

## Imperial Fruit and Forcing Gardens at Versailles



THE imperial fruit and forcing gardens at Versailles form a large establishment, not so costly nor nearly so fine as Frogmore, but containing a few things novel and instructive to the English visitor. Generally the crops do not display the high cultivation nor the surface the rapid rotation to be seen in the market gardens round Paris, but in the culture of hardy fruits there is something to admire. It is a forcing, culinary, and fruit garden solely, therefore there are few pot plants to be seen, the houses being nearly all devoted to the pine-apple. Some years ago the culture of this fruit was considered by some of our gardening authorities to be better understood in France than in England; but though very fine pines are grown in the neighborhood of Paris, our pine growers are on the whole the best. Dutch growers of the pine-apple as Mr. James Barnes of Bickton, Mr. David Thompson, Mr. Rose at Frogmore, and many other gardeners, afford us the best example of how to produce it in the highest degree of perfection. The forcing department is usually well-ordered and neat so far as the more permanent houses go. In them the back walls may be seen very prettily covered with the two well-known Vincas, *alba* and *rosea*. To cover the walls of all kinds of glass-houses devoted to ornamental purposes is an object with most people who possess such things. It is very rarely well accomplished, mostly from using a bad selection of vigorous growing plants, which often get covered with insect filth, and become a capital breeding place for it, or perhaps never yield flowers. If anybody possessing a stove, pine-house, or intermediate house, or any other warm structure with a back walk and border against it, will



plant in it and train against the wall the two pretty subjects named above, plant for plant, the result will prove strikingly pretty. The plants are always glossy and full of flower, may be kept at two feet or allowed to grow six feet high, and are always free from insects or vermin of any kind. They keep neatly to the wall with but little trouble, and bloom all over the surface, top as well as bottom. They are in this state very useful for cutting, and the effect, when you enter the house, is of the most pleasing kind. Their culture in this way is far more satisfactory than in pots, and in almost every warm stove or forcing house in France you see them trained against the back walls. The system of forcing grapes and early vegetables in very small rough frames is extensively practised here.

The fruit growing department is undergoing a gradual and complete alteration, especially as regards the choicer Pears, trained as espaliers. So satisfactory is the system adopted, that I am certain if English cultivators generally could get an idea of its excellence it would lead to a revolution in our fruit culture, and a great improvement in the appearance of our gardens. I know of no way whereby we may so highly improve the garden culture of the Pear than by paying more attention to it as an espalier tree. This is also the opinion of many of the best fruit growers in Britain, who agree that there is no finer fruit than that gathered from well-managed espalier trees. It is well known that some pears lose quality by being grown against walls. It is equally certain that a fuller degree of sun and exposure than the shoots and fruit get on a pyramidal tree is very desirable in many parts of this country, especially for particular kinds. Many sorts grow beautifully as pyramids; others, to be had in perfection, must be grown upon walls; but by means of the improved espalier system the majority of the finer kinds may be grown to the highest excellence. If the French can teach us nothing else they can certainly give us a lesson as to the improvement in appearance, cheapness, and utility of the espalier mode of growing fruit, especially as regards the finer varieties of Pear trees.



It should be borne in mind that the good opinion of espalier trees given by British cultivators has been won by them under great disadvantages, for nothing can be uglier or more inefficient than the usual mode of supporting and training espaliers in our gardens. It is generally so costly and disagreeable to the eye, that it has been done away with for these reasons alone in many gardens. I know some important ones near London, and indeed in many parts of Britain, where the espalier is the most unworkmanlike and discreditable affair to be seen in the place. Great rough uprights of wood, which soon rot and wobble out of position, thick and costly bolt-like wire, cumbrous and expensive construction, and, in a word, so many disadvantages as would suffice to prevent the prudent cultivator from attempting anything of the kind. The form of tree used, too, is such that the lower branches become impoverished, and often nearly useless.

