examined in Messrs. Ellwanger & Barry's grounds. He says: "The exhibition was not as numerous in varieties as I had expected, nor as large an attendance as I had supposed the great interest felt in the growing of Strawberries would have drawn out. Nevertheless there was really a good show of berries, and among them many new ones, besides a host of seedlings, under numbers, most of which were of the first or second year's fruiting. Most of the fruits shown bore evidence of having been grown under only ordinary care; a few samples only exhibited extra attention and culture having been given to bring out their best qualities. Seedlings under numbers were shown by Messrs. Ellwanger & Barry, Jacob Moore, and Thomas R. Peck. Mr. J. Keech had four new sorts on the table, which he has named respectively General Grant, General Sherman, General Sheridan, and General Meade. These varieties were stated to have been all grown from seed of the Russell mixed with *Triomphe de Gand*—the flowers all perfect.

General Meade is large, rich, bright scarlet, conical; seeds deeply imbedded; quality very good.

General Sheridan, medium size, dark rich red, somewhat irregular in form; seeds light colored; flesh light red, pretty firm, promising well for market growing.

General Sherman, medium size, light rich scarlet red, long, conical in form; seeds deep; flavor deficient.

General Grant, good medium size, irregular in form; dark red, or about same

color as Wilson; somewhat acid, but sprightly in flavor, and claimed by the originator as very early, which would be its only claim to favor.

The seedlings of Mr. Moore are claimed as hybrids, and presented very good promises of value, this being, as I understood, their first year of fruiting. Number 73 was large, of a rich red, and very fine flavor; and should it prove a good bearer will be a great acquisition. Number 39 had a rich flavor, with pretty firm flesh, and promises well.

Thomas R. Peck, of Waterloo, had thirty-six seedlings, and from among them I find my notes commend as of good quality and promise the following numbers, viz., 3, 5, 8, 11, 16, 23, 27, and 49.

Of the nineteen seedlings shown by Messrs. Ellwanger & Barry, I made my notes, but afterward visited the plants in bearing, and selected from them the following numbers as being desirable to prove further by another year or more of fruiting, viz.:

No. 32, which has light pale green broad foliage, with large dark red, firm, roundish cockscomb fruit, with a delicious Alpine flavor.

No. 26, large, dark red, sweet, and promising.

During the meeting of the Society, a vote was taken as to the best six varieties for amateur growing, resulting in twenty-eight ballots, or votes, each one of which had upon it the *Triomphe de Gand*; while twenty-two votes were cast for Wilson, twenty-two for Hooker, seventeen for Jucunda, sixteen for *Agriculturist*, nine for Russell, four for *Green Prolife*, and four for *Trollope's Victoria*. Not a vote was given for Hovey, or for Burr's New

Pine, the one certainly the handsomest, and the other the highest flavored berry, of the whole strawberry collection. In this connection of varieties and their values, the President, H. E. Hooker, remarked, that amid all the new sorts brought forth from year to year and heralded with loud clamor as being vastly superior, but very few ever endured a half dozen years, and the records as well as the tables of exhibitions would show our best varieties now grown to be mostly those of from fifteen to twenty years ago. On the best modes of growing Strawberries there was considerable discussion, resulting, as near as I could gather, that *Triomphe de Gand* and other foreign varieties should be grown in hills and with high cultivation, in order to obtain satisfactory crops or good-sized fruits; while the *Wilson*, *Early Scarlet*, etc., might be grown in rows and produce very great crops, really making a gain in favor of the latter, of just the amount of outlay in preparing the ground, procuring mulch, etc., etc., and favoring them as the varieties to be grown by men of small capital. The package most desirable to pick in and send to market was the round quart box, in which each berry is displayed at top without showing any stem, and so carried to and sold in market. It is far preferable to the slovenly manner of *Cleveland*, *Cincinnati*, and other Western cities, where they are tumbled into half bushel drawers, and when sold scooped out, mashing and bruising at least one fourth of the berries.

After examining berries on the exhibition tables, I went to the grounds of Messrs. Ellwanger & Barry, where I had the pleasure of examining over seventy varieties

under name, and among them many quite new and rare.

The *Durand* is a berry of medium size, dark rich red, flattened, conical in form; broad leaf with short foot-stalks; of fine quality, but only moderately prolific.

King Arthur is a foreign sort; large, dark red; good foliage and good quality.

Dr. Nicaisse, also a foreigner, with pretty good foliage and extra large fruit of irregular form; white flesh, and in flavor about like *Jucunda*, to which it is superior in size.

Tilip's Rival Queen is another foreigner; large, firm, very rich in quality; good foliage and strong foot-stalks.

Lucas, also foreign; large, dark red; handsome, fine, and with good foliage.

Napoleon III., foreign; a good bearer, large good fruit, quite late.

Ambrosia, foreign; large, good, and with strong foliage.

La Constant, so much praised by some of the best pomologists about Boston, does not do well here, nor has it succeeded with me. The foliage burns badly, and before one knows it the plants are all dead.

Metcalf's Early, medium or small, good quality, moderately prolific, quite early; has been highly praised by our Western friends; but as I saw it, would not be very desirable.

Among varieties evidently valueless, I noted *Cornucopia*, *Le Titian*, *Great Eastern*, *Sir Harry*, *Seedling Eliza*, *British Queen*, *Honour de Belgique*, *Garibaldi*, *Hooper's Seedling*, *Myatt's Prolific*, and many more; while among those most desirable, the *Triomphe de Gand* and *Wilson* are kinds always to be depended upon for a crop.



TREES TO PLANT.—If you are designing to plant out any trees the coming fall or spring, now is the time to watch the fruits as they ripen, and make your notes of those you think desirable. Early in Sep-

tember make up your list and send it to the nurseryman, for all honest dealers execute their orders in rotation as received, and those first received are most likely to be filled with the best trees.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

HAMMONTON, N. J., July 15, 1867.

MESSRS. WOODWARD: The following notes are the result of this season's experience with a few varieties of strawberries:

Philadelphia.—This variety was the first to ripen, is of good quality, fine scarlet color, good size, productive, and a very vigorous grower, and although not so great a bearer as Wilson's Albany, I think it the best early variety yet introduced.

New Jersey Scarlet.—This variety is quite productive, and very good for the table, but is a few days later than the Philadelphia; is not scarlet, but of a dull dark red with a bad-looking surface; makes a bad appearance in market, and does not sell well. It has perfect flowers, and I think yours can not be genuine, because from the source from which I received mine, and comparing them with others, I have no doubt they are correct.

Metcalf's Early.—Ripened with New Jersey Scarlet, but much of the fruit rotted before it was fully colored, and it is inferior in most respects to either of the preceding. A prominent grower at Moorestown remarked to me after fruiting it this season, that "Metcalf's Early had played out."

Wilson's Albany.—This is undoubtedly the most productive, and stands more hard usage than any other variety; but it ripens one half its fruit in a few days when strawberries are plenty, and consequently does not always bring as much money as some less productive kinds.

Agriculturist.—Sometimes gives good crops, and when well grown is not surpassed in quality, and about half the berries are of the largest size; but it does

not always yield well, and unless well grown, is frequently about as poor a specimen of a strawberry as I ever tasted.

Jucunda.—Very poor grower, leaves burn badly, very poor bearer, and very poor in quality; and I may add this is the verdict of three fourths of all with whom I have conversed, including some who have grown it in the vicinity of Pittsburg. Plants obtained from Mr. Knox.

Brooklyn Scarlet.—This is a strong grower, a pretty good bearer when well manured and cultivated, of large size and brilliant scarlet color; too soft for transportation, but it is not excelled for the table.

Abraham Lincoln.—Since changed to "The President" by its originator, (?) Mr. Plattman. Not the first time its name has been changed, as several good judges who have examined it on my grounds agree with me fully in pronouncing it the Agriculturist.

Yours truly,

WM. F. BASSETT.

HANGING EVERGREENS FOR WINTER.—Some of the simplest and yet most beautiful embellishments for winter window decorations have been pots of the English Ivy (*Hedera*). The plants should be grown in pots in a cool, partially shaded situation during summer, being careful to have a stone or brick under the pot to prevent the roots gaining earth beyond the pot. In late autumn these pots of Ivy, with their dark, rich, green foliage, clean and glossy, can be transferred to the window of a sitting-room or library, and even should the temperature run down to zero, they are not at all injured.

CANNING FRUIT.—The season of canning fruit having arrived, we give the following extracted directions as the best and most practical of the many writers on the subject.

The *Farmers' Advertiser*, by the way an extremely good paper, published at St. Louis, Mo., says, relative to canning fruit:

"*Imprimis*—Can the fruit the same day it is gathered. More than half the secret of having fine preserved fruit lies in this simple direction.

"*Secundo*—Never can fruit without adding as much sugar to it as you would to prepare it for the table. This is imperative, else your fruit will inevitably be *leathery*; *cook it in*, I should say at the rate of one quarter of a pound to one pound of fruit, *at least*; but taste and try, as I did, and when it suits your palate, cease from all saccharine matter.

"And now for the *modus operandi*: Pare and extract the pit; cut into halves and plunge into cold water until ready to cook, else your peaches will be black; this, of course, does not apply to other kinds of fruit. Place your cans in any vessel where they can stand at least half way up in boiling hot water, which keep so until sealed. I usually take a large dripping-pan and put it on the top of the stove at one side, while my preserving-kettle is on the other. Make your sirup, and when it comes to a boil, put in your peaches and let them cook (if clings) until you can pierce with a piece of broom corn. If freestones, when the sirup boils up over them the first time, skim out and put into the cans. When the latter are full of the peaches, fill up with boiling hot sirup, wipe off the tops with a rag wet with cold water, being careful that no juice remains on them, then put on the covers, remove from the water to the stove hearth, and seal.

"Everything must be *hot*, from the beginning to the end; hot sirup, hot cans, hot fruit, hot sealing-wax, and, harder than all, hot and blowzy hands and faces, just when the thermometer stands at blood-heat in the shade. Oh! ye lords of creation, it is

quite as hard work as 'to plow and to sow, to reap and to mow,' that your *ardent* halves are performing for your toothsome delight the coming winter.

"All small fruits are subjected to the same process, except that the rule for them is simply to allow them to come to a boil, and not remain longer in the sirup. Strawberries, to retain their color and flavor, require more sugar, and to be put into stone, glass, earthen, or *anything but tin*. I prefer the quart stone jars, with tin covers. The wires which come with them are superfluous. The same is true of blackberries. Tomatoes I scald, peel, and then bring to a boil again, with a little salt added, when I put them in *new tin*, and seal. I have never been fortunate with glass or earthen jars. If stone jars are used, be sure that you buy dark colored, well baked and glazed ones, not the yellow."

The annexed method of canning fruit was furnished at the New York Farmers' Club, by Mr. Powers, of Oswego County, New York:

"I will suppose your fruit and glass cans all ready. I prefer cans with glass covers. I scald the fruit in a large tin pan, with juice or water to cover it. Put half a tea-cup of cold water into every can, and fill up with hot water. Put the covers and rubbers also into hot water. Now empty a can and fill up with hot fruit, and then another. Let them stand open till the hand can be held upon them without burning. As soon as filled, cut writing paper the size of the can, one for each, and when cool slip one over the fruit entirely, and fill up the can on the top of the paper with boiling juice, and seal at once. Ladies, try this way. The fruit will never mold, and keep any time if you don't eat it. The papers keep the fruit from rising to the top of the liquid. There is no use of setting cans into water to heat them, or of putting them into quilted bags—it is too troublesome. I let the fruit shrink, and then fill up to the cover as close as possible. Ladies must be governed by their own common

sense. Men attempt to give directions, but their wives have to tell them, and they are likely to forget."

NOTES ON PEAS.—In our last number we spoke of Carter's First Crop having bloomed in advance of all others planted at the same time. Now, having grown and eaten of some thirty varieties this season, we feel prepared to say that with us a selection of peas another year will be Carter's First Crop, McLean's Advancer, Lord Raglan, and Champion of England; and perhaps for yet a later one, we would take the Missouri Marrowfat. McLean's Advancer comes directly after Carter, when planted at the same time, and is a large pod, productive, and an exquisitely sweet and tender pea. Lord Raglan follows, and is but a day or two in advance of Champion, but it is sweet and large, and fills a void of two or three days otherwise left without peas. Champion of England all growers now know and acknowledge as one of the best.

Napoleon and Harrison's Glory come at the same time, and are very similar, with good pods, but the peas are not sweet.

Ringwood Marrow is earlier than the two last named, but a tasteless although large pea. Eugenie is later, and a pretty good pea, but it is not productive. Blue Scimitar has large pods, but all do not fill. Veitch's Perfection is a good one, and so is Competitor, and many others; but our trial and after-decision is in favor of the four we have named as a collection, all to be planted at same time, and in same manner and soil, and from which we gather a succession of the very sweetest peas.

BUDDING the pear on pear stocks, and apples on their kind, is generally performed this month. The cherry on Mazzard or Morello stocks should have been done last month—but the bark of many trees will yet peel well, and it may now be done. On Mahaleb stocks we prefer the last of this month, or early in September;

and so also for budding pear on quince. Too early budding on these late-growing stocks is apt to cause the bud either to throw off or be grown over. Peach budding should be left just as late in the fall as the bark will peel well and freely.

FRUIT IN SOUTHERN ILLINOIS.—From a record of the Illinois State Horticultural Society, it is estimated there are south of Centralia, on the Illinois Central Railway line, 500 acres in strawberries; 516,400 peach-trees; 78,000 pear-trees, and 208,875 apple-trees; and these are exclusive of the plantings during the past spring, which, from what we learn, have been to the extent of nearly, if not quite, one third more. Raspberries and blackberries are also largely grown there, and grapes have become almost as much an item of care and interest as in the other favored grape sections.

KEYES' TOMATO.—The plants of this tomato resemble so closely a kind we have grown before, that we desire to ask of Mr. Keyes a history of its origin. Will he oblige us by giving it? When the seed was sent out last spring, the statement was made that the variety was thirty days earlier than all others. So far from this being the case in our own grounds, we find it to be a week later than Powell's Early, and to ripen at the same time as the kind first mentioned.

THE POMOLOGICAL MEETING AT ST. LOUIS.—From all we learn, the next meeting of the American Pomological Society, at St. Louis, September 11th, will be most numerously attended; but unfortunately we also learn that in many places the fruit of pears, peaches, and apples have so many of them dropped, that great disappointment will result to many fruit-growers, in the lack of varieties they had hoped and intended to exhibit. Our country is great and wide, and we look, notwithstanding the deficiency in some sections, for a grand show.

NORTH ANDOVER, MASS., June 20, 1867.

MESSRS. WOODWARD—*Dear Sirs*: I take a subscriber's liberty to bore you a little. I am on the point of putting up a plant-house and grapery—a span-roofed house.

(1.) Now, I find all span-roofed houses tend to spread at the base. How can it be obviated?

(2.) About here I find they advocate setting the vines outside and bending them into the house. Is it best? By so doing I can see that the foundation can be firmer.

(3.) In Danvers I saw a new house lean-to, curvilinear roof, on iron rafters. It looked very nice. The sash bars were so arranged that the contraction and expansion of the iron would not affect the glass. Have such houses been tested, and should you advise the use of them?

(4.) Do you consider the boiler more economical than the flues?

I hope you may consider my questions worthy of attention, and if any suggestions occur to you, they would be most thankfully received.

I am yours, most respectfully,

FRANCIS F. DOLE, M.D.

1. Span-roofed houses can not spread if they are properly constructed. A glass house, if intended to be permanent, should have foundations of brick or stone, and the ridge of the roof should be supported by posts four by four inches, resting on brick piers placed every ten feet apart. See fig. 137.

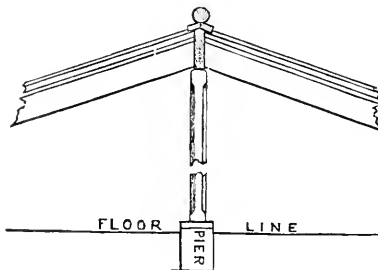


FIG. 137.

2. Our practice is, in every case, to plant the vines inside of the house, the founda-

tion of which is built upon piers of brick (fig. 138), or upon posts, if the foundation

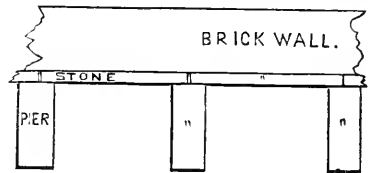


FIG. 138.

is to be of wood. The vines are thus allowed free access to the outside, and are better protected from sudden changes of temperature than if a portion of the cane is on the outside.

3. Iron for the roof of green-houses has not found much favor in this country, from the fact that our sudden changes of temperature create expansion and contraction of the metal to such an extent as to cause serious breakage of glass. Even in the milder climate of England this difficulty prevails. Of late years many devices have been put forth to obviate this difficulty, the best of which is the invention of Mr. Beard, for which he has secured a patent, which is illustrated in the London *Florist and Pomologist*, from which our cut is ta-

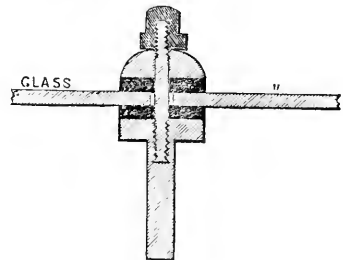


FIG. 139.

ken, one half of full size. (See fig. 139.) In this case the sash-bar is in two parts, the upper secured to the lower by means of screws. A strip of asphalted felt on each side of the glass forms an elastic bed, separating it from contact with the iron. Large glass, twenty by thirty inches, is used; and when the angle of the house is greater than forty degrees, the glass is

laid end to end. With a less angle the glass so laid we have found to drip badly at joints, from the moisture of the house, as well as to leak in violent, driving rainstorms. It is said by the inventor to be better in such cases to lap the glass. When the glass is lapped, the covering bars are made the same length as the glass. If it is laid end to end, then two or three squares may be covered.

4. The flue system of heating is by far the most economical as regards the first outlay; and for small detached houses, a well-built flue, if carefully managed, is an efficient mode of heating; but for a larger class of houses the hot water has many and great advantages, among which may be mentioned less fuel, no dust, smoke, or gas in the house, no repairs for years, and the ability to equalize the heat throughout the house, as well as to heat two or more houses from one boiler.

PEOLONIA, NORFOLK COUNTY, VA.

MESSRS. G. E. & F. W. WOODWARD—

Gents: As you requested, in answer to my last letter relative to my quarter-acre strawberry patch, I herein inclose you the result for this season.

My bed is now seven years old, and this season I shipped my berries myself to New York and Philadelphia. The fruit is finer and the vines were more productive than ever. Independent of what I have eaten, and we did not stint ourselves, I netted on the quarter acre \$700. Some sold in your city, by my agent, at \$1 50 per quart, per crate; and I sold some here at \$2 per quart. The last of my berries sold in New York at fifty cents, when the best Jersey Seedlings were in opposition to them. I commenced picking on the 15th of May.

The demand for plants this season has induced me to let the vines run to suckers, or I should have had a chance to pick berries, as usual, until late in July. Northern visitors, and every trucker in this section, have looked in on these strawberries with an expression of the greatest astonish-

ment; and in fact I have the Agriculturist, Jucunda, the Lorio, Prince's Welcome, Albany, and a number of others, all under the same treatment and condition, and they really fade into insignificance alongside of this Empress Eugenie, as to beauty, flavor, size, and adaptability for transportation.

Now, what do you think of seven-year-old strawberry beds? I think I can keep this one in existence seven years longer, with the same results, if I had not allowed it to make runners.

If I were to tell you my plan of arranging the land to make so permanent a result, you would be astonished at its simplicity. But knowing how valuable an editor's time is, I do not desire to trespass upon your patience, for fear it might no longer remain a virtue. Yours, most respectfully,

F. W. LEMOSY.

POULTRY.—Almost every one keeps poultry, and while we have no interest ourselves in the different breeds, we have of late been at times much amused at the bragging spirit shown in some poultry articles, and especially in that kind which so confidently puffs the Brahmas, because we think the writers about as well posted on the delicacy of flesh as some who write on grapes and pears are on quality of fruit. Our own experience, after ourselves breeding many varieties, and paying very high prices for Shanghais and Brahmas, is that the colored Dorkings are unquestionably the best in all respects—in that they are hardy, only moderate eaters, good sitters, good layers; the young come early to maturity, and the form of the bird on the table is superior to all others, while its meat, even on old fowls, is delicate, even to the flesh of the legs. The Brahmas are good winter layers, great eaters, small eggs, comparatively, with thick shells, while the flesh of very young birds is good; but if kept to above half grown they are coarse, and the legs and wings, especially, are tough and stringy, and always with a yellow hide rather than skin, that almost resists cooking process.

BUDDING.—The season of propagating by budding, or inoculating as it was earlier termed, commences with the cherry. If old trees are to be changed by this means, they should be the first to be operated on, as the growth is completed earlier on old than young trees. Young stocks of Morello should be worked also earlier than Mazzards; while the Mahaleb makes a growth so late in the season, that often it can be budded successfully all through September. All the fruit books give the *modus operandi* of shield budding; and we will only suggest that it is always safe to insert the bud on the north or northeast side of the tree, because of the drying heat of the south and west sun in summer and of the sometime injury caused by warm suns in winter, exciting the bud or sap vessels during the day and rendering them extra sensitive to the cold of the succeeding night.

At a meeting of the Western New York Fruit Growers' Association, held at Rochester, June 27, the best six varieties of strawberries for amateurs were voted upon. Twenty-eight ballots were cast, with the names of six varieties on each ballot. The result was as follows: Triomphe de Gand, 28; Wilson, 22; Hooker, 22; Jucunda, 17; Agriculturist, 16; Russell's Prolific, 9; Green Prolific, 4; Trollope's Victoria, 4.

RASPBERRY and blackberry canes that have ripened their crops of fruit should be at once cut away, thus giving all the nourishment of the root to the new canes, as well as more light and air around them to mature and perfect their wood and buds, preparatory to next year's fruiting.

WHAT VARIETIES OF PEARS ARE MOST CERTAIN TO SET THEIR FRUIT.—A correspondent writes us that he has "recently been through and among thousands of dwarf pear trees, and that while the majority of them had bloomed freely and cast their blooms without setting or hold-

ing their fruit, he found the Louise Bonne de Jersey and Beurre d'Anjou the least affected; most if not all the trees of these varieties have set more or less fruit, and some of the former quite abundantly."

MILDEW ON GRAPES.—At the time we write this, July 10th, we have just returned from visiting several vineyards of Isabella and Catawba grapes, and have found considerable mildew. The growth of vines up to this time has been almost unprecedented, and while we have no desire to croak, we think grape-growers must watch carefully and use preventives or remedies freely, or otherwise be prepared for more disease of the vine than is usual.

LAWNS.—During this month, August, the grass on lawns should not be cut very close, as if so done, it is liable to burn and dry out the roots, and the spaces to fill with false and wild grasses. Those who are about to make new lawns for another year should now commence the labor of trenching or plowing and subsoil plowing very deep. The lawn should be made and allowed to settle a week or two, or during two or three good rains before sowing the seed and leveling up, and the seed should be sown as early as the season of cool nights and frequent rains comes on. Some writers advise the use of grains, as rye, oats, etc., to be sown with the grass-seed; but as, according to the general law, the stronger overpowers and gradually destroys the weaker, we have found the use of any coarse grain injurious rather than beneficial. In the making of lawns we have at times had the handling of very light sandy soil, and when compelled to do the best we could with it, without aid from top-dressing, etc., we have used oats in the fall, for the purpose of holding it from blowing, and have made our second sowing of seed after the oats had grown an inch or so. We use Red Top, Kentucky Blue Grass and white clover at the rate of from four to six bushels to the acre.

CUTTINGS of heliotrope, geraniums, etc., should be struck during this month. As they grow, pinch back frequently in order to make the plants bushy and strong. In potting, do not use too large pots; small pots and repotting is far better than the use of too large a size at first.

NAPOLEON III. STRAWBERRY.—MESSRS. G. E. & F. W. WOODWARD, 37 PARK ROW, NEW YORK CITY—*Gents*: Your letters are received, acknowledging receipt of the sample of the strawberry Napoleon III., and we regret to learn that they arrived in such condition as not to enable you to judge of their quality. The fruit is large to very large (the samples sent you giving a fair average size at that time, not having sent the largest or the smallest berries).

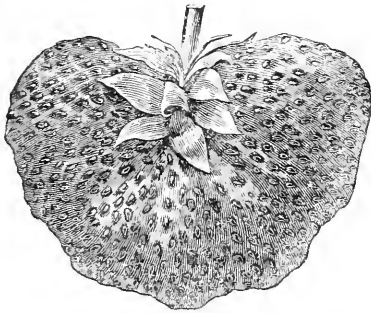


FIG. 140.

The variety may be described as irregular, flattened, varying from oval to cockscomb-shaped, of a handsome rosy-red color, shading to darker red in the sun, and waxy bluish in the shade; flesh of delicate, snowy whiteness, rather firm, and of sprightly, high flavor, with a delicate aroma; plant vigorous and healthy, with large dark-green foliage; very productive—exceeding in that respect anything in our collection, except Wilson's Albany; in season later than the Wilson, succeeding it; flowers perfect. For shipping, we fear it may not prove sufficiently firm, but as an *amateur* berry it is not *excelled*, and will be especially valuable from its lateness. The variety

was obtained from the originator, Mr. F. Gloede, in 1864, and has succeeded admirably with us since. Compared with Jucunda, it is not quite as attractive in color as that beautiful and popular variety, but of much higher flavor, more vigorous growth, and greater productiveness. We inclose photograph of a good-sized berry.

Truly yours, EDW'D J. EVANS & Co.
YORK, PENN., July 1, 1867.

WOODBURY, CONN., July 15, 1867.

EDITORS OF HORTICULTURIST: The strawberry season is over, and the yield has been a good one. *Triomphe de Gand* is our favorite, though we are pleased with *Agriculturist*, *Downer*, *Russell*, and last, though not least, *Hovey*. The raspberry crop is ripening up, and the *Antwerps* are bearing profusely. The crop of wild red raspberries is the largest in our recollection; the boys and girls are gathering them by the pailful, which readily sell at eighteen cents the quart. The grape crop looks promising.

The mildew appeared on the Delaware July 1st, and a few days later on *Iona*, *Israella*, *Adirondac*, *Allen's Hybrid*, and *Diana*. *Catawba*, *Concord*, *Hartford*, *Northern Muscadine*, *Union Village*, and *Ives* are wholly exempt. I have a few of the first-named vines planted on a thin soil with subsoil of gravel, that the mildew has not attacked. Yours, E. SPERRY.

SEEDS should be gathered as they ripen, placed in tight, dry paper bags, and laid in drawers or on shelves, where they will not be liable to absorb moisture.

WEEDS at this season of the year come rapidly to maturity, and the careful cultivator will watch and destroy them without mercy, knowing that one plant permitted to seed will supply him with much unnecessary labor the coming year. If you have careless neighbors, try and induce them to at least mow the weeds in their grounds before they ripen their seed.

PEARS.—It must be remembered that few if any of our early pears ripen well if left on the tree. As soon as they will detach freely from the tree, at the base or junction of stem and tree, by raising them slightly, they should be gathered and laid away in dark shallow drawers and between layers of flannel. Two or three days will usually bring out their highest colors and mature their juices to the greatest perfection.

METCALF'S EARLY STRAWBERRY, we notice, has been pronounced a failure in Southern Illinois, as not specially early.

LENNIG—STRAWBERRY.—We see no reason for calling this strawberry Lennig's *White*, for it is not a white berry, although when partially ripe it is greenish; when fully ripe it is only light greenish just at the apex, and the balance a delicate pink red. We suggest that hereafter the addenda of *white* be omitted when describing it. As a berry for amateur growing it is one of the very best, of high and pleasant flavor, and when well grown more than moderately productive.

NEW STRAWBERRY, CHARLES DOWNING.—Our esteemed and most valued friend Charles Downing comes before us now with his name attached to a new strawberry. The seedling promises well, but there are so many features of vitality, viz., hardihood, productiveness, adaptation to soil, etc., that we confess our regard for Charles Downing makes us almost regret that his name has been attached to a strawberry, or at any rate until it had been tried and proved in all parts of the States. Charles Downing is known all over this and the Old Country as one of the best and most honest of all pomologists, careful and correct in his decisions, with a fine and thoroughly cultivated taste; and while we would always keep his name and his many virtues before the people, we do not wish it associated with any fruit except one that proves universally of the best. We therefore suggest that the originator of this

strawberry cause his plants to go into the hands of true men in all our States and sections for perfect trial before he offers it for sale. There are plenty of men who would take and try and report, and reserve to the originator all the plants if he so desires.

LARGE YIELD OF STRAWBERRIES.—It is recorded by W. C. Flagg, Esq., Secretary of the Illinois State Horticultural Society, that David Gow produced six thousand five hundred quarts of strawberries from a measured half acre, or at the rate of four hundred and six bushels to the acre.

THE PLUNGING SYSTEM.—Although plunging pot plants is an old practice, yet in our wanderings we frequently find amateurs, and even professional gardeners, who permit their pots of plants to stand out exposed to the dry hot air of summer and into the chill nights of autumn without a thought of the effect such alternations in temperature have upon the foliage. Some gardeners use for plunging their pots spent tan bark, others sawdust, while we confess a preference for clean sandy loam. In forming our plunging bed for the season, we bed the bottom with flat stones, place our pots, and fill around and among them with our sandy loam, always, by the way, keeping our level with the surrounding surface, and having a good drainage from under our flat stones. It is only necessary to make a trial of the plunging system for one season to convince any one of its advantages in health and vigor of plants, over the too common practice of leaving the pots exposed to changes of temperature, moisture, etc., etc.

LIQUID MANURES, soap-suds, wash, etc., applied once a week to dahlias, roses, etc., will cause them to grow vigorously and double the size and beauty of their blooms. Be careful in applying not to wet the foliage, but make a little trench around each plant, pour in the liquid, and afterward fill up again with dry earth.

WEIGELA, GOOSEBERRY, ETC.—*Messrs. Editors*: Last year, and the year before, that very good man Charles Downing sent me several Weigelas. Last year they flowered; and again, now, as I write, the dark red one is in flower—a beautiful thing, one or two weeks earlier than rosea, darker and richer in color, with its clusters or trusses of flowers covering every stem. Is it *Groenweganii*? I suppose it is, and if so, let me say that all planters of shrubs should have it.

Another good thing he sent me was the Mountain Seedling Gooseberry, but I have almost failed in growing my cuttings of it put in last fall at same time as the Houghton, and in the same manner. Is it any harder to propagate? or were my cuttings (possibly) less strong than my Houghtons?

ADDIE.

[We agree with you in advising the Weigela *Groenweganii* as a beautiful shrub, and in the gooseberry propagating think your cuttings were perhaps made a little less in length, and some of them of less mature wood than in the case of the Houghton.—Ed.]

TOLONO, ILL., June 27, 1867.

MESSRS. G. E. & F. W. WOODWARD, NEW YORK—*Gents*: You seem to indorse quite fully Husmann's work, and yet I notice that in the HORTICULTURIST you insist that vines should be summer pruned, or pinched, so as to leave three or four leaves beyond the last bunch. Husmann as strongly recommends pinching back to ONE leaf, and gives his reasons for his practice at length. Will you, in the HORTICULTURIST or otherwise, explain this discrepancy.

DANIEL BRADLEY.

[In indorsing any work which we may do, it must not be supposed that we indorse every item therein, for no book has yet been written without some errors. We indorse Mr. Husmann's grape-growing views and detail of practice as being far in advance of any other author, and the first man who has dared to step out of an old beaten track; but our experience has

not been in favor of pinching the bearing branch back to one leaf beyond the fruit, and our reasons for not doing it are, that we think by leaving three leaves we develop more perfect sap to swell and assist in perfecting the fruit than can be done by the one leaf. Laterals of course come in as aids, but in our case we have all the time three leaves to Mr. Husmann's one, and we do not think we have any too much foliage to aid and assist under the influence of our very hot sun.

No two books give a like direction, and in grape-growing hardly any two varieties of vines will succeed alike under the same treatment. While we differ from Mr. Husmann, we consider him a very capable and practical man, and in holding our own views do so with respect and esteem for those of others.]

BLIGHT IN THE PEAR.—Pear trees should be watched carefully at this time for the appearance of blight. Without asserting that amputation of the limb is a remedy or preventive, we can safely say that, as it must be done some time, the sooner done on appearance of disease the better. We have practiced cutting the branch a foot or more below any visible sign of disease, and in some cases have entirely checked its progress.

BOOK NOTICES.

AN ELEMENTARY TREATISE ON AMERICAN GRAPE CULTURE AND WINE MAKING. By Peter B. Mead. Harper & Brothers. Price, \$3.

After a careful perusal of this book, we can not consider it strictly an emanation from P. B. Mead. Its object professedly is to teach the amateur gardener and vineyardist, but the evident intention is to set forth the immense superiority of the Iona and Israella grapes above all other varieties, and thus to advance the interests of their originator, to whom the author is indebted for many of the engravings. Mr. Mead gives us full and explicit details of the various modes of training and cultiva-

tion in Europe, leaving his readers to infer that all improvements in grape culture have been discovered only there. He disdains even a passing notice of American grape-growers or American authors on grape culture. Have not such men as Longworth, Chorlton, Allen, Ellis, Remelin, Buchanan, Husmann, or Fuller put forth an idea, or by their practice done ought to advance the cause of grape culture in this country? and that, too, with varieties of the vine demanding a different mode of treatment from those of Europe? The fathers of American grape culture, we are to judge from the book, are the author and the originator of the Iona; they have brought forward varieties, and introduced, practiced, and improved upon systems of training that leave nothing further to be desired. In a new book on such a subject we look for new ideas, but find nothing that has not been said, and *well said*, before. The author claims to give a simple record of his own practice and experience, and would lead us to suppose that he had a practical knowledge of the various processes of planting, pruning, and training. Those who know him best may ask, where is his experimental garden, that they may view the results of his labors?

In typography, engravings, and binding, the book reflects credit upon its publisher; but the work ought to have been entitled Dr. Grant's Catalogue Revised and Improved.

VINEYARD CULTURE. Improved and Cheapened by A. Du Breuil, Paris. Translated by E. & C. Parker, of Longworth's Wine House, Cincinnati; with Notes and Adaptations to American Culture, by John A. Warder. Robert Clarke & Co., Publishers, Cincinnati, O.

We have received some proof-sheets in advance, of a work on "Grape Culture," as per title above named. In the preface of the American edition, the editor says he desires to aid and abet all advance in grape culture, and also says we have now "started in the right direction," because we have avoided the errors of early planters in

attempting to acclimatize our foreign grapes. In this, would not our American editor have done better—although, perhaps, not so well paid—had he been willing to condense his own knowledge into an American work? We think he would. But here is the work. Du Breuil is a capable man abroad, and undoubtedly handles the vine as there grown, and as to its habits, with knowledge and skill; but we well know the same course will not answer here, and hence we can see nothing gained to the multitude in publishing, or, rather, republishing, foreign ideas and teachings, although commented upon by an American. "Smith's Landscape Gardening" is a pretty good indication of the advantages resulting from Americans editing a foreign work.

GEYELIN'S POULTRY BREEDING IN A COMMERCIAL POINT OF VIEW. With a Preface Introductory, by Charles L. Flint, Secretary Massachusetts State Board of Agriculture. Published by A. Williams & Co., Boston. Price, \$1 25.

We have been more or less engaged in rearing poultry for many years, having gone through all the breeds, and at last settled on the Speckled Dorking as combining all in all the most good qualities, and our experience convinces us that the meat of poultry can be grown pound for pound at a less cost than beef. The work here presented to the public conveys more plain and practical directions regarding breeding, keeping, etc., of fowls than we find in any other work on poultry, and ought to meet a ready and extensive sale.

CHEMISTRY OF THE FARM AND THE SEA. By James R. Nichols, M.D. Boston: A. Williams & Co., Publishers. Price, \$1 25.

This is a series of short and familiar lectures on the chemistry of various items connected with the household farm, and the riches supplied in salts, etc., from sea plants. It is plain and descriptive, and to the young or transient reader a work of interest and value.

THE

HORTICULTURIST.

VOL. XXII.....SEPTEMBER, 1867.....NO. CCLV.

THE BLACKBERRY.

BY ANDREW S. FULLER.

THE introduction of the New Rochelle Blackberry was an event of considerable importance to horticulture. It is true that there were at that time other varieties in cultivation that possessed many valuable qualities, but the New Rochelle was such an advance in size that it awakened an interest in this fruit that had not been previously felt. The excitement created in regard to this variety may have been owing in part to the persistency with which Mr. Lawton pressed its claims for superiority upon the public notice, or because it was widely and extensively advertised; but whatever may have been the cause, it certainly has become immensely popular. Every horticulturist is probably aware that the popularity of a fruit is often dependent upon the manner of introduction; for if a variety is brought forward with much ado, and a considerable display of *printers' ink*, it is pretty sure of being widely disseminated; consequently it will fall into the hands of thousands, who, never having seen better, will believe it is the very best of its kind, even if it is not. Another point, which I fear is too often overlooked, is that of price at which a new kind is first sent out. One that is given away or sold very cheap is seldom appreciated; but if two or three dollars are paid per plant, they are quite sure of being well cared for, and

as good culture is very often the secret of success, consequently many of our fruits seem to be wonderfully prolific and valuable only while they are new and scarce.

The New Rochelle has lost none of its original good qualities, but the depreciated value of the plant has taken away at least one half the incentive to good culture, and the result is seen in many a neglected plantation. Although it is still a valuable variety, yet it is not as good as we desire, for the fruit is too acid until fully ripe, at which time it is so very soft that it will not bear transportation to any considerable distance; besides, in many locations in the Northern States the plants are quite tender.

The Dorchester, which was about the only variety of blackberry in cultivation at the time the New Rochelle was introduced, is still extensively grown in many sections of the country. It is a very early and excellent variety, but in some soils is not very productive. The berries are also rather small to suit the popular taste, although in rich soils and under generous treatment they will average as large as shown in fig. 141. The Dorchester and New Rochelle blackberries, however, have been the means of calling the attention of fruit-growers to this class of fruits, which before their introduction were almost universally neglected. Several new candi-

dates for public favor have recently been sent out, among which the most promising are the following:

WILSON'S EARLY.

I confess to an agreeable surprise with this variety, for it has really proved to be superior to the high encomiums which were bestowed upon it by those who first disseminated the plants. The berries are

enormously large, far excelling the New Rochelle, being much longer, and nearly or quite equal to it in diameter. Fig. 142 is an exact representation of a cluster of these berries, picked from a two-year-old plant. I have gathered many such clusters from plants set out this season, and its productiveness, even when quite young, is really surprising.



FIG. 141.—*The Dorchester.*

The extreme earliness of this variety is greatly in its favor. Following closely the raspberries, it fills a space in the season heretofore almost unoccupied, and affords an opportunity to the grower of small fruits of keeping his baskets and crates continuously in use. The berries all ripen in about two weeks, and the entire crop

may be disposed of before the later varieties begin.

The Wilson's Early will, doubtless become one of the most popular market varieties.

KITTATINNY.

This new wonder among the blackberries can not claim large size as one of its

merits, as it is not quite as large as the New Rochelle, but it is of far better quality, and probably the best-flavored variety in cultivation. The plant is also very hardy, and in my grounds not a cane was killed the past severe winter, while the

New Rochelle and Dorchester were more or less injured. Although the Kittatinny is not the largest variety in cultivation, still it is larger than the Dorchester and some others, while at the same time it possesses other merits that will make it very



FIG. 142.—Wilson's Early.

popular with both producer and consumer. The introduction of these two new varieties (Kittatinny and Wilson's Early) will cause other choice kinds to be brought out if they already exist; if not, they will be produced from seed, and ere long we may

look for the advent of a really good *thornless* variety. A blackberry plant without thorns, and yet possessing all the other good qualities, would be a great saving of dry goods, to say nothing about the scratched hands and hard words, either-

uttered or suppressed, by those who are obliged to work among them. We have already a superb variety of the black raspberry (Davison's) which is thornless, and a blackberry possessing the same merit is a thing devoutly wished. There is one

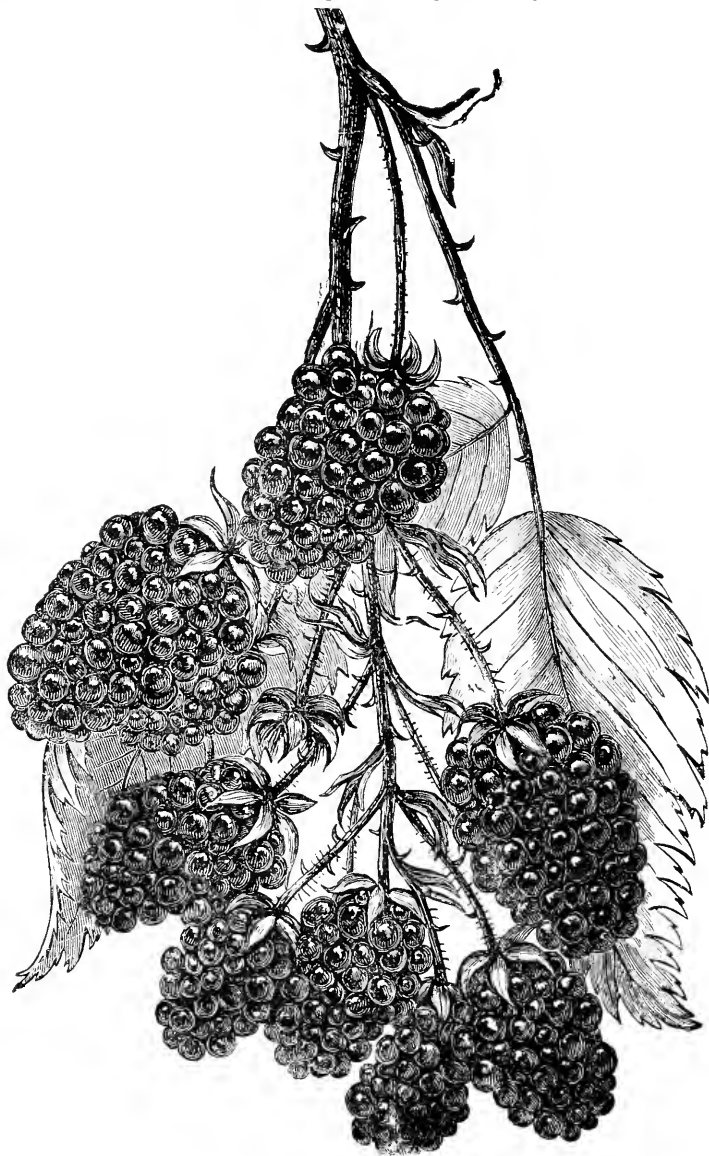


FIG. 143.—*The Kittatinny.*

candidate for the honor found near where the original Kittatinny was discovered. Who knows but it will be a successful rival of its thorny neighbor? My plants of this new variety look well, and I wait impatiently for the development of fruit.

