

---

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google<sup>TM</sup> books

<https://books.google.com>



THE  
ORCHARD HOUSE;

41  
—  
1-8

OR, THE  
CULTIVATION OF FRUIT TREES IN POTS  
UNDER GLASS.

BY THOMAS RIVERS,  
OF THE NURSERIES, SAWBRIDGEWORTH, HERTS.

~~~~~  
THE PROFITS OF THIS LITTLE PUBLICATION ARE TO BE APPLIED TOWARDS THE REPAIR  
OF THE PARISH CHURCH OF SAWBRIDGEWORTH.  
~~~~~

LONDON:  
SOLD BY  
LONGMAN, BROWN, GREEN, AND LONGMANS,  
PATERNOSTER-ROW.

ALSO SUPPLIED POSTAGE FREE BY THE CHURCHWARDENS, SAWBRIDGEWORTH, HERTS,  
ON APPLICATION TO THEM ENCLOSING THIRTY POSTAGE STAMPS.

1851.



LONDON:  
SPOTTISWOODS and SHAW,  
New-street-Square.

## A FEW WORDS PREFATORY AND APOLOGETIC.

---

It has been, and is, too often the custom of writers on horticulture and agriculture to write first and practise afterwards,—in other words, to promulgate a pretty theory, and then reduce it to practice; I have not been “to this manner given,” for in this, as well as in other instances, I have reduced my practice to writing. The method of culture given in the following pages has been to me a pleasant relaxation from the cares of an extensive business, and I feel convinced that it may be made equally agreeable to a numerous class of busy men, who make their gardens a source of untiring quiet enjoyment.

It is very probable that some who may be tempted to read the following pages, will feel surprised that I have made a separate publication on so trifling a subject, when so many horticultural periodicals are open to those who cannot write a large book. They may say, “Why not occupy a few columns in the ‘Gardener’s Chronicle,’ or a few pages in the ‘Cottage Gardener’?” My motive must be my apology.

For many years our parish church, from causes not proper to be mentioned here, was in a fearfully dilapidated state; a partial repair has rescued it from serious consequences, still much more is required. A hint from one warmly and actively interested in its restoration has induced me to dedicate the profits resulting from this little publication towards such a sacred, and, I trust, praiseworthy object. I hope not to be misunderstood. It is not ostentation that has tempted me to this: no love of fame, but purely the wish to disseminate a taste for refined horticultural pursuits, and a hope that I, an humble agent, may be, through this, enabled to contribute a trifle towards the restoration of the Church of my forefathers, and, I trust, of my children’s children.



# THE ORCHARD HOUSE;

OR,

## THE CULTURE OF FRUIT TREES IN POTS UNDER GLASS.

---

WE have now cheap glass, cheap timber, and cheap bricks; it is therefore time to endeavour to neutralise the uncertainty of our seasons by glass; for glass, without the least addition of artificial heat, will give us the climate, in average seasons, of the south-west of France; and, what is of vast consequence, without the least hazard of injury from spring frosts, from which all temperate climates, both in Europe and America, suffer occasionally so severely. Let us see how nearly glass structures, without fire heat, will approximate to the climate in France, taking one of the most favoured districts, viz. Angers.

The Chasselas de Fontainebleau, our Royal Muscadine, ripens there in the open air in average seasons on the 25th of August: this is as nearly as possible the time it ripens here under glass, without artificial heat. The Black Hambro' ripens at Angers on the 25th of September: in one of my vineries in a warm situation, without fire heat, many bunches were fully ripe on the 15th. We can thus now, at little expense, in our own dear native land, create a warm climate, and reap its benefits in choice fruits, without personally suffering by a residence in its oppressive heat.

I believe that I have more than once described my "glass-roofed sheds," for I have not thought it proper to give them too high-sounding a name; still, as they must come into extensive use, a better name must be found, expressive of this peculiar structure, which is not a vinery, or pinery, or peach house—these all appertain to great and grand gardens—but, a place for many fruits: it may therefore, I think, without affectation, be called an Orchard House; a place requiring but little expense to erect, but little experience and attention to manage, and yet giving pleasing results to the suburban gardener, who has but a small garden,—which must be a *multum in parvo*,—to the amateur with plenty of gardening taste, and but a limited income; in short, to a numerous class, with minds full of refinement and capabilities of enjoyment of

horticultural pleasures, but with purses not so bountifully supplied, these orchard houses will be a most agreeable boon: let me therefore proceed to tell how to build one.

Their length may be from ten feet to one hundred or more, according to means and space; but their breadth and height must be according to the following dimensions, unless any improved plan may be suggested, which is very probable; but then equal cheapness and equal efficacy must be adhered to.

Dimensions  
of orchard  
house.

Height of  
back.  
Height of  
front.

Dimensions  
of rafters.

Rafters not  
morticed.

I will suppose that an orchard house thirty feet long is required. A ground plan, thirty feet long and twelve feet wide, must be marked out, ten posts or studs of good yellow deal, four inches by three, and nine feet in length, or if larch poles sixteen inches in girth can be procured, they are quite equal in durability; these latter must be cut in two, and the flat sides placed outwards; these posts or studs, whether larch or deal, must be fixed two feet in the ground firmly, and the ground ends must be charred two feet four inches from the bottom, which adds much to their durability: it will thus be seen that this, the back line of studs, will stand seven feet in height clear from the surface. For the front wall ten studs four feet long must be inserted in the ground one and a half feet, so that they stand two feet six inches clear from the surface\*; on these studs, both at front and back, must be nailed a plate four inches by two and a half, on which the rafters are to rest: the studs are thus far arranged in two lines. Now then for the rafters: these must be fourteen feet long, and four inches by two in thickness, placed with the narrow surface upwards, to spare the trouble of "ploughing," to make the rebate for the glass, which is great labour and waste of material. On the upper side of each rafter, exactly in the centre, must be nailed a slip of half-inch board, three quarters of an inch wide; this will leave half an inch and one-eighth on each side for the glass to rest on,—not too much when the width of the glass is given. We have thus the rafters so far prepared for glazing, but not yet fitted on the plates at top and bottom: they must never be morticed, but let in at top by cutting out a piece thus: and sloped off at bottom thus:

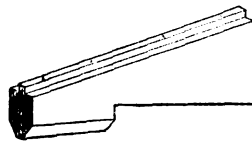


Fig. 2. Bottom end of Rafter.

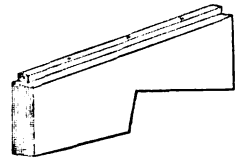


Fig. 1. Top end of Rafter.

Description  
of glass to be  
used, and size  
of squares.

To receive the glass at the top of the rafters, a piece of three-quarter inch deal board, six inches wide, must be nailed along the top to the end of each rafter, so as to be even with the surface, and in this should be a groove to receive the upper end of each piece of glass; at the bottom, a piece of board, one inch thick and six inches wide, must be let in for the glass to rest on, and to carry off the water. We have thus so far a sloping roof, seven feet three inches (with the plate) high at back, and two feet nine inches high in front; but the glass is not yet in. The most economical glass is 16-oz. British sheet, which can be bought at  $2\frac{1}{2}d.$  or  $3d.$  per foot, and the best size, twenty inches by twelve; putting the caps, as it prevents breakage by frost; placing it cross-wise, so that the rafters must be *about twenty inches asunder*. On and outside the

\* These respective heights of front and back are a matter of choice; my builder gives six inches more, in his estimate.

back studs, half-inch boards must be nailed, well seasoned, so that they do not shrink too much; these must be painted white. In the back wall, sliding shutters, two feet six inches by one foot, in grooves, must be fixed, for complete ventilation; two close to the roof, and two about eighteen inches from it, as in the annexed sketch:

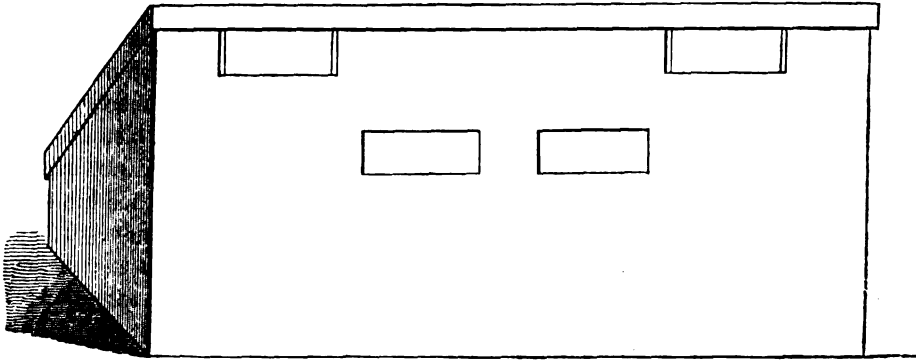


Fig. 3. Back of Orchard House.