To support his espalier fruit trees the Emperor's gardener, M. Hardy, has largely adopted a system which is at once cheap, neat, and almost everlasting. Instead of employing ugly and perishable wooden supports he erects uprights of T-iron, and connects these with slender galvanized wire. These are tightened with the little *raidisseurs* before alluded to, and then there is an end of all trouble. He manages to erect this trellising nine feet high for less than a shilling a yard run; but it could not be done so cheaply in smaller quantities. Then, instead of adopting the common form of espalier tree, with horizontal branches, he more frequently uses trees of which each branch ascends towards the top of the trellis, and thus secures an equable flow of sap through the tree. There is no more important matter connected with our fruit culture than this very point, and therefore I should be much obliged to all my readers, both amateur and professional, if they will give the subject attention, as I am sure that by doing so they will be led to largely adopt it, and much improve their fruit culture. The finest stores of pears I have ever seen were in gardens with a good length of tree trained in this manner; and I know few places in France where the espalier system is so extensively and



so well carried out as here. The form here represented is much better than a cordon or single-branched Pear tree, because a more free and natural development is allowed to the tree, and at the same time the trellis is covered quickly, and a considerable variety of fruit may be obtained from a small space. It is very extensively adopted by M. Hardy, upon walls as well as on the neat and elegant trellis, of which he has constructed so much. Of course the *Palmette Verrier*, the fan, or any other form, may be trained on these trellises, but decidedly the best are such as combine the advantages of quick covering and early productiveness claimed for the cordon, and the fuller development and more pleasing appearance of the larger forms. It should be borne in mind that planting erect cordons close together, as they must be planted, involves a great expense which is avoided by using trees of a fuller development. It takes a good many years to form the large style of tree usually adopted and therefore I advise the general planting of these intermediate forms.

Nothing can be neater alongside garden walks than lines such as these trained on the trellis alluded to. There is no shaking about of rough irons or wooden beams, no falling down or loosening of the wires; the fruit is firmly attached and safe from gales, the wood is fully exposed, and the trellis when well covered forms an elegant dividing line in a garden. The best way to place them is at from three to six feet from the edge of the walk, and if in the space between the espalier and the walk a line of the cordons elsewhere recommended be established, the effect and result will prove very good indeed. In some cases where large quantities of fruit are required, it may be desirable to run them across the squares at a distance of fifteen or eighteen feet apart. The principle is quite simple, the proof of which is that the trellises at Versailles were erected by the garden workmen. M. Hardy, the head gardener at Versailles, is the son of the celebrated writer on fruit trees of that name, and has had much experience in fruit growing. "These trellises," says he, "are the cheapest as well as the most ornamental that we have yet succeeded in making and



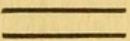
the trees which I plant against them are of the form that I prefer to all others, for promptly furnishing walls and trellises, and for yielding a great number of varieties in a comparatively restricted space." The mode of employing the uprights of pine wood painted green and reaching from the top of the trellis to within six inches of the ground, is not a common one, though very desirable where the erect way of training the shoots is practised. The reader will readily perceive that this system combines the advantages of the cordon and the large tree. Of course many other forms, or any form, may be used with this system of trellising, with slight modifications to suit different kinds of trees or different forms. The double trellis is simply a modification of the preceding, and is not only desirable where space is limited, but also for its economy, for one set of uprights supports the two sets of wires simply by using cross bits of iron about eighteen inches long, and at the desired distance apart.

The Pear as a low cordon is found to succeed very badly and to plant it as an oblique cordon at fifteen or eighteen inches apart is considered much too close and very unwise. A white wall fourteen feet high covered with Easter Beurré Pears was very fine indeed. The trees were mostly on the Quince stock, a few on the Pear, but all bore equally well. They were all trained in the five branched form usually adopted here, and had almost covered the tall white wall. The fruit-growing foreman insisted very strongly on the necessity of having white walls for fruit trees, and stated that dark ones injured both fruit and leaves, while white ones benefited both. White walls, apparently well lime-washed every year, are to be found in every good establishment, whether for peach, grape or other wall fruit culture. The Easter Beurré may be seen here double-worked on the Curé. On one wall the trees are established and in good bearing; on another they had been budded last year only. The Curé is first grafted on the Quince and allowed to form five vertical branches before it is budded. The Easter Beurré is found to do best when double-grafted, though the trees directly on the Quince and Pear seemed to do well.



The naked parts of the stems of fruit trees in this garden were in many cases protected from injury from a strong sun by being neatly covered with straight straw, tied with willow twigs. Neatly done, it seemed better than the commoner plan of placing slates or boards before them. Brackets to support straw mats in spring are placed on every wall at a little more than a yard apart.

There are a great many old and worn-out trees in the garden which have had a bad effect on its appearance here and there, but the gradual adoption of the new trellises will much improve matters. The Pear makes as strong a growth here as I have ever seen it make in Britain, though some of our growers are continually saying that quite a different and very much more fruitful kind of wood is formed in the fine climate of France. There are a few specimens of forming letters with trees to be seen here, as in many other French gardens.