RURAL RESIDENCE.

BY CARL PFEIFFER, ARCHITECT, NO. 4 BROAD STREET, NEW YORK.

THIS design is given as one well adapted for a village or rural residence, where economy of space and expense are desired to be combined with an agreeable exterior and appearance of interior spaciousness.

This house was built at Hamilton Park, New Brighton, Staten Island, about four years ago, at a cost of six thousand dollars, and is one of the group of twelve (all

different in design) alluded to in the May number.

It is built of brick, with brown stone trimmings and Mansard roof, with slate covering—has a basement, two stories, and an attic; and the attic affords good comfortable rooms, ten feet high, with an air space between the ceilings and roof. The side walls being partly formed by the Man-

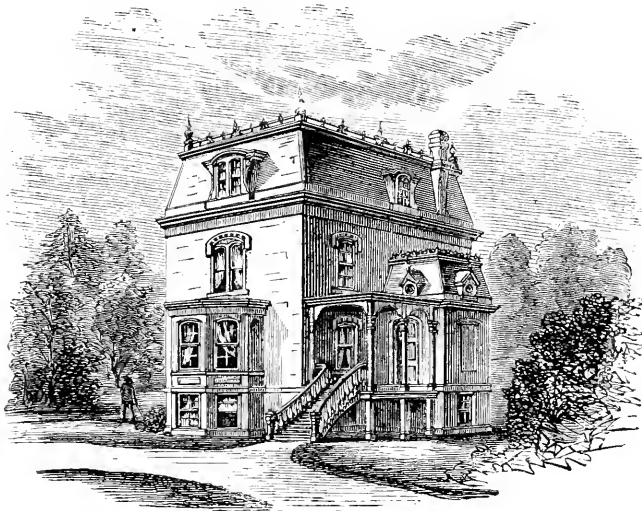


FIG. 144.—*Rural Residence.*

sard roof, are back plastered between the rafters, and the slate is laid upon tarred paper. All these precautions were taken to prevent dampness, heat, and cold from penetrating too readily.

The basement walls are sixteen inches thick; those above are twelve inches, except the walls of the projections that form the hall and library, which are only eight inches.

The basement contains the kitchen, laun-

dry, and store-rooms. The first story is so arranged that the several rooms communicate by large, double folding doors, and may be opened into one spacious interior, and still are accessible separately.

The projecting part of the library or bay extends up only one story, and forms a balcony on the second story. Though the dimensions of the hall are small, a cramped appearance is avoided by the Mansard roof over it forming a dome, giving a ceiling of

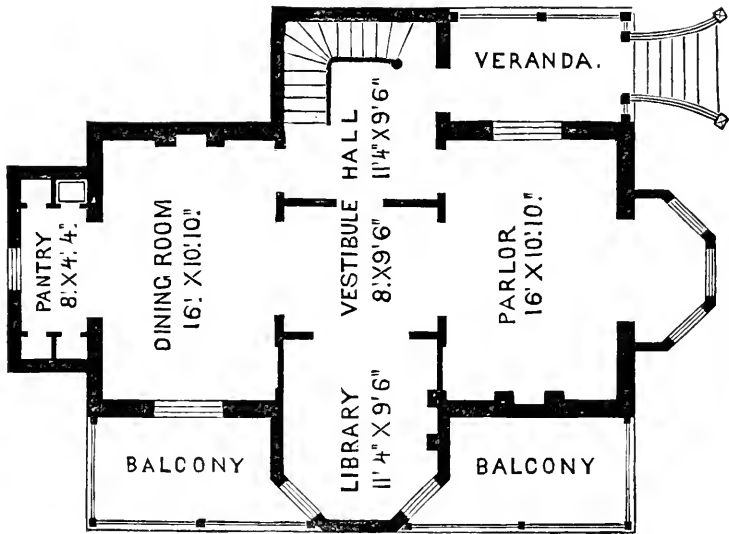


FIG. 145.—*First Story.*

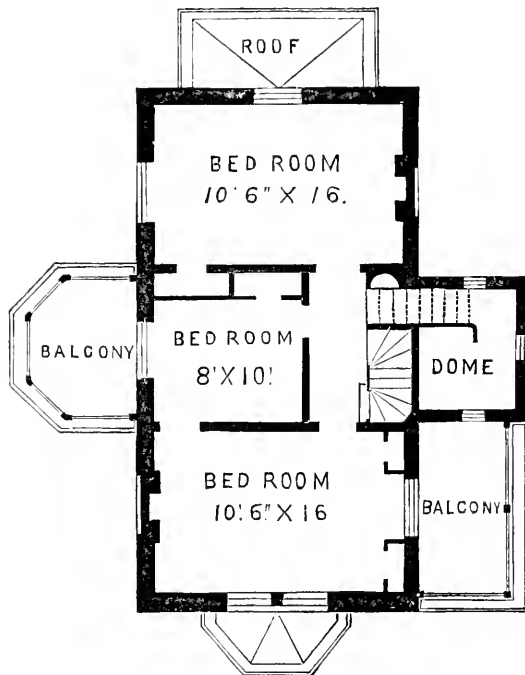


FIG. 146.—*Second Story.*

eighteen feet high to the hall, with colored glass in the skylight and dormer windows.

At the rear of the dining-room a bay is built out, one story high, to afford the closets of a butler's pantry and a dumb-waiter. All may be shut out by large double folding doors opening into the pantry from the dining-room, or the folding doors may be opened, and are so arranged that they will shut against the closets, and give the appearance of a bay window to the pantry corresponding to the bay windows of the parlor when the fold-

ing doors between the parlor, vestibule, and dining-room are opened, thus securing on a small scale that appearance of spaciousness so difficult to obtain at a moderate cost.

The second story has three, and the attic four bedrooms, making seven bedrooms in all, and also a number of closets. Added to these, the parlor, library, dining-room, and butler's pantry, of first story, kitchen, laundry, store and cellar-rooms in basement, it may readily be seen how it may meet the wishes of a family.

STRAWBERRIES.

BY WM. F. HEINS, PATERSON, N. J.

WHAT kind of Strawberry shall I plant? is a question as often asked as it is answered by advising to use those sorts most in favor with the parties questioned. I have raised many thousand seedlings, cultivated over one hundred and thirty varieties, carefully testing their character and qualities, have collected reliable information on the subject, of persons in different localities, and have come to the conclusion that the Wilson and Triomphe de Gand give, of all the native and foreign varieties, the greatest satisfaction in the largest portion of our country. I also find that for forcing under glass no sorts are superior to these two.

Every season brings us new seedlings, "truly splendid, superlatively magnificent," and each claimed to be "the Strawberry." Even old varieties, which perchance suit a very limited locality, are dished up in the full glory and capacity of our language as beyond anything ever seen or heard of; and pictures of the berries, as large as the space on the paper will allow, head the columns of praise, and are sent all over the country in order that no one may be deprived of an opportunity to secure so valuable a prize.

To satisfy myself what could be done

in this style of "humbug," I prepared a bed twelve by twelve feet, in a peculiar way, and planted the *La Constante*, twelve by twelve inches apart, and by watering with liquid manure, shading during mid-day, etc., I produced astonishing results. Besides a quantity of smaller berries, I took from this bed one hundred and thirty-five, measuring from four to five and a quarter inches in circumference, all very fine and handsome-looking fruit. I must confess that this little plot put all my other varieties decidedly in the shade, and many visitors could hardly believe their own eyes; still, there were the facts. Now, this *La Constante* is of medium size only, can not endure in most localities our sun and heat, and is not suitable for general cultivation. But, had I visited some of our fruit committees, and desired their opinion, they could in all honesty but have certified that the result before their eyes was certainly beyond anything ever seen before. Their certificate could then have been published all over the country. The result would have been orders for thousands of *La Constante* plants, and hosts of disappointed purchasers.

Let me name a few of my favorite sorts

besides the Wilson and Triomphe de Gand, and afterward give my mode of cultivation.

Agriculturist may gain by further trial, at least some portion of the value put upon its quality and character. Berry, good size, fair flavor; plant, hardy; flower, perfect.

Russell, flowers pistillate; productive,

and fair flavor; not very handsome, and must be planted near perfect flowering varieties.

Brooklyn Scarlet, perfect flowers, hardy plant, handsome berry, and good flavor; not over-productive.

Lady Finger, good flavor, hardy, fair cropper, perfect plant.



FIG. 147.—*Agriculturist.*

Durand's Seedling promises well, but should be tested in many locations before being recommended for general cultivation.

Austin Shaker Seedling, large and handsome; no flavor.

Green Prolific, truly prolific, of large

size, fine appearance, but sadly deficient in flavor.

Jucunda—if the experience of others with this variety is the same as my own, it will soon be laid upon the shelf.

New Jersey Scarlet, medium size only, and flavor nothing to boast of.

Ripowan, fruit good size, not over abundant; no flavor.

French's Seedling, of good size and flavor, and prolific. I think it more suitable for the South than other localities.

Scotch Runner, a very valuable variety, particularly when planted closely in rows.



FIG. 148.—*Russell's Prolific.*

The fruit is not large, but of good flavor; not firm enough for transporting long distances; but it will grow and bear well without particular care where other varieties would fail.

To raise strawberries in perfection re-

quires well and deeply worked soil, containing as much thoroughly vegetable matter as practicable. Leaf mold, wood ashes, charcoal dust, and sods are well adapted for the purpose. Fresh stable manure should never be used.

A location exposed to the full sun is most desirable. My experience has taught me that the fall, say September and October, is the best time to set out plants; the month of August is generally too dry. I find the runners more thrifty, and the

young plants to become sufficiently established to endure the winter and yield a good crop the following season.

Many advise an elaborate method of planting, by making spacious holes and a little mound in the center, and then the



FIG. 149.—*Brooklyn Scarlet.*

roots spread out carefully over it. All this I think a useless waste of time. I have planted thousands of strawberry plants, and have lost but a very small portion. I take a short but thick dibble, two inches in diameter, make a hole, and after trim-

ming the roots with a sharp knife or shears, I set the plant in the hole, close the soil tightly around the roots with both hands, pressing the plant firmly down at the same time, so that the heart or crown remains uncovered. By selecting a cloudy day, or



FIG. 150.—*Durand's Seedling.*

after a good rain, for planting in this manner, the plants will grow vigorously. For small plantations I find beds four feet wide, with paths of eighteen inches between, the most suitable arrangement. Three rows, twelve inches apart, are planted in each bed, the plants eighteen inches apart in the row, arranged in this form :



All parts of the bed can thus be reached for picking the berries, pulling the weeds,

and managing the runners. For field culture the rows should be three feet apart,



FIG. 151.—*Green Prolifio.*

and the plants twelve inches distant in the rows. This space gives ample room for the use of the plow and cultivator when needed; and the fruit can be gathered with facility.

Late in the fall all runners are removed,

the soil between the plants loosened, and all weeds destroyed. A dressing of compost is then forked in, if needed, and after a good frost, about the beginning of December, or even later, according to the season, the whole beds are covered one inch deep

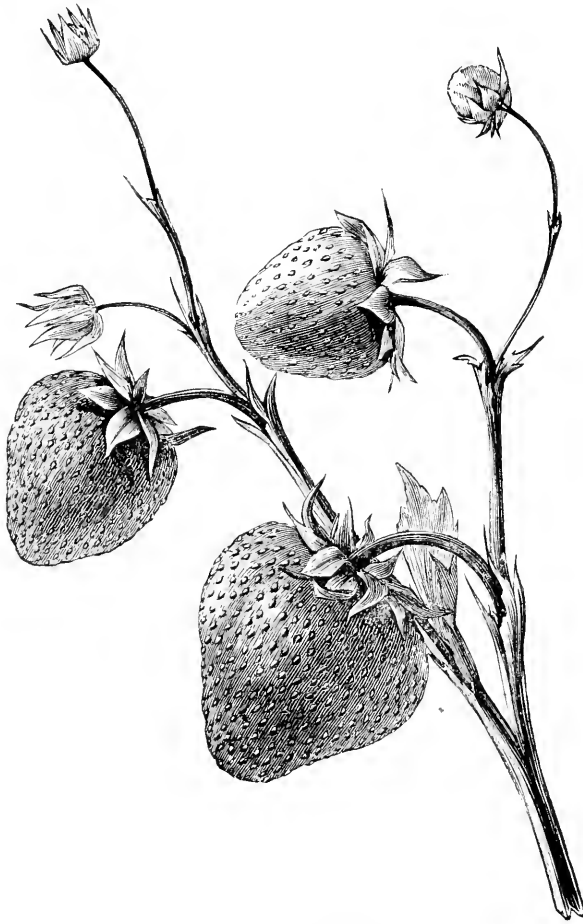


FIG. 152.—*Jucunda*.

with salt hay. Straw, as it usually comes from the threshing machine, will answer if salt hay can not be procured. This covering is not to be removed until June, after all the berries are gathered. All runners are to be removed before fruiting. After

the crop is over, a rake is used freely among the rows, and the runners are allowed free scope until late in the fall. The plants are allowed to bear three seasons, and are then destroyed. By making a new bed every year the rotation will be complete.

PROPAGATING PLANTS BY SUCKERS AND DIVISION OF THE ROOTS.

BY A. S. FULLER.

DR. ASA GRAY, in his "Structural Botany," page 102, defines a sucker as "a branch of subterranean origin, which, after running horizontally and emitting roots in its course, at length, following its natural tendency, rises out of the ground and forms an erect stem.

"The rose, the raspberry, and mint afford familiar illustrations, as well as many other species which shoot up 'from the root,' as is generally thought, but really from subterranean branches. Cutting off the connection with the original root, the gardener propagates such plants *by divisions*."

The above is a brief statement of the theory generally advanced by vegetable physiologists in relation to the origin of suckers—*i. e.*, that they are produced from subterranean branches, and not from true roots.

Now, while it is not my purpose to occupy any considerable space in this treatise in endeavoring to explain any theory relative to the propagation of plants, nor to provoke a discussion upon the origin of buds or roots, still there are some mystifying statements made by our best authorities on the subject that call for a passing notice. According to Dr. Gray's theory, the raspberry can scarcely be said to have any roots; at least it would be difficult to fix the point where branches end and roots begin, because one of these so-called subterranean branches, which is not more than one-fiftieth of an inch in diameter, will often produce buds and stems as readily as those which are larger. Other vegetable physiologists make the same or very similar assertions. Schleiden, in his "Principles of Scientific Botany," page 220, says that "no root is capable of producing buds." If this is true, then thousands of

plants which we cultivate have no roots, inasmuch as there is not a portion of that which is commonly called root, however minute, that can not under proper circumstances be made to produce buds and leaves. Professor Lindley, in his "Theory of Horticulture," chap. X., while referring to this subject, says: "A cutting is only capable of multiplying a plant when it bears buds upon *its surface*; and as the stem is the *only* part upon which buds certainly exist, so the stem is the only part from which cuttings should be prepared."

According to this theory, cuttings made from the leaves are not only ignored, but should not be used, although we have every reason to believe that at the very time that the above paragraph was written there was scarcely a garden in England in which plants were not being propagated from cuttings of the leaves and from true roots, on neither of which could buds be discovered when taken from the parent stock.

To show how readily some writers promulgate theories founded upon what they may have supposed to be general principles, I will make another extract from the same page as the last: "And again, as the internode or space of the stem which intervenes between leaf and leaf has no buds, their station being confined to the axil of the leaves, a cutting prepared from an internode only is as improper as from the root."

It certainly may be very *improper* to make cuttings from the internode or from roots, still every gardener knows that with such plants as the willow, quince, poplar, etc., that not only will roots be produced from such portions of the stems, but buds as well. It is quite evident that the learned author (Professor Lindley) had

some fears that this theory would not stand the test among the practical men, for he adds: "It will occasionally happen that, owing to unknown causes, morsels of the true roots will generate what are called adventitious buds, and hence we do occasionally see the root employed for propagation, as in the *Cydonia Japonica*; but these are rare exceptional cases, and by no means affect the general rule."

But he has previously said that "a cutting is only capable of multiplying a plant

when it bears a bud upon its surface." Do we really ever look for buds on the surface of the roots when making cuttings of the blackberry, raspberry, paulownia, catalpa, and hundreds of other plants which are being constantly propagated from pieces of the roots? It certainly makes but little difference with the results whether buds are to be seen or not so long as they are produced at the proper time. The assertion that there are only exceptional cases, consequently do not affect the

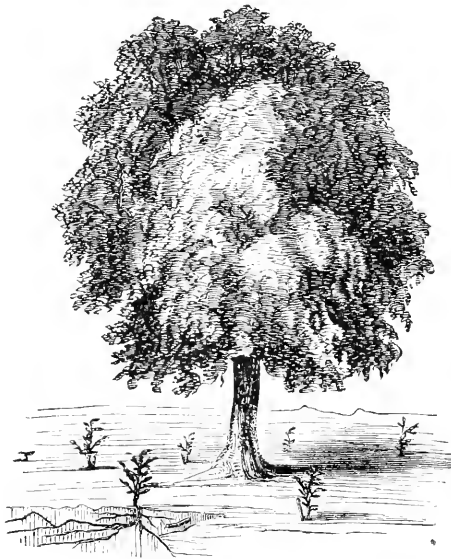


FIG. 153.—*Roots Exposed.*

general principle, has really no foundation, because we are not confined to any particular family or species of plants to find those which may be propagated from the roots. The tender geranium is as readily multiplied from roots as the paulownia, pear, or plum.

It is true that there are many plants which the most scientific propagator has not as yet been able to multiply from root divisions; but because all such attempts have heretofore been unsuccessful, is no proof that it can not be done, or will not at

some future time. Why one plant possesses so much vitality that almost every portion, from the leaves to the most minute point of root, can readily be made to produce a separate plant, while with another every attempt at such a division is unsuccessful, can not be scientifically explained. The fact is apparent—the cause unknown.

There are many kinds of plants that produce suckers in such abundance that no artificial aid is required, except in separating them from the main plant at the proper time. But there are others which

require assistance, such as heading down the parent plant, or severing the roots, leaving them in the ground until suckers are produced.

This last method of propagation was practiced two hundred years ago more than at the present time. In an old work written by Moses Cook, in 1675, we find this method described as follows: "In the latter end of February or beginning of March dig round the trees you intend to increase from till you find such roots as before mentioned, and taking your knife, cut them three or four inches from the great roots, smooth at the place you cut off; then raise up that end, putting in the earth to keep it up, that when your ground is leveled again, the end of the root so cut may be two or three inches above ground." A tree thus prepared would appear somewhat as shown in fig. 153. New shoots will spring from the ends of the roots exposed. The next season the entire root, or only a portion of it, may be taken up with the plant attached. Mr. Cook evidently had not heard of the modern theory of buds not being produced or found on tree roots, as he gives this plan as a sure one for propagating most of the forest trees then in cultivation. When trees have been subjected to this mode of prop-

agation for several successive generations, it increases their natural tendency to produce suckers, until with some kinds the habit will become a very troublesome, if not a decided nuisance; therefore, in such cases, it should never be resorted to if it can be avoided.

Plants that produce suckers can usually be grown from pieces of the roots, and this mode is practiced more generally at present than that of waiting for the roots to produce them without artificial aid. Plants grown in this manner are generally better supplied with fibrous roots, and assume more of the character of those grown from seed, therefore are better suited for transplanting. Root cuttings of hardy plants are usually made in the autumn, for the same reasons given for making cuttings of the ripe wood at that time.

The size of the cutting will vary according to the species operated upon, and the manner of keeping through the winter will also vary considerably; owing to the different structure of the roots, some will require more warmth and moisture to develop buds and roots than others, therefore each family or species will need a particular treatment peculiar to itself, which it would be difficult to explain under any general rule.

NEWMAN PLUM.—Mr. Elliott, of Cleveland, writes us that he has "received samples of the 'Newman Plum' from D. L. Adair, Esq., of Hawesville, Ky., and that the variety so sent is of a roundish-oval form, about one inch in diameter, clear light red, with a blue bloom, and until the fruit is fully ripe, there are numerous white specks or dots; flesh yellow, sweet, somewhat stringy, yet tender, and adheres to the stone, which is quite large for the size of the fruit. In my earlier days I frequently met with wild plums in Ohio, and have often done so in Missouri, that were almost if not quite identical, and in the years 1836 to '45, or thereabouts, they

were abundant in the markets of all the Western towns and cities. Mr. Adair claims for it perfect exemption from the curculio—a matter of course of which he should know; but unfortunately for its chances in Ohio, I am disposed to think it would be no more free than any of our wild varieties."

FRUIT CROP IN CALIFORNIA.—An estimate made of the value of the fruit crop of California places the apple at about \$400,000, the peach at \$300,000, the plum at \$160,000, cherries, apricots, and pears at \$230,000, and grapes at over \$1,000,000.

PORTABLE POULTRY HOUSE.

ALMOST every one is desirous of keeping a few fowls, and while they desire to give them fresh food, earth, etc., it is often difficult so to do, when kept in any stationary coop.

The accompanying cut, taken from the *Cottage Gardener*, presents a convenient

and at the same time cheap design for use on small places, and we imagine will be of interest to a great number of our readers. It is exceedingly portable, as light as possible consistent with durability, and very economical of space, besides possessing excellent interior arrangements for the com-

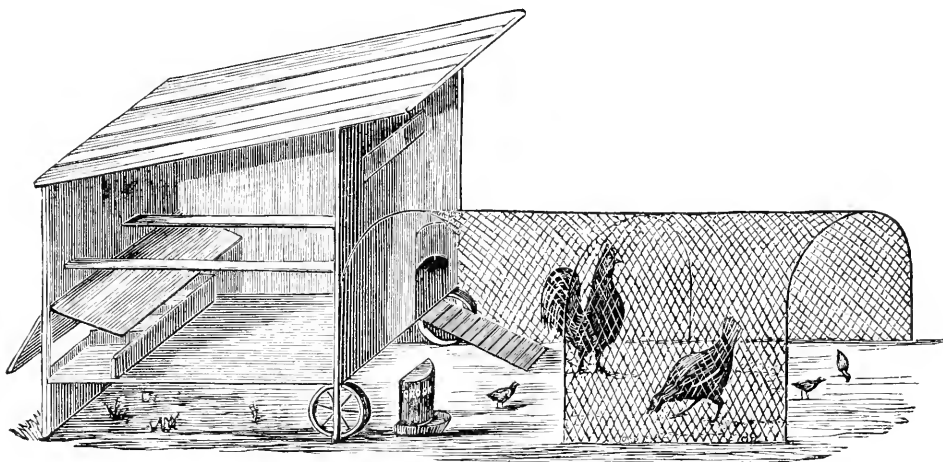


FIG. 154.—*Portable Poultry House.*

fort of the fowls for roosting, laying etc. The nests are so arranged that any lady can collect the eggs without going inside the house. The open space under the house affords ample retreat for the inmates on wet days. The whole being mounted upon wheels, and provided with side fall-down lever handles, it can readily be moved

about, and these houses represent one of the most useful improvements in poultry arrangements.

They are equally adapted to either garden or farming purposes, the land becoming enriched and cleared from insects at a small cost, with benefit to both proprietor and fowls.

FLOWERING THORNS.—When arranging for shrubbery planting this coming fall, the various flowering thorns should not be forgotten. Some years since our friend Charles Downing gathered together a beautiful collection of various shades of bloom, from pure white to a deep crimson,

but the latter was only a single flower. At this present time the brilliant rich crimson tint is in existence in a double-flowering variety, which has been figured in the *Florist and Pomologist*, and is doubtless already in the hands of our leading nurserymen.

NEW SEEDLING STRAWBERRY NICANOR.

BY F. R. ELLIOTT.

RECENTLY, while attending the Strawberry Exhibition of the Western New York Horticultural Society, my attention was specially drawn to a seedling strawberry exhibited by Messrs. Ellwanger & Barry, of Rochester. The plant on exhibition had upon it two hundred and seventy berries, and the appearance promised so well as a berry for market growing, that I decided to visit the grounds of Messrs. Ellwanger & Barry, and see whether in the field it sustained the character of that on exhibition. Visiting the grounds, I found a field of ordinary common soil, about fifteen by twenty rods square, planted with strawberries, in rows three feet apart, and the plants about one foot or less in the rows, and the varieties as follows: some six or eight rows of Large Early Scarlet, then eight or nine rows of the Seedling, then twelve or fifteen rows of Wilson's Albany, and twenty or more rows of Triomphe de Gand. All apparently had received the same treatment, which was merely plowing the ground in the ordinary manner of farm plowing, before planting and after planting, keeping it decently, not perfectly, clean of weeds and grass. The exhibit was abundant on the Early Scarlet and on the Wilson, but the Seedling was one perfect mass of fruit—certainly one half more than the Wilson, and with the foliage upright and strong, enabling it to sustain and ripen all.

Upon inquiry of the man in charge, he told me that he gathered fruit from this variety at an earlier period than from Early Scarlet or Wilson, and also much later. As it ripened its berries gradually, its value in the market was much greater than that of the Wilson. According to Mr. Ellwanger, it was grown some six years since from seed of the Triomphe de Gand, and with the exception of a few plants kept for examination in their own grounds, the stock was placed in field culture to enable them to prove its value as a market berry.

The drawing herewith I have made without any special reference to size, but as near as I could to a fair average of the whole crop. As yet no public

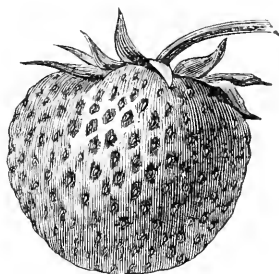


FIG. 155.

notice or description has been made, and on my desiring to figure and bring it before the public, the name of NICANOR, or the Conqueror, was given, as one short and appropriate.

Leaf, large broad oval, of a deep, dark pea-green color, and deeply serrated.

Foot-stalks, long and strong, carrying the foliage very erect and high.

Fruit, medium, or above, in size; or from one to one and a quarter inch in diameter, regular and even rounded cockscomb form; surface glossy, firm, bright, deep scarlet red; seeds dark colored, moderately imbedded; flesh reddish, rich, sweet, and high-flavored; truss with long foot-stalks, and usually from eighteen to twenty-four berries on a truss.

Flowers, perfect, setting every berry without a failure.

As a market berry, while it is not perhaps any larger than the Wilson, it is more uniform in size, ripens more gradually, and carries equally as well, if not better. As a vine, it is among the most hardy, having very long, deep, and strong roots, and enduring the changes of summer and winter with impunity.

C L E M A T I S.

BY JOHN SAUL, WASHINGTON, D. C.

In the June number of the HORTICULTURIST, page 187, you have called attention to the importance of protecting the Clematis during winter, as recommended by that excellent horticulturist Mr. A. S. Fuller. The mode of planting, as recommended, in groups, is also good, especially when a little judgment and taste are used in arranging the plants—having due regard to color and vigor of growth.

My present purpose, however, is to draw attention to some of the beautiful new varieties that have appeared of late, and which may not be sufficiently known.

Clematis Jackmani.—This beautiful variety is the result of a cross between *C. Lanuginosa* and *Hendersonii*; a lovely, hardy climber, with large flowers of a deep bright violet, a very vigorous grower and profuse bloomer. Only requires to be known to be extensively cultivated.

Clematis rubra violacea.—A similar hybrid to the above, and raised, like it, by Mr. Jackman, but the parents were *C. Lanuginosa* and *C. Viticella atropubens*, and differs

chiefly in its intense narrow shaded reddish flowers, which are remarkable for their rich velvety appearance. *Equally* fine.

Clematis Fortunii—A very fine species from Japan, with large, showy flowers, which it produces in profusion, and are very striking at a considerable distance. Said to be much admired by the Japanese.

Clematis florida Standishii.—This fine plant is also from Japan, and one of the most beautiful of the family. The color of its flowers is rare and very beautiful—a kind of violet blue, with crimson and carmine shining through it.

Clematis Lanuginosa.—This beautiful species has been longer in cultivation than some of the above, yet not so generally known as it should be. There is also a fine white variety of this (*C. Lanuginosa nivea*), which will form an admirable contrast to the rich, deep-colored varieties.

Clematis fulgens, atropurpurea.—Princess of Wales and Rubella are beautiful varieties, but yet scarce, and not sufficiently tested.



NEW JERSEY STATE AGRICULTURAL SOCIETY—ITS COMING FAIR.

WE learn from the editorial columns of the journals of our neighboring sister State, that this time-honored association, after a rest of several years, is about to hold a fall exhibition on grounds of their own, situated between the cities of Newark and Elizabeth. It is with very great pleasure that we are able to announce this fact, for we have not heard from this association in the way of an exhibition since the commencement of the war of the rebellion; and we have a conviction that, from the high character of the gentlemen at the head of the association, they will

attempt nothing that will not prove in every way successful and creditable to themselves and their State. Though this Society have held no fairs for the period mentioned, they have not been idle in the good work, but, on the contrary, have been zealously though silently pushing on the development of the agricultural resources of the State of New Jersey. It is mainly by their efforts that the geological survey of the State has been carried out, resulting in the brilliant discovery of their enormous marl beds, priceless in their worth, and contributing to the wealth of the State what

seems at sight to be almost fabulous. Petroleum and California gold are lost in the comparison, for the amount of capital employed in getting at and distributing this treasure is as with the result insignificant. We learn, too, that this Society, for the purpose of better carrying out its beneficent designs, has become a joint stock association, and now numbers among its stockholders or members some of the best and most influential men of the State. Their officers are gentlemen whose well-known characters and social position give every assurance that their Society will not degenerate, as has too often been the case, into a mere horse affair, and their exhibitions turn out only horse-racing shows; but that a careful regard will be had to the true agricultural, horticultural, and industrial interests of the State, the horse taking only his proper position in connection with these.

The officers of the Society are now calling upon the stock breeders of their State, their manufacturers and mechanics, and all interested in agriculture, horticulture, pomology, and the domestic and household arts, to get ready for their fall exhibition, to be held on their own property, where they intend to lay out very extensive ornamental

grounds, and to erect suitable buildings for a permanent establishment. Their idea seems to be to build up a bureau whose usefulness shall be commensurate not only with the interests and wants of the State, but with those of the entire country; and in this we can but wish for them the largest and fullest measure of success.

This exhibition, we learn, will come off about the third week in October, and as the time fixed is so favorable for a good display of fruits, we do hope that our nurserymen and amateurs will take note of this, and now that New Jersey is considered by New Yorkers as no longer foreign soil, that they will compete in the display of fruits, and show to our friends of the sister State what New York can do in the way of apples, pears, etc.

The premiums, we are told, will be on an increased scale of liberality, and outside competition in the way of fruits fully courted. Let us then show them what we can do.

We would suggest to those who may wish to exhibit fruit at the exhibition of this Society, or to communicate with them, that Col. R. S. Swords is the corresponding secretary, and his address is No. 264 Broad Street, Newark, N. J.

HAMILTON COLLEGE GROUNDS.

IN vol. 4, New Series of the *HORTICULTURIST*, page 276, is a diagram of these grounds, with a notice of some improvements then contemplated. The trustees had placed the matter in the hands of a committee of gentlemen whose taste and experience are not wholly unknown to many of our leading men in horticulture. About one thousand dollars were placed at their disposal by a few friends of the improvement. The Committee continued in charge of the grounds for three years, and in that time arranged a system of walks, removed many unsightly objects, and im-

proved the surface grade of the whole grounds. The work was commenced during the presidency of Rev. Dr. Simcon North, who gave the undertaking his hearty approval. In this improvement was opened a new means of student culture, by a display of tasteful and elegant grounds, cultivating a taste for landscape gardening and a love of the beautiful. One can hardly over-estimate the value of such culture in our schools and colleges.

So far as we know, Hamilton College first began this work among our colleges. The Committee, appreciating its value, de-

terminated to make it a first-class work. A large number of fine and rare plants and shrubs were set out, and many leading horticulturists were interested in the matter. From Charles Downing, of Newburg; from Messrs. Ellwanger & Barry and Messrs. Frost & Co., of Rochester; from H. W. Sargent, Esq., of Fishkill; Messrs. Hovey & Co., of Boston, and others, valuable contributions were received. In 1858, the executive officer of the College was changed, and the new incumbent claimed the control and proceeds of the grounds. In consequence of this claim the Committee resigned to the trustees who appointed them the care of the grounds. Their resignation was accepted, an assurance being given that their plans should be adhered to and carried forward. Since this time until within the last year the College executive has controlled and directed all work, and it is a matter of deep regret that so little has been done. The only improvement has been in the growth of trees and shrubs previously planted. The planting done has been more than counterbalanced by losses, occasioned by neglect—losses of rare shrubs and plants not easily made good. Cattle have, by browsing and scraping, injured the growth and beauty of some trees yet living—the clean cut line of the walks is obliterated, and the lawn has become a

meadow. Minor matters may be replaced by renewed care, but the eight years lost time, in the planting and growth of trees, can not be regained.

During the past year another change has taken place in the executive office, and the trustees of the College have requested the former Committee again to take charge of the grounds. These gentlemen are still full of interest in the work, and announce their determination, so far as they have means, to push on the improvement. Many friends of the College, noticing the improved condition of the grounds during the commencement season, which has just transpired, are led to expect good results in the year to come.

But for success the Committee must have means.

We deem this a matter of interest, not only to friends of this College, but to all lovers of horticulture and friends of progress in this direction. The writer of this article has heard college and school trustees in the Far West speak of the Hamilton College grounds as an example to be followed. May it not be possible for a fund to be established, through some friends of the College, the income of which shall enable the Committee to carry out their plans and make these grounds, so beautiful even now, a model worthy to be admired and copied?

THE NEW YORK HORTICULTURAL SOCIETY

TO THE EDITOR OF THE HORTICULTURIST: Recent allusion in your pages to the importance of a society devoted to the encouragement of horticulture in the city of New York, recalls the efforts made some years ago to secure that object. Do we live so rapidly in this country as to forget in the brief space of ten years the existence of an incorporated society, holding extensive annual displays of fruits and flowers, at which the most gifted of New York divines and orators were at times induced

to expatiate on the value to the community of such means of pure recreation and enjoyment? Are the active members of that association no longer to be met with in the leading thoroughfares of that great city? Are the names of SHEPHERD KNAPP and WILSON G. HUNT forgotten among your merchants?

The reminiscences of the New York Horticultural Society must be written up for the benefit of those who at this day think it advisable to inaugurate a new society.

It was the boast of the very indefatigable Secretary, that the old Society, though in a very faint condition, would survive at least as long as he should. He still lives. What has befallen his ward?

My object in touching this topic is to point out the difficulties which stand in the way of a metropolitan horticultural society, or rather to warn the restorers of the Society, whoever they may be, of the incongruous elements which are generally called together in the formation of such societies; to hint the question whether the practice of paying money premiums to gardeners for the exhibition of their employers' fruits and plants is a safe and proper mode of proceeding? Is the emulation produced between gardeners of a healthy nature, and worthy of encourage-

ment? Is not the interest of the commercial horticulturists the controlling power in all such societies? Are such exhibitions and displays, as are generally produced by our horticultural societies, promotive of the real progress of horticulture?

We do not propose at this time to offer our *own* views on these important points, but should the editor of the HORTICULTURIST desire the data on which we would discuss these questions, we shall freely furnish the same. Having been temporarily an active and enthusiastic member of the New York Horticultural Society, we should like to learn the causes of its failure from those who ran the machine in the later days of its operation. Can not your worthy friend P. B. M. give us some light?

A COSMOPOLITAN MEMBER.



A CHAPTER FOR LADIES ON GATHERING AND ARRANGING FLOWERS.

THE reason that people so often fail in arranging flowers is, that they put all the brilliancy together, and perhaps relieve it but slightly, or not at all, with that verdure which abounds everywhere in nature where flowers most charm us. Many persons go into the garden, and, gathering a lot of flowers, stick them closely into a vase of some kind, nearly as close, perhaps, as a broom is tied up. This results from their not seeing the reason why prettily marked flowers please us when set, so to speak, in wide spreads of rich verdure. The result of such a jumble is, that the product is about as attractive to the tasteful eye as a garden all yellow and red; and what should be the sweetest thing in the house is painful to look at compared to a flower and spray depicted on the vase which contains it, or perhaps on the wall of the room. As a rule it may be said that, by using a sufficiency of green, we could get rid of much of this awkwardness, and though it may not enable people to arrange flowers really well, yet a great advance is made when we

recognize the value of green. If you see a person who is about to arrange a vase of roses bring in a handful or two of the freshest and finest rose-leaves in the garden, you may be pretty sure that the roses will not look amiss when he or she has done with them. When arranging a dish of roses with short stems, we always begin by putting a circle of large and fine leaves around the edge (fern fronds are better), so that their points droop over; and by putting a profusion of them through the blooms, an infinitely better effect may be produced with half, or even quarter the number of blooms, than when they are "lumped in." But it is not enough to avoid what we will call lumping: it is desirable to give each flower its own place, so to speak. This is to some extent a mechanical operation, as in vases generally there is no resisting medium on which to place the flowers. You can not arrange them rightly without some little contrivance. For a flattish vase or dish, the best thing we know of is silver, or any other

fine sand, in a very moist, though not actually in a sloppy state. This forms a capital planting medium, so to speak, and at the same time keeps the flowers fresh—at least, as much so as water does. By filling the dish or vase with sand, full or thereabouts, and then when moist rounding it up a little in the middle, you have as good a preparation for the reception of flowers as can be made. Insert the flower-stems in it to the required depth, first having pointed them and stripped them of the lower leaves; and as the height of each bloom is of some moment, they may often require to be shortened, which should be done with a sharp knife in a slanting direction, and that will assist them in penetrating the sand with facility. By doing this you have the disposition of your flowers quite under command. If they be of a trailing or decumbent habit, it will be necessary to sink them nearly to the necks; and if they be of an erect or stitfish habit, like geranium or sweet-pea blossoms, they may be left as long as may be desired or convenient. Flowers, green leaves, graceful grasses, or any other addenda, may be thus placed at discretion. If a coat of the common lycopodium be placed over the sand, so much the better; it would act as a capital resting-place for the flowers, and do away with the necessity of using a good deal of small stuff to fill up the interstices. Indeed, a lot of long moss or spray of twigs cut to a level top and plunged in a narrow vase has often been successfully used instead of sand. Then again, where the receptacle for flowers is very shallow, like the lower tray of some ornaments for table decoration, a little sand is all that is necessary; but it should be borne in mind that such trays are suitable chiefly for flowers that may be cut short, and for little bunches of forget-me-not, lycopodium, and things which will form erect and somewhat compact little tufts, with short fern-spray, etc. Sometimes rather close little wire coverings are used for dishes and vases, and these certainly support the flowers well, and do

away with the slightest necessity for crowding, but yet are inferior to the soft, moist masses of sand. It has just occurred to us that by growing the common lycopodium in dishes till it attained luxuriance, and then bringing them into the house, they would form capital cushions on which to place a few choice flowers. Indeed, we have no doubt of it. By filling the dish with very fine sandy peat, passed through a fine sieve, and rounding the center considerably up, pricking the common lycopod over the surface, and placing the vases in a warm vinery, fernery, or moist and rather warm structure of any sort, in a month or two they will become masses of green, and droop over the margin of the dish. It may be propagated thus to any amount, as every bit grows as freely as grass. Half a dozen really good flowers inserted in this—and the pointed stems would pass as readily into it as into the sand—would afford a charming effect; and with a few bits of graceful ferns to counteract the lumpy appearance of the moss, it could not fail to be admired. The lycopod would look well for a long time, and when it faded or became dusty, others could be introduced from the stock so readily propagated. The dishes should have a hole in the bottom for the water to escape into an outer case. Of course this is quite inapplicable to costly, tall, or elegant narrow vases, but it would suit to a nicety low dishes for roses or any other flowers; and such are the most useful for general purposes, as by their judicious use you see the beauty of the flowers, and that alone—which is generally a gain. For the tall vases we have often used sand; but where they are too fragile or expensive to risk breakage by filling them with heavy material, it is better to cut a bunch of some kind of spray—say box, yew, or any small-leaved plant—and trimming it off, put it in the vase, so that its top is about level with that of the vase, and on that surface the flowers may be inserted thinly and firmly as you please.

From the above it will be seen that we

have a horror of the bundling system. Every flower should stand distinct in the arrangement, and it is also very desirable to avoid the crowding in of too many colors into the one vase or dish. A few simple flowers, carefully selected from the woods or ditches—say the hawthorn, the forget-me-not, the wild grasses, the meadow sweet, the marsh marigold, etc.—a select few, observe, not too many kinds, and well arranged—will produce a better effect than all the flowers and colors of the garden lumped together. Quiet sweet things, like mignonette, may be used in abundance as a sort of groundwork for the display of brighter flowers; and why not bunches of it for insertion into the necks of vases as well as the evergreen spray we named above? Decided colors should generally be grouped distinct from those of a quiet tone; but so varied are the forms and colors of the flowers of our gardens that it would be folly to be tied by any rule except this: Place the blooms thinly, and in the midst of refreshing verdure, as Nature does; the brighter the color, the more green should, as a rule, be employed. The procuring, or rather the selecting, of this green is an important point. Ferns of many kinds are valuable, but many other plants are equally so. Of the ferns, the apex of the fronds of the common male fern are highly suited for dressing the margins of large vases, dishes, etc.; while for more delicate work there are innumerable kinds in the way of the maidenhair, and, in fact, every elegant fern may be used. Where there is much decoration of this kind to be done, it is well to grow a few of the most suitable kinds in some quantity for cutting at all seasons; but, generally, the spray of the more elegant conifers, such as cupressus nootkansensis and others, the arbor-vitæ, the neat and pretty new retinosporas, and, in fact, many things in this way will be found

most valuable. They last much longer, are to be had in a fresh and green state at all seasons, and often furnish quite as graceful an effect as the ferns. Some of the better lycopodiums, too, or selaginellas, as they are called, are among the very best things that can be used, and in a warm place grow as freely as weeds. Finally, the selecting of the flowers and the cutting of them is worth a thought. The right way to do it is to gather a few suitable kinds in distinct little bundles—whether fern, foliage, or flowers—and then, when placed on a table, the arranger has simply to take the flower or frond he wants—a thing not easy when all are gathered in a promiscuous bundle. Another word: fail not to use the fuchsia and other pendulous flowers for drooping over the margins of all but the lowest dishes, to produce a charming effect.

Since writing the above we have seen large, very large vases, and very expensive, too (6,000 and 7,000 francs apiece), in Paris houses, filled tastefully with flowers—a capital medium for the insertion of the stem being found in rich flakes of deep moss, a layer well moistened being put in the bottom of the vase, and over that another layer with only its natural moisture. The flakes of thick moss are placed in just as they grow, and thus the flower stems pass down into them with the greatest ease. It must, however, not be supposed from this hint that the French always arrange flowers well; they do rooms, etc., for festive occasions charmingly, but bouquets are far more tastefully and beautifully done in Covent Garden. The other day a French countess presented to Mdlle. Patti a bouquet about the size of a sponging bath; if any lady took it about with her it must be in a refined sort of wheelbarrow; and many of the best bouquets to be bought in Paris display no taste or knowledge of arranging flowers.—*The Field.*

CUTTINGS of geraniums, heliotrope, verbenas, salvias, etc., made now and placed in

a cold frame in a shaded situation, will make fine plants for wintering over.