The front must have also half-inch boards, nailed on outside the studs; one of them, the upper one, to be on hinges, so as to let down the whole length of the house: these, when all open in hot weather, ventilate thoroughly. To add to this, and it is all required in summer, the boards will shrink and let in air: a fierce sunlight is thus admitted by the large glass, and abundance of air, in which all fruit trees thrive to admiration. So much for the timber and glass; but when one sees that to walk along the centre of the building, which is about four feet nine inches in height, a person must be of very diminutive stature, the inquiry arises, how is head-room to be made? How simple is the answer: make a trench two feet six inches wide, and two feet deep, in the centre of the ground plan; this will leave a border on each side four feet nine inches wide. The bottom of this trench forms the foot path; its sides must be supported with boards, or with four inch brick work. Now, as every thing depends on these borders, — for there must be no benches and no shelves — care must be taken to make their surface loose and open: loose materials, such as coarse cinders, lime, rubbish from old walls, or bricks broken into pieces in size from a nut to a walnut, may be laid on them about four inches deep; they may then be forked over to about nine inches in depth, well mixing the above materials with the soil; you thus have two borders not too far from the glass, and on which your orchard will thrive admirably. It will appear odd to read about trees thriving on instead of in a border; but when I explain that this is to be an orchard in pots, it will not seem so contrary to our usual garden culture.

It was, I think, last year (1849) that, being very fond of figs, I attempted to grow them in pots in one of my vineries; but finding they required them so large as not to be compatible with business operations, I sought for some method by which I could overcome the difficulty. The pots I used, I ought to state, were not placed on benches, but on raised borders, such as I have above described; for I have adopted the sunken paths and raised borders for the last five years, to avoid the expense of the usual benches of wood. The roots made their way through the aperture at the bottom of



the pots, and the plants thus, even in comparatively small pots, attained enough of vigour to support a crop of fruit. After the crop was gathered, the pots were gently turned up on one side, and the roots cut with a knife, water was withheld, and the plants were soon at rest with well-ripened shoots. This spring they were top-dressed with manure, again placed on the border; but an idea occurred to me to give room for a freer emission of roots by enlarging the aperture at the bottom of the pot: this I at once put in practice with the most favourable results. I then reasoned, if figs in pots can be made to bear a crop of fruit, by thus giving them extra nourishment during the summer, why should not peaches, nectarines, apricots, vines, plums, cherries, and pears be managed in the same way? They can be; and I have now much pleasure in giving the simple method by which all these choice fruits can be grown on dwarf bushes with a certainty of a crop every season; and I hope to see the day, when hundreds and thousands of our small gardens will be furnished with orchard houses. It must be understood that I mean by this term, houses in which no fire heat is used; in them our climate is merely assisted by glass: forcing houses require more attention; but a forcing orchard house, built exactly as above, with a brick Arnott's stove in the centre of the back border, will answer admirably, and give strawberries in March, and grapes in May.

Forcing orchard houses alluded to.

I have a house thirty feet long, built as I have described, with a brick Arnott's stove in the centre of the back border, which is excavated for it to a level with the sunken path: everything thrives admirably. The borders are twelve inches deep, with lime rubbish mixed with a little manure: my forced strawberries, placed on the front border near the glass, rooted into it, and gave me abundance of excellent fruit. In like manner, peaches, grapes, figs, and apricots, may be forced with but little trouble,—in fact with much pleasure and gratification. But in building these forcing orchard houses the constant ventilation through the cracks in the boards must be avoided; they must be cased with asphalte felt, or, as bricks are cheap, the walls may be of brick, with the ventilating shutters in back and front. The forcing orchard house I have alluded to above, is built with studs of larch cut once down, and covered with half-inch boards; these being nailed on, were well tarred with Stockholm tar, and the felt (M'Neil's) then nailed on, and done over twice or thrice with boiling coal tar, in which lime that had been slaked a fortnight was mixed to the consistency of thick paint: this forms a shining, imperishable, mineral coat,—I know of nothing equal to it for felt, clay, or lime walls or fences; my clay walls on some old buildings have, by repeatedly using it, become coated with stone. I have mentioned that bricks may be used; but although I have many plant houses built with bricks, I have not employed them for building orchard houses, or even houses for forcing roses, &c. My preference for boards and felt for forcing houses may be owing to imagination; but I may as well state *why* I have and do prefer them;—it is because I have found them fiercely hot during the day, even in moderate sunshine, the evil effects of which are easily modified by abundant ventilation, and agreeably cool during the night, without that stifling atmosphere peculiar to houses with brick walls, only because bricks give out heat for many hours after sunset. Now in thus rapidly cooling down, I have found that they approximated to the descriptions given of the climate of the East, the birthplace of all our choice fruits; accordingly, my peaches, nectarines, grapes, and figs have grown and do grow with as little trouble as I can wish them, in

Forcing orchard house described.

Coal tar and lime for coating felt, walls, or boards.

Boards and felt preferred for forcing

houses with their walls of half-inch boards and felt. But I ought not to omit mentioning here an additional reason for my opinion that fierce sunlight through large pieces of glass and abundant ventilation, will give us the climate of continental Europe. I have an orchard house, ninety feet long, twelve feet wide, rafters four inches by two and fourteen feet long, the back wall of which is a fine beech hedge, twenty years old, eight feet high, one and a half thick, the front half-inch boards; the board next the glass fifteen inches wide, is on hinges, and is always open in warm weather: this house is glazed with 16-oz. sheet glass, twenty inches by twelve, placed crosswise, so that the rafters are twenty inches apart; the glass is foreign, of the cheapest description, and cost  $2\frac{1}{4}d.$  per foot. Under ordinary circumstances I should have much trouble from scorching, as it is very irregular, and many foci are formed; but the gentle percolation of the air through the hedge is so constant and so regular, that not a scorched leaf is to be found in this orchard house, in which are about 700 peaches, nectarines, apricots, and figs in pots, a few pears full of fruit, a few plums, the same—everything is in perfect health, the shoots of the peaches and nectarines in particular are beautifully ripened. Now what can tell more forcibly that scorching is the result of imperfect ventilation?

Orchard house with a beech hedge for a back wall.

No scorching, even with inferior sheet glass.

I may here mention that my idea of the approximation of this orchard house to the climate of the South of France is not imaginary, for some of my gardening friends from thence have said on entering it, "Ah, Monsieur, voilà notre climat!"

The climate of France imitated.

In potting trees for this description of culture, pots of one uniform size should be employed; and it is of importance to have them of a size that can be easily lifted. Those known in the London potteries as No. 8. are the most eligible—they measure eleven inches in diameter inside at top, and eleven inches deep also inside—for being portable, they may be made so ornamental for the dessert. What, for instance, can be more gratifying than some fine bushes of Moor Park or Peach Apricots, studded with their golden fruit, arranged on the side-board of the dining-room, or the same of peaches, nectarines, plums, cherries, and grapes? All this can be done, and only by the simple structures I have attempted to describe, and the equally simple method I am about to give.

Size of pots.

Orchard house trees ornamental for the dessert.

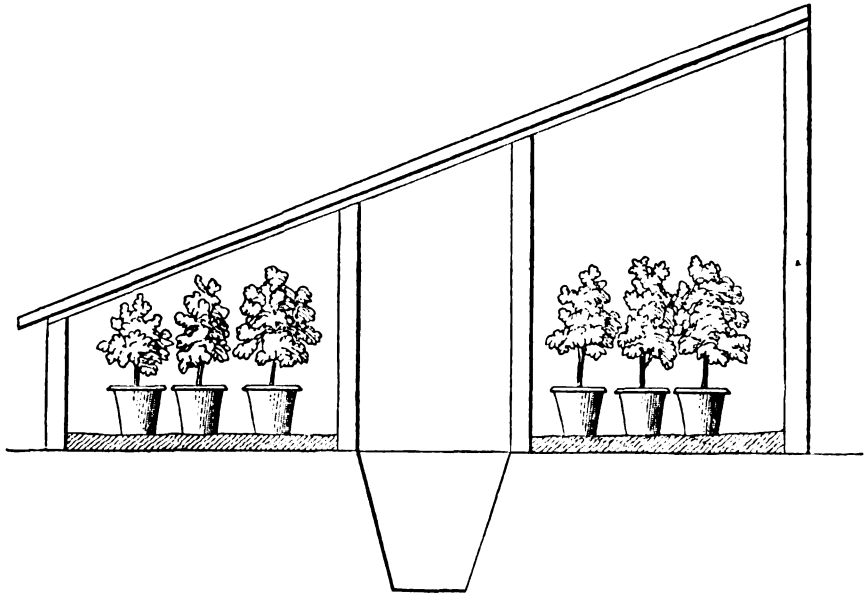


Fig. 4. Section of Orchard House.