When I last visited this garden M. Hardy had commenced carrying out a system of protecting his espalier trees. The plan is simply to strain lines of galvanized wire above the top of the espalier, so as to form a low span when covered with rough canvas. The sides are not covered, but the protection at the top is sufficient to prevent radiation, and to throw off heavy rains when the trees are in bloom. If there is a wall running at right angles with the lines of espaliers, wires are stretched from it so as to form a light support over each espalier; if not, a post is driven in so as to support and stretch the wire in the firmest way. The lower of these two lines  may be supposed to represent the top of the espalier, the upper a line firmly supported at a few inches above it. Wires are also stretched at each side of this, at about twenty inches from it, so as to form the outline of a very low span-roof of strained wire. It is a matter of little difficulty to stretch cheap canvas of some kind over these wires, letting it be an inch or two narrower than the breadth between the outer wires, so that it may be strained tight, say a yard for the canvas, and two inches more for the wires. The outer margins must of course be firmly threaded to the outer wires with



twine or any convenient tying or rough sewing material. Here they simply use the stems of the glaucous or Hard Rush (*Juncus glaucus*) which grows wild all over Britain, and find it answers admirably. A neat ridge is then arranged over each line of espaliers, which throws off the rain and prevents radiation, thereby saving the bloom from frost and insuring a crop. The protection is put up before the buds are liable to be injured, and removed when the fruit is set, and all danger has passed away. Thus a very cheap and effective protection is secured. The old trellising used for fruit growing in these gardens is inferior compared to the new. The kinds of pears mostly grown here are Easter Beurré, by which several walls are covered; Duchesse d'Angoulême, of which there is a square of trellising in all nearly 600 yards long, and about nine feet high; Beurré Diel, and Louise Bonne d'Avranches.

The Peach is well-grown and trained in some parts of the garden, a form with five main branches being adopted with success. It is analogous to the form used for the pear in the same garden, and is very readily made.

In addition to the trellises above described, the most remarkable feature of this garden is the presence of a vast number of horizontal cordon Apple trees, both in single lines and in superimposed ones of two or three stages, all on galvanized wire. The trees are on the Paradise stock, and nearly always confined to a single stem. These trees bore an enormous crop during the year 1868, but the fine apples were nearly all destroyed by the worm. At the end of September, the display of fruit was quite remarkable, although much had fallen before that period, and the year had been too hot for the perfect development of the Apple. One border devoted to cordons is 300 mètres (984 feet) long, and altogether there is 4000 mètres of cordon apples in the garden. As the greater portion of this length is composed of two and three lines of wires placed at distances of a foot one above the other, there is really quite 8000 mètres, or more than five miles of horizontal (or French) cordon Apple trees on the true Paradise stock, and the plantations are being extended as often as circumstances will permit.



It should be observed that though the cordons are often grown in lines one above the other, one plant does not furnish more than one line except at the ends. There, however, it is necessary to take several branches from one plant to furnish the two or three lines of wire starting from the same post. Here, as in many other gardens superintended by experienced fruit growers, this mode of Apple growing is preferred to any other, but the enormous number planted best speaks of the estimation in which it is held. The cordons, though generally well-managed, are not quite so good as I have seen them elsewhere, and apparently from being too closely confined to the main stem. I have always noticed them best and most satisfactory when allowed to form a free and regular bush of spurs along the stem. The soil is as cold, stiff, and disagreeable for fruit culture as could well be devoted to that purpose.

*The New School of Fruit Culture of the City of Paris in the Bois de Vincennes*

Not long since it was determined to make a new school of fruit culture for Paris, and in the spring of 1868 the first trees were planted. Naturally there is but very little to be seen as yet; but, nevertheless, a description of it can scarcely fail to be of use. As to plan and arrangement it is almost identical with that recommended by M. Du Breuil for the north of France. It is situated near the Avenue Daumesnil entrance to the Bois de Vincennes. The first thing remarkable about the new garden is its walls; they are of felt, supported on a rough wooden framework. The felt is first nailed on frames of wood about six feet long by four feet wide, which are dropped into a groove made in the uprights, the stronger framework being based upon a few inches of masonry; the felt is whitened over, and the whole surmounted by a little ridgelike coping. This peculiar form of wall was erected in consequence of the objection of the authorities to have any walls of solid materials in the neighbourhood, which is so near the fort, but this merely helped to prove that in cold northern countries we may hope to grow good fruit by



means of something less expensive than well-made brick walls. These walls are about nine feet high, except at the north end, where they are more than twelve feet high.