A FEW CHOICE ROSES AND PYRETHRUMS.

RECENTLY visiting the grounds of Messrs. Ellwanger & Barry, Rochester, I saw about five acres of Roses in bloom, and examined and made notes of many varieties. The Hybrid Remontants have now become so much and so general a garden feature that perhaps it may not be amiss to name a few of what I consider the very best.

Imperatrice Eugenie is certainly the best white yet out—a free bloomer, good strong grower, and a beautifully cupped flower. It is new. Delephine Gay is an older sort, but its clusters of light flesh-color flowers are beautiful.

Auguste Trice is a fine light rosy pink, while Gen. Jacqueminot and Richard Smith are all brilliancy, the former a full flower, the latter only semi-double, but extremely rich and velvety in its petals. Victor Verdier and Madame Victor Verdier are both beautiful, clear rose color, globular, and free bloomers. Prince de Rohan is only semi-double, but its petals are very dark velvety and rich. Christian Putner is a superior dark variety. Senator Vaise is another very dark, yet rich crimson flower and plant, a free bloomer. General Washington, Maurice Vernandi, and Duchess of Norfolk are all superior dark varieties, rich in color, and good bloomers. Reine de Vierge is a purplish rose, very handsome. Sydonie, although one of the old

sorts, is among the best of those of a light pink shade. Baron Provost and its sport Panachee d'Orleans are old, but yet most beautiful and desirable. Among the old June Roses, Aurette is elegant; while of the moss varieties, Madame Edouard Ory is the most certain and constant bloomer; but for beauty of bud none yet equal the old Crested Moss.

So much for Roses, and now of new Pyrethrums. All know the common double-white, or Feverfew as it is commonly called; but here I saw, for the first time, in full bloom, a collection of new varieties, with the flowers of the size of half a dollar, and as double as the best China asters. The colors were pink and its shades straw-purple, etc. To me these varieties, which are all as hardy as the old well-known sort, must soon come largely into demand, as a bed of them would form a perfect bouquet in itself during the whole season, and require no care except that of simply keeping the ground clear and well-stirred around them. I will name some of the best varieties, in order that any reader who desires to obtain them may know for what to send. They are Herman Stinger, Madame Mons. Lovitz, Mr. Pell, Madame Billiard, Pompon Rose, Beauty de Laken, and Gustave Heitz.

F. R. E.

 GRAPES ON THE LAKE SHORE.

MR. ELLIOTT writes us, under date of August 10th, that he has “recently visited very many of the large vineyards along on the south shore of Lake Erie, and that as a rule the crop promises very abundant, and with but two or three exceptions no rot of any amount has exhibited itself. The vineyard of George Leick, at Collamer,

east of Cleveland, of about thirty acres, is especially vigorous and healthy; and so also a small vineyard of Mr. Pellot, some twelve miles west; while the extensive vineyards of E. Boyd, at Avon Point, numbering something more than one hundred and thirty acres, are as vigorous, healthy, and promising as could be desired. In

these Lake Shore vineyards the Catawba is the leading variety grown; but a fine vineyard of three acres of the Delaware, on clay ground, highly enriched with bone and slaughter-house manure, may be found on Captain John Spalding's farm, just west of Cleveland; and in other locations the Delaware, with high manuring of specific manures, is a good grower and great bearer. The Rogers' varieties, Iona, and many more, as Ives, Norton, etc., are

planted more or less by almost every grower; but their value, as compared with Catawba and Delaware for wine, is yet to be tested in that vicinity. In Mr. Leick's grounds the Norton gives promise equal to the best results in Missouri; and some fifty or more vines, fruiting in the grounds of Mr. John Hoyt, have ripened their fruit for several years earlier than Catawba, and of superior quality for wine."

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

CLARKE RASPBERRY.—G. W. Campbell, of Delaware, Ohio, writes us in relation to this raspberry as follows: "I am happy to be able to add my testimony as to the *hardiness* of the Clarke Raspberry, as well as to its great excellence. It endured 25° below zero here last winter, fully exposed, and came out this spring wholly uninjured. I find it quite distinct from the Kirtland, being of better flavor, a little firmer, of larger size, stronger growth and foliage, and apparently equally hardy. All things considered, I regard the 'Clarke' as the most valuable red raspberry within my knowledge."

VERNON, ONEIDA CO., N. Y.

MESSRS. WOODWARD: I have been thinking of writing you for some time of our trials and troubles with fruits, flowers, etc., in central New York this season, but have not got to it yet. And by the way, is Clematis *Sophia* hardy enough to remain out *here* during the winter? and can you tell me why *Wistaria floribundus* (big name), one I bought of W. R. Prince, of Flushing, some nine years ago, has never blossomed?

It grows finely, but has never shown a blossom bud yet.

[Clematis *Sophia* will endure the winter well in your climate, if protected as described by A. S. Fuller in "Record of Horticulture," that is, taken down and coiled around the foot of the stakes, and three or four inches of coarse litter, such as straw and leaves, thrown over them, and over the whole a few shovelfuls of soil. The buds of your *Wistaria* are probably winter killed. We should protect in the same manner as for the clematis, and also pinch back young side-shoots in July or August, to form spurs on which flower buds will appear year after year.]

FROGMORE EARLY BIGARREAU CHERRY.—The London *Florist* describes a new cherry under the above name, as being "large, obtuse heart-shaped; skin with a brilliant red cheek, dotted with minute yellow points; flesh delicate, translucent, tender, melting, juicy, with a rich sweet flavor," and ripening before any of the so-called Bigarreus are in market.

MANHATTAN, RILEY CO., KANSAS, June 8, 1867.

EDITORS OF HORTICULTURIST: In a brief communication published in the December number, 1866, I alluded to the cause for disease in the grape, assigned by the "Lake Shore Grape-Growers' Association." REUBEN (who ought not to be ashamed to write such spicy and useful articles over his real signature), in the February number, 1867, page 50, attempts to correct an error into which he alleges I had fallen. If I was in error, it was the HORTICULTURIST's article alluded to that led me astray. Reuben asks if I did not get "a little mixed up," and as he read their views, "it especially applied to rot, and not to mildew." The article in the HORTICULTURIST says, "The cause of disease in the grape, rot, etc." I inferred that "etc." would include mildew.

Where the grape is infected with disease, it is natural to suppose that grape-growers would investigate the cause of disease; but in middle Kansas, where a few berries on a few bunches of a few vines have mildewed but once since the first vines were planted (1856-7), my thoughts were not directed to this subject as much as where mildew is prevalent. When I planted my first vines, I knew nothing about the cultivation of the grape; but I have since read all the authors I could procure, and made some observations, and have been led to believe that where the ground is suitably prepared (not too deep here), the soil adapted to the growth of the vine, and roots that are *perfectly* healthy when planted, that we can here grow grapes a great many years at least without their health being affected. My observations have been confined to my own vines; and with me, vines that were propagated from green wood, or one-year-old canes, when not root-pruned at the time of planting, have often shown the yellow leaf, although I have four-year-old vines that were propagated by layering green wood, that so far the foliage is of the natural verdant color, but they were *very* closely root-pruned,

about one or two inches only of wood left from the collar. I have not yet produced any green wood layers that were not root-pruned that have lived over three years without showing the yellow leaf, and in a few years they nearly all die. Commencing with the yellow leaf, the growth ceases, the leaves dry, and they are numbered among the things that were. While, on the other hand, the vines that were propagated from sound bearing wood, raised in autumn, root-pruned to within one foot of the collar, heeled in, and planted in spring, have presented no sickly appearance, although such vines, propagated on my grounds, have been planted every year since the spring of 1858. I might here add, that I do not cut away as much wood when pruning as is the practice of some vignerons.

There are a great many wild vines growing along the Big Blue River, especially among the timber and "bushes." I cleared a few acres in 1856-7, including a thicket of wild summer and frost vines. In many instances rampant sprouts of the vine started from the wood of the vine remaining in the ground, and during unfavorable years I have frequently observed many of these new canes covered with sickly yellow leaves, but in no instance have I observed the unhealthy hue on vines that were rambling at will over shrubbery. You may find some who will tell you that they have seen yellow leaves on vines which were running, "as they liked best," over bushes, etc., but I speak of vines that were never injured by fires that annually sweep over the prairies, and sometimes extend to the bottom. It might be well enough to say that vines with yellow leaves, on land where they have been cut off or burned and sprouted up again, are few, very few, yet I have found some. The vines generally present a healthy appearance.

Taking these observations with the fact that one-year-old roots have immature wood, and when this immature wood is planted, whether produced by layering

green or ripe wood, it must rot off, and rootlets can not start from the end of the root until it is decomposed, might I not, in my ignorance of the disease of the vine, reasonably infer that there is a possibility that the decaying wood communicates a weakness to the vine which may not show itself for many years after it is planted, until conditions are favorable for developing it? I have had vines that would show yellow leaves every alternate year, and afterward die, but not in *good* roots, properly root-trimmed in the fall, and planted in situations favorable to the healthy development of the vine. Disease may linger in the human frame for years, and at times the patient and his friends may imagine that he is in a fair way of recovering. So far as external appearance is concerned, he looks as if he is convalescent, but the germ of disease is lurking in his body, which sooner or later consigns him to his final resting-place.

It is said that in districts subject to disease, weak vines are more liable to disease than strong, healthy plants, and that fungi derive their sustenance on dead as well as on the living vegetable matter upon which they grow. Might not the *living* vegetable matter be partially decayed, yet to the human eye appear to be living matter? If this is so, might not the seeds of the decay be sown by planting the immature terminal roots, or severely top-pruning the vine, which results in a proportional amount of the roots decaying; and in this way the vigor of the vine becomes weakened, when disease, the same as with the human system, could take a hold with greater ease? May it not be a hidden constitutional weakness in the plant that enables the mildew, or any other disease, to grasp the vine with facility, while a vigorous vine would resist the effort to seize and lay it prostrate? In short, might not the great primary cause of much, if not all, of the disease of the vine, aided of course by other agents, be attributed to a constitutional weakness of the plant, and, like

poor, frail human nature, the infirmities of the parent vine be clandestinely visited upon the offspring "unto the third and fourth generation?"

My experiments and reflections relating to the vine have not been with its diseases. The opportunities for such investigations have not been presented to me, on account of our almost entire exemption from mildew or any disease of the vine except the yellow leaves, which occasionally make their appearance when the conditions are unfavorable to the health of that plant; therefore my ideas must be very crude, perhaps without any foundation from which to draw inferences; but in the vine districts where disease has prevailed, there are doubtless many scientific men who have given this subject some attention, who can remove our erroneous views, if such they are, and plant in their place correct ones. Excuse the space, although I have been as brief as I possibly could to make myself understood.

I am, truly, etc., A. M. BURNS.

DAHLIA IMPERIALIS.—The *Floral World* advises managing the Dahlia Imperialis, for the purpose of getting the most blooms and receiving the most pleasure from it, as follows: "At the end of September, or some time before the 20th of October, we carefully take it up, give it a good-sized pot, and place it in a warm green-house, which is kept closed, to recover the plant from the lifting, and in due time we transfer it to the warmest part of the conservatory. Let it be kept growing on in fact the whole year round, and take care to strike a few cuttings in April every year for planting out. Thus it may be made to do double duty and give double pleasure."

SUCKERS on budded roses should be carefully looked after and rubbed out. They often start strong in the fall, or when the roses are about to make renewed growth and bloom.

NEW PLANTS.—We have elsewhere alluded to *Sanchezia nobilis variegata* as being probably the best novelty let out during the present spring, and may, therefore, here pass on to notice other acquisitions of merit, among which must not be forgotten the *Double Crimson Thorn*, recently figured by us. Another prominent place among the novelties of the season must be accorded to *Amaryllis (Hippeastrum) pardina* (Bot. Mag., t. 5645), one of Messrs. Veitch & Sons' introductions from Peru. This *Amaryllis* is one of the broad-petaled species, with a very shallow tube, and the segments spreading out to form a wide open flower, showing off its very novel coloring to advantage. The color is a pale straw yellow, spotted all over with small irregular more or less confluent blotches of crimson, the markings being exactly analogous to those which occur on many varieties of *Calceolaria* or *Tydæa*. It is a very beautiful plant, and is quite an acquisition among stove bulbs.

Among stove terrestrial Orchids a very pretty species has been published under the name of *Bletia Sherrattiana* (Bot. Mag., t. 5646). It is a native of New Grenada, and has vertically flattened pseudobulbs, plicate leaves, and racemes of large bright purplish rose flowers, a dozen or more together, of delicate texture, with broad petals and a beautifully marked lip. The habit is that of *B. verecunda*. The lip is large and flatfish, three-lobed, with large rounded or reniform side lobes, and a transversely reniform terminal lobe, which is deeper colored than the rest; the center is pale-colored, and marked with three parallel golden lamellæ or crests, from whence purple veins radiate into the side lobes. It is an important addition to the ranks of terrestrial Orchids. Another acquisition, just flowered in the collections of Mr. Dawson, of Meadow Bank, and Mr. Marshall, of Enfield, is the New Grenada *Odontoglossum roseum*, a small-flowered plant having blossoms wholly of a pretty rose-color, and which is a very ornamental object.

M. Regel figures in the *Gartenflora* a desirable-looking hardy perennial, named *Primula luteola* (t. 541), which may be compared to a yellow-flowered *P. denticulata*, the leaves much resembling those of that elegant species, and the inflorescence being also similar in character, though the flowers are a trifle larger. It was discovered in the Caucasus by Ruprecht, growing abundantly in moist situations at a considerable elevation, and was raised by him and given to Mr. Buck, of St. Petersburg, by whom the specimen was flowered. The leaves are six inches to a foot long, with margins recurved, flowers pale yellow, with a dash of golden yellow about the throat. Blooms in August.—*London Florist and Pomologist.*

HOW TO TAKE IMPRESSIONS OF PLANTS. —The advantage of being able to take accurate impressions of plants without much labor need not be pointed out to those who can appreciate what is useful. It is not brought forward as a substitution for dried specimens, where these can be obtained and attended to; but as being less cumbersome it deserves notice, as a means of refreshing the memory, in very many instances, in a manner equally satisfactory as when specimens are employed. It has, further than this, no claim to novelty, but simply to usefulness.

The materials required are few, and these not expensive. One pennyworth of lampblack and one pennyworth of sweet oil are all that will be required besides the paper. A large sheet of paper should be provided, and this should be prepared by rubbing it evenly all over with a piece of flannel moistened with the oil; this must be done thoroughly, and when the paper is well moistened, but not in a wet state with the oil, a small quantity of lampblack should be laid evenly over it, also using flannel for this part of the operation. If this preparation can be made a day before using the paper, it will be so much the better. The next process requires great care. Having the prepared sheet in readiness, place on it

evenly and flatly the plant, flower, or leaf of which an impression is required; then place over this a dry sheet of paper, and with a handkerchief or cloth press firmly over every part, that it may equally and regularly receive the black preparation. The paper intended to receive the impression should now be in readiness, and the specimen must be carefully removed and placed on it, and great care must be taken that its position is not changed; this, too, must be again evenly and firmly pressed as before, and the impression will be complete, and must be laid carefully aside to become dry. A specimen or two can be tried on a spare sheet, in order to ascertain whether the blackened sheet is in a proper state of preparation before it is attempted to take a very careful impression. This is particularly valuable in preserving sketches of the leaves of rare and valuable plants.—*Gardeners' Magazine.*

NEW SEEDLING CHERRIES.—Mr. Elliott writes us, that Charles Pease, Esq., has fruited this year, for the third or fourth time, some seedlings, among which he has selected and made drawings of two that give promise of value, because of their period of maturity, which is after nearly every other kind, except the sour cherries, have ripened and gone.

"CEMENT CISTERNS.—In household matters in the country, the use of rain water in almost every family is a necessity, because the well water is rarely soft enough for washing purposes. To secure rain water, cisterns are resorted to; and as I wanted one or more, I consulted a mason, who, after figuring and looking at my ground, which is a stiff clay about three feet deep, and then a shale or soapstone rock, he decided he could not build me a cistern of eight feet deep and six feet diameter at a cost of less than twenty-five to thirty dollars. Not disposed to pay that amount, I set my hired man to digging, and in one day he dug and shaped

me out a cistern of the shape of a common iron cooking pot, eight feet deep, four feet diameter at top and bottom, and widening to six feet in center. This, in two hours' time the next morning, I plastered once over with one part water lime and two parts sharp sand, and covered the top with hewn oak posts. The next day, in one hour's time, I gave it a second but thin coat of plaster, in all taking one bushel and three pecks of water lime and double the quantity of sand—costing me, besides my own time, the sum of not quite five dollars.

I practiced this same course some twenty-six years ago on clean sandy soil, and the cistern is to this day perfect, and has never leaked.

Another cheap way of saving rain water is to take any old cask, coat the outside with coal tar, sink it in the ground, bedding the bottom and sides in clay well packed and at least six inches thick. It is possible that in sandy soil a mixture of the coal tar with sand immediately around the cask might make the cask water-tight. Were I now where I had sandy soil I would try it. A."

TRANSACTIONS OF THE INDIANA STATE HORTICULTURAL SOCIETY.—J. S. Dunlop, Esq., will please accept our thanks for a copy of Transactions of the Sixth Session of the Indiana Horticultural Society. In its records we recognize many of our old correspondents, and are pleased to read their sayings relative to fruits. In the death of George M. Beeler, the Society, as well as the country, lost one of its most valuable and enthusiastic as well as correct pomologists.

GLADIOLUS BULBS.—In taking up and selecting gladiolus bulbs this coming fall, remember that bulbs of medium size, if well ripened, give the best blooms next year. Very small bulbs do not always bloom well, while some varieties afford very poor blooms on old and large bulbs.

BLIGHT IN PEAR AND ROT IN GRAPE, ETC.—A correspondent suggests that “much if not all the diseases termed blight in the pear, rot in grape, etc., may be attributable to diseased roots.” He says, “Pear wood, often when making cuttings for grafts, is found blackened or discolored; and if the cuttings are made late in spring, the discoloration is greater at the base of the young shoot than at the top.” He also says, “that he has often observed blight to attack those trees most on which he has in spring found the greatest discoloration. He regards this disease as coming from the roots, which may have been made unhealthy, either by excessive stimulants and late fall growths, or by destroying actively developing foliage in the summer or growing season.”

The diseases attendant upon grape culture and pear growing are yearly becoming more and more formidable, and we shall be glad if any sustainable theory of their cause be brought out. We give the above, hoping some of our many skillful fruit-growers will report to us of their views of its tenability.

PERENNIAL PLANTS.—The value of perennial flowering plants in every garden we have repeatedly touched upon, and urged as perhaps the greatest of any that make up the flower garden. We now say, make your arrangement for planting them this fall. Select out your list, send your order to a reliable dealer, dig deep and thoroughly manure the ground with well-rotted manure, adding, if you can, sods at the bottom, and plant in October.

FRUIT HOUSES.—The dearth of fruits in most sections this season convinces us more and more of the policy of erecting fruit houses, wherein to grow fruits for the supply of the tables of amateurs and those of wealth. To the amateur or private gentleman the fruit house is a never-ceasing pleasure as a resort, while the fruit in and out of season is a great and real luxury.

The commercial grower may command prices remunerative by arranging for the ripening of his fruit when that grown in the open air can not be had. Large houses are much the most profitable, and as they can be constructed and heated at a comparatively moderate expense, no resort should ever be had to a small house, or one in which the trees are confined to pot culture, as pot culture involves constant attention and watering, dressing, etc., etc.; while if the trees are planted out in the border they in great measure take care of themselves.

WHAT manure had I best use for Raspberries?
EDGAR.

The common practice has almost always been to use well-rotted animal manure, applied and worked in in the autumn; but we have manured with salt and bone meal for the two past years, and had a good strong growth of cane, large and fine fruit, and less quantity of weeds than when we used the barn-yard manure.

We apply the salt and meal early in spring, before vegetation starts, and as soon as the ground opens, we work up with a cultivator or small plow.

EVERGREENS AMONG ORCHARD TREES.—Heretofore, planting evergreens among orchards of fruit has been deemed incongruous, and undeserving the attention of planters, or as presenting a careless waste of land without system or order in arrangement. From some observations we have made this season, however, and from records of several of our correspondents, we predict that but a few years will find many orchards interspersed irregularly with evergreen trees. Closer planting than heretofore recommended we have no doubt will prevail, as our fruit-growers study the devastating effects of too great exposure of the young trees to wind and sun. In most sections this year, while fruit bloomed and set abundantly, gradually, little by little, it has dropped, until many

a grower who in early summer counted on bushels can now count fruit only by the dozens. We have watched this falling of the fruit pretty carefully, and while we have no doubt that too great an amount of bloom impaired the vitality and was the first cause of failure, yet observation has taught us that trees partially shaded and screened by evergreens, or by close planting with other trees, have retained their fruit, as a rule, better than those more exposed to the full rays of the sun at all points, and the withering blasts of wind, no matter from what quarter. Horticulturists at the West have for some time advocated hedge screens as a protection to their orchards, and we have no desire to undervalue them, but would increase and extend them, while at the same time we would, in planting an orchard of five hundred trees, make one fifth the number evergreens. Again: believing in closer planting, we a few years since set one dwarf pear orchard, four by eight feet, and an apple orchard of Standards, twelve feet apart. The pears are, it is true, growing one way pretty closely together, yet they are all healthy, and this season have retained their fruit better than others which are more widely separated.

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HAMMONTON, July 5, 1867.

MESSRS. EDITORS—I see in the July HORTICULTURIST you would be pleased to hear from any subscriber who has tried bagasse, or the offal from the sorghum mill. In reply, I would say that, three years ago this past spring, I tried it, and paid very dear for the mulch. I lost over eighty pear-trees out of one hundred that I tried it on. I planted an orchard of pears and apples for a neighbor of mine, and as I did the planting I warranted the trees. He said to me, as I was planting, "There is plenty of bagasse—use it as a mulch around the trees." Consequently I lost most all the pears. They leafed out and looked fine at first, but early in July they blackened up,

and the leaf looked as if scorched. As soon as I found it out, we removed the bagasse from the trees. With the exception of three or four, the apples all lived it through, but did not recover until the next year. The pears most all died right away. Some twelve lingered through, but to-day are not as good as trees set the following spring; and these were one year younger when set than the former, making two years difference in age. The man came to my nursery and selected his trees to fill up, stating he would take younger trees and try them. He did not think it was the bagasse, but some other cause. But I planted pear-trees the day before, on the afternoon of the same day, and several days following, on similar land, trees dug from the same nursery rows, but without mulching, and did not lose more than the general average from transplanting. It could not possibly be anything else than bagasse that killed the trees. I have since seen it tried on Lawton blackberries, with the same consequences. If this is of any service to the HORTICULTURIST readers, you are at liberty to use it.

Yours, very truly,

JOHN H. HOLDING.

[As our correspondent says, we asked for information relative to the use of bagasse as mulch for trees, and we thank him for this record. To our mind, however, it proves nothing against the use of bagasse, as no test was made of other material for mulching at the same time. Our own impression is, that no mulch should be applied around a newly planted tree until near the close of the growing season, say last of June or first of July, but the ground should be frequently stirred and kept loose, open to action of sun, air, and light, until the period of great heat and drought, and then as soon as the terminal buds commence forming, put on the mulch to aid in a larger and better action of the roots, and more even and better development of bud and wood.]

WINE EXHIBITION.—At the May meeting of the Mississippi Valley Grape-Growers' Association, it was determined to hold an exhibition of wines in this city (St. Louis) at the same time as the approaching meeting of the American Pomological Society.

The exhibition will be open to all the States comprising the Valley of the Mississippi, and it is the wish of the Association that this call shall be considered as an invitation to all the wine growers and manufacturers of this region to bring in their samples and contribute each his part toward making up a collection of wines which shall fairly exhibit this important industry in all its branches.

This gathering of the horticulturists of the whole country will afford grape growers and wine makers a rare opportunity of submitting the qualities of American wines to the test of intelligent tastes.

The wine producers of the Mississippi Valley invite a comparison of the wines grown between the Alleghanies and the Rocky Mountains with those produced in any other part of the world, and are satisfied to abide the verdict which may be rendered by the appreciative palates of connoisseurs.

For the purpose of comparing our wines with those of other sections of the United States or of Europe, contributions of wines from all quarters will be cordially received.

C. W. SPALDING,

Pres. M. V. Grape-Growers' Association.

PROFITS OF GOOSEBERRIES.—A friend writes us saying that from a row of the Houghton Gooseberry bushes, one hundred and ninety feet long, two years planted out, he has this season gathered and sold four and one quarter bushels of fruit, sold at two and one half dollars a bushel, giving him ten and a half dollars, or at the rate of about three hundred and fifty dollars per acre. While this may be counted a good yield for the age of the bushes, it is not much over one half of what full-grown

bushes will yield, and the price we consider a very small one for the fruit. Even at this, however, it will be seen that gooseberry growing is quite as good in the way of money returns as most other fruit crops.

THE following is an extract of a letter received from Wilmington, Ill.:

"Weather very dry. Oats and wheat good, and mostly harvested. Apple crop very *short* and wormy; blasted badly in early spring. Grapes splendid: Concord, Delaware, and Hartford Prolific vines loaded with fruit. I have one Delaware vine, four years old, that has over 100 lbs. perfect fruit on it, which is too much for it to bear; but the vine has the best of care. I have about three acres in bearing of Concord, Hartford Prolific, and Delaware. The Catawba, Isabella, and Clinton are rotting. No show of it on other varieties. I put out ten acres this spring, mostly Concord, say three-quarters Hartford Prolific, Delaware, Ives' Seedling, Norton's Virginia, Diana, Rebecca, *Iona*; am fixing for six acres Delaware in spring; am satisfied it is *the grape*. The trouble has been in the quality of vine sent out. I have twenty-five fine vines out of 125 set. Where some of them cover a space of twelve or fourteen feet, of splendid healthy vines, loaded with fruit, others seem again not over a *foot high*, and have same care every way.

"R. W. WATERMAN."

KITTATINNY BLACKBERRY.—At a meeting of the committee of the invited guests of E. Williams, held at Newton, N. J., on the 8th ult., consisting of P. T. Quinn, J. J. Thomas, L. Wetherell, R. S. Swords, and Geo. E. Woodward, the following resolution was proposed and carried:

Resolved, That the thanks of all fruit-growers are eminently due to Mr. Williams for his labors in introducing the Kittatinny blackberry, and that we do most cordially give our approval to this excellent variety of a fruit so valuable, believing as we do that it meets in quality, productiveness, and hardness especially all that is claimed for it; in short, that it possesses everything required for a first-class berry.

THE
HORTICULTURIST.

VOL. XXII.....OCTOBER, 1867.....NO. CCLVI.

CHERRIES FOR THE WEST, AND FOR PROFIT.

BY F. R. ELLIOTT.

THROUGHOUT most sections of our Western and Southwestern States the cultivation of sweet cherries, like Black Tartarian, Rockport, Elton, etc., is attended with so many vicissitudes and so much uncertainty and disappointment as to prevent their being generally grown, and in their place (because every one wants cherries) the common varieties of sour cherries, with here and there a plantation of Early Richmond or Early May, have taken their place, and many a grower of fruits, with hundreds of cherry-trees, is at this time utterly ignorant of the good qualities of the sweet cherries, and also in a great measure of the best varieties of the sour cherries, or those regarded as hardy.

Illinois and other Western horticultural societies have asserted that the cherry known by them as "*Early May*" is the only one worthy of general cultivation at the West. I think otherwise, and look upon such decisions as being immature, and as measurably without a fair trial of other sorts. While I have great deference for the views and opinions of others, I present the following varieties, which I feel satisfied may, as a rule, be safely

planted and successfully grown, even in localities regarded as most unfavorable.

I have, many times before, written of the advantages of using the Morello cherry as a stock, and also causing the trees to branch directly from the ground; both of which are now generally conceded to be valuable aids to success; but if Mazzard stocks are used, I think root-pruning annually until the trees arrive at bearing age, will, in many locations, and especially when the soil is dry or well underdrained, result in producing healthy and hardy trees; but as it is attended with more labor than when the tree is on the Morello stock, and does not even then dwarf the tree quite as much, the Morello stock is best, if it can be had.

LOUIS PHILIPPE.—Of all the sour cherries, were I restricted to one, this would be my choice. The tree is upright, spreading, growing to a large tree as it acquires age, open and regular in form; of habit between the Dukes and the Morellos, although its tendency is toward the Morellos—vigorous and rapid in growth. *Leaf*, broad, oval in shape, with fine sharp serratures, petioles green, and of medium length;

fruit, the largest of its class, roundish, round and regular, very even and uniform; *stem*, short, stout, set in a broad, even, regular cavity, usually grows in clusters of two or three; *color*, rich, dark, almost purplish, black red when fully ripe; *flesh*, red, tender, juicy, sprightly, lively, mild acid; *pit*, small. My drawing is made from fruit gathered 15th July, 1867, and it would remain on the tree perfect ten days

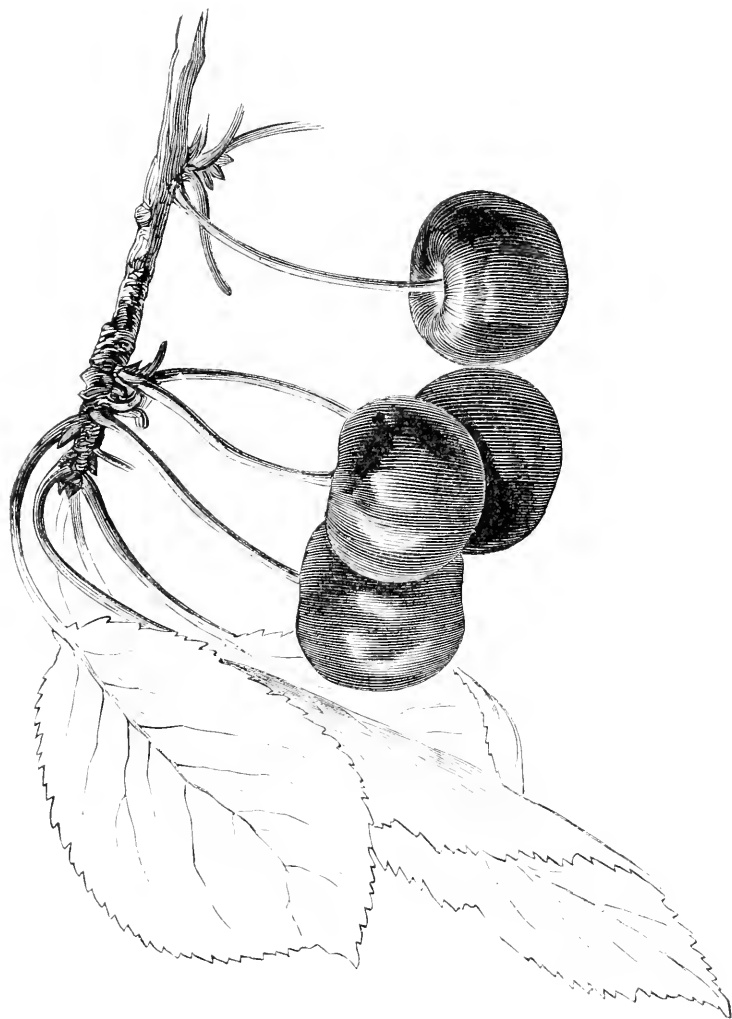


FIG. 156.—*Louis Philippe.*

or more without injury, or rather with benefit. On one stem six inches long, now before me, there are twenty-three cherries, all of a size equal to the drawing.

REINE HORTENSE.—This is a Duke in

habit, more upright and vigorous, and with larger and stronger foliage than the Morillos. As a bearer it is not more than moderately productive; but while it bears regularly and evenly, all the fruit of good

size, the tree is quite hardy, and the fruit ripening late carries the season of cherries along almost or quite to August, as it will hang a week or more after being really ripe. *Leaf*, large, long, oval, with a sharp point, serrated; petiole, reddish; *fruit*, large, round, elongated; sides, compressed; smooth, glossy, regular surface; *suture*, shallow, half round, followed by a marked line; *color*, bright, lively red, marbled and

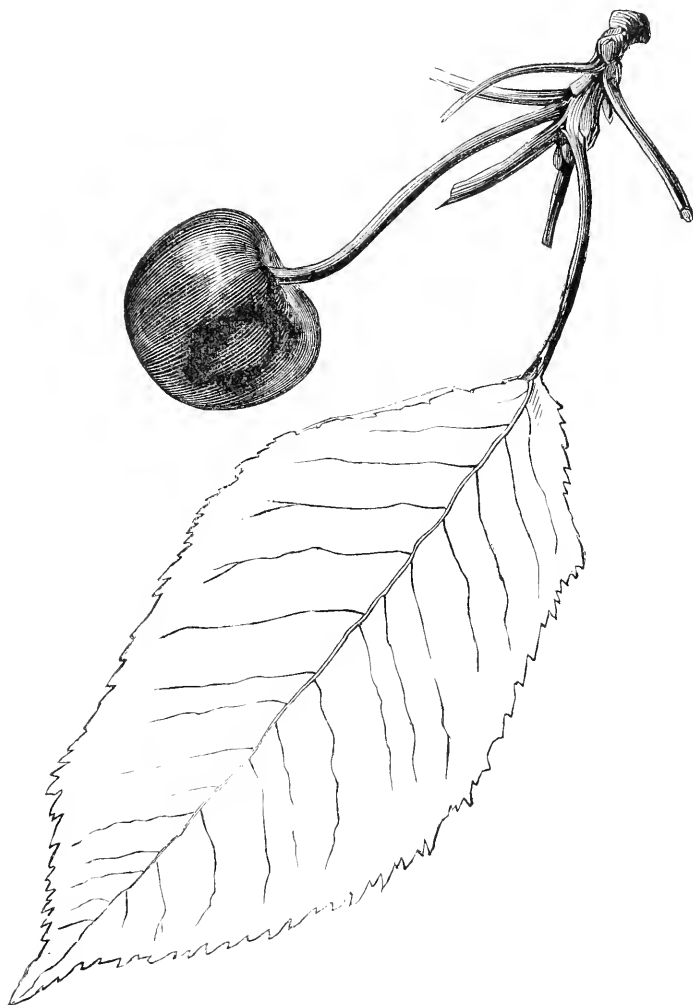


FIG. 157.—*Reine Hortense*.

mottled on amber ground; red when grown in the sun; *flesh*, pinkish yellow, sprightly, mild, pleasant acid; *pit*, full medium; perhaps may be classed large; *stem*, long, often, if not always, curved. *Season*, from middle of July to August.

BELLE MAGNIFIQUE.—Another fruit with so much of the Duke habit that it perhaps

must there be classed. While young, the tree is a very moderate bearer, but as it acquires age, the productiveness is increased, until on a tree ten or twelve years old, cherries sufficient for a family can be gathered daily for many weeks. *Leaf* is broad, rounded oval, with fine sharp serratures; *fruit*, large, or above medium, ovate rounded; *color*, clear red or pale yellow, when exposed

to the sun—if left to hang on the tree for a time they become all red; *flesh*, yellowish red, tender, mild acid, separating freely from the pit; *stem*, rather long and stout, set in a deep, open cavity. *Season*, all along from last of June until early September.

KIRTLAND'S MORELLO.—This variety was first described as "Kirtland's Large Morello;" afterward, in my book, as "Large

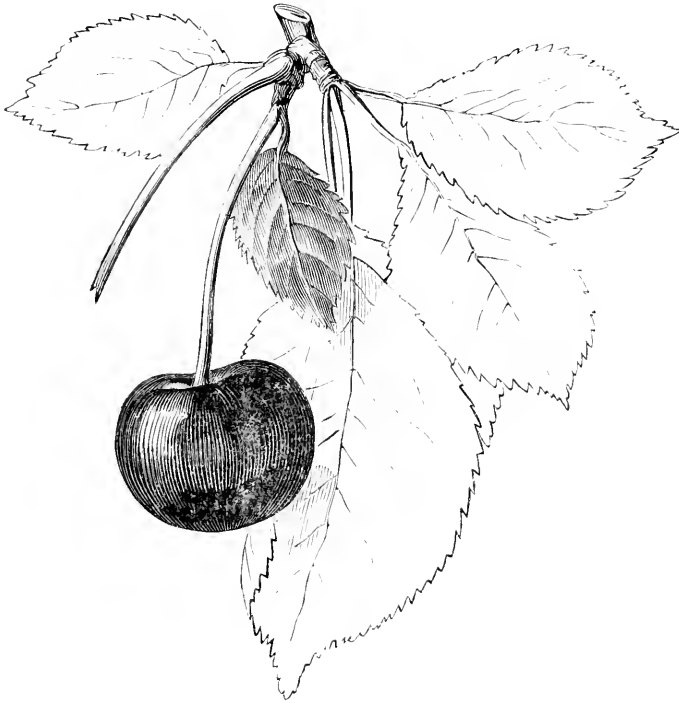


FIG. 158.—*Belle Magnifique*.

Morello." I now prefer to name it "Kirtland's Morello," because it is not of the largest of its class, although a large and fine cherry, and because I honor the name of Prof. J. P. Kirtland, who originated it, and believe that the variety will be a more profitable one for our Western fruit-growers than any of his choice and delicate sweet varieties. The tree is a vigorous,

rapid grower, spreading, and perhaps, like all of the Morellos, a little drooping; yet it is upright, and forms a very handsome tree. It is not a great bearer, but its fruit is evenly distributed over the whole tree, and is of uniform size, large, and very handsome and good. The leaf is of the Morello class, while the wood appears stronger. *Fruit*, large, for Morellos, round-

ish, dark red; *flesh*, juicy, acid, and, unless ripe, a little bitter, but when ripe, rich and of high flavor; *pit*, small. It ripens early in July, and is really a most valuable sort.

ARCHDUKE.—This is a Duke comparatively little known or cultivated, yet in my experience it is by far the best of them. It is very erect and upright in habit of

growth, more vigorous than May Duke or Late Duke, and quite as hardy, if not more so. *Leaf*, long, broad oval, dark rich green, slightly serrated; *petioles*, a little bronzed; *fruit*, large, not as round as May Duke — more heart-shape — compressed; *color*, very dark, shining red; *flesh*, light red, slightly adhering to the pit, tender, sub-acid, rich, and very good; *stem*, long



FIG. 159.—Kirtland's Morello.

and slender; an abundant bearer, ripening about the 1st and 8th of July. Next to Louis Philippe, I regard this as one of the varieties most valuable to plant at the West or Southwest, either for market or family use.

EARLY RICHMOND.—Under this name I have an old European sort which it seems difficult to identify. In Illinois and other

Western sections, some of our best pomologists regard the Early May there grown as identical with the description by myself of Early Richmond, while I am myself in doubt whether the Early May of the West is not the same as one imported by me some years since under name of Donna Maria. I regret that I can not give a drawing of Donna Maria from the fruit, as then

it, perhaps, might help to settle the matter. As it is, I can only give a description taken from my book, while I give a drawing of Early Richmond, and description from the

fruit before me. The tree is a free grower, spreading and drooping in habit. Spray abundant. *Leaf*, a dark, rich, shining green, broad oval, acute pointed at apex;

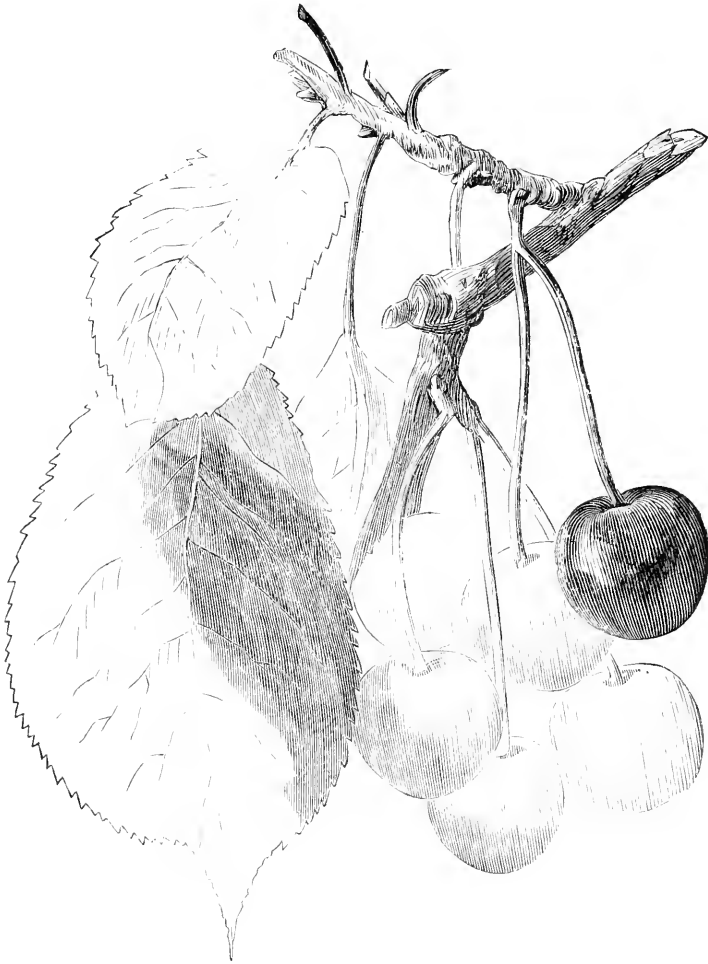


FIG. 160.—*Archduke*.

serratures regular—nearly every other one is deepest; petioles, medium length, green; *fruit*, of medium size, borne in pairs, round, bright, rich, clear red, becoming darker as it hangs on the tree. Although it is fit to

gather in June, it will often hang on until the middle of July. The stone adheres strongly to the stem, so that the fruit may be easily stripped therefrom, and the corolla almost always remains on the stem,

thus marking it. The flesh is of a reddish cast, very juicy and tender, and to many persons' taste a pleasant acid. The stem is set in a deep round basin, very regular.