## BUILDER'S ESTIMATE.

To ———. *An Estimate for erecting a Forcing House, 21 feet long, 12 feet 6 inches wide, 2 feet 9 inches high in front, and 7 feet 6 inches at back.\**

	<i>d.</i>	<i>£.</i>	<i>s.</i>	<i>d.</i>
3 feet of Oak Door Sill, 3 by 4, including Labour - - - - -	6	0	1	6
184 feet of Memel Fir, for posts, plates, rafters, door-frame, &c., including Labour, 3 by 4 - - - - -	3½	2	13	8
26 feet ditto, for 4 corner posts, 4 by 4 - - - - -	4½	0	9	9
120 feet ditto, small posts between others, 2 by 2 - - - - -	1½	0	15	0
154 feet ditto, rafters, 2½ by 4 - - - - -	2½	1	12	1
22 feet deal, for top grooving piece, 1½ by 4½ - - - - -	2	0	3	8
22 feet ditto, bottom rail, 1½ by 5½ - - - - -	2½	0	4	7
40 feet super. of ¾ Deal, for rebates on rafters, facings on ditto, corner and door fillets - - - - -	3½	0	11	8
336 feet ½ inch Deal Boarding, and Labour and Nails - - - - -	2	2	13	0
21 feet ¾ by 9 Yellow Deal for flaps to front, with 3 pairs of 8-inch Joints, and Buttons - - - - -	0	0	8	6
14 feet ¾ Deal ledged Door, Joints and Latch, comp. - - - - -	0	0	10	0
80 feet 1 inch Deal for boarding side of path up the centre, with Piles, and Labour and Nails - - - - -	4	1	6	8
4 Sliding Shutters, 2 feet long each, with Slides and Handles - - - - -	0	0	8	0
121 square of 16-oz. Sheet Glass 20 by 15 inches, with Putty, Labour, and Painting Rebates - - - - -	11	5	10	8
		<b>£17</b>	<b>8</b>	<b>9</b>

By using larch poles in lieu of squared timber for the studs, a considerable saving may be effected.

Since the foregoing pages were written, Mr. Paxton's interesting description of his "crystal palaces" has been given to the public. I have written for more humble gardens; but what glorious orchard houses may be built on his ridge and furrow system! One of those "palaces" with raised borders, well furnished with peaches, nectarines, apricots, figs, and even pomegranates, in 20-inch pots, and treated as

\* The best kind of paint for these structures is Carson's anti-corrosive.

recommended for all other orchard house trees, would realise an eastern garden, and bring to mind one of the fruit gardens of Damascus, described so vividly by travellers. In short, I know of nothing in gardening so capable of gratifying the two senses — sight and taste. Thus in great and grand places, in lieu of a cheap and simple orchard house, a fruit conservatory, heated by hot-water pipes, the trees grown in ornamental vases placed on elevated beds; a few tea-scented and other delicate roses, and spring flowering bulbs, planted in the borders, may be made a beautiful adjunct. It must, however, be recollected, that but very few of what are called conservatory-plants, can be planted, for it is necessary that the house should be cold and dry in winter to give the fruit-trees their rest. Heat must only be applied in early spring to force the fruit, if early fruit be required. The most severe frost will not injure tea-scented roses or bulbs, if the house is kept perfectly dry after October.

It is very possible that some who read this may say, “Why not plant the trees in the raised beds, rather than in pots or vases?” To this I reply, They cannot be kept under control, even with annual root-pruning. I have some peach-trees which have been planted in the raised borders of one of my orchard houses four years: they bear admirably; but, in spite of root-pruning, they will, grow too rapidly. Now, in pots, the size and growth of the tree may be regulated with the greatest nicety; the annual root-pruning can be done with much facility, and there is no occasion to dig and disturb the borders, which must be done to a great extent to root-prune properly, trees planted in them. In fine, as far as my experience has gone, I can imagine nothing so eligible as pots, or vases, for fruit-trees in orchard houses, or fruit conservatories.

---

## APRICOTS.

APRICOTS in pots are very rarely seen: I believe they force badly, as they will not bear the confined air of a forcing house, and therefore are not cultivated as pot trees even in large establishments. I remember some years since, being much struck with some apricots cultivated as dwarf trees in the South of France; the trees, full of their rich golden fruit, looked so beautiful, that I have never ceased to wish that our climate would allow us to grow them in the same mode. I did not then think of cheap glass, root-pruning, and pot-culture.

The most desirable sorts of apricots for a small orchard house are, the Early Red Masculine, which ripens in June; the Large Early, which ripens in July; the Musch Musch, also early; the Blenheim; Moor Park; Peach; St. Ambroise, Royal, and Tar-dive d'Orleans: these give a good succession, ripening very nearly at the same season as those on walls; for it must be understood that fruits in thoroughly ventilated orchard houses, are not much accelerated, unless the season happens to be very sunny. It is not an *early*, but a *certain* crop, that must be expected from such houses.

The most eligible trees for pot-culture are those that have been in pots one or two years: if these can be purchased, so much the better; if not, trees that have been

The most eligible varieties.

Proper description of trees for potting.

removed and cut down one year in the nursery; if neither of these descriptions of trees can be found, "dwarf maiden trees" \* will do. Trees that have not been in pots must not be potted till the end of October. Presuming that potted trees have been procured, they may, early in October—if omitted then, in November or December—be repotted into pots of the size selected for this description of culture. I have named 11-inch pots, because they are portable, but 15 or 18-inch pots may be employed if larger bushes are required, and they may be shifted into these large pots as they advance in growth; 11-inch pots will, at any rate, do well to commence with. I have named three months for potting trees; they may indeed be potted till March, but then no fruit must be expected the first season. If fruit-bearing trees that have been in pots can be procured, they cannot be potted too early in October.

Season for  
potting trees.

Larger pots  
for larger  
trees.

Compost for  
potting.

Enlarging the  
aperture of  
the pot.

How to pot  
your trees.

I know of no compost better for stone-fruits than two-thirds turfy loam, and one-third decomposed manure, to which some road or pit-sand may be added. The loam should not be sifted; if it contains a large proportion of lumps as big as an egg, so much the better. If you examine an 11-inch pot, you will find it eight inches across at the bottom, and the aperture from one to one and a half inch in diameter. Take a light hammer, and enlarge this aperture to five inches in diameter; then place four or five large pieces of broken pots or tiles across, so that they rest on the inside ledge left by the hammer, leaving interstices for the free emission of roots; on these place some of the most lumpy part of your compost, then your tree; if it has a ball of earth, loosen it; fill up with compost, settle it by a hearty thump or two on the floor, place it on the border where it is to grow during the summer, give water, and a top dressing of some manure to lie loosely on the surface, and the operation is finished.

Pruning.

Summer  
pruning.

Autumnal  
pruning of the  
roots.

Autumnal  
pruning.

I may as well now take an apricot tree from this commencement, as its treatment will serve, with slight modification, for nearly every fruit tree under pot culture in orchard houses. Well, then, if it is a bush with four, five, or six shoots, and if it has been in a pot, these will be short and well-ripened; they may be shortened, when the plant is potted, whether in autumn or spring, to about eight or nine inches, and the shoots, whether three, five, or seven, left so as to form the foundation of a nice, regularly-shaped bush. The first season after potting, the tree will, in May, put forth from each shoot three or four; all these but one on each shoot, the leader, must be pinched off with the finger and thumb to within an inch of their base, they will then form in time fruit-bearing spurs. Your tree will probably, if it has been potted and grown under glass previously to coming into your possession, bear fruit the first year; it will to a certainty make a fine and healthy growth. Let us suppose the summer over and October arrived; the leaves are yellow and falling, your tree is going to rest—let us assist it, as follows:—gently lift up one side of the pot, so that you can see the roots that have made their way into the border during the summer; take a sharp knife, begin on the side next to you, and gradually sever every fibre and root close to the bottom of the pot, then shorten each leading shoot of this summer's growth to about nine inches. All your trees must be operated upon in this manner; they may then be placed close together for the winter, as it will give space for winter vegetables

\* This is a term applied by nurserymen to trees one year old from the bud or graft.

or other plants requiring shelter ; water must be withheld, and the trees suffered to remain dry and completely at rest during the winter. Winter treatment.