The garden, which is not a yard larger than is necessary for the purpose to which it is devoted, is in two divisions—one to illustrate the practical and profitable culture of fruit for market, the other all the important modes of fruit culture, the various curious and useful forms of wall and standard trees, and, in a word, most things necessary to know concerning the subject. The division devoted to illustrate the mode of culture best calculated to afford a quick and certain return is planted almost entirely with the finest of all winter Pears, Easter Beurré, and that well-known Apple the Calville Blanc, one of the best of all Apples for either dessert or culinary uses. The Pears are all cordons, either planted against walls or espaliers, and the Apples are all the low horizontal cordon, the form I have so often recommended. The most valuable and excellent fruits are the only ones cultivated. Most of the cordons against the walls are oblique (thus ///), except at the high end wall, where they are vertical. The Professor's reason for adopting this form, is that the walls are more readily covered by it, and a much quicker return obtained; and of course he thinks these advantages compensate for the expense of planting so closely, or any other objection that may be urged against the system. Between three and four thousand trees of Easter Beurré, and the same number of Calville Blanc, are planted here in this small garden. The trees have done very poorly indeed, having been planted too late, and it is to be feared many of them will die, so that much in the way of healthy and fertile specimens will not be seen for some years.

One thing cannot fail to strike the British visitor who takes an interest in fruit growing, and to give him a valuable lesson at the same time; precautions to protect the trees effectually from wet and frost are taken, which are never seen or thought of in British gardens. All round the walls iron brackets project from immediately beneath the permanent wooden coping, to receive wide copings made of felt on a cheap wooden frame-



work, in lengths about six feet long and two wide. These are slipped in under the short permanent coping, and rest on the bracket, the hooked point of which holds them in position. A small eye is at the under side of each, so as to thoroughly fix the coping by attaching each length with a piece of wire to another eye near the upper portion of the wall. Thus a most effective and excellent protection is afforded the delicate blossoms and fruit in spring. This is against the walls, where the British cultivator occasionally, takes a little trouble to protect his trees from the cold rains and frosts of the budding and flowering season. Equal care is taken to protect the espalier trees—a thing which has never yet been attempted by British fruit growers, who, however, are not slow to contrast the difficulties they have to contend against with those of the French, for whom of course the climate is said to favor everything. The protection for the espaliers is afforded by iron rods projecting from the top of the pine posts that are used to support the double espaliers, and running through them are six lines of galvanized wire, forming a sort of span over the trees. A little above these wires runs a stronger one, connecting the posts beneath it, and resting on the lower wires are two lines of neat thin frames of straw, each at least a yard wide. These are firmly fixed down to the wires, so that in spring the trees are placed under what may be called a neatly-thatched shed. No doubt some other material would look better than the straw, but it is cheap, and when nailed firmly between laths does not look untidy; and, moreover, it is the object of the place to show the cheapest as well as the best methods of protection, and also the best way of applying those most commonly in use; and the use of neat straw mats for protecting walls is very common in France. Posts of pine wood five or six inches in diameter are employed to support the espaliers, because they are cheap; and, to secure their durability, they are thoroughly saturated with blue vitriol before being erected. This is a cumbrous and bad plan, the kind of fruit trellises employed at Versailles being neater, more durable, and in every way so superior that I am astonished



that anybody who has seen the Versailles trellises could think of erecting such things as these.

In the garden devoted to teaching purposes, all the lines which the branches of the wall trees are to pursue when fully formed are indicated by small rattan canes—accurately placed, so that as the tree grows the trainer has no hesitation as to the exact position each branch should take, but merely has to attach to the rods so definitely laid down. The larger trees against the walls are mostly those I have figured as the *Palmette Verrier* (see Page 488). This is however occasionally trained “double,” that is, it has two vertical stems instead of one. Useless as well as desirable forms are shown; for instance, trees formed like a goblet, with the branches crossed or ascending vertically, or sometimes like a goblet reversed. These are all useless for practical purposes, though they may serve to amuse an amateur; who, however, would do better to amuse himself with trees more beautiful, productive, and easy to train. The way of making a hedge of Pears—a hedge that when once made, and with its branches crossed and intertwined, will support itself—is also shown; and without doubt neat and productive screens may thus be made in any garden, and the trees kept quite as neatly as if supported by expensive trellising.





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