DONNA MARIA—"A Morello, forming a small tree, but very prolific. Fruit of medium size, dark red, tender, juicy, rich, acid, valuable for cooking." My tree of this

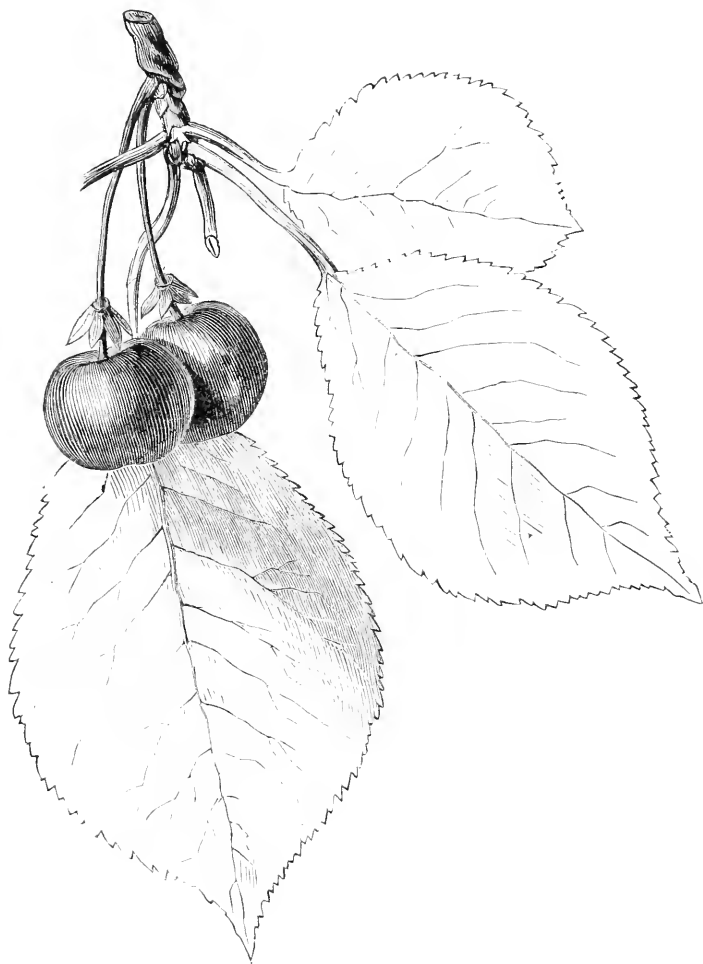


FIG. 161.—*Early Richmond.*

was injured, and the fruit this year quite imperfect, so much so that I do not feel like making drawing or new description from it. I hope at the Pomological Meet-

ing to be held in St. Louis this September, that the Cherry subject will come up, and receive more attention than it has at the past two meetings.

PROPAGATING PLANTS BY SUCKERS AND DIVISION OF THE ROOTS.

(CONTINUED FROM THE SEPTEMBER NUMBER.)

BY A. S. FULLER.

THE variableness in the structure and form of roots demands a corresponding variation in the mode of propagation. Some kinds are hard and woody, and such as these often require a particular treatment to cause the development of buds and new

FIG. 162.—*Oxalis Acetosella.*

roots, while others will produce them in abundance under the most ordinary care. Among herbaceous plants there are an immense number of species which are readily multiplied by root divisions. The pæonia and dahlia are types of a

class of plants that produce tubers with the buds clustered at the apex or crown, and not distributed over the entire surface, as seen in the common potato and artichoke. In multiplying the plants of either class we have only to separate the buds, leaving a tuber, or a small portion of one, attached to the bud, for the purpose of furnishing it with sustenance until it shall emit new roots and tubers. Many of the fibrous-rooted plants, which grow in tufts or stools, as seen in some species of grass, garden pinks, and other familiar plants, are commonly propagated by division of the roots. All plants which naturally produce buds, bulbs, or tubers on their roots

nia, canna, and arundo, the buds are situated at what are called the joints, consequently the roots should be cut through the internode, so that the buds will not be injured.

The *oxalis acetosella* has interspersed along its root-stock a number of small bulbs, as shown in fig. 162; at the base of each there is a small bundle of fibrous roots through which the plant mainly draws its sustenance. With such an example before him, the merest novice could readily determine how many divisions to make; but if no such bulbs nor buds were apparent, as is usually the case with the roots of the paper mulberry, paulownia, and similar trees, then he would have no guide, but must determine how large or small the pieces should be to produce the best results by experimenting with the different sizes.

We are now supposing that those propagators who have discovered the best methods of propagating the different species of plants had kept the method to themselves, which, fortunately for the present and future generations, is not the case, to any considerable extent.

Although it may be quite a difficult matter in some cases to decide what particular portion of a plant is *the true root*, and perform their functions only, *i. e.*, gather sustenance for the support of the plant, still there are many instances where the point of separation is distinctly marked, and no change of position ever takes place. In many of the bulbs the point of junction between the true roots and the bulb is very distinct, although in common practice we often speak of dividing the roots, which in reality is only a division of leaves, or a fleshy deposit made by them at their ease, as in the common garden lily. The *Tigridia* is a familiar example of a bulb which rapidly multiplies by divisions. Fig. 163 shows a cluster of these bulbs which has been produced from one in a single season. The true roots are large and fleshy, and contain nutriment which is

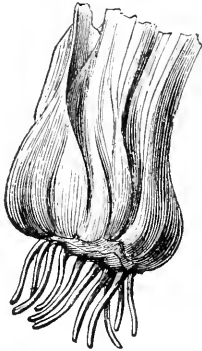


FIG. 163.

or subterranean branches, are, as a rule, more readily propagated by root divisions than those which do not show such a development. But, as I have previously stated, with many species the existence of buds is of no importance whatever, because there is an inherent power in the plant sufficient to produce them whenever they are required.

It is, however, only by experiment that we can determine what kinds of plants possess the power of producing adventitious buds; consequently it is always best to preserve all the buds that may be observed upon roots that are being used for propagation. For instance, in dividing the large root-stocks of the *yucca*, *bocco-*

absorbed by the bulb, even after they have been separated from the soil. The roots of plants are mainly buried in the soil, consequently their peculiarities, habits, and structure are studied far less than the stems, branches, leaves, and flowers, which are continually in view. But they possess

many beauties, which when once seen will never be forgotten; and their wonderful structure, along with the important place they occupy in the vegetable kingdom, demands our best efforts to discover all the secrets of their growth and development, much of which is at present unknown.

CROTCHER APPLE.

WE have received specimens of this apple from S. E. Thompson, Esq., Vienna, Dorchester County, Md. It is said to have originated in that county, but it is not known by whom. We do not recognize

the fruit as any variety heretofore noticed. Fruit, medium size, oblate conic, flattened at base and crown, slightly angular; skin whitish, somewhat waxen, sometimes with a slight blush, and thinly sprinkled with

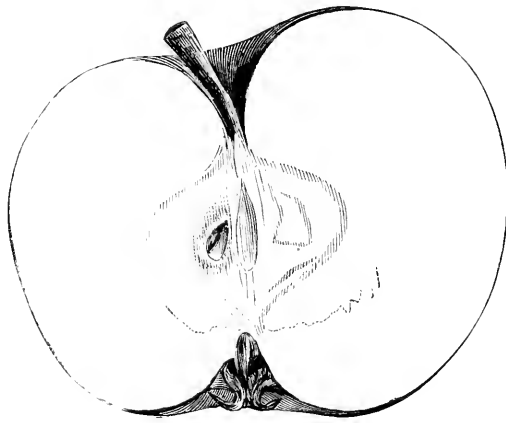


FIG. 164.

light and green dots; stalk short, set in a large, deep cavity, slightly russeted; calyx closed; segments medium length, erect or slightly recurved; basin rather large, abrupt, slightly uneven; flesh whitish,

crisp, tender, juicy, with a refreshing sub-acid flavor; quality very good; ripe 1st to 10th of August, or ten or twelve days after early harvest.

NEW PETUNIAS.—Among the new petunias this season, one under the name of *Edward Beach*, shown by Messrs. Frost &

Co., of Rochester, at the June meeting of the Western New York Horticultural Society, is perhaps one of the best.

GROWING AND FRUITING DWARF PEARS.

BY F. R. ELLIOTT.

THE planting and growing of Dwarf Pears yearly increases, but comparatively slow in accordance with what would be supposed from the acknowledged fact of their correct cultivation being profitable in a pecuniary view. Treatise after treatise has been written, and the whole subject perhaps as fully delineated as is possible, and yet there are hundreds of men who yearly plant Dwarf Pear Trees, but follow no system of cultivation except the plain one of "let alone," and the result is, that of the number of trees yearly planted, nine tenths of them grow for two, three, or four years, become ill-shaped, bear a heavy crop of fruit, gratifying the owner, and causing him to break out in fulsome praises, but the next year are found merely alive, and in two years more gone entirely. Such showing, however unfavorable it may appear, is, according to my observation, very near the truth, and while, as I have said, abundance has been written, which should have been heeded, yet as line upon line is always needed in Horticulture as well as

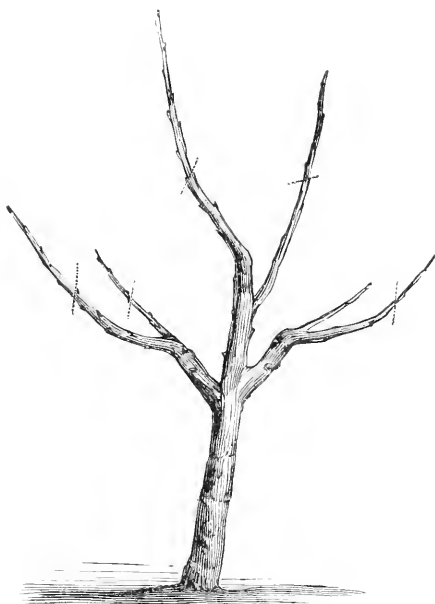


FIG. 166.

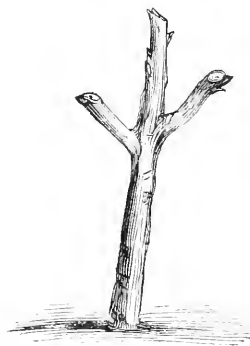


FIG. 165.

Holy Writ, I will assume to give a few plain directions, that, according to my observation, must be pursued in order to

grow Dwarf Pear Trees and fruit them, looking forward to their long and profitable life. And first, while Dwarf Pear Trees, that is, the pear worked upon quince roots, may be grown and fruited successfully in almost any soil, as with the grape, I believe a rather heavy, strong clayey loam is the most enduring and productive of the highest-flavored fruit. We must also understand that, unlike the Standard or pear root, the dwarf, being on quince, will not do to grow in grass plots, no matter how much you dig and mulch around them; in fact, digging immediately around the body and under the branches of the tree is injurious rather than beneficial. It is true that Dwarf Pears, as well as grapes, are grown occasionally in grass

lands, without care or attention, producing good crops of fruit; but the case is rather exceptional, than as a rule to be followed. Make, therefore, the plantation where with horse plow and cultivator the ground can be stirred between the trees, while keeping the weeds and grass from growing directly around them by means of the hoe; or, if convenient, keep the ground light and loose by mulching, that is, covering the whole of the ground

over four inches deep with straw, coarse hay, or any similar material. Experience, I think, however, favors working the ground and leaving it exposed for the first three or four years after planting, or until the trees commence bearing freely.

In preparing the ground, after first thoroughly plowing mark out the rows eight feet apart, and plow two furrows each way, leaving the center of the line where we design to plant with a land furrow and



FIG. 167.

two furrows of loose soil each side thrown from it. This plowing should be from seven to nine inches deep, and then plant the trees, carefully spreading out the fibrous roots, along the line, each eight feet apart, and just so deep that when the furrow is turned back, all the stock or quince on which the pear is budded will be below the ground. After the trees are set, turn back the furrows with a plow,

and then add a subsoil plow to follow the first or common plow, and finish plowing the ground between the rows, turning it all the time toward the trees and leaving a dead furrow in the center for surface drainage.

And now, with the trees planted, comes the "tug of war" in the way of pruning; and while the drawings published give us pictures of trees at just certain lines, I

know the majority of growers can not, nor will not, give the care requisite, even provided they had the knowledge to enable them to insert a bud here or a side graft there, in order to form a symmetrical tree. I therefore choose to take things as they are, and try to say how a

certain good form and healthfulness to the tree may be obtained by even the most un-informed. Again, our drawings published, as a rule, together with the instructions, direct the commencement of labors from a maiden, or one year from the bud, tree: while very few trees are sold by our nur-



FIG. 168.

serymen at less than two years from the bud, and these generally without ever having had a knife applied to them with the intention of forming them into beautiful or appropriate shaped trees, but design-

edly to enable them to make vigorous and salable ones.

My readers will recollect that I do not here write for the teaching of professional gardeners, and those who have time and

knowledge to care for and create perfect formed trees in every case, no matter what the variety, or how incongruously it may grow, but for the plain, practical working of those who desire to grow Dwarf Pears with little labor, and continue them in health and vigorous fruitfulness from year to year.

Assuming that the trees are received and planted, I will next assume that they are

mainly of two years' growth from the bud and about four feet high, with side branches, and the growth of the last year varying from one to three feet. Some of them, perhaps, have no side branches until up some two and a half to three feet from the ground, and such trees I cut at once down to a good strong dormant bud about eighteen inches from the ground; but as a majority have side branches, my drawing,

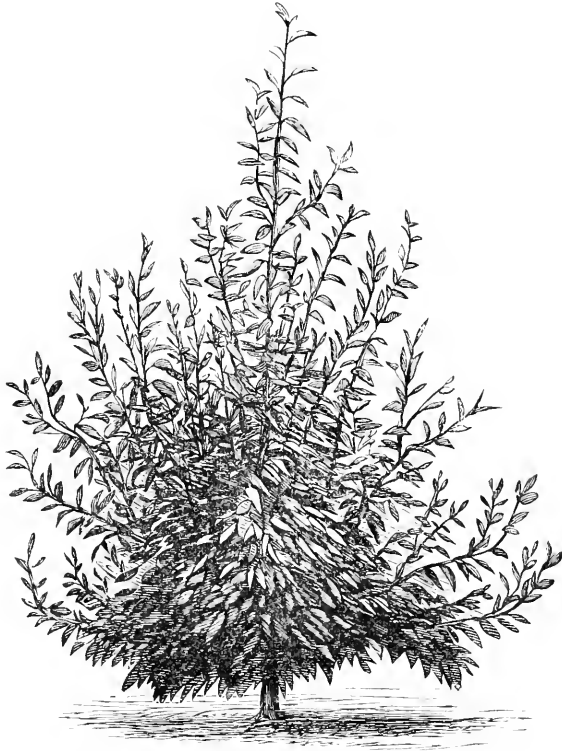


FIG. 169.

fig. 165, shows that I cut down to two buds on a side branch and three buds on the leader, leaving, if possible, my buds on the outside of the shoot in order that, as they grow, the tree will form an open head. This drawing and all the others I give are from trees in my own grounds, and exact copies. The first summer I per-

mit all the buds and shoots to grow as they may, not but what it is probable, if time could be given to watch and rub away buds, as a careful gardener would, that the sap might be directed to furnish greater strength to particular shoots; but that as the average of tree-growers can not, or will not, give time and care requisite

for such course or purpose, it is desirable to gain all the supply of root possible; and as summer pruning checks rather than adds to the formation of roots, I prefer to let all grow the first season. What is

termed winter pruning is generally advised to be performed in the spring. I prefer the fall, say about the last of November, and I then take this tree, and prune its growth of the season to the cross

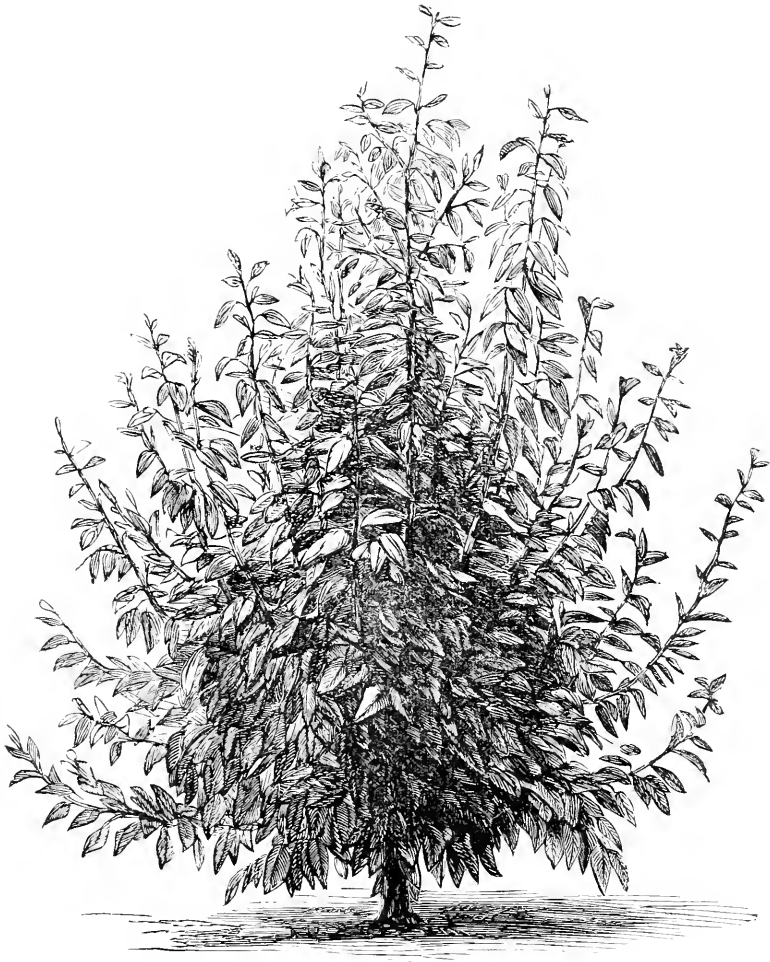


FIG. 170.

lines marked on the branches in fig. 166. Fig. 167 shows this same tree with about one half its season's growth made, and the extension beyond my cross lines being yet tender with the foliage not quite half

grown, the thumb and finger nail met together cut it readily; and while for a few days the extension of growth is checked, no great check is given to the roots, but within four or five days after

pinching, the tree pushes its terminal buds, or the last one against where we pinched; and while it makes a moderate growth spreading and expanding the form of the tree, the little check given by this pinching adds apparent increase to the fullness of the lower buds, and hence hastens the period of its first fruiting. This summer pinching is an easy labor, usually to be performed about the middle of June—sometimes earlier, according to seasons, and in doing it, perhaps more skill, or rather thought and common sense, is required than even for the winter pruning. I saw a grower this year imbued with the pinching-in process, but he had done it without a thought of guiding the form of the tree by means of the growth of the next terminal shoot from the last remaining bud, and as a consequence his trees are thick, bushy, round-headed, perhaps, but without that openness required to develop the best fruit; and in order to reach it he will have to cut away a large number of branches, and really put his trees back a year rather than advance them. Fig. 168 shows the same tree, or one close by it, which is an exact counterpart (the whole pruning having been alike), which has not been summer pruned, but left to grow as it would from the condition in which fig. 166 shows it to have been cut at the cross lines last fall. The cross lines on this tree indicate the point at which to cut this fall.

The next and following years, whatever course of pruning, whether fall or annual pruning, *i. e.*, winter pruning or summer pinching be pursued, the lower branches of the tree will sway downward somewhat,

and if continued to be pinched or pruned annually the appearance will be, at the expiration of two more summers or the fourth year from planting, as shown in fig. 169. The third summer's growth, however, sometimes proves so very vigorous, that I have occasionally found a gain by leaving the tree without any annual pruning that year. It having obtained a good bushy form, if I cut away too freely I get again a vigorous growth without any gain in shape, but keep back the formation of fruit buds, which the tree is now old enough to produce and sustain its fruit. If left unpruned, the elongation of growth is checked, and all along the stems of last year fruit buds commence to form. Fig. 170 shows a tree left unpruned, on which last year the shoots grew three to five feet; this year they have grown about one foot, or fourteen to sixteen inches, and the shoots of last year have fruit buds promising a good crop next season.

From this time onward, or rather from the time that once the tree has acquired its appropriate regular spreading form and commences bearing fruit, very little is requisite in the way of pruning from year to year to enable it to continue along. Good cultivation, as I have said, and not too near the bodies, with an annual shortening of the previous year's growth to one half or one third, according as it is vigorous or otherwise, and a yearly thinning out of its fruit should it incline to set too many, is all that is needed to make pear growing on Dwarf Trees successful and profitable.

RASPBERRIES should have all been pruned some time since, but if not done, better do it now than wait until spring. Take away all the old canes that have borne fruit, and also all the small, weakly canes, leaving two to four canes to each hill, and these cut back to from three to

four feet high, according to the strength of the canes. Leave all the canes loose, to be acted upon by winds. If tied to wires or stakes, our experience has been that the wear of winter cuts and injures the canes at the tie, causing them often, in the following spring, to break off at that point.

ROOTS.

I HAVE read with much interest the articles by Mr. Fuller on the propagation of plants; but I must confess that on reading the one on the propagation of plants by divisions of the roots, I was not a little surprised at the criticisms which he offers on the works of Gray, Lindley, and Schleiden. That these authors should have fallen into any very gross errors in regard to the morphology of plants was something surprising to me.

Schleiden is well known to be one of the most careful of original observers, a man who has worked ably and industriously upon the structure of plants. Gray is a botanist of the first rank, and is well known in other departments of that science besides taxonomy, while Lindley was unquestionably at the head of the scientific horticulturists of Great Britain. That all these men should be in error on the point in question does indeed seem strange.

After carefully reading Mr. Fuller's article and the references he has given to the works of these distinguished men, I have no hesitation in saying that he has not presented a fair statement of their views and of the morphological principles which they advance. They take a purely scientific view of the subject. For such purposes definitions must be close and exact, and their definitions are such as exclude from the catalogue of roots a great many things which find a place there in the minds of common readers. Thus, we all know that when farmers speak of *root* crops, they include potatoes. Neither Gray, Schleiden, nor Lindley admit potatoes among roots. Schleiden carries this so far as to deny entirely to some plants the possession of true roots, as Mr. Fuller will see if he reads on five lines beyond the passage which he quoted from that author.

If he will consult De Candolle's "*Ornographie Vegetale*," he will find that

at one time it was proposed by Hedwig to call all underground parts roots. Probably Mr. Fuller has adopted Hedwig's definition.

But it was seen at once that this would not answer. It would be tedious to give the reasons. They are fully set forth by De Candolle.

Then again, in regard to Dr. Gray: At page 102 of the work quoted by Mr. Fuller, he says: "To the general statement that roots give birth to no other organs, there is this abnormal, but by no means unusual exception, that of producing buds, and therefore of sending up leafy branches. Although not naturally furnished with buds like the stem, yet, under certain circumstances, the roots of many trees and shrubs, and of some herbs, have the power of producing them abundantly. Thus, when the trunk of a young apple-tree or poplar is cut off near the ground, while the roots are vigorous and full of elaborated sap, those which spread just beneath the surface produce buds and give rise to young shoots. The roots of the *Maclura* or *Osage Orange* habitually give rise to such irregular or adventitious buds and branches."

With all due deference to Mr. Fuller, I think Dr. Gray's exposé of the facts in the case quite as full and quite as clear as that given in the September number of the *HORTICULTURIST*.

Dr. Lindley is quoted as saying that cuttings should be made only from those parts of the plants which have buds upon the surface. To this Mr. Fuller objects, that we never *look* for buds—just as if our *looking* for them made any difference. Moreover, buds may exist, and yet not be very obvious to uneducated eyes. Mr. Fuller well knows that if he were to offer for sale a quantity of grapevine cuttings which did not contain very visible buds, he would make but slow sales. Here we have a plant

on which in those parts usually employed for propagation the buds are very prominent. On the other hand, every botanist knows that the willow is nearly covered with adventitious buds, which can be very readily seen if looked for properly.

But Mr. Fuller says that the doctrine laid down by Dr. Lindley would lead us to ignore the use of *leaves* for propagation. Now, it so happens that at page 271* of Dr. Lindley's work, he commences a whole chapter devoted to the propagation of plants from *mere leaves*! Moreover, he refers to the old work of Agricola (edited by Bradley, London, 1721), to show that the process is an old one. Agricola's work is a very curious production, and gives very full details in regard to the propagation of plants by leaf. Of all the old authors that we have read, he came nearest to a description of the modern system of propagating grapevines by eyes.

In regard to propagation by leaves, Dr. Lindley says: "The mere leaves of some plants will grow under special circumstances—a fact often supposed to be much more rare than it really is."

Moreover, in regard to propagation from roots, Dr. Lindley gives nearly two pages of fine type describing the methods of propagating plants from pieces of roots. (Op. cit., pp. 282-4.)

But Dr. Lindley holds with Schleiden, that roots have no buds. "In general, roots have no buds, and are therefore incapable of multiplying the plant to which they belong. But it constantly happens, in some species, that they have the power of forming what are called adventitious buds; and in such cases they may be em-

ployed for purposes of propagation. There is no rule by which the power of a plant to generate such buds by its roots can be judged of. Experiment is therefore necessary, in all cases, to determine the point." He then gives an instance (*Anemone japonica*), in which he says: "Every fragment of the plant is reproductive." (Op. cit., page 31.)

He also describes a process very similar to that figured by Mr. Fuller, but in regard to it he says: "They [the roots] are now in every respect similar to branches, developing buds, and consequently all the appendages of the axis. They appear anatomically the same as branches, excepting the pith, of which they are destitute. Now, it appears that roots when so circumstanced perform all the functions of the stem, confirming Knight's theory, that sap can at any time generate buds, without any previously-formed rudiment, when circumstances are favorable to their production."

These extracts from their works show very clearly, we think, that Lindley, Gray, and Schleiden are quite as fully posted in regard to the facts in the case as is Mr. Fuller. Is it to be supposed, then, that such men would stultify themselves by denying in one breath what they were about to assert in the next? Such a supposition is too grossly absurd for me to believe. The difficulty is, that Mr. Fuller has merely glanced at the works of the authors he has undertaken to criticise, and has failed to inform himself fully as to their views. When he does this, I think the "mystifying statements" of which he complains will become plain. BIBLIOPHILE.

ASPARAGUS beds may be made this month just as successfully as in the spring. Prepare the ground by digging or plowing

it deep—not less than sixteen inches—securing some drainage from the beds into the alleys, and thence freely away. Cut off the tops of the plants, plant about three inches deep, and dress the whole bed over with coarse manure four inches deep.

* "Theory of Horticulture," London, 1855. The American edition, by Downing, contains the same chapter.

PURE NATIVE WINES—WHAT AND WHERE THEY ARE.

UNDER this head, our readers will remember an article in our June number. It was written with the best of feeling toward all wine-makers, and as a guide to those who intend planting the vine with a view of making wine from the produce; believing as we do, that while the quantity of fruit consumed by the people will increase from year to year, still there are some sections of our country where it will be found more profitable to make wine than to sell the fruit for table use. As there are now perhaps more who make wine by their skill in compounding, than in a knowledge of fermenting the juice and fining it, it was not to be expected that our remarks would go "scot free," for wherever a man's pecuniary interest lies, there generally is he sensitive, and accordingly we have had several communications; but as none of them embraced more than a puff of themselves, we have not published them.

In the last September number of the *Boston Journal of Horticulture*, our old friend and former correspondent George Husmann takes us up quite savagely, evidently showing his sensitiveness on a subject which he well knows has caused him to receive a certain amount of censure as taking a first, however modest or innocent, step in the way of diluting and preparing a good drink, which he calls wine, and which can be made in any season, and with almost any

grape. Certainly, if correct, a very great gain on the old idea, that it required good ripe sweet grapes to make good wine. Our main objection to his course, which is an imperfect knowledge of galling, is that it opens the door to other practices which may not in themselves be as little reprehensible. He cites us as having made accusations without investigation. We have looked over our article, and fail to find where we have made accusation against any one. We only spoke of our native wines as they had come to our knowledge, giving names only of a few parties whose wines we had drunk, and believe to be pure. But if a man is found with his coat off, and a chill blast comes, he is sure to feel it, and at once turns savagely toward the point from whence it comes; and even if he knows he can effect nothing, it is natural that he should exhibit his feeling.

Mr. Husmann quotes Mr. Leick as assenting to the practice of adding sugar and water. We do not know how Mr. Leick will accept this, but incline to the impression that he would not acknowledge any such courses as embraced in his practice of wine-making. As we have studied Mr. Leick, his knowledge in wine-making as compared with Mr. Husmann's would enable the latter to take home to himself his German proverb, of having "heard the bell ring without knowing where it hangs."


MARKETING GRAPES.

THE grape may be shipped to distant markets with less liability to damage than any other of the small fruits. There are, however, some exceptions to this statement. Some varieties are quite tender and more difficult to handle than others. The Concord is one of this sort; its clusters are

large and compact, its skin thin and tender, and its berries large and juicy, thus making it, perhaps, the most difficult of all our native grapes to handle, or to market in good condition. It can, however, be shipped, and some grape-growers do succeed in sending it long distances, without

material damage. This being one of the most popular market grapes among the fruit-growers, as well as with dealers in general, it is important that the art of marketing it should be generally understood.

This grape, when rightly handled and presented in market, makes the most attractive appearance of any of the small fruits; therefore great care should be taken in gathering and packing to preserve the bloom that covers it. The best way that we have tried, is to lay the bunches, when cut, into shallow market-baskets, two layers deep, and carry them to the fruit-room, where they should be allowed to stand a couple of days to evaporate some of their moisture and become a little wilted, thus rendering the clusters more flexible and easier to pack. In taking the bunches from the basket, they should be handled chiefly by the stem. With a little patience, a skillful hand will seldom find it necessary to handle a cluster in any other way. The grapes should be cut when dry, but not before they are sufficiently ripe. It is a lamentable practice, that of sending half-ripened fruit to market, as is too often the case, especially with the grape. This fruit when ripe is justly esteemed as one of the healthiest known; but when eaten in an unripe state, it may be set down as decidedly unwholesome.

Grapes, like other small fruits, are usually packed and sent to market in boxes of various styles. The best packages, however, for distant markets, are those holding not less than two, or more than five pounds. Smaller boxes are sometimes used, holding but a single pound. This size we consider unprofitable to both parties, especially so to

the buyer, as it compels him to pay about as much for a package holding but one pound, as for one holding two or more, and nearly half as much as the grapes are worth. A medium-sized box is undoubtedly the best for such varieties as the Concord, as they are liable, when placed in larger packages, to be crushed by their own weight. Grape boxes are generally made of paper, which answers the purpose very well. Still we have met with losses by their use, for if the paper absorbs much moisture from the grapes it loses its stiffness, and thus the grapes crush each other by their own weight. To avoid this liability, we would recommend the use of wooden boxes; these can be made as cheap, and perhaps cheaper than paper ones, and by covering the outside with suitable paper, can be made to look just as presentable. We like round boxes best, as they can be made of lighter material, and be stronger in proportion than square ones, and are more attractive in appearance. The depth of a grape box should be about four inches. The depth, however, may be varied according to the varieties or size of the bunches.

Grapes may be shipped in either light boxes, cases, or crates. They should be as light and cheap as they can be, and have sufficient strength and durability for a single trip to market, as it is not expected that they will be returned when sent long distances. In constructing the cases, care should be had not to get them too large and heavy. A fifty-pound crate is as much as a man will take up and handle with ease; and if it is tumbled about, the jar will not be as violent as in the case of heavier packages.—*The Circular.*

LAWNS will receive a great benefit from a dressing of bone-dust this month. Apply, say, at the rate of one ton to the acre, and at the same time sow at the rate of two bushels of plaster to the acre. Such an application will show the grass vigorous

and healthy next spring, and do away with the too common but unsightly practice of covering during winter with manure. Do not mow the lawn any after the middle of this month, but leave the growth as a partial protection to the roots.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

CHEAP PLANTS.—We have all along contended that it was better and really cheaper for the purchaser to pay double price for the best plants than to take those rated as *cheap*, as a gift. The following experience of a grower, we feel, is only a truthful summing up of the case, although we do not believe the price named—viz., one dollar a plant—a just one to be demanded for even the best of grapevines, except it be some rare and new sort that the demand requires more than the supply can furnish:

“It is better for the purchaser to pay one dollar each for three vines propagated from a parent vine, than to pay twenty-five cents each for a dozen vines propagated from a vine in every respect equal to the vine producing but three. He will have three plants of excellent quality; and if he will give the same care to the three vines that he would to the dozen, he will in the end, according to my experience, have better results; but the great mass of the people demand cheap plants, and we must gratify them, or they will send to those who will furnish them; but if all would agree to send out none but plants of the best quality, and charge according to the value of the plant, I believe in the end it would be to the interest of both purchaser and propagator. When I see an advertisement in which grapes are offered for five, eight, or ten cents, even at wholesale, the idea strikes my mind that the plants are not worth anything. When I first commenced to test the vines I bought cheap vines, but I found in a few years that I was throwing away money. The people ought to understand

that a good vine at fifty cents or a dollar is far cheaper than a poor vine at twenty-five cents, or even five cents. I bought some of the Wilson Blackberry plants this spring, at a dollar and fifty cents per root; they have grown three feet, and look healthy. I afterward saw an advertisement offering the same variety of plants at twenty-five cents each. I procured some of the latter to see what the difference in their growth would be; half lived till July the 1st, the other half died about the middle. This was only another proof to me that there is nothing gained by purchasing cheap plants, but much to be lost.”

TREE PLANTING.—In planting trees this fall, all should remember that it is requisite to set the tree only just so deep as to enable it to stand, for we can earth to protect it from heaving off the winter's frosts; and as soon as spring opens and the ground is leveled down, the roots will start and seek their appropriate depth. If we dig a deep hole, especially in hard clay soil, and fill it with good loam and set our tree therein, we first invite the water there as into a cistern—and second, we cause a vigorous growth of roots, until they reach the undisturbed clay, when a check is at once perceptible; and often an orchard stands from five to seven years without apparently making any progress. Remember, then, and plant your trees just so deep as to cover their roots, but no more; then earth up for a winter protection against frost for the first year, and dress down again to a level in spring.

GRAPEVINES FROM GREEN WOOD.—A. M. Burns, of Riley County, Kansas, writes the *Prairie Farmer*, referring to rot, diseases, etc., in grape culture as follows:

“Although we have been free from rot and comparatively free from mildew—a few scattering bunches showing some last year on vines planted in the best prepared soil I have—yet I observed that quite a lot of yellow leaves made their appearance; these wan leaves, I noticed, were only on vines that had been propagated from green wood by layering, or on vines from old wood that had not been root-pruned before planting; while vines produced from good bearing canes, taken up in the fall and all the unripe wood cut off, “heeled in,” and coming out in the spring with nicely calloused wood where cuts had been made, presented a very healthy-looking foliage. It is true that some of the hardy varieties produced roots from green wood, which I root-pruned within an inch or two of the collar, that have remained healthy-looking for years, but their progress in growth was very slow—very little more than good cuttings. The vines that I propagated by layering green wood, when not closely root-pruned before planting, nearly, if not all, died; while a great many propagated from sound canes, by layering, showed the yellow leaf and gradually died; but I observed that none of my vines exhibited the wan leaf which had been propagated from sound bearing canes, properly root-pruned and the wounds calloused before planting in properly prepared soil, adapted to the healthful growth of the vine.”

Again, he adds an item which confirms additional our view of the necessity of cutting away unripe wood, or that which our good judgment tells us will not ripen, and thus aid in preparing the plant to endure the severity of a climate beyond its natural order. While this cutting may injure at the time, if made early, say 1st to 10th of October, a small portion of roots, experience has shown that there is benefit rather than injury in so doing. If the plant

is left to itself, and severe weather attacks it in the unripe condition and with a quantity of unripe sap returning to the roots, the whole plant as well as the roots feels the effect injurious; hence the advantage of cutting away immature wood and foliage, that the remainder may return through its foliage and sap vessels only elaborated substances, healthy and hardy, in support of the vine. The following is Mr. Burns' item:

“It is an admitted fact, I believe, that the roots of the vines can not ripen their ends in autumn; the consequence is that the immature wood must rot if planted. It is also known that just in proportion to the quantity of the tops of grapevines that are cut off, there will be so much of the roots that will decay. Now to what other cause can I attribute the yellow leaves on vines brought from a distance, as well as those that are indigenous to the country, than that the decaying wood on the roots of the vines affects the vigor of the mature wood; perhaps sows the seeds of disease that may not be immediately observed, but which will, under favorable conditions, show itself at a future period. I have observed that the yellow leaves did not exhibit themselves, in some instances, for years after the vines were planted; but as soon as unfavorable conditions were presented, the yellow leaves could be seen.”

THE DELAWARE GRAPE we have seen this year, grown on clay shale land well manured, ripen or rather color its fruit as early as the Hartford. On sandy and gravelly soils, while one or more berries have colored early, the main part of the bunch has not the matured any earlier than the Concord.

HARTFORD PROLIFIC GRAPE under our observation again this year, does better on clay than on sandy or gravelly soils. On clay soils its bunches are larger and more compact, and it colors and ripens earlier than when grown on sand.

AUTUMN PLANTING.—There is no doubt of the benefit of autumn planting for trees or vines, provided they are duly protected against the heaving frosts of winter. We have planted our cherries in September, and always with good results. Our pears and apples we prefer to plant never later than October, if we can possibly obtain them. The early planted tree, while the ground is yet warm, forms new fibrous roots, enabling it more successfully to resist the winter's changes, and to supply food as soon as wanted for the spring growth. If our trees are procured from a distance, and do not arrive in season to plant early, we make it a point to prepare our ground and have everything ready, so that when they do come, no time need be lost in planting them. Clay lands are better if worked in the fall when somewhat dry; at any rate they should not be plowed when wet, if it can be avoided, for once they get packed down hard in the fall, no benefit comes from winter's frosts, and often the spring gives no relief. If the ground for planting is level and somewhat stiff, with only a slight surface drainage, do not plant the tree too deep, but after planting go through with the plow and throw the earth up to the trees, leaving between each row an open furrow drain to hold and carry off the water during winter.

ORIGINAL DISSEMINATOR OF THE DELAWARE GRAPE.—A short time since we saw, in a Western paper, a record of a trip among vineyards; Dr. Grant was one of the party, and it was stated that he, Dr. Grant, was the original disseminator of the Delaware Grape. We believe in rendering "to Cæsar the things that are Cæsar's," but we can hardly believe Dr. Grant could have seen this record, or he would at once have refuted it, and given to Mr. A. Thompson, of Delaware, Ohio, the credit, justly his due, of bringing the Delaware prominently before the public as a distinct variety worthy of their patronage.

GLADIOLUS and other tender bulbs should be taken up before any frost affects the ground. It is perhaps best to take them from the ground as soon as the tops die, dry them carefully, not in too strong a sun, and pack them in tight paper bags and lay away in a dry place free from frost. In some sections where the ground is dry and snow falls, and remains, before the ground freezes, they will often do to be left in the ground, but as a rule they do not flower as freely as when taken up, kept during winter, and replanted. So also in our Southern States they undoubtedly will do to be left in the ground; but even there it is always well to transplant in order to have good blooms.

OUR ROSE BEDS.—From where we now write, the summer has been one of unusual drought; and having visited many gardens, we find the one where we are now staying with its roses giving daily an abundance of blooms, while many gardens kept in much higher condition have hardly a bloom to show, although in some their collections embrace dozens of varieties to our friend's one. The secret of this continual summer bloom, our friend says, consists simply in the fact that every rose bed should be re-set every year, and a bottom at depth of eight to twelve inches be supplied with fresh turf, or a foot deep of coarse barn-yard manure well chopped as it is put in. He prefers and only uses the turf sod.

PERKINS GRAPE.—This is a variety belonging strictly to the native fox grape; its bunches are large, and so of its berries, and it colors and ripens up early, and furnishes, according to the best information we can get, a large quantity of juice to the pound of grapes, which juice is rich in sugar, but a little too strong in aroma for a good wine, although one of our correspondents writes us that he regards it as among the most promising wine grapes recently introduced.

EARLY FRUIT-PLANTING.—The following, written by W. C. Flagg, Esq., Alton, Illinois, well known as one of the most intelligent fruit-growers at the West, and Secretary of the State Horticultural Society, we take from the *Prairie Farmer*, one of our most valuable Western exchanges, and truly a farmer's paper. This record has reference mainly to Madison and St. Clair counties, and is of great value to every thorough lover of fruit-growing:

"In the American bottom within the limits of Madison and St. Clair are found pear-trees of from seventy-five to perhaps a hundred and fifty years of age, planted by the French *habitans* in the good old times of French domination. Perhaps the first orchard planted by an American in the county of Madison was that set of seedling apple-trees by Samuel Judy, in section 5, of township 3, 8, about 1802 or 1803.

"It was a good many years later before grafted apple-trees were planted. A single tree of Lady Apples was planted in 1819, on the farm of D. A. Lanterman, in section 19, of 5, 8.

"The same year, or a little later, orchards of grafted fruit were set out by Robert Collet and Emanuel J. West, in township 5, 8. Among these trees were Lady Apple, Janet, and Bellefleur. The trees were procured from Burlington, New Jersey, at that time the home of William Coxe, whose work on the cultivation of fruit-trees appeared in 1817. Both of these farms having been leased to a long series of tenants, the orchard trees are now mostly dead.

"In 1822 Gersham Flagg planted an orchard of over five hundred trees in section 3, of 5, 8. Three hundred were seedling trees from St. Clair County, planted in the spring of that year, and two hundred were grafts from the nursery of John Smith, of Bond County, who started a nursery near Greenville in 1818, with stock brought from the nursery of George Heikes, an emigrant from Pennsylvania to Kentucky. Among these we find such varieties as Kirkbridge White, Rambo, Wine, Vandevere, Pennoek,

Pryor's Red, Newtown Pippin, Rawles' Janet, and Gilpin.

"Only a few years later a nursery was started in township 5, 8, by a Swiss of the name of Masson. His advertisement, and that of his partner, Robert Collet, may be found in the *Western Ploughboy*, an agricultural paper published at Edwardsville, in 1831. Among the forty varieties of apples advertised, are Pennsylvania Red Streak (Wine), Bellefleur, Newtown Pippin, Fall Pippin, Rawles' Janet, Small Romanite, Large Romanite, Rambo, Red Russet (Pryor's Red), Seek-no-Further, Hubbardstown Nonsuch, Porter Apple, Rhode Island Greening, Buckingham Vandevere, Lady or Pomme d'Appie. These were sold at twelve and half cents each, eleven dollars and fifty cents per hundred, and a hundred dollars per thousand. Fourteen varieties of pears are advertised, and a very desirable succession of peaches, extending 'from July 10th till 1st of November.'

"From 1830 onward, fruit culture and general horticulture increased rapidly. Evergreens from the Eastern States were planted about 1838 at Alton and elsewhere. In 1845 Dr. E. S. Hull planted his first peach orchard, whose remarkable fruit did much to attract attention to the Alton region.

"In 1843 vineyard culture was commenced by the Messrs. Koepfli, at Highland, in the southeast corner of the county, and wine was made by them in 1847, from the Catawba grape. Since that period the cultivation of grapes has been considerably extended in this vicinity.

"At Collinsville extensive plantations of the raspberry have been made in the last few years, under the bluff and on the 'American Bottom.' The product of one field sold in 1865 for \$7,000.

"At Troy, Julius A. Barnesback has been very successful with a small orchard of an acre of dwarf pears, which he mulched with all the straw from forty acres of wheat. Under this apparently weighty covering

the trees have grown and borne fruit excellently well.

"Between Edwardsville and Troy there are numerous old orchards with whose history we are not familiar.

"Strawberry culture about Alton has increased considerably during the last few years, fifteen thousand pounds having been sent from Alton in a single day through the express offices, during the present season of 1867."