I may as well carry their treatment through the second year. February is with us, and, if the season is mild, buds are beginning to swell, and flowers to bloom ; the trees in your orchard house are, however, dry, dusty, and stagnant ; place them in their stations, give each of them a small quantity, say a pint, of water, — not, however, if the winter is still raging—let them rest three days, then give them a quart each, —in short, gradually saturate the earth in the pots, and afterwards water them regularly as required by the state of the weather. The shoots, if the weather is mild, will soon begin to swell, and in March, or early in April, if the season is late, they will be in full bloom ; and beautiful things they are, for no frost, no storms, will destroy the blossoms. If the weather is sunny, with sharp frosts at night, as is often the case in early spring, the shutters, both back and front, may be open all day, and closed at night ; if a wind-frost and cloudy weather, they may be closed day and night ; the ventilation through the crevices where the boards join will be amply sufficient. With this treatment nearly every blossom will set. As soon as the fruit becomes the size of a horse-bean, commence syringing the trees morning and evening with soft water, and continue till they begin to change colour ; and while in this young state they must be thinned, leaving, at first, upon a bush that has been two years in a pot, about three dozen, which, when the fruit attains the size of a small nutmeg, must be reduced to two dozen ; the third year, a tree, if it has prospered, will be able to bear three dozen ; it is, however, better to have a few finely-grown fruit than many that are small. If some of the trees are required to decorate the dessert, — and what can be more ornamental than an apricot tree full of fruit ? — they may be removed by cutting the roots as before recommended : no injury will accrue, — it is only putting the tree to rest a little prematurely ; they must, however, in such cases, be removed to the orchard house after the fruit is gathered, and have water till the end of October. In pruning the second season, summer-pinching in May and June must be continued, as before recommended ; and in October, when the trees are put to rest, the leading young shoot of the summer on each branch must be shortened to six inches. The third season, these shoots may be reduced to four inches. As the tree becomes fruitful, but very short annual shoots will be produced ; these, if longer than four inches, may be shortened to one or two inches, till, ultimately, pinching off the tops of the young shoots to one or two inches will be all that is required. Treatment in second season  
Early spring watering.  
Ventilation.  
Syringing.  
Thinning the fruit.  
Summer pinching the second season.

To sustain the tree in its confined state, something more must be done than allowing its roots to go into the border : annually in March, every tree must have a top-dressing of some strong stimulant. I have employed, with much success, horse-droppings saturated with night-soil, exposed to the air two or three months previously, placed on the surface of the pots, previously stirring the soil and taking out a portion of it with a pointed stick to two or three inches in depth. Liquid manure, not too powerful, must be applied once a week during the summer ; weak guano water, 1 lb. to 30 gallons, is perhaps as good as any : a good soaking of this once a week is better than using it more frequently. The treatment for the second year may be continued every season without variation, except as regards pruning ; and every spring the pots should have a fresh station on the border ; and after two or three years, the soil of the Top-dressing.  
Liquid manure.

Refreshing  
the soil of  
borders.

Trees to be  
looked to in  
winter.

border may be removed two or three inches in depth, and filled up with a compost of burnt earth, 1-inch bones, and turfy loam, all very rough; and it will be necessary in very dry winters to watch the trees to see if their shoots shrivel; if so, they must have a small quantity of water, but not in severe frost; and if the winter is excessively severe, to "make assurance doubly sure," some dry hay or litter may be laid on and around the pots; the dry state of the soil will, however, as for as my experience has gone, perfectly resist the effects of frost.

The climate of  
the orchard  
house tem-  
pered to the  
East.

Now, let us see what we may expect from this system. The apricot, the peach, and nectarine, as is well known, all come from the East: we will take Persia or Armenia. The winter there is dry and very severe; the spring dry, with hot sun and piercing wind, just when peaches and apricots are in full bloom, and yet how they succeed! Let any one go into an orchard house when we have our usual March weather: the wind will whistle through it, and the climate will feel dry, sunny, and bracing; the blossoms, under these circumstances, will all set. Unfortunately, we cannot command sunshine enough to carry us along, so that our fruit may ripen in May and June, as in warmer climates; we must, therefore, wait patiently, for our orchard house climate is slow but sure in its operations. If the above directions are followed, Nature is imitated as closely as possible with our cloudy skies. The trees bloom in a dry, airy place; they pass through a comparatively dry, warm summer; they are, like all trees, natives of dry climates, early in a state of perfect rest, which is continued all through the winter, owing to which, they form healthy shoots, and well-developed blossom buds. Nothing in culture can be more perfect, and all is so simple, that, knowing as I do with what facility it is done, I feel ashamed of the vast number of words required in the attempt to describe it.

Old houses  
may be  
adapted to  
fruit trees in  
pots.

It will be seen that I have, to carry out this system, recommended houses of wood and glass; those, however, who prefer brick to wooden walls, may have them, as any small greenhouse may be made into an orchard house, by merely lowering the roof to height given in page 6.,\* sinking the pathway, and having sliding shutters back and front. The grand essentials are, low roof, borders instead of benches, and constant ventilation, more or less, according to the state of the weather, through the shutters; but there will not be, what I hope I may call without impropriety, that constant, gentle percolation, as through boarded houses, and which seems so highly favourable to the well-being of stone-fruits.

Number of  
trees a house  
will hold.

Trees to be  
placed ir-  
regularly.

I have, I find, omitted to state the number of trees that may be grown in a given space. The pots should be placed in the borders, back and front, about two feet apart. A house of the width given in page 4., and ten feet long, will thus hold about twenty trees; they should not be placed in rows, but irregularly, so as not to shade each other. Twenty trees will give from forty to sixty dozen of fruit, when in full bearing. A small bush of the Pitmaston orange-nectarine, four years old, bore this last season, four dozen of fruit, and brought them all to perfection; still this is too many, as some of the fruit were small. I mention this merely to show what can and may be done in this very interesting mode of cultivation, which, to sum up, is as follows: annual top-dressing, annual summer pruning by pinching, autumnal pruning, and root-pruning.

\* It must always be borne in mind that a low roof, so that the trees are not too far from the glass, is absolutely essential.

## PEACHES AND NECTARINES.

I KNOW few fruit trees calculated to give more satisfaction in the orchard house than a choice selection of the above: they are so exceedingly prolific; when in blossom, in early spring, they are so fresh and beautiful; and again in autumn, what fruit can vie in beauty with a ripe peach or nectarine? and what to the lover of fruit trees can be more gratifying, than to see his sideboard or dining-table decorated with peach-bushes in pots, studded with their lovely and perfectly-ripened fruit? — for in the orchard house peaches and nectarines ripen perfectly, and are of very high flavour.

If bushes of only a moderate size are required, 11-inch pots, as recommended for apricots, may be used; but I may as well state, once for all, and for all descriptions of fruits, that, if fewer and larger trees are required, larger pots may be employed; thus 13, 15, or 18-inch pots may be used with equal success, by enlarging the aperture at the bottom, allowing the emission of roots during the summer, root-pruning, and putting the tree at rest during the winter. A peach or nectarine tree may thus, in two or three years, be made capable of bearing many dozens of fruit; but I must confess, that my taste inclines to small prolific trees only because one can have greater variety in a small space; and small trees are pretty, are easily looked over, so as to know every leaf and bud, every blossom and fruit. Small trees preferred.

As with apricots, if peach trees, already in pots, and in a bearing state, can be purchased, so much the better, for then a year is saved; but as such are more expensive than “maiden” or “cut down” trees, the cost of which is generally about 1s. 6d. to 2s. 6d. each, these had better be purchased. I may here state, that “cut down” trees are two years old. Now, if nice healthy trees of this description, with fully ripened shoots, can be found, they are more eligible than “maiden” trees; but as they are not often to be met with, I will first give the treatment required by one year old, or “maiden trees.” Choice of trees.