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FALL OR AUTUMN FRUITING RASPBERRIES.—We have been not a little surprised at the statements made by some of the Western growers of the value of autumn-bearing raspberries. Our own experience has been rather to condemn than praise them; for even if a moderate crop is produced there is no demand for them—they are out of season, and not desirable—will not sell, and our children would rather have peaches or pears—in fact, do not care for the raspberries.

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THE LOGAN GRAPE we have examined this season in connection with the Hartford Prolific, in clay and sandy gravelly soils, and while it colors a little sooner than the Hartford, it does not form as good bunches, nor does it really ripen any earlier, and in quality it is not equal, so that we believe it a variety to be cast aside.

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THE LYMAN GRAPE.—It will be recollected that in our March number we copied a description of a grape under the above name, which had been issued by the secretary of the Ohio Pomological Society as a new grape, and that we then doubted it. Recently we find the following relative to it in the *Country Gentleman*:

"Among the new varieties of grapes, lately noticed in the horticultural journals, is one called the *Lyman*, found in the grounds of the late N. Longworth, of Cincinnati. I think this may prove to be an old variety, well known, and more generally cultivated in Vermont, for the last fifty

years, than any other kind, until the introduction of new varieties of late. The fruit is of medium size, bunch and berry black, and the juice very dark, making a wine, with addition of sugar, resembling *port*. About fifteen to eighteen years ago, as nearly as I can recollect, Mr. Longworth applied to myself and others in this section, for samples of grapes in cultivation about here, and I sent him some Cowan grapes, Mr. J. Bатtey sent him some NeNiell grapes, and the late Rev. J. Wheeler, D.D., of Burlington, sent him the Lyman grape. Mr. Longworth tested all these varieties, and reported to each of us the weight of the must which he regarded as favorable, and he requested cuttings, which were sent to him. The facts stated above lead me to believe that the supposed new variety is the old Lyman grape of Vermont.

"JOHN W. BAILEY.

"PLATTSBURGH, N. Y., July 25."

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WINDING THE BODIES OF FRUIT-TREES WITH STRAW.—Old things become new in horticulture as well as other pursuits, and recently we find writers touching up, and justly so, the policy of winding the bodies of fruit-trees with straw bands, or with moss wound on with a string, in order to protect it from the direct rays of the sun or the immediate direct injurious action of cold. We practiced it many years ago with good results, and can safely advise the course as one especially valuable to be pursued with recently planted cherries or pears, more particularly those with long bodies which will be exposed to the sun.

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FOWLS will lay better and more regularly by being confined a part, say the morning, of each day.

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TO NURSERYMEN.—We shall feel obliged if every nurseryman in the United States will send us a little account of his nursery—the amount of ground occupied—average number of fruit-trees, vines, etc., together with the soil, etc., etc.

ELWOOD, N. J., *August 19th, '67.*

MESSRS. G. E. & F. W. WOODWARD: I have noticed in your valuable JOURNAL letters giving this season's experience with strawberries, in which several varieties are rather severely "set down." I will omit names, etc., having no desire to hurt any one's feelings or question their facts, but merely to comment on the prevailing habit of praising or denouncing varieties without giving the reader any clue to whether the soil, the cultivator, or the variety should have the praise or blame. It is a matter of perfect indifference to the public whether Smith, Brown, and Jones succeed or fail with a certain variety. The object of publishing such statements should be to show, if possible, *why* they succeed or fail, that others may profit by their experience; and for this a knowledge of the nature of the soil, *at least*, is necessary. For instance, if one writer, who denounces the Jucunda, had told us that they were grown in a sandy soil, which is the case, if I remember aright, his statement would have had a certain amount of value; and if corroborated by a sufficient number of similar experiences, would show that it is not adapted to such a soil. Then we should have learned something. But if one merely pronounces a variety worthless, only to be contradicted point-blank by equally good authority, who will be any the wiser, though the war of *opinions* rage to the end of time? These same Jucundas had been "run" the previous year to produce plants, and, I think, his Agriculturists also.

We want a radical change in this matter. Why will not you, Messrs. W., lead off in this reform, by a standing notice, or otherwise, that a description of soil and other particulars should accompany every such statement of results to insure publication or notice? Give us a synopsis of the case with the verdict. I could also throw a little light on the statements of some others; but having said enough to explain my meaning, I will only remark that

Metcalf's Early may or may not have "played out" this season. But the failure of two or two dozen growers with it will not justify that assertion. There are a good many things that *ought* to be "played out," however, and among them this evil of giving us facts instead of information.

Yours remorselessly,

C. E. F.

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DISTANCE APART IN PLANTING.—All the old records give twenty-five to forty feet apart as proper distance at which to plant apple-trees. So, grape men say, plant 8+10, and 10+12 feet, etc. These distances are all probably correct when the tree or vine arrives at full maturity, but during the time intervening the ground has all to be worked; and as trees often bear more or less fruit many years before arriving at full size, we believe there is a gain in closer planting, and so believing we have practiced accordingly, setting our apple orchard 10+12 feet, our grapes 4+8, our dwarf pears 4+8, and so on with other trees, designing to take away the surplus, as those intended to be permanent require more space.

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WOODBURY, CONN., *September 15th, '67.*

NOTES ON GRAPES IN THIS LOCALITY.—The unprecedented wet season has delayed the ripening of the grape crop full two weeks. Hartford, N. Muscadine, Delaware, and Israella, etc., are now ripening, while Concord, Diana, and Iona are just coloring.

Concord has lost full one half the fruit by rot. Delaware is ripening its fruit perfectly, notwithstanding the leaves mildewed badly.

Diana made a good growth until fruit was half grown, then the latter mildewed so as to leave not a single cluster healthy.

Iona and Israella have resisted the mildew reasonably well, and the fruit is free from disease. Allen's Hybrid and Ives have made a good growth, better than Adirondac, which has mildewed badly.

E. SPERRY

HYDRANGEA DEUTZIAFOLIA.—This variety was introduced from Japan by Dr. Hall, and placed in the hands of Messrs. Parsons & Co., of Flushing, L. I. Its vigorous habit, the season of its blooming, August and September, its magnificent trusses, changing from pure white to a most delicate tinge of pink, and the abundance of its bloom, render it one of the most desirable shrubs known.

CEDAR FALLS, IOWA, September 10, 1867.

MESSRS. EDITORS: There are doubtless some who feel interested in knowing how grapes will succeed in this latitude, $42\frac{1}{2}^{\circ}$, especially some of the new varieties. For the information of such I will send you a few notes.

My bearing vines consist of the following kinds: Diana, Delaware, Iona, Clinton, Creveling, Concord, Rogers' Hybrids Nos. 3 and 4, all of which are doing well, and especially Delaware and Rogers' Hybrids. Iona maintains its reputation as to quality, and from present appearances I think will be a good bearer. Rogers' No. 3 is a healthy, strong growing vine and an abundant bearer. The fruit is quite large and showy, of but medium quality. It is desirable, however, for its earliness. Among the new kinds that do not succeed with me are Israella, Allen's Hybrid, and Adirondac. Respectfully yours,

D. T. CHOAT.

PRESERVATION OF FLOWER STAKES.—Of all my experiments to preserve flower sticks against rot, the following is the only mode that has proved fully successful:

Heat ordinary coal tar to the boiling point; pour into a tub or barrel to a depth sufficient that the stakes may be covered four to six inches above the point of contact with the ground; put the lower ends of the stakes into the tar and allow them to remain at least one hour, then take them out; and after allowing the surplus tar to drain off, roll them in dry sharp

sand until the tarred portion is completely covered; afterward allow them to dry thoroughly. Dip the stakes a second time in cold tar over the sanded portion, and let them get thoroughly dry again, and they are fit for use.

I treated a lot of stakes of different sizes in this manner over nine years ago: many of them have since been painted at two different periods with substantial paint, and now need repainting; still, the lower portion is as sound as ever, and will, no doubt, last for some years, although the sand has mostly disappeared.

W. F. HEINS, Paterson, N. J.

LIME, BONE-DUST, etc., are better to be applied to the orchard or the vineyard in autumn than spring. Let the application be made just before plowing up to the plants in the fall, when it will all be absorbed in the soil during winter, and be ready for the use of the trees and vines in spring. Dwarf pear orchards and vineyards may receive from twenty to fifty bushels of lime to the acre, and one ton of bone-dust, with, say, two bushels of plaster, and the result will be most satisfactory to the owner.

GAS LIME A PREVENTIVE OF CURCULIO.—One of our correspondents tells us that he has this year grown an abundance of the finest plums on trees that heretofore have always had their fruit stung by the curculio, and that while his trees have been loaded, his neighbors, only a few yards distant, have lost their entire crop. His practice for success is to have ready a heap of refuse gas lime, which every other day he manages by a cup on end of a stick or otherwise to scatter in, on, and among the foliage and branches of the trees while yet they are wet with the dew. The gas lime adhering to leaf, fruit, and branch seems to deter the insect from his labor of life, and leave the fruit crop to mature for the benefit of the land-owner.

FOREST NURSERY, FAIRVIEW, TODD Co., KY., }
 August 16, '67. }

MESSRS. EDITORS HORTICULTURIST:
Gentlemen—I can not regard your strictures, etc., on the Charles Downing Strawberry, and its originator, in the August number of the HORTICULTURIST, in any other light than that of unkindness. Why require that this berry shall be tested everywhere before sending out? Has this course been pursued toward any other strawberry? Is it expected that any variety of this fruit will succeed in all the *States* and *sections*? The variety (Charles Downing) has fruited six seasons in the hands of its originator; and two seasons in the hands of disinterested parties in other parts of the country. I think I have the right to expect the same courtesy exercised toward me that is shown to other patrons of your JOURNAL. When and where did you call on any other originator of fruit to have it tested everywhere before offering it for sale? But I will leave the subject for the present for your further consideration.

Very respectfully,

J. S. DOWNER.

[We confess a little surprise at the tone of Mr. Downer's communication above. We wrote our stricture, not against the strawberry, but as implicating with it the name of a horticulturist whose good works are known everywhere and whose bad traits have never been discovered, and as we do know that no strawberry yet generally known is free in all sections from faults, we felt that the name of Charles Downing should be used only *when* as connected with all that was desirable in fruit culture. We have but a few men in horticulture, if we must say it, as well as in other pursuits of life, who do not make the almighty dollar superior to their judgment and better feelings, and the names of those few we choose, so far as we can, to keep inviolate.

We know not what this strawberry may prove around the country. It may sustain the character of the name given it, and we

shall rejoice if it does as much as any other one; but when the name of so valuable a man to the horticultural world is appended to a fruit, we think more care than usual should be given to testing its actual value everywhere. We have a private note from Mr. Downing in which he says he objected to the name until the kind had been more generally tested, and we believe every true horticulturist in the United States will join us in what we have said. You, Mr. Downer, have produced some good fruits; you had a right to give your own name to what you pleased, but the name of such a man as Charles Downing belongs to us all, and neither you or any other man has a right to attach it to any fancy of your own without the full and free consent of the owner.]

STRAWBERRIES that have been planted late should be covered as soon as the ground freezes, using either straw or corn-stalks, or anything that will shield them from the freezing and thawing in winter, and yet not pack down upon and smother the plants.

BLACKBERRIES AND RASPBERRIES may be planted this fall just as successfully as in spring, and if put in during this month they will form new fibrous roots, and next year make far more vigorous growth than if the planting be left until spring. After they are planted, run the plow along and earth up to them, leaving a dead furrow between each row, to act as a drain for the water, and prevent the frost throwing the plants out. Covering the whole plant four or five inches will not hurt it, provided the drainage is kept open and the covering be removed as soon as the frost is out of the ground in spring.

CUTTINGS of grape, gooseberry, currant, etc., may be put in this month, in the open ground. Our experience has resulted in more uniform success from fall than spring-planted cuttings.

DRIED FRUITS.—Let no man hesitate to plant out small fruits, as raspberries, blackberries, etc., in quantity, simply because he is not near to a market where they can be sold from day to day as they are gathered. There is, perhaps, as much, and some say more, money to be had in growing and drying them as in growing and selling them fresh. The labor of marketing, use of horse, wagon, man, etc., etc., it is claimed by those who have tested the matter, fully balance any little extra price which the fruit may occasionally bring; and again, they say that if the fruit brings a high price sold in the market as fast as gathered, the supply is so limited, that when winter comes the dried fruit brings a correspondingly high price. The records show that as high as twelve cents a quart may be counted as the value of a crop of the Black Cap Raspberries when dried and sold at the average prices. Some seasons it runs above, even up to fifteen cents, but never below ten. There is always a demand for dried fruits, even exceeding the supply; and were they more readily obtained, would doubtless be still more called for, as their use is acknowledged by all to be healthful. There are many sections where land suitable for growing berries can be had at a cheap rate, and we are surprised that among the many enthusiastic and energetic labors of our fruit-growers, no large plantation and establishment for growing and drying berries has not been put in operation. It may appear a small business, but we really believe, rightly pursued, there is more money to be made by it according to capital required than in almost any other item of fruit-growing.

PROPAGATING PEARS FROM ROOTS.—I now propagate for myself and intimate friends the most choice varieties of pears, which I obtain by means of the roots. Not a single one fails in this new process. It is immaterial in what manner they are set out. This method I discovered accidentally, in consequence of some roots on which

I intended to graft other kinds of pears being thrown on the ground and covered with a little earth, to preserve them until used for that purpose, and which were lost sight of and forgotten until the next spring, when all of them sent up stalks, which in the autumn were as tall as those raised from the seed of two years' growth. They can be set out in the spring as well as autumn. Such roots should be selected as have one or more terminal fibers, and those that are often cut off or left in the earth when a tree is transplanted, succeed well. They can not be too small, but should not be larger than the finger. The wounds at the large ends of the roots should be covered with the same composition to protect, as in grafting. They must be set obliquely.

DR. VAN MOES, of Belgium.

[We find the above going the rounds, and have been written to by a number of persons to know if they can grow their Duchesses, Seekels, etc., etc., by simply cutting off pieces of the roots and planting as above. We reply, that we have many years since grown pear-trees, cherry-trees, etc., from pieces of root, but that we should not advise the practice. Roots of a very strong vigorous seedling will sometimes send up good plants, but the average is less than of moderate growth, and the plants so grown with us all had a disposition to throw up suckers more readily than seedlings. As it is, those who purchase trees will almost always find them worked on seedlings, quince, etc., and hence the roots will be of the seedling. If a Bartlett or Duchess on quince has been planted so deep as to have the pear stock take root, it is possible a piece could be taken, and a tree of the same variety grown from it; but we do not think it could be as cheaply done as to bud or graft into a good healthy stock.]

THE application of salt to land assists in rendering soluble phosphate of lime and silicate of ammonia, hence one of its great items of value as a manure.

A GRAPE FOR THE MILLION, AND FOR ALL SECTIONS.—If such a thing can be produced, which we very much doubt, in our opinion the *vitis cordifolia* must become one of the parents. Hardihood of vine, freedom from diseases, etc., seem more to belong to it than any other, and those who are working for new results, we advise to experiment as much as possible with this species.

ROADSIDE IMPROVEMENTS.—Too often, as we have traveled over the country this summer, have we witnessed a fine house, good buildings, and fences, but the roadside outside of the fence line containing more or less rubbish, evidently the gatherings and prunings of the garden and lawn trees. Sometimes the street or roadway is clear of this; but while the grass is clipped inside the fence, the outside is left to grow long and rank, with more or less coarse weeds, presenting just that appearance to the man's grounds that the finding of a heap of dirt under the lounge would to the housewife, and giving him in our view no claim to a better name than would be applied to such a housewife.

Our horticultural readers should each and all strive to make the outward appearance of their grounds clean, neat, and tasteful, first by keeping away all rubbish from the street, next by frequent mowing and destruction of weeds, and lastly by planting and caring for shade trees and flowering shrubs, giving themselves pleasure and attracting notice from every passer-by; and again, as an example to those of their neighbors who, not being readers, or not having learned to move out of their original tracks, continue to make brush piles, keep hog pens, and grow thistles, mullein, etc., in front of their houses.

PEACHES.—As the season arrived, a greater crop of peaches was found on trees than counted for by a majority of growers. In some sections the curl in spring seemed to check and destroy, and many concluded

their crop as entirely lost, but after a time the trees recovered; and although drought has been severe in some locations, yet even there the late ripening sorts have given good, fair average crops. The very early sorts have not been as profitable this season as later ones, owing partially to the curl and partially to rot, which affected the fruit at about the period of maturity. Oldmixon Freestone, Crawford's Late, and Smock have all proved very profitable. Where the trees had plenty of moisture and good soil, Crawford's Early has done well; but its tendency to overbear, and thus give a small-sized fruit, makes it objectionable to some of the largest growers. Some trees that we saw of the Sturtevant had the fruit evenly distributed over them, and of good size; the President also, as a white flesh peach, we saw in several places quite equal in productiveness and size to Oldmixon Free, and more showy.

MESSRS. EDITORS: I have a lawn on a sandy loam subsoil. This season it has burned out, and the grass has dried up, and the ground is filled with a coarse, wild, rank grass spreading a foot or more to each root. What shall I do with it?

B.

[Rake it over at once sharply with an iron rake, and remove as far as is possible all the wild grass, then apply bone meal ground fine at the rate of one ton to the acre, and salt at the rate of eight bushels to the acre, and plaster (gypsum) at the rate of two bushels to the acre; seed anew with red top and blue grass at the rate of four bushels to the acre; rake thoroughly, and roll several times, and especially after a rain. In spring we think your lawn will be all right again.]

WIRES IN THE VINEYARD should be slackened as the weather grows cool. It should be done at the time of autumn pruning of the vines. A little loosening now will save many a post from drawing and having to be re-set.

PEARS gathered when nearly ripe, and laid away in shallow drawers, one tier of fruit only, with flannel blankets below and above, will ripen in a few days, and color finely, developing their character and quality in the best manner.

THE PLUM CURCULIO.—P. S. Bush, Covington, Ky., sent a letter to the Cincinnati Horticultural Society stating how he destroyed the curculio and saved his plums. He covered the ground under the trees with gravel screened in lime, and secured his crop. Subsequently, in another experiment, he scraped off the grass under the plum-trees with a sharp hoe, and covered the ground half an inch thick with marble dust, which compacted down to one fourth of an inch, making an impervious coating, impenetrable to worms and insects. He had no trouble with the curculio. The theory is that the instinct of the insect teaches it to avoid depositing its eggs where it is plain the larvæ can not find cover to perfect itself. Hence it avoids trees where the surface of the ground beneath is hard and impervious.

[We are not a little surprised to see this item come again before a society so reputed for its intelligence as that of Cincinnati. It was an item of practice by Mr. Longworth years since, and the experiment made in many sections; but while it appeared to hold good in small yards and gardens where there were no neighboring trees, as soon as it was attempted on trees scattered about in a large orchard, it failed as often as it proved successful. But old things must be again brought up from time to time.

DAHLIAS should have the tops cut away as soon as one good hard frost has destroyed their foliage—then leave the tubers in the ground for a week or so. Select a good, clear, dry day for digging, drying, and taking them to the cellar or green-house. A good way to keep dahlias is to pack them with potatoes in barrels,

standing the barrels in the cellar, so that they absorb little or no moisture from the bottom. Dahlias, however, keep well when simply placed on a dry cellar bottom, or on boards. Light is objectionable, as, like all roots, a certain amount of vitality is lost by exposure thereto. If possible, keep them in the dark.

SELECTING GRAPES TO PLANT.—*Messrs. Editors:* I am a novice in grape-growing; have about ten acres of land; have out about four acres in Catawba, one in Delaware, and about one more in varieties—Concord, Iona, etc. Now, I want to fill the balance of my ground with something reliable, and was going to plant Catawba, as that does well with us; but I see Mead's book condemns it, so also Bateham, of the Lake Shore Grape-Growers' Association, and I am measurably in the dark as to what to plant. Can you enlighten me?
Avon, Ohio.

[We know not whether we can advise satisfactorily as to what grape to plant, or whether we can enlighten Avon; but perhaps he will get some light if he will compare Mead's book carefully with Dr. Grant's treatises, and note the fact that Mead speaks favorably of no grape except those in which Dr. Grant has a leading interest. Again, if he will trace the course of Mr. Bateham, he will find that, since his leaving the nursery business, he has advocated the Iona and others of Dr. Grant's grapes to the exclusion of all others, while in the section where he resides, the Iona has fruited but very little, and therefore he can not know much of it. Aside from Catawba, we should now plant largely Rogers' 15, Ives' Seedling, and Norton's Virginia, looking to the wine products for our returns. All these varieties, it is known, succeed well in both vine and fruit in the region from which you date, and they are all wine grapes. Salem, a new grape of Rogers', may be superior, but it wants testing, therefore buy a dozen or so of it and try it.]

HYACINTHS, TULIPS, AND OTHER BULBS should be planted during this month. Make the soil deep and rich with well-rotted manure, but when setting the bulbs place around them clean sand. One of the best shows of flowering bulbs we ever saw was on the premises of a florist who made his ground rich and deep to within three inches of what would be the level surface. He then spread an inch of clean white sand; then placed his bulbs and covered them with sand; then one inch of soil, and a covering of thoroughly rotted manure.

To have a continuance of flowering in spring, the bulbs should be planted at different times in the fall; say, part the 10th of October, part the 20th, and part 1st of November.

HARDY SHRUBS.—It is better to plant out in the fall than in spring. Fall-planted shrubs will often give many flowers the following summer, and make more vigorous growth than those planted in spring.

CLEAN THE GROUND of all weeds or rubbish this fall. A few weeds or a little bunch of grass serves as a nesting-place for mice, and before you are aware of it your trees are girdled. Besides, there is nothing like cleaning up in the fall, as it is comparatively a leisure time. In spring there is everything to do, and you can't stop. Clean up now, and all the ground for next year's cropping plow or dig, and leave loose for the winter's frosts to act upon.

AN IMMENSE SEED ESTABLISHMENT.—We have now in this country a number of very large seed establishments, most of which are found recorded in our advertising columns, and the following account, taken from the *Country Gentleman*, of one at Rochester, owned and conducted by James Vick, Esq., will enable those who have not an opportunity of visiting, to appreciate somewhat of their magnitude:

"He now occupies, in the southeast part of the city, twenty-three acres of ground

for growing seeds, chiefly flower seeds, and employs six horses and about twenty-five men and women. The collection of bulbs on these grounds is large—over a hundred thousand tulips flowered the past season; and the collection of lilies is probably the best in the country. During the blooming season the display of these and other flowers presented a brilliant and magnificent appearance. More than fifty persons are employed in the seed-rooms in the city during the business season, in packing seeds and filling orders. Two persons are constantly employed in opening letters, often working from fifteen to eighteen hours a day, more than a thousand orders frequently being received in a day. The post-master states that on some days last season these letters constituted one eighth of all that came to Rochester. From seven hundred to a thousand orders are generally filled each day—making over seventy thousand last year, addressed to forty-five thousand different customers. Eleven thousand dollars were paid for postage the past year."

ACKNOWLEDGMENT.—Our thanks are due to F. P. Vergon, of Delaware, Ohio, for a box of Delaware grapes, ripe and fine, and received in good condition *September 10th*. Also to E. J. Keeley, Esq., Paramus, N. J., for fine specimens of Concord and Delaware grapes.

By reference to a notice in our advertising columns, it will be seen that the firm of G. E. & F. W. Woodward is dissolved by mutual consent. F. W. Woodward, who has had the charge of the editorial and publishing department of the *HORTICULTURIST*, will continue the same, as well as the publication of Agricultural and Horticultural books, and the business of the late firm, at 37 Park Row.

G. E. Woodward will practice his profession as Architect and Civil Engineer, and will publish the Architectural books of the late firm at 191 Broadway, N. York.

THE
HORTICULTURIST.

VOL. XXII.....NOVEMBER, 1867.....NO. CCLVII.

THE AMERICAN POMOLOGICAL SOCIETY.—ITS ELEVENTH BIENNIAL
SESSION.

On the 11th of September, 1867, the American Pomological Society commenced its eleventh biennial session in the city of St. Louis, Mo., with its long time-honored President, Marshall P. Wilder, in the chair, he having, in company with P. Barry, Esq., left the Paris Exposition and the gardens of France, and traveled by land and water some 4,500 miles for the sole purpose of once more meeting in pleasant association, amid a collection of Pomona's products, the fruit-growers of the United States. From no self-interest—from no hope of personal aggrandizement or pecuniary reward—the members of this Society gathered themselves together with the products of their orchards and vineyards from all parts of the States; some, as named above, even crossing the ocean, that they might compare and discuss the values of fruits and the modes of culture, diseases, etc., and spread the information broadcast and free over the land to aid the new beginner and assist him in producing the most palatable and healthful food designed by a wise Creator for man's support.

The history of this Society was fully given in the opening address of President

Wilder, and may be briefly summed up as follows:

“It is the result of the union of two national organizations that were organized in 1848. These were the North American Pomological Convention and the National Congress of Fruit-Growers, which were united in 1850 as the American Pomological Congress, which subsequently became known as the American Pomological Society. The meetings of this Society under the different organizations have been held as follows:

“The North American Pomological Convention, Buffalo, September, 1848; American Congress of Fruit-Growers, New York, October, 1848.

“North American Pomological Convention, Syracuse, September, 1849; American Congress of Fruit-Growers, New York, October, 1849.

“American Pomological Congress, Cincinnati, October, 1850.

“American Pomological Congress, Philadelphia, September, 1852.

“And under the name of American Pomological Society, at Boston, in September, 1854; at Rochester, in September, 1856; at New York, in September, 1858; at

Rochester, September, 1860; at Boston, September, 1862; at Rochester, September, 1864; at St. Louis, September, 1867; and the next meeting appointed to be held at Philadelphia, in 1869."

Of the attendance in numbers at this meeting it may be said to have been good. Not as large as the enthusiastic lovers of the subject would wish, but such as to show that pomology is a knowledge yearly increasing, and fruit-growing rapidly becoming one of the most enticing, profitable, and agreeable pursuits of rural life.

Of the exhibition of fruits, it may be said to have been almost unprecedented—the number of plates being something over *twenty-four hundred*; and yet had Illinois and the great West generally been blessed with one of their usual productive fruit seasons, there is every reason to believe that the number of varieties, as well as samples, would have been more than doubled.

Two large halls were devoted to the use of the Society during its meeting, the expenses of which were defrayed by the Missouri State Horticultural Society. In the one hall the fruits were displayed, and in the other, the meetings from day to day were held for discussions of opinions. The morning of the first day's session was mostly occupied in appointment of committees and in listening to welcome addresses made in behalf of the Missouri and Illinois State Horticultural Societies, and of the Mississippi Valley Grape-Growers' Association, to which the President replied in his usual heartfelt manner. Every word of his address expressed his deep appreciation of the great subject which had thus brought together, from thousands of miles of distance, this band of men, who, however divided and unlike in other things, were one and inseparable in the advancement of fruit culture.

The afternoon was devoted to the delivery of the address of the President, which, as usual with all of Mr. Wilder's addresses, embodied a large amount of in-

formation, condensed, and indicative of thought and research in its production.

The columns of this journal will not admit of our making more than a single extract, which relates to the production of new varieties of fruits. He said:

"In no one of my previous addresses have I omitted to urge the importance of this branch of our science; and as Van Mons advised his friends, 'to sow, to sow again, to resow, to sow perpetually,' so now I repeat the words in which my views on this subject have heretofore been summed up; and as it was my first, so it shall be my continual and last advice—'Plant the most mature and perfect seeds of the most hardy, vigorous, and valuable varieties; and, as a shorter process, insuring more certain and happy results, cross or hybridize your best fruits.'

"The process of amelioration by sowing the seeds of successive generations, if founded in truth, is so long and tedious as scarcely to be worthy of trial. But we can not define the exact truth of the theory, for we can not estimate the disturbing influence of natural fertilization; and the impossibility of preventing this, where several varieties exist in the same ground, is apparent to all scientific cultivators. Under such circumstances, we could no more prevent an orchard of pears of different sorts from fertilization by the air and insects, than we could prevent a field of corn or a patch of melons, of different sorts, from mixing by the same process.

"While most of our fruits have been produced by this process of accidental crossing, the number of finer sorts have been remarkably few and far between. We would not, however, discourage the planting of seeds of our best fruit, trusting to natural fertilization; but to secure more rapid progress and better results, we must rely on the more certain and expeditious art of hybridization. By this means we may, in a few years, produce such novel and desirable combinations as ages might not give us by accidental fertilization, or

sowing seeds at random. In employing this agency we only imitate nature; for, though the artificial process is but of recent origin, natural hybridization must have existed from the creation, and undoubtedly gave the first hint to man of the power within his reach. Nor can we doubt that the knowledge of this process is confided to man, by the Almighty Creator, that it may be developed to its utmost extent, or that, in pursuing it, we are doing His will and working with Him. Here, 'the master-mold of Nature's heavenly hand' is placed within our own, so that the judicious and skillful operator may raise new and fine varieties of fruits with as much success as the farmer can produce improved animals by the crossing of his favorite herds."

Other portions of the address embrace the "Characteristics of a good tree and of a good fruit—the preservation and ripening of fruit—comments and statistics relative to grape culture—a general view of the work of the Society, together with its moral and social influence, and closing with a tribute of remembrance to those men of eminence in horticulture who, having ceased their labors here, await us at the gate of the garden of paradise."

The conclusion of the President's address was followed by enthusiastic applause, after which the arrival of the treasurer, Thos. P. James, Esq., was announced, and the Society listened to

THE TREASURER'S REPORT.

The detailed items show of receipts a total of	\$732 25
Of expenditure	466 32
	—————
Balance	\$265 93

Next followed the election of officers. Marshall P. Wilder was unanimously re-elected President. One Vice-President was elected for each State and Territory. Mr. Thomas P. James, of Philadelphia, Penn., was elected Treasurer; and Mr. F. R. Elliott, of Cleveland, Ohio, Secretary.

Mr. Thomas Meehan, editor of the *Gardener's Monthly*, Philadelphia, read a very able paper on diseases of the pear, which was followed by discussions of the subject. Mr. Meehan classes what is generally termed *fire blight* under two divisions—one as *insect blight* caused by the *Scolytus Pyri*, the other as *frozen sap blight*, both of which he regards as confined to comparatively young branches. He regards the destruction of the pear by *blight*, as generally found, to come from parasitic fungus, and advises the old course of cutting away and burning the diseased branch as the best remedy. Canker, leaf blight, cracking, knotting, and hardening of the fruit, severally receive a few words; while he places considerable stress on a disease under the name of *Debility*, which, he says, "is in most cases the result of cultivation, and by cultivation I mean any method of treating a plant which it would not get in a state of nature. Sometimes we intentionally debilitate a pear tree. We work on the quince stock, we summer prune, and we root prune so to debilitate the wood-producing principle as to induce inflorescence, on the well-known principle that nature always makes an effort to reproduce the plant in proportion to the danger of death. We know we do not get so many fruit as we should in the long run by allowing vigorous nature to take its course, but we sacrifice abundance to gain a little in time. But in our efforts to debilitate just enough to accomplish our aim, we often do too much, until debility becomes, for our purposes, a disease."

Mr. Meehan reiterates the recommendation he has published in his journal to grow pears in grass, and to avoid any mutilation of the roots—advice which conflicts with that of many very successful pear-growers. Some discussion ensued upon this subject, resulting, however, in no settled opinion.

Mr. Husman, of Hermann, Mo., had found that high cultivation, when followed by late and wet falls or a sudden frost, in-

duced pear blight, and that by a lower cultivation the wood ripened earlier, the tree was hardier, and the disease was averted. His neighbors, who applied a richer culture than he, were still afflicted with pear blight, while he was exempt.

Dr. Hull, of Alton, had concluded that to arrest the growth at a certain period would prevent the blight, and this plan he had tried with success. He pruned the roots about the 1st of March, cutting them off to the depth of two feet, and in two years after repeated the pruning, but in a wider circle. He pruned when the tree became of bearing size, and in the case of both pear and quince roots. Overcropping, however, had so much increased the productiveness, that fatal exhaustion sometimes followed.

SECOND DAY.

T. T. Lyon, of Plymouth, Mich., introduced a preamble and resolutions cogently setting forth the usefulness of forests, belts of timber, roadside trees, etc., in sheltering gardens and orchards, the disastrous inattention prevalent in this matter, and invoking legislation to secure the setting and safety of roadside trees, exempting belts of timber from taxation, etc.

P. Barry, of Rochester, requested the President to appoint a committee to prepare pomological rules for the guidance of the Society in testing the merits of new varieties of fruits. Mr. Barry also introduced resolutions of thanks to Mr. James Vick, of Rochester, the retiring Secretary, and to Thomas P. James, Esq., of Philadelphia, Treasurer, for their services.

M. L. Dunlap, Esq., was invited to address the meeting on the subject of transporting fruit. This being a subject of some considerable importance to a large number, we give the following as condensed from Mr. Dunlap's remarks:

"We have now a new condition of things. Railroads have opened up through the country, and the more delicate luxuries of the fruit and vegetable garden can be sent

hundreds of miles. The time when the surrounding farms could supply the villages and cities with those luxuries is past. The great plains to the West, the more rigorous climate of the North, must be supplied with those luxuries. Nor is this all. The season of the several fruits must be extended. Taking the State of Illinois as an example: her fruit region proper runs through three hundred and fifty miles of latitude. Over this the season marches at the rate of about twelve miles a day.

"The strawberry begins to ripen at the south end of the State, May 5th. At that time the plants are not in bloom at Chicago, the great distributing point of the lake region, and are sent north to where the land yet lies locked in frost. The season of the strawberry is only some two weeks; but in one locality, by means of railroads, it is in the markets from May 5th to July 20th—two and a half months; other fruits have a similar history. To ship the strawberry eight hundred miles over railroads, we extend the season more than two months.

"The peach begins to ripen at the south part of the State July 1st, and by the march of the season continues until the October frosts close the orchards on the hither side of Lake Michigan.

"Southern Illinois peaches are sent to market two-thirds to three-fourths grown, and after sweltering in the cars, reach the market in a soft condition. On the other hand, the Michigan peaches are picked nearly ripe and fully matured, and they are offered in the Chicago market in a ripe condition, and command a high price, and please the taste of the people, who from such evidence suppose that late peaches are much the most valuable.

"Now, what we want is to send these fruits in a ripened condition to the consumer, and to do this we must seek the railroads to aid us. The Michigan peaches can not be sent out from Chicago, for, being ripe, they deteriorate by every mile of railway transit.

"We must have refrigerating cars, mounted on light steel springs, carrying not more than six tons, and running at nearly passenger speed, at reasonable charges for transportation.

"For packages we must discard the boxes and use baskets. Boxes are of no value to the consumer for other use than firewood, while the basket has a value in every household, and they can be returned again to the orchards at little cost.

"It was necessary to pack fruits so that they may not be injured by friction of the moving train, and peaches and grapes should be packed something like apples, by the use of a small screw. This can be done by using a cover to the basket. How much the pressure should be can only be settled by experience in the several varieties."

Dr. Hull believed only in picking and forwarding fruits when they were just about approaching maturity—not while still green. Fruits thus picked, and well packed, would ride six days without damage. Boxes should be discarded, and the railroad companies compelled to carry the vessels without upsetting them. He packed in oak leaves. He picked when the fruit would just and barely yield to pressure with the finger.

Mr. Knot shipped strawberries in pint boxes and quart boxes, and had entire success. Had sent them four hundred miles to New York.

Mr. Dunlap said that the shipping of fruits immediately on ice had proved a failure, but in the refrigerator car abundant ventilation prevented the ruinous moisture, and thus this mode of shipping was successful. He adverted to the waste of good vinegar apples in orchards, where the codling moth had detached the apples.

Mr. Nelson, of Indiana, said he allowed no apples to be on the ground more than one day, and thus produced good vinegar worth not less than forty cents per gallon, and thus also got rid of the codling moth. He kept a man busy picking up apples.

He would sell no apples that would not bring a dollar a bushel, and of the rest he made vinegar.

RASPBERRIES.

The discussion on raspberries gave the autumn or so-called ever-bearing sorts a pretty general reputation as being of little value, while the Clark Raspberry was indorsed as valuable among the Antwerp class, and the Doolittle among the Black Caps. Very few varieties came under discussion, many well-known sorts not even being named.

BLACKBERRIES.

The Kittatinny among this class of fruit received high encomiums, nothing new being brought out relative to other varieties.

GOOSEBERRIES AND CURRANTS.

The Downing was the only one named among gooseberries, and of currants remarks were made mainly as to their value as a healthful fruit, to which the President added one of their profit, in that a neighbor of his had made from \$800 to \$1,000 per acre as an annual crop, and all grown under apple-trees.

STRAWBERRIES.

The discussion on Strawberries brought out some pretty severe remarks, and very contradictory in their tenor—showing more and more that this fruit is one of which varieties are specially suited to localities and soils rather than to any one mode of cultivation.

Mr. William Saunders, of the Agricultural Department, Washington, opened the Grape subject by a paper supporting his previous records relative to mildew, and its prevention by means of shelter of board copings, or of growing broad-leaved, strong kinds, and training them on the upper wires as a protection to the weaker sorts. He takes the ground that any grape will prove hardy the vine of which has been grown healthfully and free from mildew. The paper of Mr. Saunders was followed by one from A. Fendler, of St. Louis County, Mo., in which the ground is taken that the rot and other diseases of the vine

are caused more from a want of steady moisture at the roots than from any great or rapid radiation of heat, or from fungoid growth, the latter of which he regards as the result of putrescent matter in the vine furnishing food and the elements of its growth. This paper is well written, and as it advances comparatively new thoughts, should be read by every grape-grower. After the readings, discussion on the varieties of the

GRAPE

came in order, and the Iona being called up, received very little favor from any but Messrs. Griffith and Bateham, neither of whom had ever fruited it. Mr. Hoag, however, had fruited it at Lockport, N. Y., and spoke in its favor.

IVES' SEEDLING

obtained favor as a healthy vine, good cropper, productive for wine, and was by Mr. Meehan regarded as good as the Concord for table use. Mr. Husman had found it slow in coming into bearing.

NORTON'S VIRGINIA

was declared a good grower, and fruited well in Western white oak soils, or a mixture of clay and sand. Very productive, and ripening perfectly as far north as Erie, Pennsylvania.

Mr. Husman said he made six hundred gallons per acre of wine from this grape—had made as much as twelve hundred; it bears at three years old, and the older it gets the better it becomes. The Arkansas, the Cynthiana, and the Virginia are the only three varieties that he had ever seen that never rotted. He had seen a whole vineyard killed, but it was from bad management. He said that some kinds of grapes can be raised on any soil we have, but it is useless to force certain kinds upon unfavorable soils. We should study our soils, as they do in Europe, and the man who is not willing to take that trouble had better stop grape-raising. He was in favor of each locality cultivating the varieties suited to it.

Mr. Foster, of Iowa, said a rich corn soil was not good for most varieties of grapes; but a wheat soil was favorable. The Concord would grow anywhere, but the Catawba and Diana were injured by rich soils.

The Creveling, Rogers' Nos. 3, 4, 9, and 19 were spoken of as doing well in almost all locations where tried; while No. 1 was regarded by Mr. Husman as valuable in Missouri for wine. No. 15 mildews at Hermann, but is very fine at Alton, in Illinois, Cleveland, Ohio, and several other sections.

Salem was reported on favorably by Messrs. Requia, Saunders, Spalding, and others, and unfavorably by Mr. Husman.

Maxatawny and Martha were both reported favorably upon by Mr. Husman, who said that, although the bunches of Martha were small, yet it makes a good wine.

The "Adirondack" was poor in Pittsburg, tender in St. Louis, a poor grower at Hermann and Hannibal; yet did exceedingly well at Alton; well at Lockport, N. Y.; well in the District of Columbia, and in sundry other localities.

The "Cynthiana" was highly praised by Mr. Husman. It makes a delicate wine of fine flavor, but not medicinal. The berry never rots at Hermann.

Dr. Spalding said that wine experts in Europe had preferred the Norton's Virginia over many of their own native vines, but had classed our Cynthiana still higher, and said it would "pay" us to export those kinds to Europe.

The accompanying representation of the Cynthiana was made from a cluster grown by Mr. George Husman, and is a fair representation of the grape.

In general appearance the bunch is like Norton's Virginia, perhaps not quite as compact, and with rather longer peduncles; and the inside of the berry is not as deep colored, so that the wine is lighter in appearance, of a more sprightly character, and possessing not quite as much body. Apparently the fruit will give more juice to the pound than Norton's Virginia, while

the vine is equally hardy and vigorous, with large foliage free from disease.

PEARS.

The "Clapp's Favorite" was commended by Mr. Barry, of New York. He had found

them fine a week after picking. They were sound—not vinous nor buttery, but melting.

Mr. Smith, of New York, called this fruit first-rate. Mr. Elliott coincided.

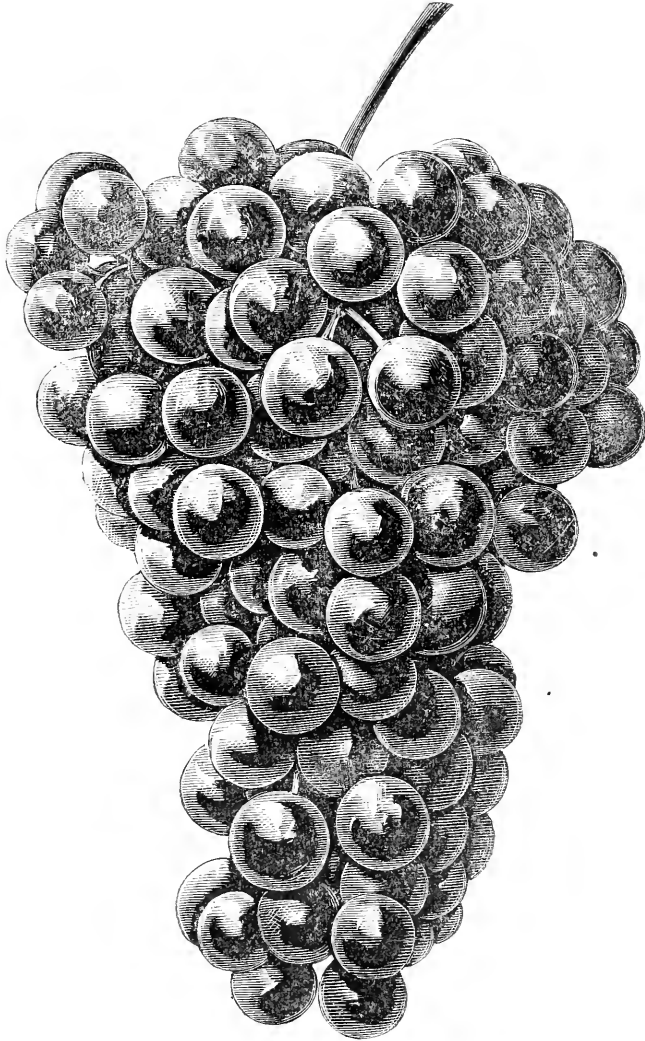


FIG. 171.—*Cynthiana*.