These have one shoot, more or less vigorous, which should be well furnished with buds towards the base. This fine shoot, though it seems a cruel decapitation, must be cut clean off with a sharp knife, at the seventh bud from its base, and then potted in the same compost recommended for apricots, in the same sized pots, and at the same season, being towards the end of October, or early in November\*; the following summer every bud will, or ought to produce a shoot. Towards the end of June, pinch off the extreme end of every shoot: no other pruning will be required the first season; and if abundant ventilation, and syringing daily, as recommended for apricots have been attended to, the fruit-buds will, towards the end of August, begin to be fully developed. The experienced gardener can at once distinguish them; such a person may prune his trees early in October; but as I write for the inexperienced, let Pruning a maiden tree. Summer pinching.

\* This season is recommended, but it may be departed from; for my peaches and nectarines last year were not potted till March, yet have made fine growth.



me endeavour to tell how to distinguish a fruit-bud, which, by the way, is the only bud to prune down to.

Fruit-buds,  
how distin-  
guished.

Well, then, generally,—or “general always,” as a foreign friend expresses it, when he wishes to say any thing that invariably takes place,—towards the base of each of your seven, or six, or five shoots, you will find four or five nice, compact, single buds, covered with their silvery coat; next to these, and higher up the shoots, are triple buds, a plump one on each side, and a thin one in the centre. Now, these plump buds are blossom-buds, and the central one a leaf-bud, which produces a shoot so necessary to the well-being of the blossom-buds, that without it they would be abortive. Be sure to have on each shoot, if possible, from seven to nine of these triple buds, and cut off the shoot close to one; if this cannot be found at the proper place, so as to be able to form the foundation of a nice, regularly-shaped, bush-like tree, cut off the shoot at a leaf-bud, which, like myself, will be found spare and thin. Now, all this discrimination is, perhaps, more than can be expected from the beginner, or tyro, to use a fine word; it will, therefore, be better for such not to prune their peach and nectarine trees till March, when every bud will plainly show its character. If the shoot is cut off at a single bloom-bud, it will die down to the next leaf-bud; this must, therefore, be carefully avoided.

The beginner  
to prune his  
trees in  
March.

Pruning the  
second season.

We have now our “maiden” tree potted, say, last autumn, at the end of the following summer with five or seven shoots; let us still suppose the beginner is to prune in the spring. Well, then, they must be all pruned for fruit as above; for the peach does not bear every year on the same spurs, like the plum and apricot, but, most ungratefully, kills the spur that bore it. A supply of young shoots must therefore be annually provided, and this must be done by cutting to within three buds of their base, three shoots out of seven, or two out of five; these closely cut shoots should be on opposite sides of the tree, so that the supply of young bearing wood is not all on one side. The shoots recommended as above, on which to leave seven or nine triple buds for fruit, will in some, but not in all cases, have to be cut out after bearing fruit. Much will depend upon the sort cultivated, and the vigour of the tree; one thing must be borne in mind,—do not let the tree become bare of fruit-buds, and naked and straggling. If pruned in spring, the nature of every bud may be seen, and the tree formed, by the proper use of the knife, into a fruitful, beautiful bush.

How to  
prune trees of  
more mature  
growth.

I have thus far been following the “maiden” tree to its fruiting state; if trees with five or seven buds, that have been once cut down, are potted in autumn, they may, perhaps, show a few triple buds in spring, and may be suffered to bear some half dozen of fruit; but, by all means, cut in closely some of the shoots for the following year's produce. Better than even “maiden” or “cut-down” trees, are those that have been in pots a year or two; if the shoots are well ripened, plenty of triple buds will be found. Leave the proportion as above given for fruit, and cut in the others closely. Trees of this description will bear a nice crop of fruit the first season of removal to the orchard house.

Treatment  
the same as  
for apricots.

I need not repeat here the directions I have given for apricots: exactly the same management is required for peaches and nectarines, which may be grown with them;

the same top-dressing, liquid manuring, syringing, root-pruning, and winter management.

The season of these highly esteemed fruits may be much prolonged by a judicious selection of varieties. The earliest peach is the Red Nutmeg, which will ripen in July (it is small, but very nice); next the early Anne, or Avant Pêche Blanche, which ripens immediately after it; then Early Tillotson; the Acton Scot; the Grosse Mignonne; the Gallande; the Noblesse; the Royal George; the Pourprée Hâtive; the Reine des Vergers, a beautiful and hardy new peach; the Barrington; the Chancellor; the Walburton Admirable, a most *admirable* new variety; the Late Admirable: these ripen nearly in succession, are all melting peaches, and give their fruit from July till the middle of October. I am also inclined to think, that with the large "Pavies," or clingstone peaches of France, such as the Pavie de Pomponne, and the Sanguine Grosse Admirable, the peach season may be prolonged till the middle or end of November. These very late peaches on walls in our moist climate, are quite worthless; but in the dry climate of the orchard house we may anticipate a very different result. I intend, another season, to remove some trees in fruit of these kinds from the orchard house in October to a forcing house, and give them gentle dry heat: the experiment is quite worthy of a trial.

A selection of nectarines may include the following: — Fairchild's Early, small, but the earliest; Hunt's Tawny; Elruge; Hardwicke Seedling; Pitmaston Orange, very beautiful and very good; Violette Hâtive; New White; Roman; Early Newington; Newington; and Late Melting (this is probably the Peterboro' Nectarine of the catalogue of the Horticultural Society).

## PLUMS.

I DO not think that the excellent qualities of this fruit are yet half appreciated: it is in season from July to November, it is excellent for preserves, for compôtes, — by the way, our neighbours the French always stone their plums for this purpose, a very good practice also for tarts or puddings, — and then how delicious are many varieties as dessert fruit! For the orchard house it is also excellently adapted, the early varieties ripen very early, the late kinds may be kept in muslin bags all through November, they shrivel in the dry climate, and are perfectly delicious: I have at this moment (Nov. 1st) some of Coe's Golden Drop in muslin bags on the trees, which partake of the flavour of those called "French plums," but are far more rich and agreeable.

Plums for potting should be grafted on the sloe (*Prunus Spinosa*): if they have been removed the year previously to potting, they will be full of bloom-buds, and will bear a good crop the first season; if they can be procured already established in pots, the crop will be better and the fruit larger; the sloe stock is not, however,

Pruning and  
treatment  
the same as  
for apricots.

absolutely essential; for I have some grafted on the common plum stock, which are abundantly fruitful. The same compost and the same treatment as to potting, as recommended for apricots, will do for plums; the same pinching and pruning so as to make the trees nicely shaped, compact, dwarf bushes, is also all that can be said or done.

Choice of  
sorts.

In selecting varieties some care is required, so as to have plums all through the summer and autumn: to commence with, take the Early Favourite, and Early Prolific, — two most excellent sorts, which ripen about the middle of July, nearly as early as the Jaune Hâtive, a very early, but very inferior plum; next in succession comes the Early Orleans; then the Royale Hâtive, and De Montfort, — much alike, but both excellent; the Peach; the Imperial Ottoman, a delicious early yellow plum; the Purple Favourite; the Mamelonne, an early green-gage-like plum, comes next; the Isabella; the Green Gage; the Columbia, a magnificent purple American plum; the Reine Claude de Bavay; the Tay Bank; Lawrence's Gage; the Jefferson, — new, rich, and delicious it is; Knight's Green Drying; Reine Claude d'Octobre; Coe's Golden Drop; Imperatrice; Ickworth Imperatrice; St. Martin's Quetsche; and Coe's Late Red: all these are excellent, and ripen nearly in succession as I have placed them. A very nice way of keeping the autumn plums, or indeed, those that ripen in summer, from wasps and flies, is to form your trees into compact bushes, and then enclose the tree on which you wish to preserve the fruit, in a muslin bag, — any common cheap muslin will do, — tying it tightly round the stem of the tree, so as to exclude the ants, which are great pests in dry and pleasant places. I have nothing more to say about plums; for orchard houses they will to a certainty always give abundant crops, and as certainly ripen their fruit: in short, their culture will be sure to give satisfaction to those who love gardening.

How to en-  
close the tree  
in muslin.

## CHERRIES.

The proper  
stock for  
dwarf cher-  
ries.

THE Cerasus Mahaleb, Bois de Sainte Lucie, or Perfumed Cherry, has been long employed on the Continent as a stock for dwarf cherries; it will grow well in calcareous and shallow soils, unfavourable to the common cherry stocks; for trees for potting it is highly eligible, and trees grafted or budded on it form beautiful dwarf bushes; it is, however, better adapted for that tribe of Cherries of which the May Duke is the type, and for that of which the Morello is the representative, than for the Bigarreau and Heart Cherries, which are apt to gum, and grow too rapidly in proportion to the stock. Cherries are well known to be difficult to force, or grow under glass, the blossoms so generally fall without setting their fruit; in our well-ventilated orchard houses, this is not, however, the case.