The President pronounced it the largest and handsomest early pear, productive, and lacking in nothing for a first-class pear.

The habit of the tree is excellent. It bears ten days earlier than the Bartlett.

Mr. Parry, of New Jersey, said it ripens

in New Jersey two weeks earlier than the Bartlett, and is their best pear.

The "Edmunds" Mr. Barry called excellent at Rochester, New York. It was of a delicate straw color. Messrs. Wilder and Bronson also praised it.

The "Howell" was generally approved, and appeared successful everywhere.

The "*Superflu*" was commended on all hands as of first quality.

The "Sterling" was eulogized as handsome, sound, a good market fruit, but of moderate quality.

The "Beurre Diez" cracked badly in some places, though delicious in quality.

Dr. Warder said that his tree of this kind shed its foliage—which was worse than the cracking—and also cracked badly three years out of four.

The President said that in his orchards it uniformly shed its foliage and cracked.

Mr. Heaver, O., said that with him it never did either, but was an entire success!

In New York, Mr. Hoag found it generally shedding its leaves and the fruit cracking.

The "Beurre d'Anjou" won the praise of Messrs. Colman, Missouri, and Hoag and Bronson, New York.

President Wilder said it was, of course, his great favorite. It was known that he was its introducer, having imported it from Europe. His crop of it was one hundred bushels a year, and the marketmen engaged it of him beforehand. It bears abundantly; every pear is a good one, and will keep till January.

Several others joined in applauding this pear.

The "Sheldon" was commended by Messrs. Hooker, Bronson, and the President, and warmly praised as "tip-top" by Messrs. Trowbridge, Manning, and others.

The "Clairgean" was much extolled on all hands for beauty, size, and flavor, and called early at Hermann.

The "Tyson" was held a success in the West, the tree being very good, fruit early, delicious, hangs well to the tree, and is

abundant. The tree is often from seven to ten years coming into bearing, and slowness in this respect is a characteristic of it.

The "Onondaga" was fine in St. Louis County, in Ohio, in Connecticut, and especially at Pittsburg and Cincinnati. An excellent market pear.

The "Easter Beurre" was No. 1 at Alton, and with care succeeds generally. It failed in Massachusetts. It needs a long season.

The "Lawrence" was pronounced good at Cincinnati, in New York, at Alton, in New Jersey, and in Massachusetts.

The "Winter Nellis" was reported small but excellent, ripening both early and late, in November and in April.

The "Flemish Beauty" appeared fine in Iowa, Ohio, Wisconsin, and Northern Illinois, and at Syracuse, N. Y., was regarded as the best pear. In some places the fruit rots at the core and drops. In Southern Illinois it loses its foliage too soon, and fails. Best and most profitable in Northern Indiana.

Mr. Heaver thought these differences due to varieties in soil.

Members represented it as good in both sandy and clayey soils, and sometimes bad in clayey. The President said that atmospheric changes and influences, beyond control, greatly affect the pear.

The "Vicar of Winkfield" received a bad reputation. It was the worst pear Dr. Claggett knew of. Mr. Husman thought it as good as a turnip. Some one remembered that it had been called the very best for baking! The President smilingly esteemed it for cooking, and said it required careful culture.

The President said that he had to present upon this subject the consolidated wisdom of the Massachusetts Agricultural Club, which had been in existence for twenty years. That Club had unanimously agreed upon recommending the following list of best pears for cultivation in that State:

Standards—Bartlett, Seckel, Urbaniste, Merriam, Sheldon, Beurre d'Anjou.

Second Series—Brandywine, Doyenne, Boussock, Beurre Bosc, Onondaga, Howell, Lawrence.

Third Series—Belle Lucrative, Paradise d'Automne, Beurre Superfin, Marie Louise, Beurre Clargeau, Vicar of Winkfield.

Cherries received but a few remarks, bringing out no new points worthy of mention, while peaches and apples were, from want of time, entirely omitted. Mr. Nelson, of Indiana, however, introduced the following, which were adopted:

Whereas the time left to this Convention for the discussion of the merits of the apple is entirely inadequate to do justice to this great staple and most important of all fruits; therefore

Resolved, That growers of that fruit be requested to communicate with the General Fruit Committee in regard to the value and adaptation of different varieties to the different soils and climates, as well as the diseases of the fruit and the tree; and that said Committee may communicate the same to the Society at such time and in such manner as they shall deem expedient.

To this we now add that the Secretary at Cleveland, O., has made arrangements for the transmission of sample fruits for comparison, or to receive names to his address free of charge, and those who have new varieties, or those of which the names are unknown, are invited to forward him samples.

OUR NATIVE WINES ABROAD.

During the session of the Society, Mr. Husman desired to hear from the President some account of his experience with our native wines during his recent visit abroad.

The President said that on his arrival at Paris from Washington he was elected one of the Commissioners. He found that the American wines had been passed by the committee. A single bottle of Catawba was taken as a sample of American wines. He endeavored to obtain a revision, but failed. He then moved for the appointment of a committee of the Universal Ex-

hibition to report upon the growth of the vine, horticulture, and pomology. The committee was appointed, consisting of Americans, of which he was a member. The committee found that samples of American wines had been seriously injured by being placed where they were too warm.

In examining some of the wines from Hesse Darmstadt, the committee found them inferior to ours. The owners on tasting ours said, If you can make such wine as this, you have no need of ours.

He said the best American wines would compare favorably with those of the Rhine. We were taken to the famous Johannisburg, and were shown their best wine, and had never before tasted such excellent wines. These favorite wines are sold at one pound ten shillings per bottle to the Emperor of Russia, the Duke of Cambridge, and other nobles who could afford to pay for them. These wines would cost in this country about \$15 per bottle. We can not raise such wines, but have some almost as good.

They examined the American wines, and the Europeans expressed their approbation of the Virginia Seedling and the Ives. A gentleman said these are the only wines that could have withstood the heat to which they were exposed. Persevere in raising your red wines—they can not be surpassed.

At Johannisburg we examined the soil, and found it apparently unfavorable for grape-raising. The whole surface is like a cake of burnt clay, and had to be broken up by a large two-pronged hoe. Only 60,000 bottles were raised on this spot.

Mr. Barry, who accompanied the President to Europe, was called to state his experience. He said the Johannisburg grape was a Reissling. The fine grapes are all raised on elevated ground, the level ground always producing inferior wine. The vineyards are renewed once in ten, fifteen, or twenty years. We saw fields from which the vines had been removed and broken up preparatory to renewing the vines.

BEGONIA BOLIVENSIS.

WE find this elegant variety of the *Begonia* figured and described in the *London Florist Magazine*, from which our illustration and description are taken.



FIG. 172.—*Begonia bolivensis*.

"Few collectors have been more successful in adding to our stores of useful plants than Mr. Pearce, who has for so long been engaged in ransacking portions of South

America in the interests of Messrs. Veitch & Son, of Chelsea; his discoveries are such that they come within the reach of a large number of horticulturists, from their being adapted to green-house culture; and in this, one of the most recent of his introductions, we think we can hail another valuable addition to our new plants. We learn from the *Botanical Magazine*, in which it has just been figured, that it was discovered by Weddell in the Cordillera of Bolivia; but we suppose it was merely retained as a dried specimen in his herbarium, for it was regarded as quite a new plant when sent home by Mr. Pearce; and we know that when it was exhibited at the Paris International Show in May, it attracted more of the attention both of botanists and horticulturists than any plant there exhibited. It was afterward shown at the Royal Horticultural Society at Kensington, and was greatly admired. The

root is tuberous, and the stem rises from it to the height of about two feet, although possibly under cultivation it may become larger; the flowers are very freely produced in groups of two and three, springing from the main stem, and hang down gracefully, displaying their brilliant scarlet color very well. There is a good deal of peculiarity in the structure of the plant differing from other *Begonias*, which makes it a plant of considerable interest to botanists. It often happens with our new introductions, however, that many of them are interesting both to the botanist and horticulturist; this *Begonia* is one of these, and as we believe it to be of very easy cultivation, we expect that it will be, ere long, very generally grown; at any rate, by all those who can appreciate this class of plants, it must be regarded as one of no common order of merit."



AUTUMN PRUNING.—The old advice to "prune when your knife is sharp," may in the simple cutting away of a stray twig be considered good, but its practice put upon trees or vines as a rule, would, at some seasons, be found injurious rather than beneficial. Cultivators disagree relative to the best time, but all, or nearly all, adopt some specific season for their general pruning. At the extreme North, pruning the apple or pear in late autumn may be found unadvisable, because of the greater exposure of wood next the last bud remaining; but in our practice, we have never found any injury to occur to the buds from pruning the pear and apple trees as soon as the leaves fall in autumn, and we are therefore disposed to advise the practice.

VALUE OF WATER AS AN AMELIORATING AGENT.—Mr. Meehan is reported as saying, at the Illinois State Horticultural meeting, "that he thought large bodies of water

had no material effect in aid of fruit growing. Mr. Saunders, of Washington, is also reported as expressing a similar view, or, in other words, "he did not see, from his observation on the shores of Lake Erie, that there was any advantage in this respect." We are inclined to think both these gentlemen have been over hasty in their remark, and that one season's residence on the shore of a large body of fresh water would convince them of its value as an ameliorating agent of temperature in aid of vegetation within reach of its influence.

HERBACEOUS perennial plants should be transplanted this fall. Make the ground deep and rich with well-rotted compost; arrange the plants so that when they grow and flower next season, the tallest growers and darkest colors will be in the center or the back of the bed or border. After planting, mulch the surface with coarse straw manure.

MINER PLUM.

THIS variety has excited considerable attention at the West, particularly in Wisconsin, where the fruit has been exhibited. Young trees were sent to us for trial last spring, by Geo. P. Delaplaine, Esq., of

Madison, Wisconsin, which were planted out, and have all, without exception, made a vigorous growth. This fruit is an improved variety of the wild plum, and is deserving of notice at our hands. It can



FIG. 173.—*Miner Plum.*

not, of course, take rank with our finer cultivated varieties, but in sections where these fail, it is well worthy of trial. Joel Barber, of Lancaster, Wisconsin, to whom we are indebted for specimens of the fruit,

says of it, "that it has been cultivated in his vicinity for many years, and is the only satisfactory kind there grown, being of vigorous habit, free from disease, and perfectly hardy. The tree blossoms two weeks

later than other varieties, and ripens its fruit about October 1, and keeps for a considerable time, and is entirely exempt from the attacks of *cureulio*." Fruit of medium size, oblong, tapering to a point. Color, rich dark purplish red, with a fine bloom; flesh rather soft when fully ripe,

slightly adhering to the stone; stone oblong, pointed at each end. Flavor good; skin thick, somewhat astringent; leaves serrate; young shoots dark red. It originated with Mr. Miner, of Lancaster, and is no doubt a seedling from some of the wild varieties so numerous in that section.

NEW JERSEY STATE AGRICULTURAL SOCIETY.

THE Ninth Annual Exhibition of this Society was held October 8, 9, 10, and 11, on their own grounds at Waverly, midway between Newark and Elizabeth, on the line of the N. J. R.R. Within the past two years the State Society has been re-organized, and now commences its career with bright prospects ahead. The recent fair was an entire success, and the multitude of visitors that thronged the ground during the four days were well pleased with the management. The officers spared no pains to make the exhibition interesting and instructive.

Heretofore it might be appropriately termed the Moving Society, that was annually put under the "*hammer*" and knocked down to the highest bidders, who were remunerated for their investment by sharing the profits from the increased trade, in consequence of holding their annual fair in a certain locality.

The officers grew heartily tired of this method of conducting business; and by the personal efforts of a few gentlemen, a charter was granted by the Legislature, enabling the Society to purchase land for a permanent location. The same parties were instrumental in getting enough money subscribed to purchase the property. The location selected is admirably suited, and all who visited the ground during the exhibition were delighted in finding the premises so beautiful and easily accessible from all parts of the State. There are at present sixty-five acres inclosed with a neat board fence, and when completed, the Society will have over 200

acres—including a lake of eighty-five acres, which will add very much in giving freshness and variety to the scenery.

The Society will make arrangements during the coming year so that they can offer such inducements to manufacturers, mechanics, and agriculturists as will insure an extensive display of goods at all future exhibitions.

The recent fair has awakened a lively interest, and, even at this early date, persons are making preparations for the next fall's exhibition.

Although ground was not broken until six weeks before the opening day—still, by the personal and constant supervision of the officers, the work was so far complete as to satisfy exhibitors, and the arrangement of goods pleased the visitors. The President, Gen. N. N. Halstead, Secretaries, Colonel R. S. Swords and William M. Force, and Treasurer and General Superintendent, Benjamin Haines, deserve the thanks of the people for their efforts in making the exhibition the most interesting ever held in the State. "Long may they live!"

The articles for competition were arranged in five different departments—each of which had a superintendent, who had full control of all articles in his department, and who appointed judges.

There was a large display of agricultural implements, labor-saving machines, etc., etc. C. G. Crane & Co., of Newark, made the most extensive display of farm tools of every description. The show of cattle was not large; of Alderneys, however, there

were many choice and valuable animals on exhibition.

The second department (agricultural and horticultural) was one of the most interesting features on the ground, and attracted a great deal of attention. Although the season was unfavorable, a poor fruit year, still the tables were covered with a large display of very choice fruit, and mostly from amateurs.

Wm. R. Ward, of Newark, exhibited sixteen varieties of pears, which were very fine—also a branch of the Vicar of Winkfield, heavily laden with fruit.

John Crane, of Union, had on the tables twenty varieties of pears and about that number of apples; both collections were highly creditable. Wm. H. Goldsmith, of Waverly, showed some fine pears, grapes, and quinces. C. H. Earl, of Newark, exhibited twenty varieties of apples, quinces, etc. E. & J. C. Williams, of Montclair, had on exhibition a choice collection of pears, apples, quinces, and potatoes. The display of grapes from Rev. J. Knox was most creditable to the grower, and were awarded a special premium, diploma, and the thanks of the Society. A. J. Holecomb, of Flemington, N. J., exhibited twelve varieties of apples, that attracted a constant crowd of spectators, on account of the size and color of the fruit. The largest specimens of Duchesse d'Angoulême and Beurre Diez Pears on exhibition came from Thomas Grigg, Vineland.

The following account of the second department is from the *New York Times* :

FRUIT AND VEGETABLES.

The exhibition of all kinds of fruit and vegetables was held in a spacious tent, affording ample accommodations for a large exhibition. The most extensive display was made by P. T. Quinn, of Newark, superintendent of the floral tent. Although the past season, especially in New Jersey, has been exceedingly unfavorable for producing fine fruit, still, competent judges affirm that Mr. Quinn has succeeded in

making the most creditable exhibition of fruit that was ever known in this State. The show of pears was really magnificent. Fine apples and choice grapes appear in liberal abundance. The majority of exhibitors are amateurs, not a professional nurseryman being represented among the apples or pears.

The display of potted plants and evergreens is very fine, and their artistic arrangement speaks well for the superintendent. The tent is beautifully ornamented, and is constantly filled with a crowd of visitors, who seem to enjoy themselves while admiring the productions of the Jersey soil. Mr. D. D. Buchanan has on exhibition forty different varieties of hardy evergreens tastefully arranged. Mr. Harvey has also a collection of evergreens, potted plants, and cut flowers, which are very fine. Mr. J. Hutchings, of Elizabeth, exhibited 100 pots of green-house plants, which deserve high credit.

I have seldom seen so large a display from amateur growers. There were a few Japan pears on the table, which attracted considerable attention from their peculiar form and appearance. Of vegetables there is an abundance; and judging from the large exhibition of potatoes, one would think that New Jersey is rivaling the productive soil of Ireland in that line. The most creditable exhibition of potatoes is made by Reisig & Hexamer, of New-castle, N. Y., who displayed on separate dishes fifty varieties.

Rev. J. Knox, of Pittsburg, Penn., exhibited fifty varieties of grapes, and all of them are excellent specimens of their kind. The fruit was not taken from the vines until Monday morning, the 7th, and they were displayed at the New Jersey Fair on Wednesday morning in excellent condition. Such a large exhibition from one individual, and all in such excellent condition, reflected great credit on the producer. There are many other exhibitors in this department, but they are mostly amateur growers of fruit.

ROGERS' NO. 8 GRAPE.

BY F. R. ELLIOTT.

AMONG the many numbers and varieties of the Rogers Hybrid Grapes, my attention has this day (29th September) been called by Professor J. R. Kirtland to an examination of one under designation as No. 8. The vine growing in the Professor's grounds

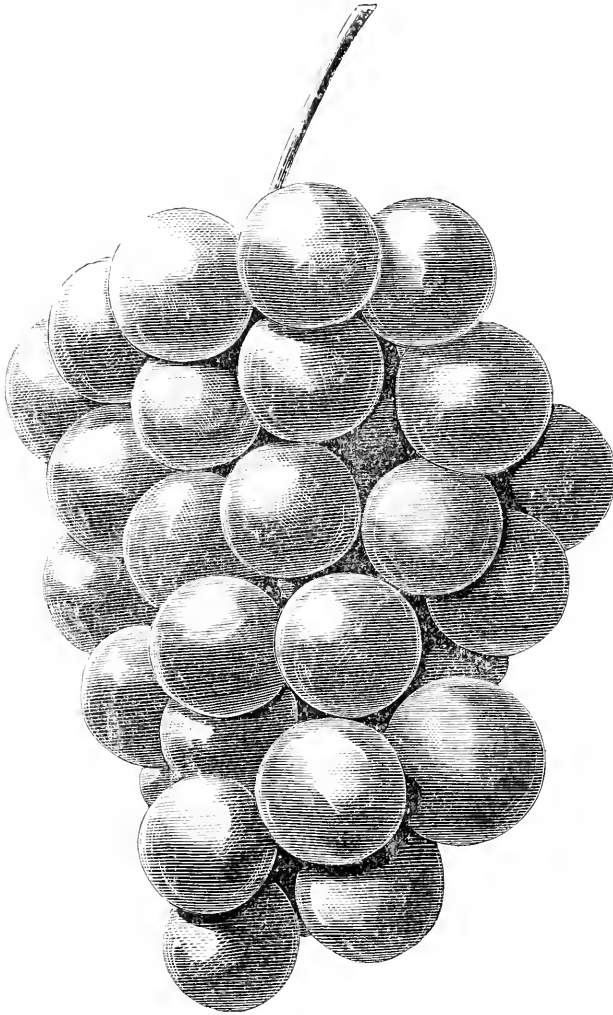


FIG. 174.—*Rogers' No. 8 Grape.*

is strong and vigorous, with broad, thick, and coarse foliage, which has so far never exhibited any signs of disease. The appearance of the grape is most attractive,

and the eating of it I think could not but convince any one of the truth of its being a hybrid, and that Black Hamburgh was one of its parents. The superiority of this grape, as now shown me, taken in connection with the fact that it has received little or no notice, has induced me to make the accompanying drawing and description, that other growers of it may note, compare, and write.

Bunch large, the berries rather loose,

with long, stout peduncles. Berries large, oblong rounded, some nearly or quite round. Color, unless fully ripe, an amber red, but the fully matured berries a deep coppery red. Bloom, light gray or whitish. Flesh, sweet, juicy, with but a slight tinge of foxiness, and almost entirely free of pulp. Skin, about the same thickness as Catawba, but has little or none of the astringency or harshness of that variety. Seeds large, long oval, light brown.



GRAPE CULTURE AT THE PARIS EXPOSITION.

In a recent number of the *Journal d'Agriculture Pratique*, M. Joigneaux has given elaborate reports in regard to grape culture as represented in the Paris "Exposition." His last report is exceedingly interesting, and a *résumé* of it will no doubt interest many of our readers. The report relates entirely to various modes of culture and training, and M. Joigneaux regrets that the efforts of those who have been brought forward most prominently, have been directed to an increase in the quantity rather than an improvement of the quality of the products. This, as he says, is very well so far as it goes, but it is certainly not enough if we take into consideration those first-class stocks (*cepages*) which have made the reputation of the best French wines.

We may here remark that the French have adopted a plan which would be well worthy the attention of some of our grape-growers' associations in this country. At Billancourt, a short distance from Paris, a plot of ground was set apart for the purpose of practically illustrating the various systems of training and pruning. Here the advocates of the different systems had the opportunity of giving actual embodiment to their various methods.

In alluding to the various processes brought forward at the Paris Exhibition, M. Joigneaux mentions particularly the process of M. Hudelot for multiplying the

vines by means of what he (Hudelot) is pleased to call "graines d'Hudelot," which being interpreted signifieth Hudelot's seeds. It will no doubt surprise our readers to learn that these "Hudelot's" seeds are nothing but our single eyes! This process, as M. Joigneaux tells us, and as we have seen ourselves, has been periodically brought forward in France for some years, although it is as old as Speechly (1777), and has been fully described in nearly every work on grape culture written in the English language during the past fifty years.

The peculiarity of M. Hudelot's plan consists in *sowing* the eyes in the open ground. "Some years ago a great deal of noise was made about this process, and the inventor announced that he sowed the vine broadcast (*à la volée*), or in drills, just as we sow the seeds of wheat or carrots."

M. Hudelot's plan was tried at Billancourt, but failed, "probably because the eyes were buried too deeply."

We wonder what our French friends will say when we state that we grow vine plants from eyes by the million, and that in this country whole vineyards are planted out with vines raised in this way. But we generally raise the plants under glass with the aid of bottom heat, a method which undoubtedly possesses many advantages in addition to the mere facility with which the plants can be rooted.

M. Joigneaux is, however, of the opinion, that it is not so much by his "*mode de bouturage*," as by his mode of culture, that M. Hudelot recommends himself. His process depends upon the principles adopted by M. Jules Guyot and M. Hooibrenk. It is essentially a renewal system; but unlike the plan of M. Guyot, where the long cane is placed horizontally, or that of M. Hooibrenk, where it is inclined at an angle of $112\frac{1}{2}$ degrees, it consists in placing the stocks in line and uniting them so that the long cane of one will be wound (*enroulé*) round the stem (*tige*) of the other. M. Joigneaux thinks that this plan will do with stout and vigorous stocks, but will fail with weak vines.

M. Joigneaux next passes in review the system of M. Trouillet, which consists chiefly in dispensing with stakes and trellises and making the vine support itself, the canes being annually spurred back to near the head, and the shoots trained "*en gobelet*" (goblet fashion), but condemns it on the ground that it involves too much labor.

The method advocated by Dr. Guyot seems to grow in favor, and is gradually extending its range. Dr. Guyot has published three very elaborate reports upon the state of viticulture in France. We have read them with great pleasure, and they will well repay perusal by all interested in grape growing. Since his system was published, many imitators have sprung up, and we believe that in this country we have greatly "improved" upon his plan. Upon this point, however, it may not be amiss to quote M. Joigneaux:

"They have sought by slight variations to distinguish their systems from his. One advocates a perfect 'horizontality;' another a bow, and a third an angle of $112\frac{1}{2}$ degrees, while still another causes the cane to describe a spiral, so as to moderate the circulation of the sap and direct it to the production of fruit. All these details have in our eyes very little importance, the distinguishing feature being the mode

of pruning, which is substantially the same in the systems of all these pretended innovators."

What all, without any exception, desire, is large returns, and we regret that, in order to obtain this, they too often injure the quality of the fruit. They do not consider sufficiently that large returns necessitate copious supplies of food for the plants; that abundant vintages require gross manures, and that thereby the wine loses more than is gained.

That which is most novel, most original, and (shall we say it?) most eccentric in the viticultural exhibition of Billancourt certainly is the system of Dr. Gustave Krautz, of Perl (Prussia). His system is in extensive use in Perl, and appears to gain ground. Already it has imitators, and on this account demands attention. We can readily believe that it will yield large returns; but then it must be very exhausting, and it certainly is not very elegant, if we may judge by the specimens exhibited at Billancourt.

"Fancy a sort of box open on one side and having this open side placed downward. Through a hole in the upper side of this box passes a stout vine, while the four corners of the box carry iron supports which sustain a double pitch roof of sheet iron. Under this roof and on the box in question is arranged a stout frame, which serves to carry an iron wire on which a number of branches are plaited and curved in every possible direction. As we are not familiar with the explanations which Dr. Krautz has given of his process, we are reduced to the supposition, that the wooden box from which the vine proceeds is designed to keep the foot of the vine cool, and prevent the radiation of the terrestrial heat. As for the roof, it is clear that it is intended to protect the vine from late spring frosts."

M. Vignial shows a method of training in fan-shape, which presents a fine appearance; but, like the system of Dr. Krautz, it is suited only to strong soils.

M. Joigneaux alludes to many other systems which were illustrated on the grounds at Billancourt, but as no description is furnished, we note merely that of M. Marcon.

In this case the vigor of the vine is developed to the utmost possible extent; and to enable M. Marcon to attain this end, he has had abundant elbow-room given to him, the plants being placed at a distance of 2m. 25 apart—7½ feet. What would M. Joigneaux think of the "elbow-room"

(*couloirs franches*) demanded by some of our American growers, who place their vines 16 feet apart?

After a careful consideration of the whole subject, M. Joigneaux comes to the same conclusion that has long impressed itself upon our best grape-growers, which is, that in order to obtain the best wine grapes, the stocks must be confined within moderate limits; gross manures must be avoided, and every effort must be made to hasten the period of ripening of the fruit.

THE FIRST AMERICAN WORK ON GRAPE CULTURE.

A FEW evenings ago I stepped into the study of a friend whom I shall name Biblos, and who is known among his friends as having the finest library of agricultural works in this part of the country. I felt anxious to learn a little about the early American books on Gardening, and felt pretty certain of obtaining from B. the information of which I was in search. On asking him which was the earliest American work on the Vine, he replied: "Really I can not tell without looking. It is a pity that we have no good work on the bibliography of American science and art. Theology and metaphysics have been pretty well worked up by Trüber, but for the rest we must depend upon the booksellers' circulars and Roorbach's work. Pass me that volume by Fuller, lying on the table. I believe he gives a list. [He then examined the book.] He gives Adlum's, published 1823, as the first work. My copy was published in 1828, but is a second edition. Let us see what he says about the *History* of grape culture. [Looks.] Of this he says nothing. Pass Husman's work, 'Grapes and Wine.' Here we have a very good *History*. From this it appears that grape culture has been carried on in this country for more than two hundred years. It will be strange, then, if we do not find some work on grape culture prior to 1823. Let

me look at 'MacMahon's Gardening.' It was published in 1806, and is the oldest American work on Gardening that I possess. My copy has seen some strange adventures, having been brought from the South during the late war. This work is not mentioned by Downing in his list of works prefixed to his 'Fruits and Fruit Trees.' The oldest work there mentioned is Cox's, 1817, and the next is Prince's, whose treatise on Horticulture—an admirable little work, by the way—was issued about the time Adlum published his book."

L. Well, really this is annoying. Is there no nearly perfect list of American books on Horticulture?

B. I believe not. Phin, in his book, says that he was asked to make out such a list for vine culture, but he declined, as being incompetent. He gives a list, however. Let us look at it. [Picks up Phin's book and examines it.] Well, this is really a strange list. More remarkable, perhaps, for its omissions than for its contents. He seems to have included only those works which he had consulted. This list, like every other, may be useful; but it seems to me that if he had left out the *Chemistries* of Gmelin and Graham, and had given us a list of all the works of which he could have found any account, his labors would have been of more value. If he had wished

to distinguish those he had consulted, he might have prefixed an asterisk to each. I have heard that he was at one time librarian to a large institution, and this list evidently shows a knowledge of bibliography, which might have done us good service if he had chosen to use it. His forte seems to lie in hunting up knowledge in out-of-the-way places. Who would have thought of looking for a translation of Chaptal in the *Philosophical Magazine*? I wonder some of our publishers do not extract and re-publish it.

L. Allow me to look at the book when you get through. [Takes it.] Well, this is quite a long list, though it seems to me that many of the books mentioned relate to anything but vine culture. Still, we may find in it some clue to our object. Let me look down the list. Here is a work—Johnson, S. W.—“The Culture of the Vine.” New Brunswick, N. J., 1806. Have you it?

B. No, I have not. Never heard of it. [Searches his catalogues.] I can not find it in any catalogue in my possession. I am inclined to believe that must be the first work exclusively devoted to the Vine. It is seventeen years prior to Adlum—the earliest work mentioned by Fuller.

L. By the way, B., have you a book of Busby's with the same title as Husman's recent work, “Grapes and Wine?”

B. I have not. I am inclined to believe that is a mistake of Fuller's. I have a copy of “Busby's “Visit to the Vineyards of France and Spain,” but I can not find a record of any other work of his; still, it would not be safe to say there is none.

L. In looking over Husman's work, I see that he alludes to an article by Mr. Antel on the “Culture of the Vine,” published in the “American Philosophical Transactions,” Vol. I. Have you got that work?

B. Yes, I have—nearly a complete set of it. I see Phin has that in his list. Here it is. Mine is the second edition, published, like that referred to by Phin, in 1789. A note on the fly-leaf of my copy says that

the first edition was published in 1771. The Essay itself is dated 1769. I am inclined to think that here we have the first practical directions for cultivating the vine ever published in America.

L. Yes; but you can not call this a work on the Vine! This is the “American Philosophical Transactions!”

B. That shows, friend Liber, that you know more about vine culture than you do of bibliography. I suspect you are one of those who would place the “Diversions of Purley” on the same shelf with your book of Games, and Edgeworth's “Essay on Irish Bulls” among your books on stock-breeding. If you do not look beyond mere titles, you will be found some day ordering a copy of “Ruskin on the Construction of Sheepfolds” with a view to getting up for some of our agricultural papers an article on that essential department of sheep husbandry; or Ryle's “Wheat and Chaff,” for the purpose of comparing it with Klippart's work under a similar title. Still, as you say, it is not a work devoted exclusively to the Vine, or even to fruit culture. Nevertheless it forms the first complete American treatise on the Vine.

L. Perhaps you are right; but Fuller includes in his list only those works relating wholly to the Vine.

B. That was his intention; and yet if he had strictly carried that out, he would have excluded Haraszthy's work, which treats of silk and sorghum as well as grape culture. As a list of works whose titles speak only of the Vine, his catalogue is very well; but you see that the rule which he has adopted leads him to exclude that work, which is the acknowledged standard in regard to the descriptions of the different varieties of the Grape—a work which is so characterized by the highest of all authority, the American Pomological Society. I refer, of course, to Downing's “Fruits and Fruit Trees.”

L. Well, B., I am afraid you have worked too much among books for me to have any chance with you in an argument

on bibliographical subjects. Let us set down Antill's Essay as the first. I would like to examine it.

B. All right; but let us chat now, and you can take the book home with you and examine it at your leisure.

I did so, and on my way I thought over the chat I had had with B.; and it occurred to me that many of the readers of the *HORTICULTURIST* would have been interested in that conversation, so the question came up, Then why not report it? And I could not find an answer to that "why not;" so here is the report. But I wonder what B. will say when his old friend the *HORTICULTURIST* comes to him with that talk of ours all set down in its pages.

The Essay fills eighty-five quarto pages, and tells us how to care for vines from the cutting to the vintage. The author has sanguine hopes of success, for he says: "If the vineyard do not succeed, the fault is in the man, and not in the vine." And after this quaint fashion he holds out the most endearing encouragement to his readers. The apprehension of being at a certain expense, without the experience of a certain return, will hinder many from making the attempt; but let not these thoughts trouble you, nor make you afraid. You have a friend for your guide who will not deceive you nor mislead you; one who by experience knows that the thing is practicable here, where the country is open and clear; one who looks upon you all as his children, and with the fondness of an affectionate father will take you by the hand, and lead you with plainness and honest simplicity through all the different operations, till you become master of the whole, and then with pleasure and delight will look and see you reap the profits, to your full satisfaction, of all your expense and labor."

In these days, when we have \$100 prizes offered for the best vine, and when it requires the combined wisdom of the ablest members of our Pomological societies to make out a list of vines suitable for a given

section of country, it is interesting to read the names of those Mr. Antill recommends. The list is long, so we content ourselves with samples.

For New Hampshire, Massachusetts, Rhode Island, and Connecticut, the Black Hamburg, the Miller Grape, etc. For Pennsylvania and "the three lower counties," Chasselas, Blanc, Red Fronteniac, etc. Maryland, Virginia, and North Carolina require White Fronteniac, White Oporto, etc.

It would seem from his Essay that there was not a single American variety cultivated by the better class of fruit-growers.

"The reason for my being silent about vines that are natives of America, is that I know but little of them, having but just entered upon a trial of them, when my ill state of health forbade me to proceed. From what little observation I have been able to make, I look upon them to be much more untractable than those of Europe; they will undergo a hard struggle indeed before they will submit to a low and humble state—a state of abject slavery. They are very hardy, and will stand a frame, for they brave the severest storms and winter blasts; they shrink not at snow, ice, hail, or rain; the wine they will make, I imagine from the austerity of their taste, will be strong and masculine." He recommends deep culture and thorough manuring, but objects to the placing of any manure in the hole in which the vines are set, claiming that to do so is to set the vines in flower-pots.

His directions for pruning are full and excellent. He advises to save all the roots, and not to dig up over twenty vines at once, so that they may never be exposed to the air for too long a time. At that time, however, vines were not procured from vineyards hundreds of miles distant, but were grown on the owner's premises.

He objects to root pruning at the time of planting, except in so far as the surface roots, or *day roots* as he calls them, are concerned. On this point he agrees with

the Germans, and advises their removal. He recommends mulching, and describes training both upon stakes and trellises, which he calls espaliers, but prefers the stakes on account of the facility which they give for winter protection. He allows a light crop to be taken in the fourth year, but none prior to that. In the fifth year he allows a full vintage, and dwells at great length on the danger of fruiting the vine when too young. He objects to trellis training, on the ground that it is difficult, and fit only for rich men who can afford to employ experienced vignerons. It would seem that there were stealers of fruit in those days as well as now; but instead of taking the method advocated by friend Greeley, and securing enough grapes for all so as to remove the temptation to steal, he directs us "to guard against such attempts by a close high fence without and a smart watchful dog within, and especially by the vigneron appearing now and then with a gun in his hand, walking about his vineyard in an evening, particularly when there are idle people without; this will effectually prevent any attempts, when they see what they apprehend to be so very dangerous."

He shows no mercy to the bird thieves, and directs us to shoot the robins and cat-birds, and destroy their nests. But at the same time he offers a remedy which is perhaps worth quoting.

"If poles be stuck up here and here, near that quarter where the birds harbor and have their haunt, and small branches, with three or four twigs on them, be fastened to the top of the pole, and the twigs well daubed over with bird-lime, the birds will perch upon them, and will be so entangled by the bird-lime, that if they are suffered to continue upon them some time, if they then get away, they will hardly return again that season; and as if they communicate their grievances and their dangers, few or none of the same species will come into the vineyard that season."

He condemns, in the strongest terms, the growing of crops between the rows, and directs those who can not employ horse power to use the two-pronged fork, of which he gives a cut, calling it a *sarkling* iron. On the whole, this curious old work contains much that is to be found in our modern treatises, and yet it was written before Speechly had given his work to the public, or Switzer had described his "New Method."

His hopes were high, and from statements in his essay we should say that at first he attained a moderate degree of success. We presume, however, that his vineyard was ultimately a failure, and that the only record left exists in what my friend B. assures me may be called "the first American work on grape culture."

LIBER.

GRAPEVINES should be pruned this month, or as soon as the leaves drop, and before severe cold sets in. The length of the canes, number of buds, etc., to each plant, must be regulated more by a good common-sense judgment of the strength of the vine and the variety, than by any set rule laid down in books. The Delaware, Mottled, and other short-jointed kinds, we have sometimes pruned to ten or twelve buds on a cane, and then when the spring came have rubbed out every other bud;

but we can hardly advise the practice. The Clinton, Nortons, and others of their class, we have grown our best fruit upon by leaving long canes. Concord and Hartford Prolific have also given fine fruit by this manner of pruning. After pruning, leave the canes untied.

RHODODENDRONS, mahonias, and other partially hardy broad-leaved evergreens, should have the earth around them covered pretty deep with leaves.

PROPAGATING PLANTS BY BUDDING.

BY A. S. FULLER.

BUDDING is the art of taking a bud with a small portion of the bark adjoining from one plant and inserting it in that of another, or into some other part of the same plant from which it was taken.

The physiological principles which govern the operation are, that there must exist an affinity between the plant from which the bud is taken and the one upon which it is to be placed, and the nearer the relationship the more readily will it unite and permanent the union.

The science of botany assists us in determining this relationship, but it is only by observation and practical experience that the affinity between the various plants has been fully determined.

For instance, it is doubtful whether by the aid of the science of botany alone, we could determine the reason why the pear, which so closely resembles the apple in all its parts, and botanically so nearly related, should in its wood have so little affinity.

In budding, it is very important that the bark of the stock should part readily from the wood; and to secure this, it is necessary that the operation should be performed when the flow of sap is abundant, because if the bud is inserted at this time it immediately finds the nourishment which it requires for its support.

The sap which has been assimilated by the leaves descends mainly through the inner bark, and on the external surface of the wood of the stock; it therefore comes in contact with the inside of the bark adhering to the bud, and is transmitted to the bud itself, which thus becomes attached to the plant upon which it is placed; or, in other words, a union is formed between the two.

For budding are necessary a small knife

for preparing the buds for insertion, and opening the bark of the stock to admit them, and a quantity of some material to tie around the stock, so as to hold the bud in its place. Budding-knives are made after various patterns, those commonly used are represented in the accompanying figures. Fig. 175 has an ivory handle, made very thin at the end, and is used to raise the bark of the stock. Fig. 176 is a small



FIG. 175.



FIG. 176.

pocket-knife with a thin blade, round at the end. The cutting portion extends about one third around the end of the blade, and about two thirds of its length, leaving the lower part dull. I consider this form of knife far preferable to the first, as in using it there is no loss of time in reversing it whenever a bud is inserted, as is necessary when using one in the form of fig. 175.

But it is immaterial what form of knife is used, provided it has a keen edge, and is dexterously used.

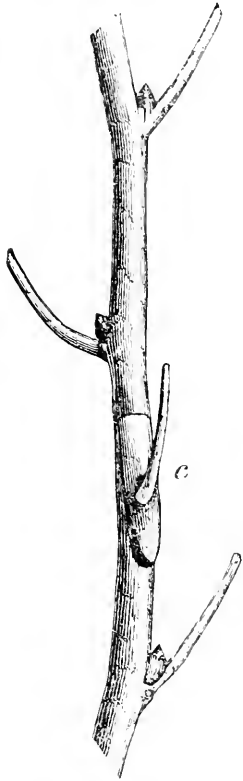


FIG. 177.

The material commonly used for tying in the bud is called bass, and is procured at almost any seed store, or it can be obtained in the form of bass-mats; but when it can not be had in either of these forms, and basswood trees, also called Linden (*Tilia* of botanists), are at hand, the bark may be stripped from them in the spring as soon as it will part freely from the wood. Immerse it in water from two to four weeks (varying according to the temperature of the water), and the bark will part with its mucilaginous matter, after which it may be divided into thin layers resembling fine silk, being very soft

and pliable. The inner bark of other trees is sometimes used, also woolen yarn, strips of thin cotton cloth, cotton wicking, etc.; but the bass is more extensively used than any other material for this purpose.

In selecting buds, the young shoots of the present season's growth are usually preferred, and these should be taken from the most healthy and thriving branches. The leaves should be immediately removed, leaving a portion of the leaf-stalk attached, as seen in fig. 177. If the leaves have fallen from the branch, it is usually thought to be too ripe for use, but in some instances such buds may be used with success. If there are any soft, immature buds on the upper portion of the shoot, or any undeveloped ones on the lower end, they should be rejected.

To become an expert in budding, the following formula may be observed: Take the branch in the left hand, with the small end toward your body or partly under the left arm; insert the knife-blade a half inch below the bud, cutting through the bark and a little into the wood, passing it under the bud, and bring it out above it, taking off the bud with the bark and a thin slice of wood attached, as at *c*, fig. 177. Then



FIG. 178.



FIG. 179.

(if using budding knife fig. 176) let the forefinger clasp the lower part of the blade: make the horizontal incision in the stock

first, and from this an incision down the stock about an inch long, being careful not to cut too deep; lift up the edge of the bark by passing the back of the blade up to the horizontal incision without removing



FIG. 180.



FIG. 181.

it. Lift the bark on the other side in the same manner—the two incisions making a wound on the stock resembling the letter T, or as shown in fig. 178.

If the bark parts freely from the wood, it is not necessary to pass the knife-blade under the bark the entire length of the incision, but only enough to allow the point of the bud to enter the incision; a slight pressure forces it down to its place—see fig. 179.

The expert budder holds the bud between the thumb and forefinger of his left hand while making the incision in the stock; and as the knife leaves it, he catches the lower joint of the bark attached to the bud under the bark of the stock before it falls back into place, and thrusts it down into position. If the upper end of the bark of the bud does not pass completely under the bark of the stock, it must be cut across so as to join the incision in the stock. If the bud was removed after being fitted as described above, it would appear as in fig. 180.

When the bud is fitted to the stock, wind

the bass (or other material used) around the stock, and tie it, covering the entire incision, leaving only the eye uncovered, as shown in fig. 181. The ligatures should be removed or loosened as soon as the bud has firmly united with the stock, which will usually be in ten to fifteen days, if at all. The horizontal incision in the stock is sometimes made below the perpendicular one, as at fig. 182. This allows more of the downward flow of sap to reach the bud than when cut across above it; but as it often proves detrimental, and not so convenient, this mode is rarely practiced, except upon plants in which the peculiar condition of the sap at the time of budding seems to require it.

When a bud is taken from the shoot, as represented in fig. 177, *c*, there is a small piece of wood remaining under the eye, which, in budding some kinds of plants, it may be desirable to remove, although it is an almost universal practice in this country to let this wood remain, and doubtless in a majority of cases, and with most kinds of plants, it is best to do so; but there are instances when a more permanent union would be secured if it was removed. When the wood is to be taken out, branches must be used from which the bark will



FIG. 182.

readily peel from the wood without tearing or breaking the fibers. Hold the branch in the left hand with the smaller end toward you; insert the knife-blade about one inch below the bud; cut a little

deeper than you would if the wood was to be left in; pass the knife above the bud about an inch, then cut across through the

Examine the bud after it has been removed, for the purpose of ascertaining whether the *chit*, as it is called, has been broken off even with the inside surface of the bark, or whether it has broken within the bud, leaving a cavity; if the latter, there is danger that although the bark around the bud will unite with the stock, the bud itself will fail to grow unless the flow of sap on the stock is sufficiently abundant to fill the cavity soon after the bud is inserted.