Cherries  
difficult to  
force.

Their potting, compost, and treatment may be exactly that recommended for apricots; the tree should be formed into a nicely shaped bush, with regular divergent

branches; on each branch the shoots, all but one leader, must be pinched back in June Summer pruning to a spur of about two inches, and the leading shoot shortened in August to about four inches till the tree has attained the size desired; the leader may then be shortened to one inch annually, and the size of the tree if it becomes too bulky, reduced by the knife. The best early cherries for the orchard house are, the Cerise Indulle, or Early May, — very early, — the tree is very dwarf; the May Duke; the Archduke; Jeffrey's Duke; the Belle de Choisy; and the Royal Duke, which ripen in succession. Then of the Heart Cherries and Bigarreau, the very earliest of all is the Belle d'Orleans; the Early Purple Guigne; Early Amber Heart; Knight's Early Black; Werder's Early Black; the Black Eagle; Elton; Bigarreau Napoleon; the Bigarreau; the Holland Bigarreau; and the Florence: I have placed them as nearly as possible in the order of their ripening. Of late cherries of the Morello tribe, these all succeed admirably as dwarf bushes: Reine Hortense, a large and delicious sweet cherry; the Late Duke, also sweet, and of the highest excellence; Griotte de Chaux; Louis Philippe; Coe's Late Carnation, a most delicious late cherry; Belle Magnifique, a very large Morello-like cherry, but not so acid; and the Morello, which, when fully ripe and black in September, is not to be despised as a dessert fruit. All these may be made to supply the dessert through August, September, and, indeed, great part of October, by enclosing each bush in a muslin bag, tied tightly round the stem near the ground; the dry air preserves them from mould, and the warm climate Preserving the fruit on the trees. gives them a flavour very superior to late cherries matted up against walls, or indeed cultivated in any other mode.

## FIGS.

THE fig is not a general favourite; but to those who like them, as I confess I do, their cultivation in the orchard house is interesting and most simple.

They may be planted in the compost already recommended, and in pots of the same size, top-dressed in spring, syringed in summer, and put to rest in autumn; in short, exactly the same treatment as recommended for other fruits. Although fig trees against walls require protection from the frost, which would otherwise destroy the young fruit which is the first to ripen in early summer, under glass, with the mould perfectly dry, and the shoots thoroughly ripened, they will be safe from injury from the most severe frost. If a well-formed bush cannot be procured, the tree must be cut down the first season to within nine inches of its base, the shoots when they make their appearance thinned out to five; when these are about a foot in length, pinch off the end from four, leaving the central shoot for a fortnight or so to elongate, then pinch off its end in the same manner: your bush will be formed, but you must not expect any fruit the first season; in succeeding seasons those must be pruned in the same manner that you would if a bearing tree is purchased and placed at once in the house; How to form the tree. Summer pinching.

*i. e.* in May or the beginning of June, as soon as the young shoots have made about six inches, pinch out the terminal bud of each; this will make them produce fruit which will give a second crop; the first will be produced from the shoots of the previous year. The tree will, in a year or two, become too much crowded with young shoots; thin them with a sharp knife, leaving no spurs, but cut close to the main branch or stem. Figs require more heat than any other fruit yet mentioned: they must have the warmest corner of the house, as they do not require much ventilation; a house with fire-heat is, indeed, the most eligible place for them, and they must have abundance of water or the fruit will all drop, when nearly full grown, without ripening. The varieties best adapted for pot culture are, the White Ischia; the Saint J  an,—both most abundant bearers; the White Marseilles; the White Genoa; and the Brown Turkey: if more varieties are required, the Nerii and the Pregussata may be added.

The trees require more heat than other orchard-house trees.  
Choice of sorts.

## PEARS.

IN the South of England, pears can be grown on pyramids with so much success, “barring” spring frosts, that there is no occasion to let them occupy room in the orchard house; still, in seasons like that of 1850, when, even in the most favoured districts, all the blossom was destroyed by spring frosts, I felt much gratification in having about a dozen trees in pots on the quince stocks covered with fine fruit,—and higher flavoured Brown Beurr  s I have never tasted. Their culture is very simple, for trees on quince stocks that have been root-pruned may be potted any time in the autumn, or even as late as February, and yet give a crop the first season after potting; as they set their fruit very thickly, they must be severely thinned the first season, and eight or ten pears ought to be the maximum of a crop. In two or three years a well grown, well nurtured tree will be able to give from eighteen to two dozen finely grown fruit; further my experience has not gone. In the North this method of culture will be found both eligible and interesting; for glass, without fire-heat, will give just the climate suitable to the finer sorts of pears.

Root-pruned trees to be potted in autumn.  
Thinning the fruit.

Their culture under glass in the North recommended.

The trees should be formed into bushes, as recommended for apricots, plums, &c.; the young shoots pinched in June, and the leading shoot of each divergent branch shortened in August to the same length as those of the apricot, so that the tree gradually but slowly increases in size, every part being furnished with blossom-buds. An abundant top-dressing of the strong compost recommended for apricots must be given in spring, even laid up above the rim of the pot; and such gross feeders are they, that manure-water may be given to them every day in summer with advantage. The most prolific and eligible sorts for pot-culture are, the Brown Beurr  ; Beurr   gris d’Hiver Nouveau; Doyenn   d’Hiver Nouveau; Easter Beurr  ; Glout Morceau; Bergamotte d’Esperen; Gansel’s Bergamot; Duchesse d’Orleans; Beurr   d’Aremberg; Beurr   de Rance; Crassane d’Hiver Bruneau; Doyenn   Goubault; Marie Louise; Passe Colmar; Saint Germain, and Van Mons (Leon le Clerc). The above are all autumn

Summer pinching.

Top-dressing.

Water constantly with manure-water.

Choice of sorts.

and winter pears. If summer pears are desired, Doyenné d'Été, Jargonelle, Citron des Carmes, and Colmar d'Été, may be potted. In the North, where these early varieties do not ripen kindly in the open air, their culture under glass will give much satisfaction, for they may be brought to the dessert with their fruit in full maturity. I need not, I trust, enlarge more on this really new and interesting mode of cultivating pears. My readers will, I hope, see its advantages, and many of them venture to put it in practice.

## GRAPES.

FOR some few years it has been the fashion for gardeners in lordly places to grow grapes in pots, which after bearing one crop are destroyed. Now these pots are generally of such large dimensions as to be quite out of character for our orchard houses, and totally unfit for the amateur who wishes to be master of "all he surveys," as such immense pots are utterly unportable. Induced by observing in the land of the vine that grapes, and good grapes, could be grown on very small bushes, and in crevices containing but a scanty portion of earth, I tried their culture in comparatively small pots, without destroying them after giving their first produce, continuing their culture without shifting, but simply suffering their roots to feed in the border: this has succeeded admirably, and my vine bushes, this last season, have been beautiful objects, bearing from four to six bunches of nicely ripened grapes.

Hitherto cultivated in pots too large.

To form these bushes but little care is requisite: a vine one or two years from the eye, with a single stem, must be selected, and potted into an 11-inch pot, in the same compost as recommended for other fruit trees, adding to each pot a quart of one-inch bones, well mixed with the mould, the bottom of the pot prepared and drained as in p. 12.; then cut the vine down to within eight buds of its base: the three lower buds must go for nought; the five upper buds, if the wood is well ripened, will give each a bunch. The lower shoots should be stopped, their tops pinched off as soon as they are four inches long: the upper five shoots may be suffered to grow till the bunch is perceptible; these may then be stopped one bud above the bunch; and all lateral shoots which will afterwards come forth may be stopped at two buds from the base: no other will be required the first season than this finger-and-thumb pruning. It is quite possible that some of these five buds may fail to give a bunch: no matter, stop them of the same length as the fruit-bearing shoots, so as to make a uniform pretty bush; for the vine in all sites and situations, and in all stages of its growth, is a beautiful object. The second season, if it is desirable to make a very dwarf bush, the plant may be cut down partially, so as to bring the lowest shoots into action. Cut down through the main stem, below the second or third fruit-bearing spur of the former year; it will thus have six or five spurs: now, on the pruning of these spurs depends success; they will, of course, from being grown under glass, be well ripened, and the buds well developed. Begin at the main stem, and count four or five buds from the base of the spur or divergent branch; the fourth or fifth will, in all probability, be nice and plump: this must be your fruit-bud: cut down to it closely, then, with, a

Pruning the first season.

Pruning the second season.

sharp pen-knife, *cut out* two or three buds, leaving the terminal bud and one only at the base of the spur close to the stem: this will give you a shoot, which is to be your fruit-bearing shoot for the following year: you will thus have on each spur two buds, one for fruit, the other for wood. In autumn, that part of the spur which has borne fruit must be cut down close to the shoot, which is to bear fruit the following season, and this shoot must be pruned in the same manner for one fruit bud and one shoot bud; this pruning should be done early in October, as the buds are then fully developed, and much is gained by autumnal pruning. A vine treated thus will last for many years, and may be always kept as a dwarf bush; the main stem, in time, will swell, and not require the support of a stick. The first season the cultivator must be content with three, four, or five bunches; but as his vine gathers strength, which it will rapidly do, if every spring a portion—say two or three inches—of the surface mould is removed from the pot, and the compost recommended in p. 12. bountifully applied, even heaped round the stem, for it is so porous that it will not throw off the water; and if the vines are constantly watered with manure-water, they will soon be able to bear eight or ten bunches. They must also, after the fruit is set, be syringed twice a day in the summer. As soon as the fruit is gathered, prune off the roots which have fed them so bountifully all the summer, withhold water, and put them to rest for the winter. I may add, that vines do not need the extreme ventilation recommended for stone-fruits: a warm part of the orchard house will suit them best; or if a small house with a brick Arnott's stove can be entirely appropriated to them, so as to force them, and, by having a succession of plants, to have two, or even three, crops in the season, much interest will accrue from their culture: to do this, if forcing is commenced in January, do not fill your house, put in, say one-third of your plants, early in March another third, and then in May the remainder.

Autumnal  
pruning for  
third forth-  
coming sea-  
son.

Top-dressing.

Syringing.

Root-pruning.

To have a  
succession of  
plants for  
forcing.

Choice of  
sorts.

The varieties best adapted for this bush culture are those that are very prolific: none are more so than the following:—the Purple Frontignan, a most abundant bearer; the Prolific Sweet Water; the Purple Fontainebleau, also abundantly prolific; the Black Esperione; the Grove End Sweet Water; the Cambridge Botanic Garden, a variety of the Black Prince, and a great bearer; the Black Frontignan; the Purple Constantia; the Chasselas Musqué; the Chasselas Rose; the August Muscat, a perfect miniature vine, which gives fruit of fine flavour; and the Flame-coloured Tokay, which, although not a fine-flavoured grape, is good, and gives large and most beautiful bunches. It must not be forgotten that the bunches must all be thinned when the fruit have attained the size of small peas, otherwise the berries will become crowded and inferior.

## APPLES.

THERE are a few delicious American Apples which require more sun and a drier climate than that of our "tight little island," and these I feel convinced can be cultivated in the orchard house with success; they should be grafted on the Paradise

stock, be planted in the same sized pots as the other members of the establishment, in the same compost, and have the same treatment with regard to summer pinching as pears. The only sorts I know at present to be worthy of this in the most favoured districts are, the Green and Yellow Newtown Pippin; the Northern Spy, a delicious Choice American apples. large, handsome and good keeping apple, with half-melting flesh; the Melon Apple, of equal goodness; the Male Carle, a favourite Italian apple, may also be tried. In the far North, however, some of our fine English apples may be equally worthy of a place under glass, such as the Ribstone Pippin; the Nonpareil; the Golden Pippin; the Golden Reinette; the Van Mons Reinette; Coe's Golden Drop; the Sturmer Choice English apples for the North. Pippin, and some others. I hope, one day, to see orchard houses on many a sunny slope in the Highlands; and why not? If art and wealth can overcome Nature in making fruits to grow instead of heather, the conquest will cause smiles rather than tears, and give a much greater amount of happiness than the "glorious victories" of our history.

---

## MULBERRIES.

In the North this delicious fruit does not ripen kindly; in such localities dwarf plants in pots may be introduced to the orchard house, and I doubt not but they will succeed well.

I may also add that White Currants, which are seldom well ripened, and are then very acid, may be grown to great perfection in pots under glass.

---

## STRAWBERRIES.

On the front part of the front border of the orchard house, a small space will be too low to be occupied by fruit trees: as this is near the glass, strawberries in pots will give much pleasure and satisfaction; their fruit will ripen about ten days before those from plants in the open air, and to a certainty will not be spoiled by rain or vermin. Whoever has tasted fruit of the "British Queen" grown under glass, with but very little forcing, will, I am sure, have lively recollections of their very superior flavour to those generally gathered from strawberry beds.

Nothing in our orchard house culture is so simple as the management of potted strawberries, and nothing will be so certain of agreeable results. About the middle of July, take 6-inch pots (thirty-two's of the London potteries), place two or three Size of pots, and preparing them for the runners. large pieces of broken pots at the bottom, so as to lie hollow; then mix your compost, which should be two-thirds loam, if rather stiff the better, and one-third rotten



Sorts most  
eligible for  
pot-culture.

Winter quar-  
ters.

manure. You are so far prepared for operating, but you still lack an implement, and what a strange one in the hands of a gardener, for it is neither more nor less than a pestle,—a wooden pestle, fashioned out of any stout stake, and perfectly rounded at bottom; now then, take a handful of mould—nothing like the hand in potting—put it into your pot, and give it a good pounding, and so keep on a handful, and a pounding, till your pot is full, quite level with the brim, for the earth will sink in time, enough to retain water. You will thus, if you have done well, have your earth level with the brim and as hard as a barn floor; take them to your strawberry beds,—and mind, there are only two kinds of strawberries known at present to be worth forcing, viz. “Keen’s Seedling,” for an early sort, and the “British Queen,” for a main crop,—and place on the centre of each pot a runner which has commenced to make roots, or if no roots are apparent it will do as well, and on the runner place a small stone, to keep it from being blown off by the wind; make no hollow place, do nothing but place it on the hard surface as I have directed. If the weather is dry, water daily; and if the runner, as is often the case, pushes forth another runner, pinch it off. In two or three weeks the roots will have penetrated to the bottom of the pot; the plant may remain attached to its parent till the middle of September, and then all the pots may be removed to their winter quarters,—some sunny place: they should be placed on rough cinders, and then plunged in saw dust or rotten tan. In February, they may be removed to the orchard house, or forcing house, as required: no shifting is requisite, and a plentiful crop will be the result.

Strawberry plants, treated in this manner, attain much strength and luxuriance in the autumn; their fruit-buds will be finely developed, and they will be all that the gardener can wish them to be. This very simple mode of treating strawberries for culture under glass is not new: it was pointed out to me by a market-gardener some five years ago. I have practised it ever since, and am more than ever convinced of its eligibility.

## GENERAL SUMMARY OF CULTURE.

THIS it will perhaps be as well to give here, merely to point out to the cultivator, in a few lines, his annual cares—his pleasures he will be sure to find.

In autumn, or early in winter as possible, have your trees potted.

In February, remove the trees to their summer stations; take out the earth, two to three inches deep from the surface, of all the established trees, picking it out with a pointed stick; and top-dress them with the compost, horse-droppings saturated with night-soil; if it has been exposed to the weather two or three months, and turned over, so much the better. Those potted in the autumn may also be top-dressed.

In spring, as soon as the blossom-buds are fully developed, the beginner may prune all the stone-fruits, as recommended under their different heads.

Later in spring, when the fruit is set, and commenced to swell, syringe them with soft water through a finely-perforated rose; if the weather is dry and warm, water them abundantly every afternoon, from four to five o'clock.

In June, commence to thin the fruit, and pinch the young shoots.

In July, if any of the trees are growing too rapidly,—this particularly applies to figs, which are very gross feeders,—gently lift up the pot on one side, and cut off a portion of their roots with a sharp knife.

In August, pinch off the extreme points of the leading shoots of all except figs; if these are pinched so late they will put forth fruit, which should not make its appearance till the following spring.

In October, root-prune all from which the fruit has been gathered and put the trees to rest, placing them close together to make room for other matters that require the shelter of the orchard-house during winter. Chrysanthemums will be found very ornamental in the latter part of autumn, and will bloom well.