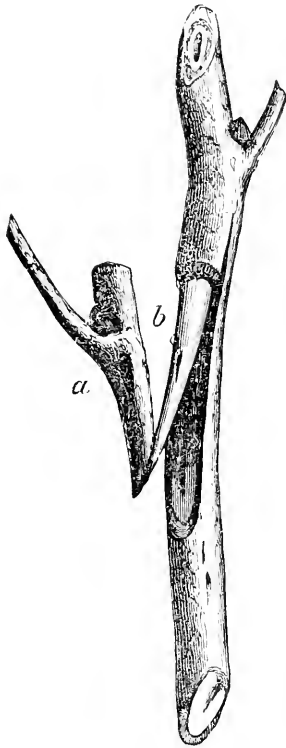


FIG. 183.

bark only, about half an inch above the bud—see fig. 183; then, with your finger and thumb, lift up the bark, at the same time press it gently forward, and you will take off the bark and bud (*a*), usually without injuring it in the least, and leaving the piece of wood (*b*) adhering to the branch.



FIG. 184.

Another method of taking out the wood from the bud is to cut around it, as shown in fig. 184, then, with the thumb, press it sideways, and slip it off. This mode is used when the branch is large and the bark too thick to work readily in the former method. A thin piece of ivory, bone, or a goose-quill is sometimes used for separating the wood from the bud; but the method I have illustrated is the safest, and may be used in almost every instance where it is necessary to remove the wood.



SEEDLING PEACH.—Mr. Thomas Bushnell, of Hayesville, O., sends me a sample of a yellow peach, which he regards as a seedling. On examining it, I can see a close resemblance to Yellow Admirable or

Orange—once pretty generally cultivated, and a sort that bears well, and with a habit almost certain of reproducing itself, which accords with the account sent of this seedling.
F. R. E.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

MRS. PINCE'S BLACK MUSCAT GRAPE has been the subject of anxious inquiry among grape-growers, and the result is that the whole of its history is now before the public. That it should excite curiosity somewhat beyond the average of similar subjects, may be attributed to two circumstances—first, the reports of its peculiar excellence as a table grape and its long-keeping properties; and secondly, the somewhat out-of-the-way *locale* of the parent vine, which has prevented many of the best judges of grapes from seeing it. However, it has been seen by many of the best grape-growers in the country, and in these pages their testimony has been given in favor of its general adoption where a long-keeping grape of the finest quality is in any respect a desideratum.

The history of this grape is interesting. The late Mrs. Pince—who, like her much-respected husband, Mr. R. T. Pince, of the Exeter Nurseries, was an enthusiast in horticulture, and well versed in many of its mysteries—was one day eating a bunch of grapes, and observed that one of the berries contained a peculiarly large, round stone. She desired it might be sown. This was done, the vine grew, and in the year 1862 first produced fruit. Mrs. Pince was not then living to witness the evidence of her good judgment and perception in regard to the sowing of the selected seed; but the seedling plant was observed to possess some peculiar properties, and it was named, in remembrance of her, "Mrs. Pince's Muscat," and has now become such a memorial of her virtues as those who

hold her name in affectionate remembrance can best desire. On several occasions this variety has come before us for critical examination, and we have had in every case to report in its favor. Yet, in truth, it is but lately that the whole character of the variety has been manifested; its immense fruitfulness and its good keeping could be ascertained only by the test of time, so that, from promising at first to be an admirable grape, it has proved at last to be one of the very best at the command of the cultivator. In the "Garden Oracle" of 1864 we reported on it as "the best grape of the year," having become acquainted with it in the autumn of 1863. In the *Gardener's Magazine* we have several times directed attention to it, and have made public our impressions, derived from seeing the original vine at home, surrounded by abundance of its progeny, the parent commencing its new growth while fruit of the previous year still remained upon the rods.

In growth this variety is peculiar. The young wood is of a purplish hue; the leaves are small, nearly triangular, deeply and elegantly lobed, and of a bluish tinge of green. The bunches are large, long, tapering, well shouldered; the berries oval, as large as those of the Muscat of Alexandria, purplish black with a thin bloom. They are borne on short, rigid, green stalks, with thick warted receptacles, a character which in some part accounts for the length of time the bunches will keep good if left hanging on the vine. The skin is tough, but scarcely thick; and this, again, is in favor of late keeping, for no tender-skinned

grape can be kept long after ripening. The flesh is firm, sweet, exceedingly rich, and of a decided Muscat flavor, changing, however, to a Frontignan flavor after the bunches have been long kept.

One of the special advantages resulting from the distribution of this variety is, that in places where there is much demand for grapes in spring, it will lessen the labors and anxieties of the cultivator, and in some cases render early forcing unnecessary. It is in its prime from the end of January to the end of April; keeping improves it, and the second-class varieties in cultivation, which are valued chiefly for their keeping, will have to yield up their places to it, for it will assuredly supersede them. Mr. Meredith, of Garston, who knows as well as most people the commercial value of a first-class spring grape, to be obtained in abundance without forcing, has lately built a house expressly for this variety, and in almost every good garden in the country young canes will be planted during the present autumn.

Now that Mrs. Pince's Muscat is in course of distribution, we must cease to regard it as in course of probation. Its character is established, its fame secured, and we confess a feeling of peculiar satisfaction in having been enabled to assist in giving publicity to the merits of so valuable an acquisition.—*Gardener's Magazine*.

POT CULTURE OF THE GLADIOLUS.—The season has arrived when the most of us are beginning to think of selecting our bulbs, especially for growing in pots. Lilliums, hyacinths, tulips, etc., have each their place assigned for the above purpose; but very few make choice of the Gladioli for pot culture, considering that they succeed best when grown in beds or borders, and certainly their effect when so grouped and in flower is strikingly grand; but let me advise those gardeners who have to maintain a succession of bloom in the conservatory throughout the year, now they are ordering their bulbs, to procure some roots

of *Gladiolus* for growing in pots. If they have not previously adopted the practice, they should now select them for flowering during next summer; and, if they succeed, I am certain after that they will be only too anxious to extend their culture in the future.

Having, in the early part of this year, a surplus stock of *Gladiolus Brenchleyensis*, *floribundus*, and one or two other varieties, for which I had no room in the borders, the thought occurred to me that I would see what they would do in pots. The roots of *Brenchleyensis* were very large and fine. Of this variety I planted three in an eleven-inch size pot. The soil which I used was good stiff yellow loam, mixing with it about a fourth of decayed manure. In planting them I did not cover the crown of the root with more than an inch in depth of soil; but I potted them very firm, taking care to press the soil well round the bulb. After this they were placed in a cold pit; and as soon as they had grown somewhat, and the weather would permit, they were removed to a spot out of doors, and abundance of water given them as they needed it. The great object of the cultivator should be never to let them suffer for lack of moisture to their roots, otherwise the foliage will become brown and unsightly. Thus treated, my bulbs have sent up splendid spikes of flowers, and the effect has been gorgeous, the color of *Brenchleyensis* being a rich vermilion scarlet, contrasting finely with the soft but delicate white and rose color of *Floribundus*, another beautiful variety. Pot Gladioli are the more useful, because they come in when the showy pelargoniums and other early summer subjects are ceasing to attract admiration.—JOHN F. McELROY, in *Gardener's Magazine*.

CUTTINGS of geraniums, verbenas, etc., that were made some time since and placed in a cold frame, should now be potted off, brought into the house, and placed in a cool, shady place for a time before giving them a position for growth.

FALL OR AUTUMN FRUITING RASPBERRY. —I NOTICE a short article under the above heading in the October number of the HORTICULTURIST, page 313, in which you say: "We have been not a little surprised at the statements made by some of the Western growers of the value of the Autumn-bearing Raspberry." As I am one who has been active in disseminating these sorts, and believe in their great value, you will, perhaps, allow me to take exceptions to your article *in part*. While I agree with you that their culture is not essential in *your* locality—or, rather, in *those* localities where peaches are a *certain* crop, or can be had at low rates, and by those parties who *have* pear-trees in *fruiting*, I must strongly dissent from that article as applied to *all* localities and *all* persons, and take the ground that they *are* a *very* desirable fruit in those portions of the country not blessed with peaches or pears. You are undoubtedly aware that no peaches can be raised over *nine tenths* of the Northwest, New York, and the New England States;—in fact, over a large share of this country named, a *bearing peach-tree* is a *real curiosity*, and in many parts a *live* peach-tree is unknown. In our grounds, at this place, we have had but *one* crop of peaches in *ten* years, and there has been but one season that they could be had for less than \$2 50 per box—small boxes at that—which puts them entirely out of the reach of a very large class of consumers. And as to pears, it is well known that the new beginner must wait for years before he can get a crop from his Standards, providing they succeed in his locality or on his soil. I speak of Standards, for it is an *established fact* that "Dwarfs" do *not* succeed well in most localities here. We have on our grounds over fifty Dwarf and Standard pear trees, eight to ten years old. From the *whole* number we have not obtained, on an average, yearly, *one peck* of fruit. My experience with them is the experience of *nine tenths* of the planters north of this latitude, and as large a share in many lo-

calities south of this. Now, can you say that in *such* localities and with *such* persons "they are *out* of season, and *not* desirable," and that you are "surprised" that we should make "statements" as to their "value" with such? I have certainly found them—the "Autumn-bearing" sorts—*very* desirable in my own family, having had my table supplied with the delicious luxury for six weeks, or until the ground "froze up;" and I believe that you would have no objection to enjoy the luxury of a "short cake" made from them, that we have so often luxuriated on, especially when peaches or pears could not be had.

It matters not, you are aware, how cold or severe the winters are, or if the buds are killed to the ground thereby, they yield their autumn crop of fruit, for this fruit is produced on the *new* growth. In fact, we would advise cutting off the *entire top* just as winter sets in, and cover over the crown with coarse litter. By so doing, the crown is protected, the roots are enriched, and the crop certain and fine. In July or August nip off the top of the leading shoots, which will cause them to branch out and yield fully double or triple the fruit.

SOUTH BEND, IND.

A. M. PURDY.

EVERGREEN branches taken from the forest and planted in the ground among the shrubbery and grouped low over the flower-beds, serve to give life and cheerfulness to the grounds, and at the same time are a protection and shade to the plants, bulbs, etc., etc.

Plow or dig all ground intended for planting next season, leaving it as light and loose as possible for the action of air and frost. If clay ground, plow or dig it only when comparatively dry—the drier the better; if too wet, it will at once pack down and no benefit arise from the labor. If dry when the work is performed, the action of the winter's frosts will be almost or quite equal to a coat of manure.

GRAPEVINES in cold houses should be freed from their upright position, and pruned, but their winter protection should be deferred as late as possible.

CLAY SOIL FOR GRAPES.—The *Country Gentleman*, writing of a visit to F. C. Brehm's vineyard, states that "bunches of Delawares were quite green on the sand, but many of them had attained nearly their full color on the clay, while the difference in altitude of soils was not four feet." On the shore of Lake Erie, we are told, the light, sandy soils do not ripen the grape as well as the clays, and that while the Catawbas, Nortons, and other late sorts, ripen rich and fine on the clay, on sand they rarely more than color. The soil exhibited by Hon. Marshall P. Wilder, at the American Pomological Society's meeting in St. Louis, as the best grape soil of the Rhine, was a hard, tough, yellow clay, the like of which may be found in many places along the south shore of Lake Erie, and over the hills of Herrmann, Bluffton, and other points in Missouri.

THE DIANA grape is said to prove one of the very best for cultivation in our Southern States.

WHAT do you know of the Van Buren Dwarf Peach? Can we grow it, and raise fruit in Wisconsin by protection in winter?

T. D. P.

[Our knowledge of this peach is limited; we have had the trees now two seasons, and still no fruit, though an abundance of blossoms. One of our specimens measures five feet high, and is three years from the bud. At this rate of growth it will hardly be dwarf enough for winter protection. Why not plant some of the well-tested varieties? Train the trees eighteen inches from the ground, and protect by a covering of straw or similar material, as has already been done with success in some of our more northern States. There is a variety called Italian Dwarf,

which in our grounds has reached a height of but sixteen inches, with a diameter of eight inches across the branches. The tree three years from the bud has this season produced six peaches of good flavor, the largest measuring two and a quarter inches in diameter. This could be protected very easily.]

STRAWBERRY—IRON DUKE.—The *Canada Farmer* mentions a strawberry under name of Iron Duke, which claims to be a seedling originating with Thos. Graydon, Esq., of St. Catharines. It is described as being "very prolific in bearing and remarkable for size and flavor, many of the berries measuring seven and a quarter inches in circumference, and weighing one and a quarter ounces."

STRAWBERRY beds planted this autumn should during this month be lightly mulched with coarse straw, cornstalks, or other litter that will serve to shield them from sun and prevent the ground from freezing and thawing rapidly; but at the same time the mulch should not pack down on the plants to smother them.

MARTHA.—This grape has received commendation as of superior quality to any white grape. We do not so consider it. As we write, we have Lydia, Rebecca, Cuyahoga, and other white sorts before us, and in tasting, while we concede to Martha more delicacy than Concord, it is not as rich as Lydia, nor as delicate as Allen's Hybrid. The berry, again, is not as large as Lydia, and it is a much more loose and straggling bunch. The skin is decidedly harsh. Were we to describe the bunch, it would be as follows: Bunch, medium; size, irregular, loose, and open. Berries, below medium, or about the size of the largest berries of well-grown Delawares, with moderately long peduncles, round, green, and with a slight bloom. Skin of medium thickness. Flesh, sweet, rather harsh, with some pulp, and each berry containing three to four seeds.

VINEYARDS should all have the earth plowed up toward the vines late in autumn, leaving a center furrow for the surface drainage.

HERBEMONT GRAPE.—This variety of grape, so valuable in Missouri, has ripened this season very perfectly in Professor Kirtland's grounds, near Cleveland, on the south shore of Lake Erie.

At the annual election of the Madison (Wis.) Horticultural Society the following officers were elected: President, Wm. T. Leitch; Vice-Presidents, D. Worthington, T. Brown; Directors, J. T. Stevens, Wm. Hobbins, H. M. Lewis, O. S. Willey, N. J. Moody; Treasurer, Geo. A. Mason; Corresponding Secretary, T. D. Plumb; Recording Secretary, Joseph Hubbins.

SALT AS A MANURE.—Many of our readers, doubtless, have a small pasture in which they keep a cow and occasionally turn a horse. Many of these pastures have coarse grasses growing in them, while in other places the grass dries up quickly on approach of warm and dry weather. All such pastures will be greatly improved, and often the coarse grasses will entirely disappear, if a harrow is passed freely over back and forth during this month, and salt at the rate of eight to ten bushels to the acre be spread over the ground.

GRAPES AT THE SOUTH.—A Florida correspondent of the *Country Gentleman* speaks in high terms of the good success of the Diana, Catawba, and Concord grapes as among the best varieties to grow in that section. He condemns the Delaware as liable to cast its foliage and make little or no growth.

WESTERN NEW YORK NURSERY BUSINESS.—It is estimated that the amount of trees sold and shipped by the railroads in Western New York is over eight thousand tons, exceeding in value one and a half million of dollars annually.

VERBENA BEDS.—Beds or borders where verbenas have been growing this season, if covered slightly with straw at the close of the season, and left until the spring vegetation is strong, will be found with qualities of young verbena plants, a part of which can be removed, and the rest will grow and supply blooms almost as early as plants taken from the green-house. In this way, while you may not have all superior flowers, yet if the plants this season are of good varieties, the chances are that a large proportion of the seedlings will be good. Portulacca and Annual Phlox beds managed in the same way also supply an abundance of plants free of cost, so that the poorest person who has six feet of flower-bed around his house need never be without flowers in summer to educate and refine the tastes of his children and contribute to his own enjoyment.

THE LYDIA GRAPE, Mr Elliott writes us he has examined this season in Professor Kirtland's grounds with even larger bunches and berries and more compact than it has ever been figured. The vine, he says, stands in a piece of ground that has been highly manured, and hence the evidence is that the variety needs a rich soil to bring out its excellence.

THE MILES GRAPE, which our valued friend Charles Downing has spoken of as a fine early sort, one of our correspondents writes us does not color up any earlier than the Hartford, and is not ripe as soon, while the fruit being small and the bunch short, it will not readily sell in market.

GREEN-HOUSES should be kept as cool as may be consistent with retaining the plants in bloom. Many houses are ruined for the winter by too strong heat in the first of the season.

CHRYSANTHEMUMS in bloom require abundant food, which is best supplied by watering them with liquid manure.

HARDY PERPETUAL ROSES are benefited by transplanting this fall, even if returned to the same bed. Take them up, prune tops and roots, dig the ground deep, placing a good layer of half-rotted manure or old turfs at bottom, and replant; then cover the surface two or three inches with well-rotted compost or manure.

A VERY popular apple at the West is Utter's Large Red, in size larger than medium, a constant and prolific bearer, hardy, and quality first-rate; season from November to March. If any of your Eastern pomologists wish to test the variety, I will send cions next winter. T. D. P.

ROSES for window blooming should be potted in good rich soil, cut back freely, then kept in cool frames for a time before bringing into the room for winter.

HYACINTHS for winter blooming should now be potted.

CAMELLIAS require to be syringed occasionally in good weather and the soil top-dressed.

RASPBERRIES, BLACKBERRIES, DWARF PEARS, and other plants or trees with small surface-roots, should have the earth turned up toward them in the autumn. A light one-horse plow, taking first a shallow furrow and turning it toward the trees, then making the next furrow deeper, and so on deepening as we extend the distance from the tree, we have found a good practice. Where the raspberries have to be covered for the winter, it is requisite to first bend them down and confine them by a spade-ful of earth. It is rapidly done, and pays peculiarly in the crop next season.

CLEAN up the lawn and roads, paths, etc., this month, raking and gathering the leaves into a heap for use in forming hot-beds next spring. Rake and roll the walks so that they present a neat, firm, and clean appearance.

LILIES and other hardy bulbs should have a good covering spread over the bed of coarse straw manure.

HARDY SHRUBS may be pruned this month, and especially should all dry or dead branches be pruned out, so as to give a neat, clean appearance during winter. Top-dress with good rotten compost, and dig it in lightly with the spading-fork.

PITS or FRAMES for winter stowing of plants should be ready. Make them two to three feet deep, and when they are well drained, place the pots in leaf-mold from the woods, give air freely and shade from hot sun; when severe weather sets in, have ready a quantity of straw, old hay, etc., for spreading over the sash.

LARGE CLUSTER OF GRAPES. — Mr. Fowler, gardener to the Earl of Stair, Castle Kennedy, produced at a recent show in Glasgow, the most extraordinary bunch of grapes, for size and weight, that has been exhibited in modern times. It all but rivaled the famous bunch of Speckly at Welbeck. It weighed 17 lbs. 2½ ozs., and was of the White Nice variety. The same grower had enormous Black Alicante, with berries the size of Victoria Hamburg, and bunches compact and pyramidal to a fault. Trebbiano, too, was the largest and best formed bunch of the kind probably ever exhibited. Mr. Fowler also produced a bunch of the Duchess of Buccleuch variety, much larger both in cluster and berry than any of this variety before exhibited. The size of bunch which Mr. Fowler induces in all the sorts under his cultural care is something wonderful, and if he does not at all times show them quite up to the finishing stroke in point of color, it need not be wondered at.—*Florist*.

GRAFTING.—Dr. Regel describes a new method of grafting, as practiced by Herr Freundlich, one of the Russian court gardeners, with remarkable success. In-

stead of taking the cions from the previous year's wood, with the bud just beginning to swell, the still soft growing lateral shoots are selected when from half to 1½ inch long, and either bark or tongue-grafted, care being taken not to draw the ligature too tight, as they swell much more rapidly than hardwood cions. Success, he says, is certain, if care be taken that the sap of the stock is in motion at the time the operation is performed. He recommends this mode as superior to all others, especially for hard-wooded trees, such as quercus, fagus, etc., which are usually difficult to propagate from the old wood. New roses and other plants, which it is desirable to increase as rapidly as possible may also be advantageously worked in the same manner.—*Florist and Pomologist.*

CELERY for winter use should be stored in trenches made the exact depth of the plant, and ten to twelve inches wide. Take up the plants on dry days only, and pack closely in the trenches. On the approach of severe frosts, cover with two or three inches of straw litter, increasing the quantity as the weather grows colder, until the covering is at least one foot in thickness.

FERN CREEK, JEFFERSON CO., KY., Oct. 22, '67.

F. W. WOODWARD—*Sir*: Please find inclosed two dollars and fifty cents, the price of my subscription to the HORTICULTURIST for this year. The particular excellency of the number for October I regard as well worth the price of the year's subscription.

Respectfully,
HENRY F. VAIL.

HEXAMER'S PRONGED HOE.—We have used this implement, and consider it one of the most valuable garden tools in our possession. For working among strawberry plants, root crops, or any vegetables planted in rows, it will do double the work of any other hand implement within our knowledge, besides stirring the ground to a depth of some four inches in a thorough manner, and with ease to the operator.

CATALOGUES RECEIVED.

VILMORIN, ANDRIEUX & Co., Paris, France. Bulbs, etc.

B. K. Bliss & Co., Springfield, Mass. Autumn Catalogue and Floral Guide.

W. F. Bassett, Hamonton, N. J. Small Fruits, etc.

Charles Brinkerhoff, Fishkill Landing, N. Y. Wholesale Catalogue of Nursery Stock.

M. O. Keefe & Son, Rochester, N. Y. Dutch Bulbs and Flower Roots.

C. L. Hoag & Co., Lockport, N. Y. Catalogue of Grape Nurseries.

D. H. Brown, New Brunswick, N. J. Strawberries, Raspberries, and Blackberries.

H. A. Dreer, Philadelphia. Circular describing the Philadelphia Strawberry.

G. W. Campbell, Delaware, Ohio. Hardy Native Grapevines, etc.

J. F. Deliot, Sing Sing, N. Y. Grapevines.

J. H. Babcock & Co., Lockport, N. Y. Hardy Grapevines.

E. Y. Teas, Richmond, Ind. Nursery Stock.

Henderson & Fleming, 67 Nassau Street, New York. Dutch Bulbous Roots.

R. Halliday & Son, Baltimore, Md. Camellias, Azaleas, Roses, etc.

C. E. & J. S. Fritts, Elwood, N. J. Small Fruit Nurseries.

M. H. Lewis & Co., Sandusky, Ohio. Native Grapevines.

Mahlon Moon, Morrisville, Pa. Trees, Plants, etc.

W. S. Little, Rochester, N. Y. Nursery Stock.

J. H. Foster, Jr., White Horse P. O., N. J. Manual of Grape and Small Fruit Culture.

Gould, Beckwirth & Co., Rochester, N. Y. Fruit and Ornamental Trees.

P. J. Berkman, Augusta, Ga. Fruit and Ornamental Trees.

Frost & Co., Rochester, N. Y. Fruits.

D. D. Buchanan, Elizabeth, N. J. Fruit and Ornamental Trees.

THE
HORTICULTURIST.

VOL. XXII.....DECEMBER, 1867.....NO. CCLVIII.

“A LITTLE MORE GRAPE.”

BY F. R. ELLIOTT.

DURING my acquaintance with grape growing, I know of no record of a season when the grape crop has been so full throughout the entire North and West as it has this year of 1867.

There have been seasons when, in certain localities, the crop has perfected perhaps as well, but I have no recollection, nor have I seen any published record of a season when it has ripened so perfectly over so large a territory. The rains injured, to a very considerable extent, the crop on the Atlantic coast and all east of the Alleghanies, yet the records even there show a success in grape growing and ripening that is far from discouraging; while west of the mountains, the unparalleled dry season over an immense territory, together with a more than average even temperature, has made the grape crop one of surpassing excellence in all soils and localities.

The records of dealers in the large markets show that the grape crop this year has come into close comparison in amount with the more general and universal one of apples, and many dealers have opened their eyes in surprise at the enormous quantities

of grapes received in the markets and readily sold at paying prices, averaging all the way from seven to twenty cents a pound at wholesale. I have no reliable statistics of the amount of acres now in bearing vineyards throughout our States, but from what I have been able to gather, we have something over 1,500,000 acres, and nearly 1,000,000 acres not yet in bearing.

If we allow the crop of this year to have averaged two tons to the acre—and it has done much more than that—we have the amount of 3,000,000 tons of grapes, which at an average of say ten cents per pound, would show the nice little sum of 600,000,000 dollars as the value of our crop of grapes—an item in amount that if it had any political basis would lead to disputation and misrule, but as it is, it tends only to humanize and benefit mankind.

Those who read this and remark, as some perhaps will, that “if we have got 1,000,000 acres yet to come into bearing, then grape growing will soon become unprofitable, because of the over supply,” should think for a moment of the rapid increase of our non-producing population in cities and manufacturing towns, and also

remember that the more abundant and common any fruit or article of food, the more freely is it purchased and eaten, and especially if that food is acknowledged on all hands to promote health while it gratifies the palate. So remembering, it seems to me no one can feel at a loss in estimating the price of grapes ten years hence at fully the present value. All the grapes, however, are not sold as fruit, but a large proportion are converted into wine; and as wine drinking has always prevailed, we may safely conclude it will continue; and as it is profitable to make certain varieties of grapes into wine, when they can be obtained at prices averaging ten cents or under per pound, we have an outlet for the surplus which, when made into wine, gives the grape grower a higher price for his labor than he who grows a surplus of corn to be made into whisky.

If I understand correctly, the grape crop of the old country is estimated in value by the quantity and quality of wine which it will make; and while I have no hesitation in saying that whoever grows grapes for table purpose exclusively, and has convictions of conscience against their use for wine, can always sell his crop at paying prices for such use; yet there are those who do not fear the influence of wine, and who also are located where a ready transmission of the fruit to market may not be as convenient as its conversion into wine. To each of these growers it is important to know the variety of grape suited to his soil, location, and purpose.

While I have no disposition to assert that I am correct, I will endeavor to condense some of the items relating to these points which I have collected.

The Concord, which has been regarded as the "grape for the million," grows freely in all soils, produces the largest berries on sandy or gravelly soils, and the greatest on clay shales. As a market berry it does not bear transportation well, frequently bursting its skin, especially if allowed to become fully ripe, and dealers have to dis-

pose of them as soon as possible after receipt. As a wine grape, heretofore it has met with but little favor out of Missouri, but the records of its must weight by the scale of Oeschle this year give it a grade from which we may expect a better wine than has ever yet been produced from it. One account I have of it from a fruit grower, whose soil is a sandy loam, on the south shore of Lake Erie, October 19th, gave 78°; another, October 21st, on clay soil, gave 80°; and another, the same day of gathering from the vines, in clay soil, of Doctor Dunham, President of the Lake Shore Grape Growers' Society, gave 84°. At the Hammondsport trial, it is quoted as ranging 71° and 75°.

The Ives, so far as I know, has never been put forward as a market or table fruit, but judging from its appearance I should not doubt its being safely transported. There are those who regard it as good for eating as the Concord. I am not one of those, nor do I think the public taste would give it as high a rank for that purpose. As a wine grape, it has abundance of juice, and its must, as a rule, weighs much higher than the Concord, making a wine of more body and character. Samples of the fruit from clay soil, same location as the Concord, and gathered at the same time, gave it a range of 7° above, or 87° against 80°. The vine is a hardy one, and a good strong vigorous grower, and while it makes a good wine, it is not as good as Norton's Virginia or Cynthiana. The Hammondsport trial of this variety gave it 75° and 80°.

The Isabella, one of the oldest varieties grown, notwithstanding it has "had no friends," nevertheless I notice ranks among dealers as one of their best sorts; and while they have to dispose of Concord as soon as possible, they can put away the packages of Isabellas for a day when there shall be a lull in arrivals. On sandy soils the fruit of this, like the Concord, is larger than when grown on clay, but the vine also is somewhat more inclined to mildew.

I consider the variety now generally grown at the West as not the true Isabella, but a sub-variety, possibly a seedling, that has been introduced, and that while the oval berry of the true Isabella can be found on it, the majority of its fruit is more round and blacker in color, maturing somewhat earlier, and with very little inclination to mildew; in truth, I have visited vineyards where it has fruited many years without ever showing any mildew to affect either the health of the vine or the quality of the fruit. As a wine grape, it does not stand in the front rank, although its must shows better than the Concord, if we except the fact that it has more acid. My lowest records of its must, when grown on clay soil, is 76°, and the highest 92°. The Hammondsport record gave it from 60° to 72½°.

The Clinton as a wine grape this year, as well as in one or two years past that I have watched it, stands well in the scale, but its great quantity of acid is its drawback, except with those who use sugar, or sugar and water, in the changing of its juice into what they term wine. Its record this year at Hammondsport was 93° and 94°, being the same as my notes of it the past two years.

The Norton's Virginia, so justly celebrated as a grape, making a rich, heavy, medicinal red wine in Missouri, ranks equally well comparatively elsewhere. At Hammondsport its record was 88° and 90°. In Missouri it has ranged from 111° to 114°, and when grown on clay soil near Cleveland, it has ranged at 105°. As a vine to succeed in enduring the climate and ripening its fruit, it may be said to be hardy and successful wherever the Catawba is so.

There are other black grapes of promise; but as I am not aware that any quantity of them have ever been sent to market or made into wine, I will only remark that to me the Telegraph promises the most valuable of all as an early market sort, and Rogers' No. 4 as a variety that, unless a

better be brought forward, will, ere long, take the place of the Concord and Isabella.

Among the light or copper red colored grapes, the Delaware is perhaps the one deserving a first notice, because of its good quality, hardy vine, time of ripening, and uniform success wherever grown in soil liberally supplied with animal manures. As a market fruit it always commands a good price and ready sale because of its delicacy; but if fully ripe when gathered, its skin is too tender for shipment long distances. Grown in sandy soil, and gathered, as too many are, just as soon as colored, and long before they are ripe, it carries well, and will sell until our people learn to distinguish ripe from unripe grapes. Under liberal treatment it is a variety that gives good crops; and while it does poorly in clay soil without liberal manuring, when that is given, its bunches are large, and berries although not quite as large as on sandy soil, yet the must weighs much heavier. As a wine grape for the production of what are termed white, or dry wines, it stands at the head of the list among our so-called native varieties. The objection made to it is, in all cases, its size, and, under ordinary cultivation, want of abundance, so that the wine, although very fine, is at the same time so much more expensive, that those who are planting vineyards hesitate to occupy ground with it. The record of its must at Hammondsport was from 87° to 103°. I have a record of it grown on sandy soil at Cleveland, October 16, marked 93°, and one gathered from George Leick's vineyard on clay soil, same date, at 116°; while from Dover Bay, two days later, also on clay soil, it gave 111°, and in Missouri, at Hermann, it gave 120°.

The Mottled Grape is a variety long introduced, but by one who had no disposition to push its claims, and it is but just coming into notice. The vine is, like the Delaware, most successful under high manurial cultivation; its wood very hardy and short jointed, bunches very compact.

ripening as early as the Delaware, but its skin being thicker, it can remain longer on the vine without injury. I have watched it for some years, and would to-day prefer it for wine purposes to the Delaware. Its must, from grapes gathered the first week in October this year, ranked, 94°.

The Iona, upon which perhaps more money has been expended in distributing and pushing it than upon all other varieties put together, notwithstanding the years it has had to exhibit itself from basket layers and wonderful twice transplanted vines, and although the Lake Shore Grape-Growers' Society has occupied most of the time during three or four of its sessions to the use of its friends and advocates, is rarely to be seen except upon exhibition tables. In northern Ohio I do not think one tenth as many pounds of the fruit have yet been produced as dollars have been paid for vines set two years since, to say nothing of later days. It is unquestionably a capital good grape in itself; but so far there has been some fatality attending the vines in the hands of almost every one, so that the quantity of fruit which it will produce is yet apparent only in the speeches made for it, or the publications advocating it. I must certainly give its advocates a more than Christian character, and believe they are only actuated by a glowing desire to benefit us all and the world at large, for I can not think for a moment, especially after listening to some of their speeches, that they have any pecuniary motive. I might suppose they would now await its production, and when its tons on tons of "that perfect grape" are found in our markets, to drive all others out, I shall, for one, be disposed to believe somewhat of what has been told us. The record of must of Iona at Hammondsport marked 92° as the highest; and where the Catawba will ripen, and the vines can be grown and fruit abundantly produced, it will most likely make a good wine, unless like the Clinton it is found to possess too large a proportion of

acid. It certainly is a capital eating grape, and I confess I shall be most happy to see it come out of the cloud which, so far, its non-productive character has given it.

The Catawba for localities where it does succeed, is at this time without a rival. It has no equal. As a market grape it bears carriage well, and when received by the dealer, its boxes in good order, can be stacked away to await the rise of market; or if by accident the boxes arrive broken and the berries injured, they readily sell at a good price for wine-making. As a table grape, when perfectly ripened, as it has been this season, and many other years before, on the clay soils of the south shore of Lake Erie, I have never met the man who did not prefer it to any grape which I could set before him at the time. Animal manures do not suit this variety, but the clay shales in which lime, potash, etc., are found, suit it to a charm, and it is on them that the richest grapes are found. Unlike the Concord and Delaware, however, it is a grape only for certain localities, and no one should plant largely of it without a knowledge of its habits, or its success in his locality. The record of its must at Hammondsport ranges from 74° to 88°. A record of it at Hermann gives 105°, while fruit grown by the Dover Bay Company gives 95°, and fruit grown by George Leick on the clay shale ridge east of Cleveland, gives 99°.

The Diana, although now many years before the public, is yet comparatively unknown. As a rule, it has failed to meet expectation, and mainly because its habit has not been understood. It should have a poor, gravelly, dry soil, without any manure. A rich soil or manure gives to it a rank growth, and the fruit consequently is too late in maturing. When correctly grown, that is, in suitable soil and long pruned, it is really a very capital grape, carries well to market, and is perhaps the very best keeping sort that is known. I have seen wine from it that compared fa-

vorably with any of the best foreign wines procurable in this country.

In the little I have here written of grapes and their must weights, I have each time

left off the acid quotations because some of my records have omitted them, and a few would only serve to confuse.

VARIEGATED GERANIUMS.

Among the many varieties of plants with beautiful foliage, grown for the adornment of our dwellings and green-houses, none are more attractive than the Variegated Zonal Geraniums. In England much attention has been paid to them, and the number of new seedlings produced has been so

great that exhibitions have been held in London of these alone. In this country, until within a year or two past, our knowledge of them has been limited to the silver and gold edged varieties. Some dozen kinds of these we have tested for bedding purposes, but have found them

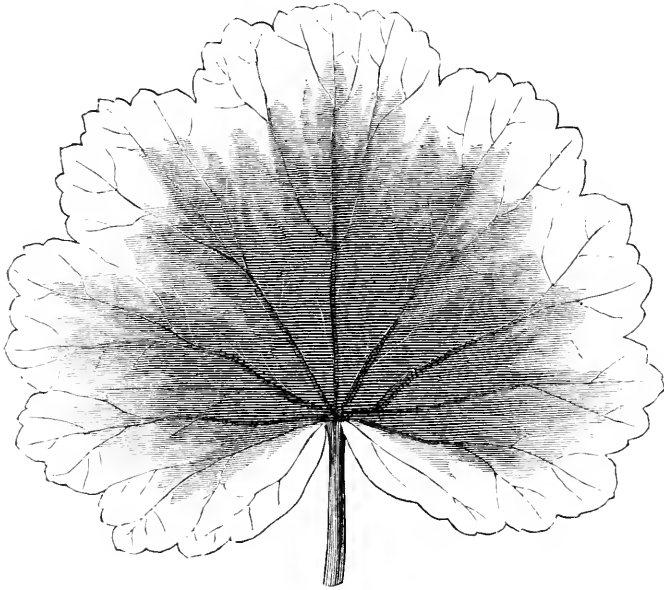


FIG. 185.—*Mountain of Snow.*

worthless, with the exception of, perhaps, one variety, *Mountain of Snow*, which we illustrate. The center of the leaf is green, with a broad margin of nearly pure white; the plant is a tolerably vigorous grower, and makes a fine display as an edging to beds of plants with dark foliage, such, for

instance, as *Coleus Verschaffeltii*. The silver and gold edged geraniums are mainly "sports," as they are termed, from the green kinds. It is not an unfrequent occurrence that a plant will produce a shoot the leaves of which are green margined with white or yellow, and in

some instances the entire branch will be white. Cuttings are made of these, and in the case of those showing variegation are rooted without difficulty. Those of a pure white we have never succeeded in growing; although they sometimes strike roots, they soon dwindle away and die. There have been other varieties introduced of late with pure yellow leaves, the only specimens of which we possess is one called Golden Nugget, and a seedling of our own which much resembles it. Neither of these will,

we think, retain their color in open culture under our powerful summer sun. A very fine variety of this class is Sceptre d'Or, the leaf of which is of a pure bright yellow with a distinct red zone. In open culture the zone fades out entirely, but in-doors the plant is very desirable. Cloth of Gold is a variety having a light green center with rays of yellow and a yellow edge. Last season it endured the sun well, the colors being much brighter than under green-house culture. We consider this

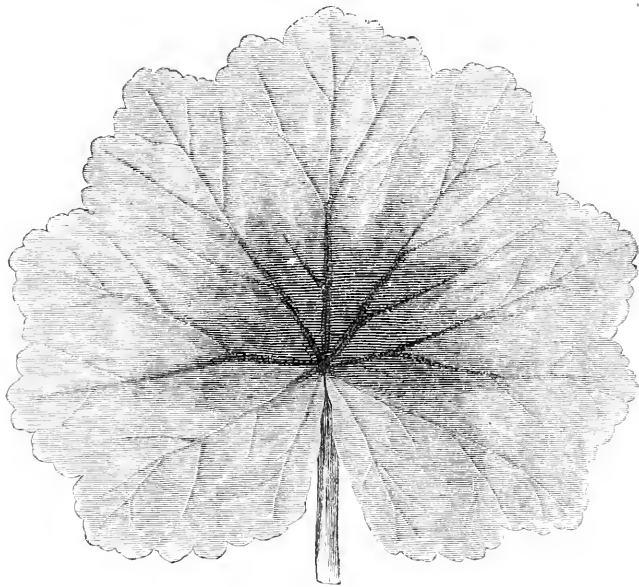


FIG. 185.—*Cloth of Gold.*

variety well worthy of attention for garden decoration.

Some two years since a friend brought over, from England, Mrs. Pollock, a variety well known there, and extensively used for bedding purposes, raised from seed by a Mr. Grieve, and which has attracted much and well merited attention. We were fortunate enough to obtain plants of it, which we have carefully tested during the past season. Out of doors it succeeds well, and grows vigorously until July, when the

colors begin to fade, and after that until last of September it is not an object of beauty. New leaves produced after that time are well colored and handsome, but the place for this variety is the green-house and for room decoration, in which it surpasses by far any plant in our collection. The leaves have a green center with a zone of reddish bronze, edged with bright red, almost scarlet, tints, and the margin of the leaf deep yellow; leaves large, flat, and of very regular shape. When well grown,

larger than our illustration. Plant, a vigorous grower; under green-house culture it needs a sunny exposure to bring out its colors.

Many new seedlings are announced in England, which, if we may judge from the descriptions given and prices asked for the plants, must be very superior. We hope to obtain some of them for trial another year. We take from the *Gardener's Magazine* descriptions of some of the best.

Lady Cullum.—Richest in shades of gold yellow and grass green with fine shades of red; a good grower, keeping its color long.

Lucy Grice.—Fine for the intensity of its red zone.

Sophia Dumaresque.—For neatness of habit, near fulfillment of the law of properties, and regular balance of colors in disk, zone, and margin, one of the finest of all.

Meteor.—Fine for properties, the leaf

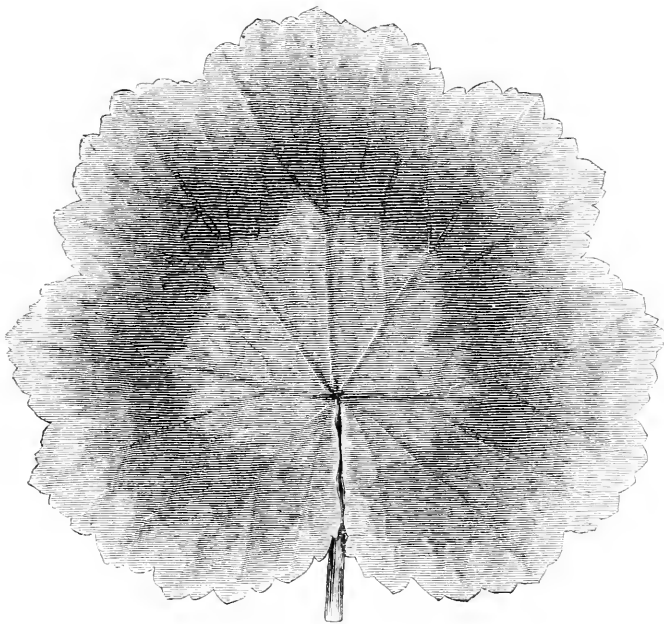


FIG. 187.—*Mrs. Pollock*.

being almost circular and quite flat; zone, rich in shades of red; margin, fine chrome yellow, very distinct, fine constitution.

Queen Victoria.—Quite distinct and striking in colors, showing at a distance a blending of blue, scarlet, and gold color, the disk being very dark or bluish green, the zone being fiery and the margin deep yellow.

Jetty Lucy.—The form of the leaf good, the zone notable for splendid shades of

chestnut, brick-red, and jet black, makes a brilliant specimen.

Beauty of Surrey.—Margin, brilliant yellow; zone, rich amber, with black shades and bars of bright carmine, small bright green disk; distinct and rich.

Eclipse.—Leaves rather too large and too profoundly lobed; but the zone so rich in vermillion red, that we must put up with the irregularities of form a splendid variety.

Defiance.—Lemon yellow, fading to straw color, the zone carmine and black, with obscure patches of deep brown. There is so much blue in the red of the zone, that when a fine plant is in fine condition, there is a purplish hue perceptible, in pleasing contrast to the black, green, and yellow.

Mrs. Dix.—Very neat in habit, colors well balanced, growth good.

Louisa Smith.—Brilliant red, black, and

gold coloring, and one of the neatest habited in growth.

Titania.—Remarkable for the brilliant shades of red and the rich deep black of the zone, the margin being a beautiful shade of yellow.

Princess of Wales.—Foliage large and abundant, margin creamy white, zone showing shades of black and purplish red; fine.

THE MARTHA GRAPE.

IN the November number of the HORTICULTURIST I notice some remarks upon this new grape, which, according to my observation and experience, are certainly none too flattering. Although I would not commend it as "of superior quality to any white grape," I still believe it to be of more real, practical value than any white grape yet introduced of which I have any knowledge. My reasons for this opinion are founded upon the vigor of growth, hardiness, and perfect health of the vine; and the earliness in ripening, and really good quality of its fruit. In respect to its health, hardiness, and vigor, after four years' trial, I would regard it as fully equal to the Concord, earlier in ripening, and in quality much superior, having more sweetness and delicacy than the Concord. The "harshness," when ripe, I do not perceive; and to my taste, as ripened here the present season, the Martha, grown in a full,

open exposure, was superior to the Rebecca, grown upon a south wall. As to the size and form of the bunch, the bearing vines are everywhere too young for us to judge accurately; but I think they will be found about the size of Diana, with probably rather less compactness. But beyond its other good qualities may be mentioned the more than probability that it will make a good and valuable white wine. Mr. Husmann has made a few gallons the present season, and found the must of extraordinary richness, indicating 92° by Oeschle's scale.

When we take all these facts into consideration, I think I risk nothing in the prediction, that the Martha will be the white grape "for the million;" and that it will not only be more extensively planted, but more truly valuable, than any other yet introduced. GEO. W. CAMPBELL.

DELAWARE, OHIO.

LARGE BUNCHES OF GRAPES.—The town of Stowmarket, a Suffolk town of some repute, gave a gold medal at the Great Exhibition at Bury St. Edmund's in July last for the three heaviest bunches of grapes. This was won by Mr. W. Meads, gardener to Raikes Currie, Esq., Minley

Manor, Farnborough, with, probably, the three heaviest bunches of Black Hamburg grapes ever seen; one bunch alone weighed 10 lbs. The aggregate weight of the three bunches was 26½ lbs. They were not only large in size but well-ripened and colored, and the berries of good average size.

TWO NEW FRUITS.

BY F. R. ELLIOTT.

DURING a recent visit to Hermann, Mo., I saw and examined at Mr. Geo. Husmann's a seedling peach and also an apple, both of which he had presented to the Commit-



FIG. 188.—*Amelia Peach.*

tee on Seedling Fruits appointed by the late meeting in St. Louis. The apparent American Pomological Society, at their value of these fruits is such that I have

made drawings and descriptions of them as herewith.

THE AMELIA PEACH.—The Amelia is a seedling variety originating with Mr.

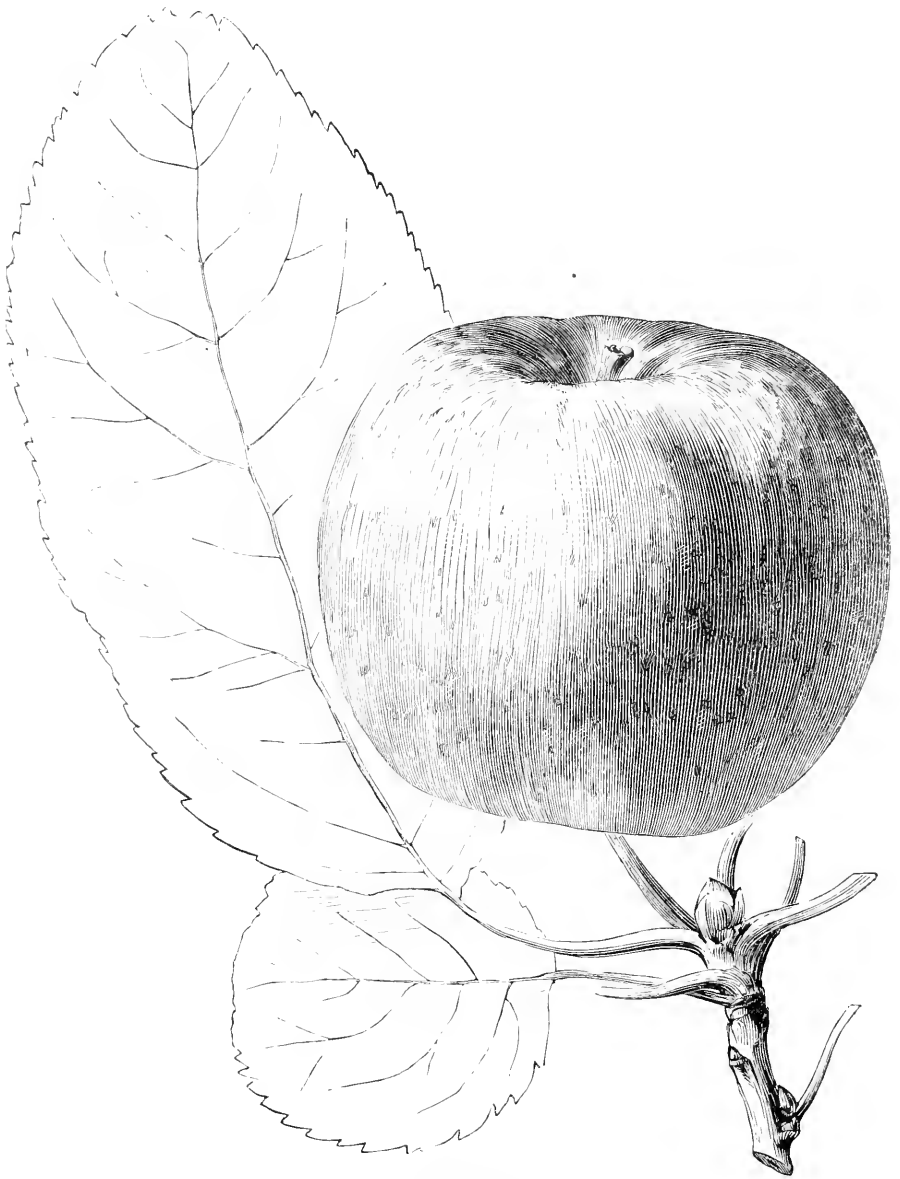


FIG. 189.—*Rasche Apple.*

George Husmann, of Hermann, Mo., well known as a skillful viticulturist and an enthusiastic promoter of horticulture. The original tree in his grounds was this past

season in full bearing, healthy, and exhibiting appearance of a robust habit, much like the Columbia, from which it is presumed it sprang.

The fruit is large, one quarter larger than Columbia, round, with a well-defined suture, one side deepest toward the apex, which has a rounded point. Color, clear rich yellow, marbled with dull red. Flesh, thick, yellow, rich, juicy, sweet, and separating freely from the stone. Season, about one week to ten days later than Columbia. Leaf with indistinct globose, almost reniform, glands. Pit rather large, angular pointed, and deeply corrugated.

RASCHE APPLE.—Originated with W. Rasche. Leaf broad, rounded, oval, thick,

and coarse. Young wood, dark brown red, with buds very prominent. Tree a strong grower, productive and hardy. Fruit medium, roundish, flattened at ends; surface with slight appearance as of being ribbed. Skin glossy, smooth, greenish yellow, with small, irregularly scattered gray dots, with a shade of deeper green suffused underneath around; faint traces of russet at the stem end. Stem, short. Cavity, regular, open, and rather deep. Calyx, closed. Basin, broad, open, deep, abrupt. Flesh, yellowish, crisp, juicy, mild, subacid, rich, and high-flavored. Core, medium, compact, close. Seeds, abundant. Season, December to March.



SEEDLING GRAPES FROM CHARLES ARNOLD, C. W.

MR. F. R. ELLIOTT, of Cleveland, Ohio, sends us the accompanying drawings from which our cuts are made, and also descriptions of some new seedling grapes which have originated with Mr. Charles Arnold, Paris, C. W. Mr. Arnold, we understand, does not yet offer them to the public, but is distributing a few plants into the hands of careful fruit-growers, in various sections of the States, in order to have the characters of the vines as well as the quality of the fruit fully tested ere he names or offers them for public approval.

Mr. Elliott remarks "that the character of description given here is of the grapes grown in open ground culture in Canada, and that doubtless when grown and ripened on the south shore of Lake Erie or in Missouri, the quality of the fruit would be improved, while its size would remain the same.

No. 1. This variety was figured last year in the *Gardener's Monthly*, but the sample sent me by Mr. Arnold is not as large as there figured, and he writes 'that it is not equal to former years, in consequence of

greatly overbearing and much layering.' My description is: Bunch, long, double-shouldered; long, stout peduncles; berries black, and covered with bloom, roundish oval, of medium size, thick skin, harsh, and with considerable pulp.

No. 2. Bunch about six inches long, shouldered, not very compact; berries almost or quite round, irregular in size, black, with a blue bloom; skin half tender; flesh vinous, not sweet; pleasant, with only a small and almost melting pulp. This and No. 16 promise valuable as wine grapes.

No. 5. Bunch about five inches long, moderately compact, not shouldered; berries small, green, roundish oblong, with short peduncles; skin thick, and flesh with considerable pulp and large seeds; vinous, sprightly, not sweet.

No. 16. Bunch about four inches long, quite compact, not shouldered, full, even, and regular in shape; berries medium in size, roundish, slightly oblong, black, with a blue bloom, rich in vinous sweet, pretty free of pulp and pleasant to eat, and promises well as a valuable grape for red wine.

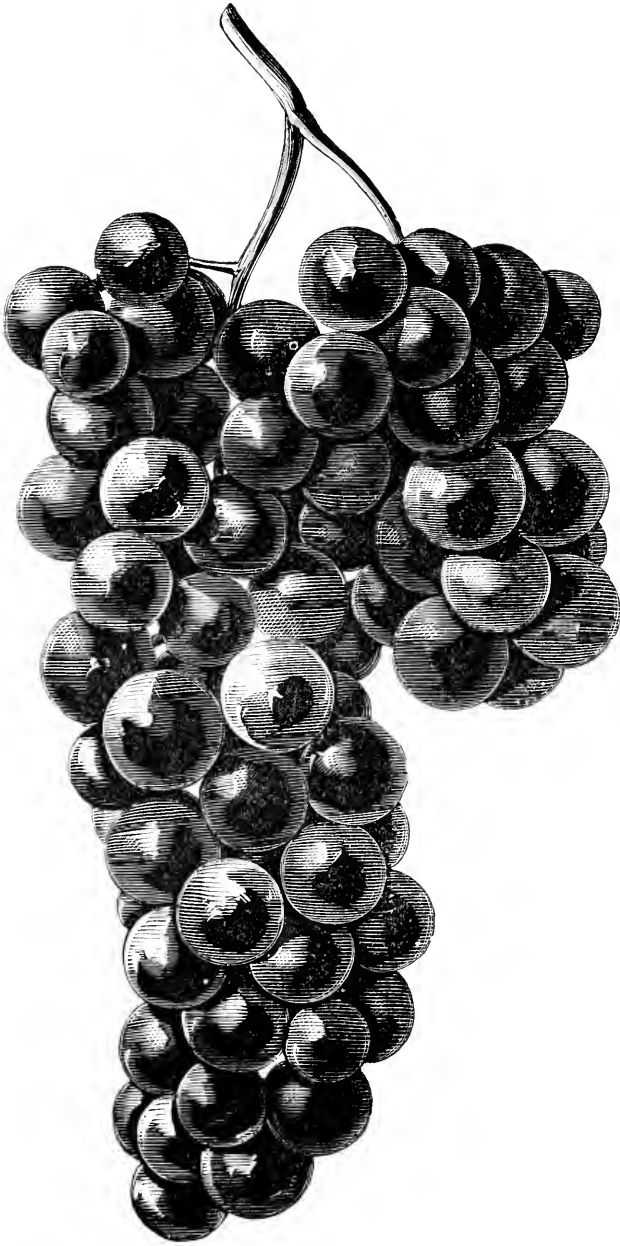


FIG. 190.—*Arnold's No. 2.*

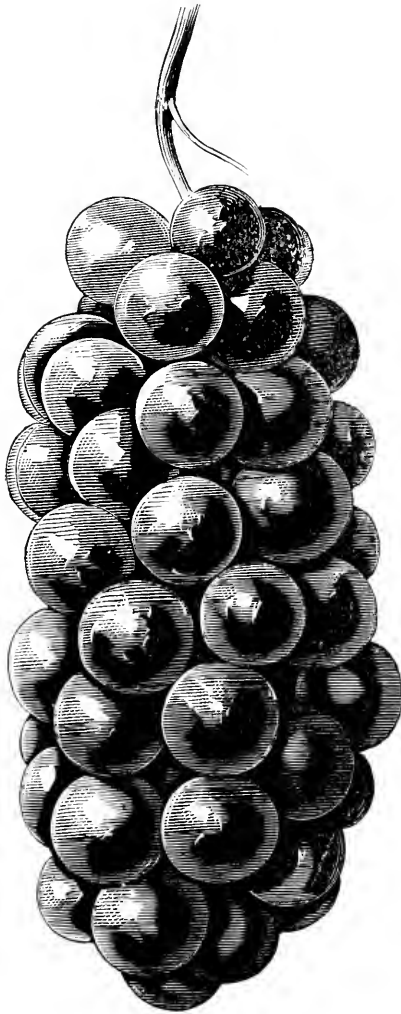


FIG. 191.—*Arnold's No. 16.*

These descriptions are made and offered for record more as an indication of what is being done by Mr. Arnold, than as showing the actual character of the grapes, which as yet may be regarded as only partially developed."



ALL young vines planted this past season will be more likely to be healthy and good in spring if they are protected by some covering this winter. If there is good drainage, as there should be, simply covering with earth is all that is requisite.

A GOOD TOMATO—CEDAR HILL EARLY.

SOME seven years since we received plants of a tomato from John Sill, Esq., of Cedar Hill, Albany Co., N. Y., with a statement that among a large number of

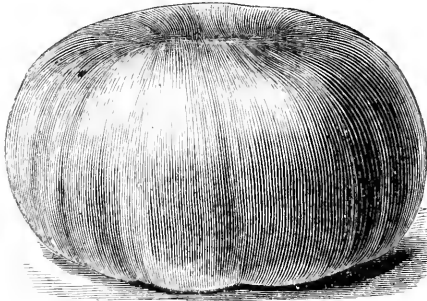


FIG. 192.—*Cedar Hill Early.*

varieties cultivated by him, this was the earliest and best. The plants were placed separate from all others in our garden, and no more than ordinary pains taken in their cultivation. The fruit ripened the latter part of July, in advance of two or three other varieties, and was superior to them in every respect. We carefully saved the seed, and have since cultivated the variety side by side with each season's novelty. Thus far no tomato has equaled it in earliness, freedom from indentations, productiveness, solidity, or flavor. Many kinds produce a full crop which ripens up at once and is gone, and the vine, exhausted by its efforts, ceases growth and further production of fruit during the season; while the kind under consideration will continue in fruit until cut down by Octo-

ber frosts. Our neighbors all strive to be ahead of us with their early vegetables, and sometimes succeed in doing so with peas and corn, but for the past four years we have been able to send them baskets of ripe tomatoes before their own were scarcely tinged with red. The fruit is of a medium size, very uniform, has few seeds, and, as far as our observation goes, is distinct in appearance from any other variety. Mr. Sill informs us that he has grown the variety extensively for the Albany market, and has found it more profitable than any other.

In our notice of this tomato we have no private interests to serve, but simply desire to call the attention of our readers to a tomato that an experience of seven years

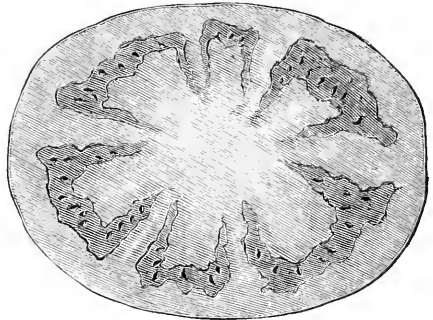


FIG. 193.

in its cultivation justifies us in saying has with us surpassed all the much lauded varieties of former years. Our illustrations are made but one quarter the actual size of the fruit.

FRUIT in bins or barrels should be occasionally looked over, and all specked or decayed specimens removed. Do not rub or wipe the fruit unless it is moist from an

associate decayed specimen; if all the fruit is moist, give air freely and assist to dry the place of deposit or it will soon all decay.

PROPAGATING PLANTS BY BUDDING.

(CONTINUED FROM NOVEMBER NUMBER)

BY A. S. FULLER.

THE particular manner in which buds are taken from the branch or inserted in the stock will make but little difference in the final result, provided the operation is carefully performed and at the proper time.

One operator will insist that the best way to make the horizontal incision in the stock is by giving the edge of the knife a sloping inclination downward, as shown in fig. 194. This form has its advantages

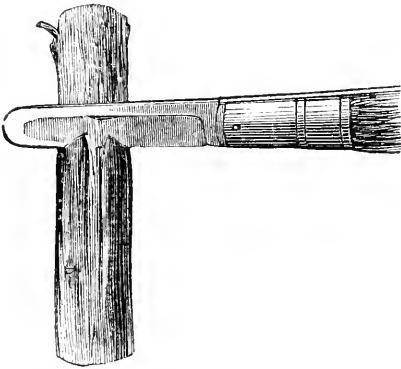


FIG. 194.

as well as its disadvantages. The point of the bark to which the bud is attached is more readily inserted under the bark of the stock than when the incision is made at right angles, but it also permits the water which falls upon the stock to enter the wound, often to the great injury of the inserted bud. This method is given in "Warder's American Pomology," and is there called Mr. Jackson's method.

The sloping incision would naturally suggest itself to any one who wished to perform the operation of budding very rapidly, because if the stock was in a proper condition, the bud could be thrust

home without resorting to the knife for the purpose of lifting the bark; although it must be admitted that, as a general rule, to lift the bark with the knife is far better than to do it with the bud. The bark and wood to which the bud is attached are not usually firm enough to resist, without injury, the pressure required to lift the bark of the stock.

The time for budding most kinds of hardy plants is usually during their growth in summer, varying the time to suit the different species, varieties, localities, and soils.

The experienced propagator who has become acquainted with the habits of the various species usually delays the operation until the stock has passed the time of its most rapid growth, for he has learned that if the bud is inserted too early in the season the stock will overgrow and smother it. Again, buds which are inserted too early will often push into growth, and not having sufficient time to mature their wood before winter, consequently perish.

Pinching off the end of the new shoot when a few inches long will often hasten its maturity, but buds which make no growth in fall are the safest. Removing the ligature with which the bud is tied, as soon as a union has been formed between bud and stock, will usually prevent a late growth.

Although summer is the best time for budding most kinds of plants, still the operation may often be performed successfully in the spring when vegetation is just starting into growth or when the sap has commenced to flow freely. The branches from which the buds are to be taken are usually cut from the parent plant early in winter and put away in damp moss, earth,

or some similar material, where the buds will remain dormant, yet alive and uninjured, until wanted for use. Budding in the spring is performed precisely as in the summer, except that there should be no attempt at removing the wood. Buds may be removed from one tree and inserted into another in the spring, if both stock and cion are in the same condition, but the operation is not generally as successful as summer budding.

With trees and shrubs which have a very thick bark, such as the hickory, chestnut, and mulberry, the annular or ring budding will be found a very convenient and safe method of propagation. It differs from the other methods in several particulars, but the main one is that the bud is not inserted under the bark of the stock, but is fitted to it. A ring of bark passing nearly or quite around the stem upon which there is a bud, is taken from the branch, and a similar ring is cut from the stock, and the bud and bark are fitted into this and then carefully tied in its place. The branch from which the bud is taken, and the stock to which it is affixed, should be of nearly the same size, although a piece of bark may be taken off from the bud, or the same added to it, for the purpose of making a close joint. Fig. 195 shows a stock and the ring of bark, with bud ready to clasp around it.

Ring budding is a valuable method where it is desirable to propagate many kinds of trees which require great care and considerable skill to insure success with the ordinary forms of summer budding. Like other methods of propagating

plants, budding may be performed in various ways. The exact form or size of the bud or stock is not so very essential, the main thing to be observed is their condition at the time the operation is performed. It should be borne in mind that new plant-cells must be formed before a permanent union can take place, consequently both

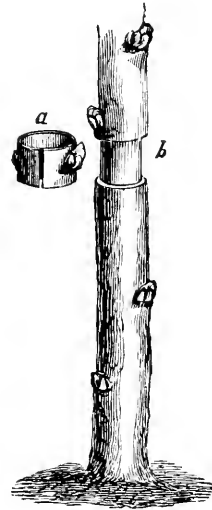


FIG. 195.

bud and stock should be in a condition to produce them soon after the junction is artificially made. As the delicate tissues of growing wood or bark are very sensitive to exposure, it is apparent that in performing the operation of budding in any of its forms, it should be done as rapidly as possible, compatible with completeness of execution.

ROOT PRUNING TREES.—If the ground is not frozen deeply, this month will do as well as November for root pruning pears or any tree of which it is desirable to check the coming season's growth. Not only should the side roots be cut, but you

should dig down and cut off the lower or top roots. Some writers claim this as a preventive of blight; we think it requires further experiments to prove it of any real value in that cause.

A WORD ON DAHLIAS.

BY E. FERRAND, DETROIT, MICH.

A FRIEND was expressing his surprise, a few days ago, that a choice collection of dahlias which he imported from Europe in the spring of 1866 and that had bloomed splendidly that year, have many of them this year failed to grow, and the rest prove to be nearly all alike and a common red variety. He said the white and yellow ones had degenerated, and all were uniformly the above-mentioned red.

I gave that gentleman the following explanation, which I submit to the readers of the HORTICULTURIST. In order to propagate the new varieties of dahlias, and make hundreds of plants where only a few would be propagated by the usual methods of separating the tubers, or making cuttings from *forwarded* growths in early spring, the European raisers of dahlias graft them on roots in winter, and to that effect use

roots of the strongest growing varieties. To make those grafts, only one bud is sufficient, so that when the owner of a good variety desires it to remain scarce, for pecuniary reasons or other, he uses cions with only one bud at the top; those plants grow and bloom as in the ordinary way, but in the fall everything is gone of the new variety, and even the tubers, except those (tubers) the upper part of which has been used for stocks, and which may have yet some dormant buds; the same when planted afterward by the uninitiated produce the flower of the stock and not that of the variety grafted on it.

When instead of a cion with a single bud, one with a second bud at the base is used, inserted into the stock, the lower bud grows into roots which naturally reproduce flowers identical to the variety of the cion,



THE FIRST WORK ON AMERICAN GRAPE CULTURE.

BY A. S. F.

THE remarks of Liber in the November number of the HORTICULTURIST are quite interesting as well as instructive. The history of American Horticulture will evidently be written at some future time, and every fact that can be recorded now will aid in making that history more complete.

Having devoted considerable time in years past in endeavoring to compile a bibliotheca of American Horticulture, I was exceedingly gratified to learn that a copy of S. W. Johnson's work on grape culture was in existence. Is it not really surprising that other writers cotemporary with Johnson should not have even mentioned him or his book?—Adlum, Dufour, Prince, Loubat, Fisher; in fact, no writer on grape culture, except Plin, has referred to him.

One would have supposed that Johnson's book would have been mentioned in the

Transactions of the Pennsylvania Agricultural Society, which was in a flourishing condition in 1803, the year in which Johnson's book purports to have been written. But from a careful examination of the reports from 1785 to 1811, I can find no reference to such a man, neither do I find the book named in the catalogue of the library. This circumstance appears more strange, inasmuch as some of the most active members of this Society lived in New Jersey, and several at Burlington.

As Liber refers to McMahon's work as the oldest American book on gardening, it may not be uninteresting to a few at least to learn that this work is not an original one with McMahon, but is an old English work reprinted in this country with very slight alterations, and without credit to the real author.

It was written by John Abercrombie, of England, and first published in 1766 under the title of "Every Man His Own Gardener," by Thomas Mawe. Abercrombie placed Mawe's name to the work, supposing it would have a larger sale, as Mawe was at that time gardener to the Duke of Leeds. After it became generally known who the real author was, Abercrombie placed his name on the title-page in connection with Mawe's.

Abercrombie died in 1806, the same year in which his book appeared in this country under the title of "McMahon's American Gardener." McMahon made some slight alterations in the work, such as omitting a few lines here and there, and adding a few of his own, also changing in some instances the arrangement of the paragraphs.

Who knows but some future historian of American Horticulture will point out similar plagiarisms in works of our time!

THE GRAPE SHOW IN NEW YORK.

THE spacious office of the *American Agriculturist* was rendered doubly attractive in the closing days of October by the multitude of beautiful grapes exhibited there by some well-known keepers of vineyards throughout the country. The broad tables were loaded with luscious clusters, and perfect bunches, still clinging to the vines, were suspended from the walls and windows, making altogether a pleasant picture of gathered harvest—a picture full of joy to the thousands of people who looked upon it; a picture full of cheer, as evincing recent advancement and large promise for the future.

The most extensive and attractive display was made by Gen. J. S. Negley, who showed fifty-five different varieties from the well-known vineyards of Rev. J. Knox, of Pittsburg, Penn. These attracted much attention and commendation. Subjoined is a list of these, and also the chief entries made by other exhibitors.

J. Knox, Pittsburg, Pa., by Gen. J. S. Negley: Concord, Hartford, Creveling, Ives, Elsingburg, Herbemont, Martha, Anna, Taylor, Maxatawney, Clinton, Rogers' Hybrid—Nos. 1, 2, 3, 4, 5, 9, 13, 14, 15, 19, 28, 30, 32, 33, 34, 36, 39, 41, 43, 44, Salem, Rachel, Cuyahoga, Miner's Seedling, Northern Muscadine, Mary Ann, North Carolina Seedling, Oporto, Perkins, Cigar Box, Diana, To Kalon, Union Village, Norton's Virginia, Logan Adirondac. Louisa,

York Madeira, Isabella, Mottled, Catawba, Iona, Israella, Alvey, Rebecca, Delaware.

C. W. Grant, Iona, near Peekskill, N. Y., 20 plates Iona, 5 plates Israella. John W. Bailey & Co., Plattsburg, N. Y., Adirondac. James A. Requa, Amenia, N. Y., Salem. C. M. Beach, W. Hartford, Ct., Iona, Israella. Chas. Siedhof, North Hoboken, Weehawken, Union Village. Jersey Black, Alvey. L. Phillips & Son, Berlin Heights, O., Iona. E. Van Kuren, for Pleasant Valley Wine Company, Hammondsport, N. Y., Catawba, Diana, Delaware. B. F. Hopkins, Brownhelm, O., Iona. B. Summers, Newburg, N. Y., Creveling, Rebecca, Iona, Israella, Cuyahoga, Clinton. D. S. Wagener, Crooked Lake, N. Y., Diana, Catawba, Iona. H. Cornell, Newburg, N. Y., Iona. F. & J. S. Lowry, Berlin Heights, O., 20 plates Iona.

Besides the fruit, a fine show of vines was made by Messrs. Hammore, Bailey, Basset, Deliot, Lindsay, Mason, Tait, and Whitlock.

In this exhibition no prizes were offered. The Imperial Horticultural Society of France have adopted the plan of leaving the matter of awards of praise entirely with the public, and in England it is proposed to do likewise. This plan might work well here. A good thing is sure to make its way without help from "Committees," and a poor affair will fail, no matter how many prizes it may win. C.

IBERIS, OR CANDYTUFT.

THE gardening world must look with no little interest at the old-fashioned, neglected things that are, from time to time, resuscitated from the oblivion into which caprice or indifference has cast them. Tastes and prejudices in floral matters will, perhaps, always vary and fluctuate as fashions do; and if I may judge by the inquiries made after many of our old-fashioned plants, as noticed in the *Floral World* from time to time, a reaction is decidedly taking place in favor of the old plants of our gardens. May I be allowed to make a few remarks on some plants, about which as yet you have said nothing, and on some of which you have not said enough? The Iberis is among the latter. These plants, of which *I. sempervirens* may be taken as a type, are in reality evergreen shrubs. I shall only notice two or three kinds, merely to show not only their beauty, but their utility, even in the most refined parterres.

To commence with *I. sempervirens*. This is, perhaps, one of the freest flowering plants on earth—a very mountain of snow; a thousand heads of bloom, of the most intense whiteness, would be but a low computation on a well-managed specimen; but it must be managed—which is very simply done—so as to make it highly ornamental in spring, and a beautiful object in mid-winter. The plant, if left to itself, soon assumes a straggling, untidy kind of habit; to counteract which, and to render the plant worthy of any place, an annual pruning is necessary. The moment the plant begins to look seedy, take the shears and clip it closely over, and reduce it to what size you choose, which may vary from one foot to two, according to position and the effect desired. No plant bears clipping better; it soon forms a beautiful compact evergreen bush, and in the latter character is as telling in mid-winter as its profuse flowering is in spring. A score or so of this plant, system-

atically planted, would lighten up the finest garden at a very early season, if allowed to form a permanent part of the design. A nobleman's gardener lately told me it was a beautiful plant, but of no use, as he had always to lift it before it had done blooming, to make room for the geraniums, etc. What a folly!

The next variety we shall notice is *Iberis corifolia*, or coris-leaved. This plant has lately become deservedly popular, though it is not new, having been introduced about 140 years ago; it is, perhaps, the finest of the tribe, decidedly shrubby, and should be well stopped in when young, as the plant would otherwise become straggling. Individually it is most beautiful, either as a pot plant for exhibition, or a first-class plant for the border, but does not bloom with the freedom of *I. sempervirens*, and therefore less adapted for display as a grouping plant.

The last plant of the tribe I shall notice is *I. garreiana*; and looking at the plant in all particulars, we may say the last shall be first, for lighting up the darkness and clothing the nakedness of our flower-gardens in spring, flowering, as it does, even in the north of England, in early April, and therefore may be thrust aside in May, so as to leave a clear stage for the scarlet and yellow. It is the dwarfest-growing of the tribe, barely reaching eight inches high; when in flower, forming a low evergreen mass, at all times sheeted over in spring with the purest of white. If liberally planted, it has a very cheerful effect in spring; or may be used advantageously as an edging to the larger beds, giving a ring of snow in April and May, and ditto of green the rest of the year. Unlike *sempervirens* or *corifolia*, this may be propagated by division. Growing close to the ground, every branch becomes rooted, and a medium-sized plant will break up into twenty or more.—TROTTS, *Williams, in Floral World.*

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

THE HORTICULTURIST.—We are daily in receipt of letters commendatory of our journal; and although we do not claim to have "all the talent," as some do, yet we consider that we may justly feel a pride when the pages of the *HORTICULTURIST* are put in comparison with any cotemporary journal. For the coming year we can say to our friends and the public, that we have made arrangements to make the *HORTICULTURIST* surpass in valuable matter—in record of new fruits and flowers, in improved modes of cultivation, in landscape adornments, rural architecture, and other items connected with country or suburban life—any and all other journals. We therefore invite all our old friends to go with us another year, and at the same time present our claims to others for their consideration.

AMERICAN POMOLOGICAL SOCIETY.—The Secretary of the above Society has issued a circular inviting contributions of knowledge upon all subjects relating to fruits and their culture, for the purpose of collation and publication in the forthcoming report. Samples of fruits are also invited to be sent him. All express companies have volunteered to transmit for the purpose free of charge.

Address F. R. ELLIOTT, Cleveland, O.

GRAPE CUTTINGS made at this season, tied in small bundles and then placed in the ground with the tops downward, covering with, say, four to six inches of soil, and again covering this, as soon as

freezing cold weather comes on, with coarse barn-yard manure to keep out frost, finishing all with boards to keep out the wet, is an old and successful practice of preparing for almost certain growth of the cuttings next season. We practiced it many years since, and got our first knowledge of it from an old German. In spring, the ground for planting should be thoroughly dug early in the season, and again just before planting. The covering of mulch or litter should be taken off as soon as all chance of hard frost is past, and little by little the butts of the cuttings should be drawn toward the surface, yet always covered, the object being to obtain the aid of warmth from the sun in order to callus the ends, just as underground heat would do in a frame or propagating house. When the cuttings are all well callused, plant in the usual manner, pressing the earth hard and firm at the base or lower end, and finish off by covering the surface even over the upper buds with some kind of mulch.

We have grown cuttings very successfully in this way, and without putting any mulch until some time in June: in fact, our practice now is altogether in this latter way, because we have in June more time, and because we do not think the mulch of any benefit until the sun becomes strong and the atmosphere more generally dry.

WATCH carefully all drains, whether surface or underground; one hour clogged sometimes does more injury than a day can remedy.

MANURE spread upon lawns or grass plots on approach of cold weather, with a view to enriching the soil, is one of the unsightly practices which we should like to see discontinued. Even in winter a good clean grass lawn is a thing of beauty, not to be destroyed or hidden and made unsightly by covering it with a coat of manure.

Its advocates may claim that it protects the roots of the grass, and so it does in a measure, but not nearly as much as an inch coat of fine leaf loam or well-rotted compost, which after being spread lightly, raked and rolled, would in a week be out of sight. But another cause for unsightliness is our motive for opposing this manurial course. It is, that all such raw manures have mingled in them more or less foul seeds of weeds, coarse grasses, etc., which vegetate in spring, and ere the owner is aware, have taken the place of the finer grasses belonging to the lawn, and destroyed its beauty and compactness. If the lawn wants enriching other than what may be given by sowings of bone meal, salt, and plaster, or the benefit of the inch coating of fine mold, then sprinkle the lawn with liquid manure weekly.

VASES standing upon a lawn, or at the point of a road in which flowers have grown and bloomed the past summer, may be made quite ornamental by planting in them some low shrub evergreens, such as the trailing junipers and American yews, mingling with them branches of the mountain ash or shrubs bearing bright berries. The evergreens may be again removed in spring, and if planted in shade will recover the strain put upon them by this exposure.

VALUE OF WATER AS AN AMELIORATING AGENT.—In a note under the above heading in the November number of the HORTICULTURIST, I am reported as having expressed an opinion on this subject, to the effect that my observations on the shores of Lake Erie did not enable me to

see "that there was any advantage, in this respect." The *respect* alluded to was that of the diseases of the grape, its general freedom from rot and mildew.

The influence of bodies of water on climate is tolerably well known, and can not be considered as knowledge exclusively possessed by residents on lake shores; but there was sufficient evidence on the shores of Lake Erie to warrant me in concluding that this influence did not extend to immunity from the effects of rot in the berry of the grape, or mildew on its foliage.

I would here take the occasion to state my belief, that the Catawba grape is just as much, and no more, liable to rot and mildew everywhere as it was twenty years ago.

WILLIAM SAUNDERS.

WASHINGTON, D. C.

TABLE DECORATIONS.—The approach of the holidays suggests many a table loaded with edibles to please the palate, and in aid of those who have to decorate them to please the eye, we suggest the use of low grown bushy plants of *Coleus Verschaffeltii* as a plant that presents a fine appearance by artificial light. Ferns of all sorts are all good, and intermingling with *Coleus V.*, give a unique and satisfactory result with but little labor.

THE apple-tree bark louse is becoming the scourge of Western orchards. Is there no remedy? Many nurseries are sending them out with the young tree—that should be a criminal offense. T. D. P.

[In the month of May wash the trees all on body and limbs with a wash of strong lye and flour of sulphur, and report the *name* of the nurseryman who sends out trees covered with bark lice. Most nurserymen are careful to destroy them as soon as they appear, because no tree can make a healthy and satisfactory growth when covered with lice; and as a rule, no lice are found on vigorous growing trees. The wash applied now will do no harm; but it will require to be repeated in spring.]

THE FINCHLEY VINE.—This vine, the history of which is a study, and the progress of which speaks most emphatically in behalf of the extension system where circumstances favor its adoption, is so remarkable an instance of success in grape-growing, that, although it has been frequently noticed by the horticultural press, it deserves a special record in our pages. We find so circumstantial an account of it in the new edition of Mr. Thomson's excellent treatise on the Vine, that we quote his description all the more readily, since it would appear that Mr. Thomson was himself in some degree instrumental in inducing Mr. Kay to plant it. The account given is as follows:

"In the year 1838 I became acquainted with the late Mr. Kay, of Finchley, near London, and up to the date of his melancholy death I continued to discuss with him, verbally and by letter, every question that bore on the culture of the vine. He always maintained the great importance of what he called 'carrying a large amount of foliage on the vine' as the only sure way of keeping up its stamina, and acted on this himself. I used to reply, that practically it was not expedient to allow more than two leaves to grow beyond the bunch. This, with the sub-laterals stopped at one leaf, I considered sufficient, and pointed to the example of the Oak Hill vines, near Barnet, then and for twenty years so ably managed by Mr. Davis, who produced splendid crops of grapes, ripe in March and April, for many years in succession from the same vines, and which he pruned to one eye, and left only one leaf beyond the bunch. I thought the system I adopted, of leaving two leaves, sufficient; Mr. Kay thought otherwise, and left from four to five.

"Carrying his ideas still farther, he said he believed that better would be the plan of planting only one vine in a large house. This I urged him to do, and in 1855 he built a span-roofed house 89 feet long, 16 feet wide, and 9 feet 6 inches in height to

the apex. In this house he planted a single Black Hamburgh vine in March, 1856, the roots all outside, and the border prepared 89 feet in length by 15 broad. Beyond this border are the borders of other houses, giving it scope for its roots little if at all under a quarter of an acre. The vine is trained with a leading stem from the center of the north side wall up to the apex, and down to the south wall, for the house runs east and west. From this main stem five laterals are trained toward each end of the house—one at the apex, the others equidistant between the apex and the walls. The last time I saw it in company with Mr. Kay was in 1862. I saw it again in 1864, when it had a full crop of excellent grapes, weighing, as I have since learned, 476 lbs. In 1865 it bore 400 lbs. of grapes; in 1866, three hundred bunches, some of them weighing 5 lbs. It took seven years to furnish the house with bearing wood. The girth of the stem where it enters the house is at this date, May, 1867, 14 inches. Mr. Osborne, an old pupil of Mr. Kay's, has ably carried out his preceptor's mode of managing this noble vine; and I trust it may long remain in robust health, a fitting monument to one who had few equals as an enthusiastic cultivator of the vine, and one who stands alone as having built a large house, and planted it with a single vine, to test a theory which some writers of the present day are starting as a new one."—*Florist and Pomologist.*

THE fruit exhibitions of the past autumn have been attended by the usual crowds of people anxious and curious to see the monster apples, pears, etc., and at the same time an evident disposition to inquire as to the names of varieties, and the soils, manner of cultivation, etc. As a rule, the numbers of varieties shown have been less than usual, and only in apples and grapes has the appearance of the fruit been up to former years.

A very large number of seedlings have, as usual, appeared, but among them very

few so good as to even claim from their exhibitor a desire to plant freely of them. A really desirable *new* pear we have not seen or heard of; and of grapes, out of dozens shown, but four or five give any promise of value. Two or three good new peaches, and a half dozen apples of good character in their own locality make up the record. A less number of blunders in nomenclature, however, than usual, give us evidence that growers as well as dealers are becoming more and more acquainted with the appearance of fruits, as well as learning that correctness in naming is a necessary requisite if knowledge is to be conveyed as to cultivation, or success desired in the business of tree dealing.

We have gathered samples and made drawings of all the new sorts of which we have heard, and shall from time to time, as fast as possible, present them in our pages, intending, as heretofore, to make the HORTICULTURIST the leading journal in imparting such knowledge.

BRIGHT BANK, ULSTER CO., N. Y., Oct. 5, 1867.

EDITORS OF HORTICULTURIST: Permit me to send you a few notes on fruit in this vicinity.

Grapes—Delaware, Rebecca, and To Kalen badly milked; vines all full, but none have fully ripened to this date except Hartford Prolific and Concord—both very fine—but these ripened full two weeks later than usual.

Plums—For the first time since I lived in the country, were a failure.

Pears—Quantity fair, but not large; almost every pear had a worm-hole, which I think caused premature ripening. Can you inform me the cause and cure of this? My trees show no evidence of worms till they are discovered in the fruit.

Apples—None, except on a few common trees.

Peaches—These gave great promise of a full crop, but when the leaves pushed out they began to curl up, and a large portion of the young fruit fell, and the trees looked

blighted. From this they recovered and have made a vigorous growth, and yielded a small quantity of fruit of best quality.

Please explain the cause of the above. I could discover no worm at the root nor insect in the leaf.

These observations are true of all the peaches in our vicinity. J. B. S.

[The worm in the pear is doubtless the codling moth. Wrapping the bodies of the trees early in the season with wisps or bands of hay is claimed to be a preventive; gathering all the fruit carefully and removing it is another. We have had a similar cause and effect among our own pears this season. The curl in the leaf of your peach-trees is one of the troubles which nearly all peach growers have to contend with. It is now pretty generally regarded as sporadic, and caused by cold, chilly, damp weather. There seems to be no remedy except to have the trees in good soil and healthy, in order that they may soon throw off the diseased foliage and replace with new. Unthrifty trees are sometimes entirely destroyed by it. In our observation this past season, the class of yellow-fleshed peaches suffered the least, while the white-fleshed, like Hales' Early, Early York, etc., suffered most. Late ripening sorts of the white-fleshed also did better than the early varieties.]

AUTUMN BEARING RASPBERRIES. — On the 27th of October I visited the grounds of Oliver Alger, Esq., near Cleveland, and examined a patch of the Kirtland raspberries, all with green healthy foliage and full of ripe and green fruit. One cluster numbered 97 berries; another, 84; another, 69, and so on, all through the patch. Ground, sandy; season, dry, until about the 1st of October, when a good shower wet the ground. Warm, clear weather followed, and therefore the cause. It, however, suggests a question as to whether the variety can be made an autumn bearing sort by cutting away the canes, as is done with nearly all of the autumn varieties. E.

POULTRY.—The Dorking has for years had our preference as a bird for all purposes, of laying, breeding, etc.; and while all published works agree with us, yet often we find such varieties as the Brahma, Black Spanish, etc., much praised, and possibly justly so; but all who experiment carefully, and weigh well the subject, we believe, will join us in saying that for one breed alone the pure Dorking has the most good qualities. A cross of a Dorking cock with Brahma hens gives perhaps the largest and best chickens for early eating; but if the breeds are not kept pure—in other words, if the first cross be bred from, the succession will be unworthy the attention of any breeder, and therefore we find it best to confine ourselves to the Dorking alone.

THE AMERICAN POULTRY SOCIETY will hold its first exhibition in this city on December 3d, 4th, 5th, and 6th. All fanciers of fine poultry would do well to attend, as the show, from the inducements afforded to exhibitors, will be a fine one. See advertisement in this number.

NEW BOOKS.

TODD'S YOUNG FARMER'S MANUAL. Vol. 2. How to Make Farming Pay. F. W. Woodward, publisher, 37 Park Row, New York. \$2 50.

In his former work, Vol. 1, "The Farm and the Workshop," the author announces his intention to publish a second volume. From several causes, the publication has been deferred until the present time. This interim has enabled the author to thoroughly revise his manuscript, and add information on the various subjects of which he treats, suggested by his further experience.

The first volume of this work (a new edition of which is now published, uniform with Vol. 2) has been a very successful book, is found upon the shelves of almost every reading farmer, and by many is considered their most valuable book of reference. Vol. 2 gives plain and practical

details of farm management, a chapter on soils and their cultivation, and much other matter of a practical character.

WHEELER'S HOMES FOR THE PEOPLE—in Suburb and Country. The Villa, Mansion, and Cottage, adapted to American climates and wants, with examples showing how to alter and remodel old buildings, in a series of one hundred original designs. By Gervase Wheeler, Architect. New and revised edition. Sixth thousand. Price, \$3. Published by Geo. E. Woodward, 191 Broadway, New York.

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WOODWARD'S ARCHITECTURE AND RURAL ART. No. 2, FOR 1868. Original designs and plans for Country and Suburban Houses. By Geo. E. Woodward, Architect, No. 191 Broadway, New York. Tinted paper, beveled boards. Price, \$1 50.

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See our book list.