In December and January, if the weather is windy, dry, and mild, observe if any of the trees are inclined to shrivel from excessive drought, if so, give them a little water in the morning; if they shrivel during severe frost it will not matter, as soon as a thaw comes they will recover. In those months also, if the frost is very severe, some dry hay or litter, three or four inches deep, may be placed on the surface of the pots, which, as they are now placed close together, will preserve the roots from the possibility of injury. Nothing else occurs to me.

I appear in the foregoing pages to have employed a vast number of words to make plain this simple, and I think I may add, novel, mode of cultivating fruit trees. Judging from my own experience, its advantages and pleasures are manifold: each bud, leaf, and blossom is brought close under the eye of the cultivator; Nature's every move is seen, and seen in a genial climate; the silvery covering of the blossom-bud of the peach,—the beauty of its fully developed flowers,—the downy luscious-looking coat of its charming fruit, are all calculated to give pleasure to the healthy cheerful mind. Many other little interesting matters will unfold themselves: the anthers shedding their pollen,—the germ of the fruit shortly after commencing to swell; in short, all the handiworks of Nature's laboratory will be brought near to the eye, near to the mind, near to the heart,—and the heart brought to look in thankfulness to the Giver of all these good and beautiful things.

## THE BRICK ARNOTT'S STOVE.

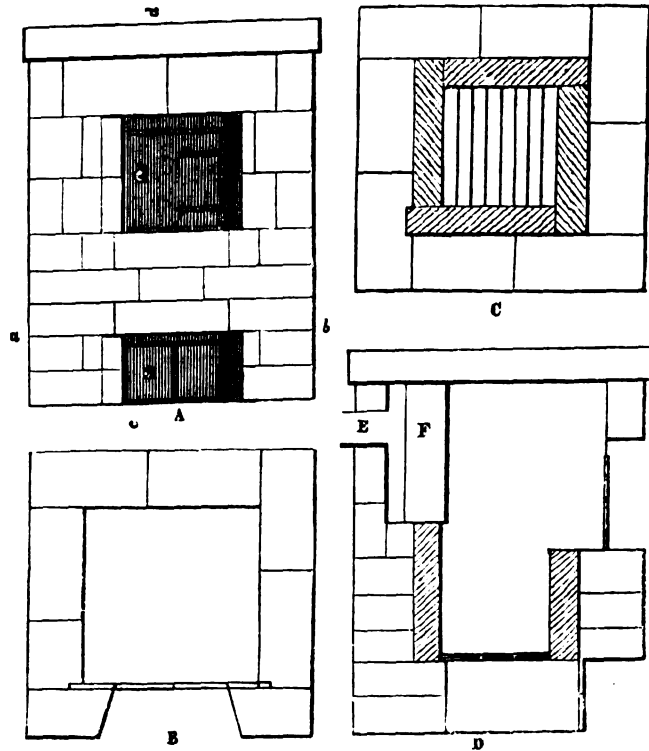


Fig. 5.

A, front elevation; B, ground-plan; C, horizontal section through *a b* in A, showing the fire-bars or grating; D, vertical section through *c d* in A, showing the front and back fire-lumps, the former reduced to nine inches in depth; E, iron pipe leading to the chimney; F, fire-lump, placed an inch and a half from the mouth of the pipe leading to the chimney, and about the same distance from each end (this causes the smoke to pass round, thus preventing a too rapid consumption of the fuel). The courses of bricks in height are laid flat.

THE above figures, the blocks of which have been kindly lent to me by the editor, appeared in the "Gardener's Chronicle" for January 24th, 1846, and a description of them was given in the same paper for January 17th in the same year (p. 35.).

I had then four in operation, I have now twelve, and have never yet seen any mode of heating small or moderate-sized houses so efficient.

For a house twenty to thirty feet long by twelve, a stove two feet four inches square, outside measure, and three feet ten inches high, and the fire-box eight inches over and eight inches deep, will be amply sufficient. For a house forty feet long by twelve, one of two feet ten inches in diameter, and three feet ten inches high, the fire-box ten inches over and ten inches deep will also answer well. The stove should be placed in the centre of the house, within a foot or eighteen inches of the back wall, and the horizontal pipe\* go at once into a chimney outside, or, what is better, the chimney may be built inside, and carried out of the back wall, just under the glass; by this method no heat is lost. If it be thought necessary to have the feeding-door and draught-door outside, the draught-pipe must be reversed. I, however, prefer the doors inside, for the cold damp air of the house, floating near the ground-floor, is sucked in and heated; no inconvenience is experienced from dust, as every morning, before the stove is cleaned out, a pint or so of water is poured in at the feeding door, so as to saturate the ashes before they are drawn out: coke from the gas-works is the only proper fuel to use. These stoves should be built with four-inch brick-work and mortar, the fire-boxes with fire-bricks and fire-clay, and they should not be used till two or three weeks after building, or the brick-work is apt to crack. I find nothing like iron for the roof or top of the stove, as Welch tiles are apt to crack; a plate of cast-iron, nearly three quarters of an inch thick, is necessary; on this a shallow pan, two inches deep, two feet square, of galvanized iron, filled with water, will always keep up a genial moisture in the house.

\* These stoves will not burn well with a long horizontal draught or flue: three feet must be the extreme length.

## THE ARNOTT'S STOVE BOILER.

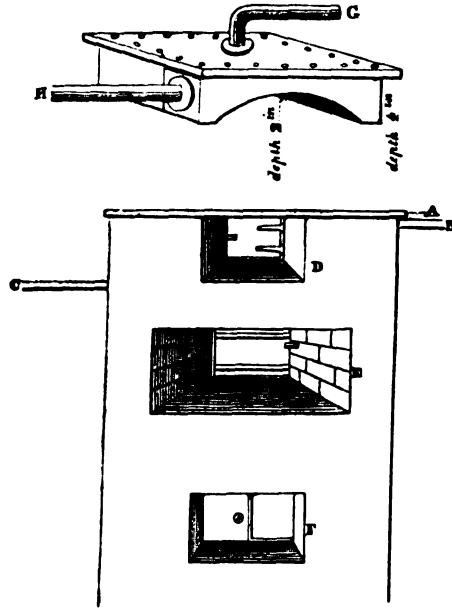


Fig 6.

A, iron plate; B, flow-pipe; C, return-pipe; D, door over the boiler; E, feeding-door; F, ash-pit or draught-door; G, flow-pipe, made of wrought iron, screwed in so that it can be turned in any direction; H, return-pipe.

THE above, figured in the "Gardener's Chronicle" for May 12th, 1849, the blocks of which have been kindly lent to me by the editor, is perhaps the most economical and efficient hot water apparatus ever introduced; it is merely a boiler placed over the fire-box of an Arnott's stove, which does its duty most admirably, at a less cost for fitting-up and fuel than any boiler I have yet seen in operation.

I have now four in full work: they have been hitherto cast of three sizes, fourteen-inch, sixteen-inch, and eighteen-inch; one of fourteen inches (fourteen inches square), which holds just eight quarts of water, is now heating an orchard house forty feet by twelve, — it does this well, at a very small cost for fuel — coke; another sixteen-inch boiler heats two propagating pits with gutters, each sixty feet long by six feet, also most efficiently; another heats also a propagating pit sixty feet long by six feet; these two last-mentioned boilers have superseded two of those ribbed monstrosities which cost four times the amount to "set," and devoured four times the quantity of fuel required by the above very simple form of boiler. When used for heating houses, the feeding and draught-doors may be outside, although I do not adopt this plan; but the stove should be, if possible, inside, as the dry gentle heat of the stove, with the moist heat from tanks or gutters, forms a perfect combination. These boilers are made by Mr. Hughes, the Iron Foundry, Bishop Stortford, at a charge of from 30s. to 35s. each. The best self-taught engineer I have yet met with is William Beales, gardener, River Head, Louth, Lincolnshire; he will build an Arnott's stove, fix a boiler in it, and place pipes round a house twenty feet long by twelve feet, so as to heat it well and thoroughly, for some ten or twelve pounds; he will, however, give his terms to any one on application.

THE END.

LONDON:  
SPOTTISWOODES AND SHAW,  
New-street Square.

3 MR 51





LONDON:  
SPOTTISWOODES AND SHAW,  
New-street Square.

3 MR 51







LONDON:  
SPOTTISWOODES AND SHAW,  
New-street Square.

3 MR 51





LONDON:  
SPOTTISWOODES AND SHAW,  
New-street Square.

3 MR 51

